Firestone

COMPLETE AUTO CARE™

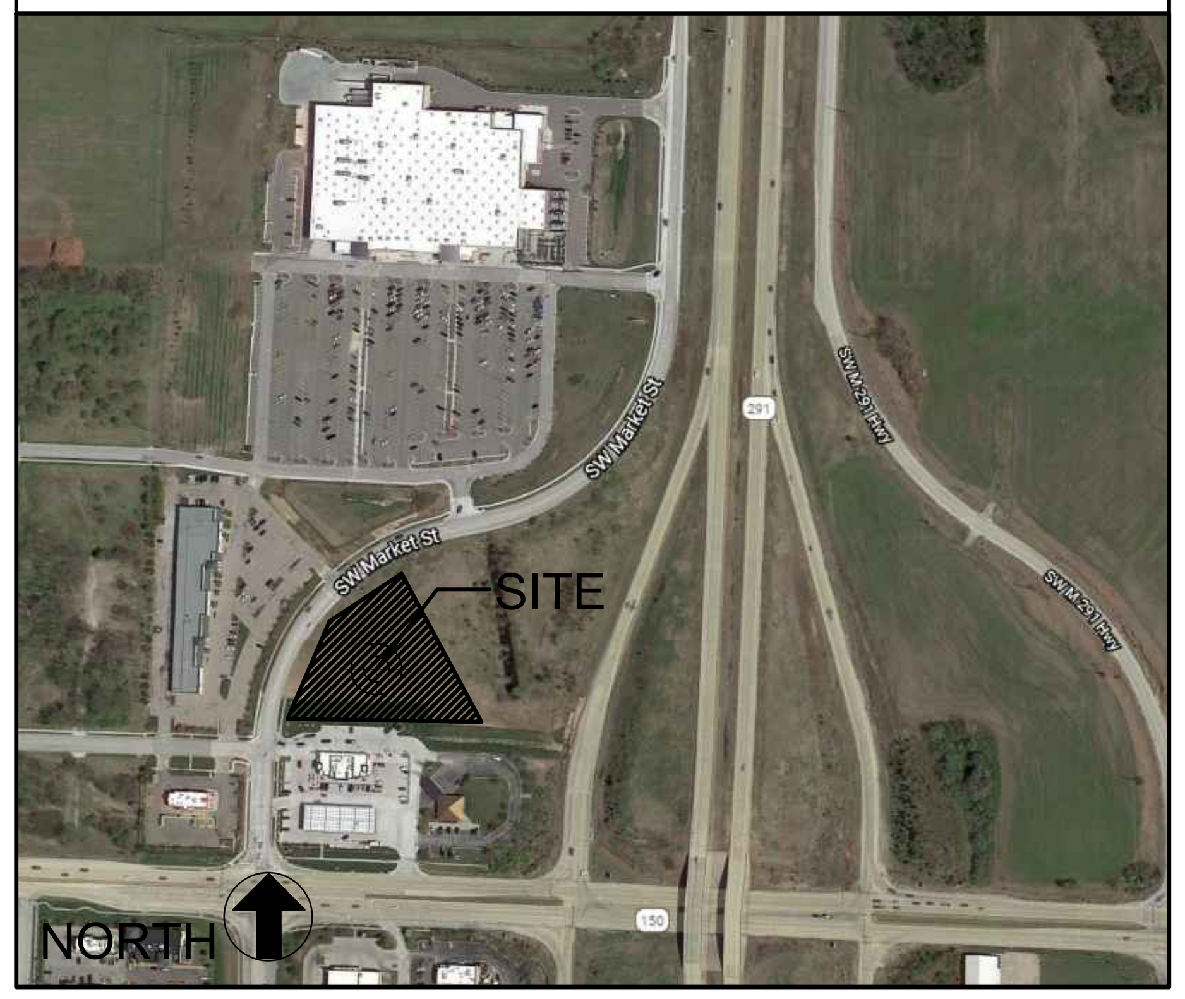
since 1926

NEW FIRESTONE STORE

3561 SW MARKET ST., JACKSON COUNTY

LEE'S SUMMIT, MO 64082

VICINITY MAP



REVISION LOG

REV	DATE	DESCRIPTION

DCB TRACKING

2020 ER PROTOTYPE **WITH** APPLICABLE DCBS THROUGH DCB # 2019-037, 2020-018

DCB #	ISSUED UNDER	DATE
2019-001 - 037 2020-001 - 018	PERMIT	03/26/20
--	BID	- / - / -
2020-018 - 023	ADD#1	04/16/20
--	CB#	- / - / -
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CODE DATA SUMMARY

APPLICABLE CODES

- 2018 INTERNATIONAL BUILDING CODE (IBC)
- 2018 INTERNATIONAL MECHANICAL CODE (IMC)
- 2018 INTERNATIONAL PLUMBING CODE (IPC)
- 2017 NATIONAL ELECTRICAL CODE (NEC)
- 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
- 2018 INTERNATIONAL FIRE CODE (IFC) NFPA
- ANSI A117.1 - 2017

BUILDING INFORMATION (2020 ER-LAYOUT)

ONE STORY METAL BUILDING, MERCHANDISING, AUTO SERVICE (MINOR REPAIR), INCIDENTAL STORAGE AREA.

SHOWROOM AREA	802 SF
ACCESSORY AREA (OFFICE,RESTROOMS)	531 SF
SERVICE AREA	3,421 SF
INVENTORY AREA	1,508 SF
GROSS TOTAL	6,262 SF

Chapter 3 - OCCUPANCY CLASSIFICATION (MIXED)

309.1 Occupancy Group M (Mercantile) - Showroom
311.2 Occupancy Group S-1 (Moderate Hazard) - Inventory
311.2 Occupancy Group S-1 (Moderate Hazard) - Service Areas

Chapter 5- GENERAL BUILDING HEIGHTS AND BUILDING AREAS

Table 504.3: Construction Type V-B
Group M - Allowable area = 36,000 SF, Allowable height = 60'
Group S-1 - Allowable area = 36,000 SF, Allowable height = 60'
Provided: 6,262 SF, 1 story 23'-8" height

Chapter 6 - TYPES OF CONSTRUCTION

602.5 Type V-B
Table 601 - Type V-B- Groups M & S-1

Structural Frame:	0 hour rating
Floor and Roof Construction:	0 hour rating
Exterior Bearing Walls:	0 hour rating

Table 602 -Type V-B - Exterior wall based on fire separation distance: All sides >10,- 0 hour rating

Chapter 7 - FIRE RATED CONSTRUCTION

705.2.2 Projections from walls of Type V Construction shall be of any approved material.
720.2 Concealed insulation materials shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 450.

Chapter 9 - FIRE PROTECTION SYSTEM

903.2.9.1- Group S-1- Repair Garages- An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406, as shown:

1. Buildings having two or more stories above grade plan, including basements, with a fire area containing a repair garage exceeding 10,000 square feet. **N/A**
2. Buildings not more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet. **N/A**
3. Buildings with repair garages servicing vehicles parked in basements. **N/A**
4. A group S-1 fire area used for repair of commercial motor vehicles where the fire area exceeds 5,000 square feet. **N/A**

903.2.9.2 - Bulk storage of tires. Buildings and structures where the area for the storage of tires exceed 20,000 cubic feet shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
Proposed tire storage = < 20,000 CU. FT. OF TIRES. **N/A**

Tire Storage- On tread, in single and double row fixed stacks without solid shelves and 5 tiers.

A FIRE PROTECTION SYSTEM AND FIRE ALARM SYSTEM WILL BE PROVIDED.

Chapter 10 - MEANS OF EGRESS

Occupant load: Table 1004.1.2,
Gross Floor Areas: 6,262 SF
Showroom (Mercantile 802 SF/60 gross) = 14 occupants
Accessory (Break area & office 531 SF/150 gross) = 4 occupants
Service Area (3,421 SF/300 gross) = 12 occupants
Inventory (Storage 1,508 SF/300 gross) = 5 occupants
TOTAL OCCUPANTS for means of egress = 35 occupants

Egress width: 1005.3.2,
Egress width @ grade level doors = 0.20" per occupant, 35 occupants X 0.20 = 7" of egress width required
Provided exit width - (3) doors = 111" (#01, #07, #16)

Chapter 11- ACCESSIBILITY

1103.2.9 - Equipment spaces frequented only by personnel for maintenance, repair or monitoring of equipment are not required to be accessible.
1104.1- Accessible routes within the site shall be provided from public transportation stops, accessible parking, accessible passenger loading zones; and public streets or sidewalks to the accessible building entrance served.
1104.3.1- Employee work areas. Common use Circulation paths within employee work areas shall be accessible.
1105.1- Public Entrances, At least 60 percent of all public entrances shall be accessible.
Table 1106.1 - Accessible parking - 1 per 25 spaces.

Chapter 12 - INTERIOR ENVIRONMENT

Ventilation and Temperature control shall conform to the IMC.
1209.2.1 Toilet room floors shall have smooth, hard, nonabsorbent surface that extends upward onto the walls at least 4".
1209.2.2 Walls within 2 feet of urinals and water closets shall have a smooth, hard, nonabsorbent surface to 4 feet above the floor, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.
Accessories such as grab bars, towel dispensers, T.P. dispensers, etc, provided on or in walls, shall be installed and sealed to protect structural elements from moisture.

GENERAL NOTES

1. ALL ITEMS SHALL FULLY COMPLY WITH IBC ACCESSIBILITY GUIDELINES SECTION 1101.2 ACCESSIBLE BUILDINGS: NEW CONSTRUCTION
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE CONTRACT DOCUMENTS. THE OWNER SHALL BE NOTIFIED OF ANY UNFORESEEN CONDITIONS WHICH MAY AFFECT PROGRESS OR COST OF WORK PERFORMED.
3. FIRE EXTINGUISHERS SHALL BE LOCATED PER DIRECTION OF FIRE DEPARTMENT. REFER GENERAL NOTE #4 AND SHEET LS1 FOR REQUIRED F.E. LOCATIONS.
4. G.C. SHALL PROVIDE, INSTALL AND CERTIFY (4) DRY CHEMICAL (A, B, C) @ 10 lbs. FIRE EXTINGUISHERS. LOCATE 1 SALES, 1 BREAK AREA, 1 INVENTORY AT DOOR TO SERVICE (INVENTORY SIDE), AND 1 SERVICE AT DOOR TO INVENTORY (SERVICE SIDE). MINIMUM AMOUNT OF FIRE EXTINGUISHERS WILL BE REQUIRED WHETHER OR NOT CODE REQUIRES. IF CODE REQUIRES MORE THAN STATED HEREIN, G.C. SHALL FURNISH AND INSTALL THE ADDITIONAL REQUIRED.
5. ALL SIGNAGE, SHELVING, AND ALARMS SHALL BE DEFERRED SUBMITTALS UNDER SEPARATE PERMIT SUBMISSION.
6. THE OWNER WILL EMPLOY THE SERVICES OF ONE OR MORE SPECIAL INSPECTORS TO PROVIDE SPECIAL INSPECTIONS DURING CONSTRUCTION FOR THE REQUIRED SPECIAL INSPECTION ITEMS.
7. A VESTIBULE IS NOT INCLUDED ON THIS PROJECT BASED ON EXCEPTION 4 OF THE 2018 INTERNATIONAL ENERGY CONSERVATION CODE SECTION C402.5.7. DOORS THAT OPEN DIRECTLY FROM A SPACE LESS THAN 3,000 SQUARE FEET IN AREA.
8. FIRE PROTECTION -
   a. APPROVAL OF SPRINKLER DRAWINGS IS REQUIRED BY BRIDGESTONE CONSTRUCTION MANAGER.
   b. NO MAIN LINES RUN WITHIN THE PLAN AREA OF THE OPEN OR UP POSITION OF THE OVERHEAD DOOR.
   c. FIRE SPRINKLER TEST PIPE TO BE DIRECTED TO HARDSCAPE TO AVOID WASH OUT OF OTHER TYPE MATERIAL.
   d. FIRE SPRINKLER MONITORING REQUIRED, WITH MINIMUM (1) MANUAL PULL STATION FOR FIRE SPRINKLER MONITORING.
   e. ALL AUXILIARY DRAINS AND PIPING ARE TO BE ROUTED OUT THRU SERVICE BAYS.
9. DISTRICT/STORE MANAGER/NSC TO PROVIDE MAIL BOX TYPE AND LOCATION TO THE GENERAL CONTRACTOR'S SUPERINTENDENT APPROXIMATELY 2 WEEKS BEFORE TURNOVER FOR GC TO IMPLEMENT AS FIELD CHANGE ORDER.

BUILDING DRAWING INDEX / PUBLICATION INDEX

SHT.	TITLE	DWG. DATE	REV. NO.	REV. DATE	FOR LEASE DOC.	FOR PERMIT	FOR BIDS	FOR CONST.
	GENERAL INFORMATION (FOR REFERENCE)							
T1	TITLE SHEET	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
N1	GENERAL INFORMATION	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
LS1	LIFE SAFETY PLAN	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
PSL1	PHOTOMETRIC SITE LIGHTING	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
	STORE PLANNING (FOR REFERENCE)							
F1	FIXTURE PLAN & NOTES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
F2	SHOWROOM FIXTURE PLAN & ELEVATIONS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
	ARCHITECTURAL DRAWINGS							
A1	METAL BUILDING PLAN & NOTES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A1.1	FLOOR PLAN & NOTES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A1.2	ENLARGED PLAN DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A2	REFLECTED CEILING & FINISH PLAN	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A3	ROOF PLAN & DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A4	EXTERIOR ELEVATIONS & DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A5	BUILDING SECTIONS & DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A5.1	WALL SECTIONS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A6	WALL SECTIONS & DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A6.1	TRASH/TIRE ENCLOSURE DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A7	INTERIOR ELEVS, SECTIONS & DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
A8	ROOM FINISH & DOOR SCHEDULES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -

BUILDING DRAWING INDEX / PUBLICATION INDEX

SHT.	TITLE	DWG. DATE	REV. NO.	REV. DATE	FOR LEASE DOC.	FOR PERMIT	FOR BIDS	FOR CONST.
	STRUCTURAL DRAWINGS							
S1	GENERAL NOTES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
S2	FOUNDATION PLAN AND NOTES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
S3	FOUNDATION DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
	FIRE PROTECTION DRAWINGS							
FP1	FIRE SPRINKLER PLAN	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
FP2	FIRE SPRINKLER NOTES AND DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
	FIRE ALARM DRAWINGS							
FA1	FIRE ALARM PLAN AND MATRIX	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
FA2	FIRE ALARM NOTES, PROGRAMMING AND CALCULATIONS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
FA3	FIRE ALARM DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
FA4	FIRE ALARM CONTROL PANEL LAYOUT	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
	BURGLAR ALARM DRAWINGS							
BA1	INTRUSION ALARM PLAN AND MATRIX	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
BA2	INTRUSION ALARM NOTES AND CALCULATIONS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
BA3	INTRUSION ALARM CONTROL PANEL LAYOUT AND DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
	MECHANICAL DRAWINGS							
M1	MECHANICAL PLAN AND NOTES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
M2	MECHANICAL DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
M3	MECHANICAL EQUIPMENT SCHEDULES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
	PLUMBING DRAWINGS							
P1	PLUMBING PLAN AND NOTES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
P2	ENLARGED RESTROOM PLUMBING PLANS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
P3	AIR PIPING PLAN AND NOTES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
P4	OIL PIPING DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
P5	PLUMBING DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
P6	PLUMBING SCHEDULES AND RISERS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
	ELECTRICAL DRAWINGS							
E1	ELECTRICAL SYMBOLS, NOTES AND SCHEDULES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
E2	LIGHTING PLAN	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
E3	POWER PLAN	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
E4	ELECTRICAL DETAILS	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
E5	ONE-LINE DIAGRAM, PANEL SCHEDULES AND NOTES	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -
ESL1	SITE LIGHTING PLAN	03/26/20	1	04/16/20	- / - / -	03/26/20	- / - / -	- / - / -

DEFERRED SHOP DRAIWNG SUBMITTALS

THE FOLLOWING SUBMITTALS ARE TO BE SUBMITTED BY THE GENERAL CONTRACTOR TO THE AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION. SUBMITTALS ARE TO BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF MISSOURI OR AS REQUIRED BY THE AHJ. REFER SPECIFICATIONS.

COPIES	SUBMITTALS
3	FIRE ALARM
3	FIRE PROTECTION

1/2" DENSGLASS GOLD IS AN ACCEPTED APPROVED ALTERNATE TO 1/2" EXTERIOR GRADE PLYWOOD.

SUBCONTRACTOR NOTES

- THE SUB CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
- THE SUBCONTRACTOR SHALL EXAMINE ENTIRE SET PRIOR TO SUBMITTING BID.

ALL RFI'S AND SUBMITTALS SHALL BE SENT TO
BSRO_Submittals_RFI@sgadesigngroup.com.

PROJECT FOUNDATIONS ARE NOTED AS PRELIMINARY, REFER TO S2 SHEET FOR FURTHER INFORMATION

TENANT CONTACT:	DEVELOPER CONTACT:	ARCHITECTURAL CONTACT:	STRUCTURAL:	FIRE PROTECTION	FIRE ALARM/BURGLAR ALARM:	MECHANICAL/PLUMBING/ELECTRICAL:
BRIDGESTONE RETAIL OPERATIONS, LLC BRANT HEFLIN 200 4TH AVE. SOUTH NASHVILLE, TN 37201 PHONE: 615.937.9345	FS LEE'S SUMMIT, LLC JASON HOROWITZ 9010 OVERLOOK BLVD BRENTWOOD, TN 37027 PHONE: 615.370.0670	SGA DESIGN GROUP, P.C. OLIVIA GOOD 1437 SOUTH BOULDER AVE, SUITE 550 TULSA, TULSA COUNTY, OK 74119 PHONE: 918.587.8600	WALLACE ENGINEERING - STRUCTURAL CONSULTANTS, INC. CARRIE JOHNSON MO STATE CERTIFICATE OF AUTHORITY #001268 123 N. MARTIN LUTHER KING JR. BLVD. TULSA, TULSA COUNTY, OK 74103 PHONE: 918.584.5858 FAX: 918.584.8689	CODE CONSULTANTS, INC. WILLIAM B. SMITH MO ST. CERTIFICATE OF AUTHORITY: #000419 2043 WOODLAND PARKWAY, SUITE 300 ST. LOUIS, ST. LOUIS COUNTY, MO 63143 PHONE: 314.991.2633	CODE CONSULTANTS, INC. JACOB P. HEMKE MO ST. CERTIFICATE OF AUTHORITY: #000419 2043 WOODLAND PARKWAY, SUITE 300 ST. LOUIS, ST. LOUIS COUNTY, MO 63143 PHONE: 314.991.2633	ACERTUS CONSULTING GROUP, LLC RANDALL A. NELSON 14817 WEST 95TH ST. LENEXA, JOHNSON COUNTY, KS 66215 PHONE: 913.322.5150 FAX: 913.322.5155

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Architecture

Firestone COMPLETE AUTO CARE™

NEW FCAC STORE
2020 ER
3561 SW MARKET ST
JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

STATE OF MISSOURI
MITCH GARRETT
NUMBER A-007541
ARCHITECT

04/16/2020

MITCHEL RAY GARRETT - ARCHITECT
MO# A-007541

ISSUE BLOCK

1	04/16/20	ADD #1

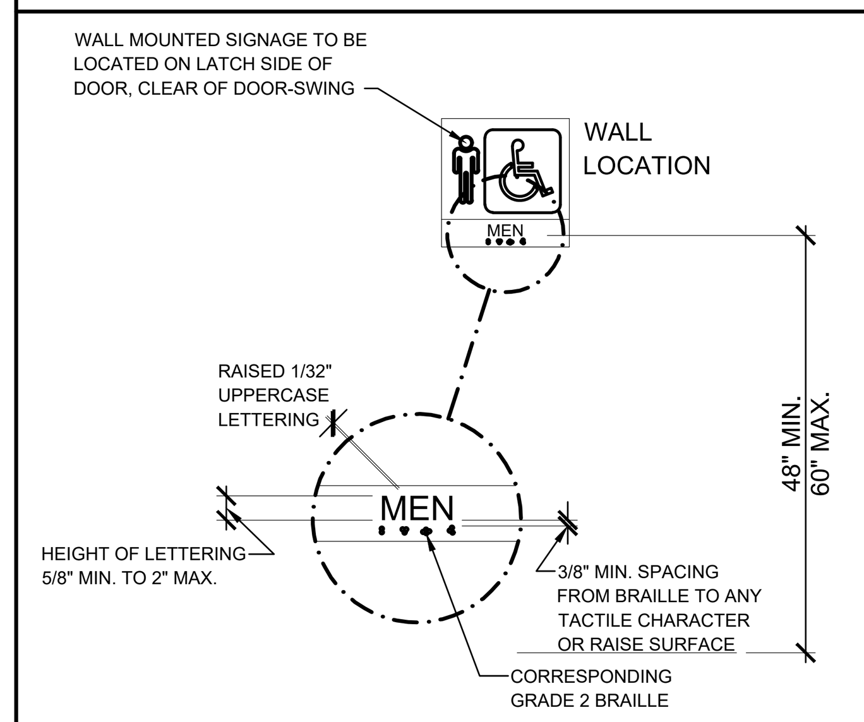
PROPERTY NO.:	160085
6 DIGIT NO.:	906983
4 DIGIT NO.:	78C9
AOR PROJECT NUMBER:	1955B71
TO PERMIT: DATE:	03/26/2020
TO BID: DATE:	##-##-##

KMP

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T1

RESTROOM SYMBOLS



SIGNS & IDENTIFICATION

1. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE THE STANDARD USED TO IDENTIFY FACILITIES THAT ARE ACCESSIBLE TO AND USABLE BY PHYSICALLY DISABLED PERSONS AS SET FORTH IN TITLE III AND AS SPECIFICALLY REQUIRED IN THIS SECTION

2. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND. THE BLUE SHALL BE EQUAL TO COLOR NO. 15090 IN FEDERAL STANDARD 599B. PICTOGRAMS AND THEIR FIELDS SHALL HAVE A NON-GLARE FINISH. PICTOGRAMS SHALL CONTRAST THEIR FIELDS, WITH EITHER A LIGHT PICTOGRAM ON A DARK FIELD OR A DARK PICTOGRAM ON A LIGHT FIELD.

3. FOR CHARACTER WIDTH, THE UPPERCASE LETTER "O" SHALL BE USED TO DETERMINE THE ALLOWABLE WIDTH OF ALL CHARACTERS OF A FONT. THE WIDTH OF THE UPPERCASE LETTER "O" OF THE FONT SHALL BE 55 PERCENT MINIMUM AND 110 PERCENT MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I" OF THE FONT. (ICC A117.1-2017: 703.3.6) CHARACTER HEIGHT MEASURED FROM THE BASELINE OF THE CHARACTER SHALL BE 5/8" (16 MM) MINIMUM AND 2 INCHES (51 MM) MAXIMUM BASED ON THE HEIGHT OF THE UPPERCASE LETTER "I".

4. MINIMUM CHARACTER HEIGHT SHALL COMPLY WITH ICC ANSI A117.1-2017: 703.3.5. VIEWING DISTANCE SHALL BE MEASURED AS THE HORIZONTAL DISTANCE BETWEEN THE CHARACTER AND AN OBSTRUCTION PREVENTING FURTHER APPROACH TOWARDS THE SIGN. CHARACTER HEIGHT SHALL BE BASED ON THE UPPERCASE LETTER "I".

5. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND

6. WHEN RAISED CHARACTERS OR SYMBOLS ARE USED, THEY SHALL CONFORM TO THE FOLLOWING:

   A. LETTERS AND NUMBERS ON SIGNS SHALL BE RAISED 1/32" MINIMUM AND SHALL BE SANS-SERIF UPPERCASE CHARACTERS ACCOMPANIED BY GRADE 2 BRAILLE

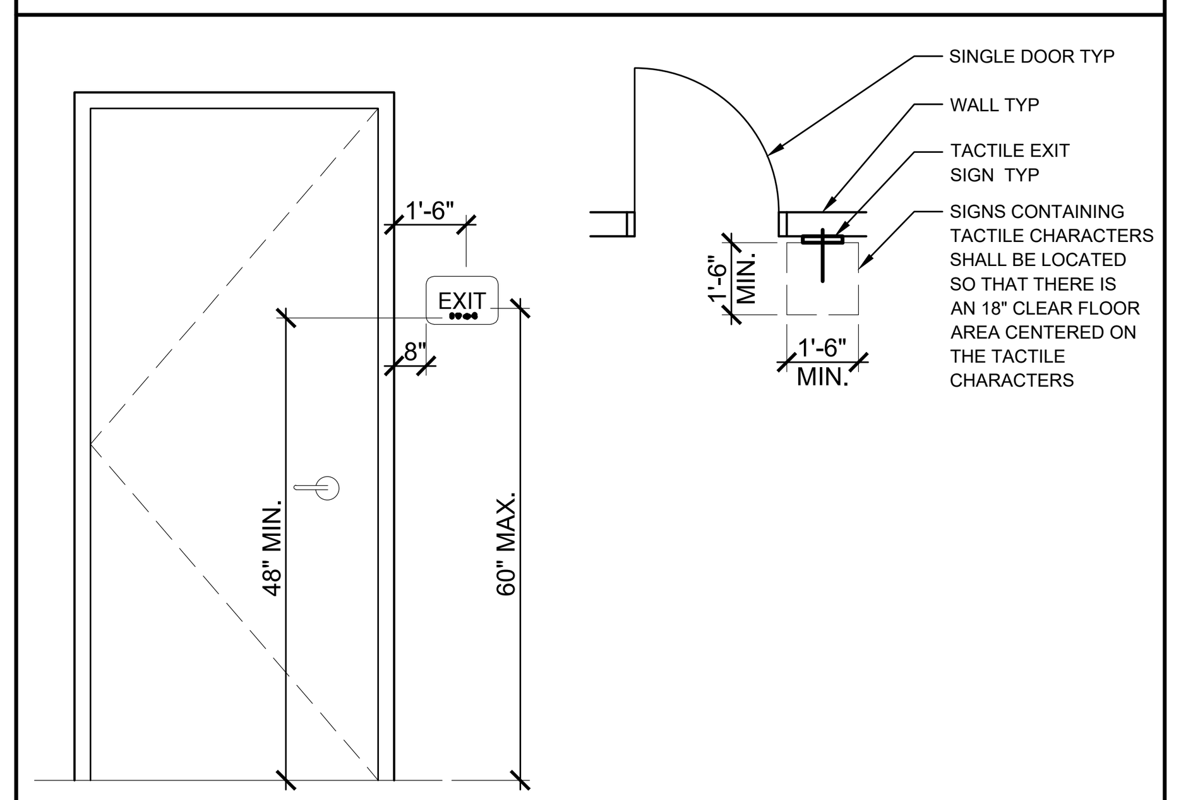
   B. RAISED CHARACTERS OR SYMBOLS SHALL BE A MINIMUM OF 5/8" HIGH AND 2" MAXIMUM BASED ON THE HEIGHT OF THE UPPERCASE LETTER "I".

   C. PICTORIAL SYMBOL SIGNS (PICTOGRAMS) SHALL BE ACCOMPANIED BY THE EQUIVALENT VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE BORDER DIMENSION OF THE PICTOGRAM SHALL BE A MINIMUM OF 6" IN HEIGHT

7. CONTRACTED GRADE 2 BRAILLE SHALL BE USED WHEREVER BRAILLE SYMBOLS ARE SPECIFICALLY REQUIRED IN OTHER PORTIONS OF THESE REGULATIONS. DOTS SHALL BE 0.090" (2.3 MM) TO 0.100" (2.5 MM) ON CENTER IN EACH CELL WITH 0.241" (6.1 MM) TO 0.300" (7.6 MM) SPACE BETWEEN CELLS. DOTS SHALL BE RAISED A MINIMUM OF 0.025" (0.6 MM) TO 0.037" (0.9 MM) ABOVE THE BACKGROUND.

8. WHEN PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, RAISED LETTERS SHALL BE ACCOMPANIED BY BRAILLE. SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT. MOUNTING HEIGHT SHALL BE LOCATED 48 INCHES (1220 MM) MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASE OF THE LOWEST TACTILE CHARACTER AND 60 INCHES (1525 MM) MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE HIGHEST TACTILE CHARACTER. WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAFS, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR AT THE RIGHT SIDE OF DOUBLE DOORS, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT WALL. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18 INCHES (455 MM) MINIMUM BY 18 INCHES (455 MM) MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION. EXCEPTION: SIGNS WITH TACTILE CHARACTERS SHALL BE PERMITTED ON THE PUSH SIDE OF DOORS WITH CLOSERS AND WITHOUT HOLD-OPEN DEVICES.

TACTILE EXIT SIGN



TACTILE SIGN REQUIREMENTS

1. A TACTILE SIGN STATING "EXIT" AND COMPLYING WITH ICC A117.1 SHALL BE PROVIDED ADJACENT TO EACH DOOR TO AN EXIT PASSAGEWAY AND THE EXIT DISCHARGE. REF DOOR SCHEDULE FOR LOCATIONS.

2. FOR CHARACTER WIDTH, THE UPPERCASE LETTER "O" SHALL BE USED TO DETERMINE THE ALLOWABLE WIDTH OF ALL CHARACTERS OF A FONT. THE WIDTH OF THE UPPERCASE LETTER "O" OF THE FONT SHALL BE 55 PERCENT MINIMUM AND 110 PERCENT MAXIMUM OF THE HEIGHT OF THE UPPERCASE "I" OF THE FONT. (ICC A117.1-2017: 703.3.6) CHARACTER HEIGHT MEASURED FROM THE BASELINE OF THE CHARACTER SHALL BE 5/8" (16 MM) MINIMUM AND 2 INCHES (51 MM) MAXIMUM BASED ON THE HEIGHT OF THE UPPERCASE LETTER "I".

3. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND

4. CHARACTERS SHALL CONFORM TO THE FOLLOWING:

   A. LETTERS AND NUMBERS ON SIGNS SHALL BE RAISED 1/32" MINIMUM AND SHALL BE SANS-SERIF UPPERCASE CHARACTERS ACCOMPANIED BY GRADE 2 BRAILLE

   B. RAISED CHARACTERS OR SYMBOLS SHALL BE A MINIMUM OF 5/8" HIGH AND A MAXIMUM OF 2"

5. CONTRACTED GRADE 2 BRAILLE SHALL BE USED. DOTS SHALL BE 0.090" (2.3 MM) TO 0.100" (2.5 MM) ON CENTER IN EACH CELL WITH 0.241" (6.1 MM) TO 0.300" (7.6 MM) SPACE BETWEEN CELLS. DOTS SHALL BE RAISED A MINIMUM OF 0.025" (0.6 MM) TO 0.037" (0.9 MM) ABOVE THE BACKGROUND.

6. SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT. MOUNTING HEIGHT SHALL BE LOCATED 48 INCHES (1220 MM) MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASE OF THE LOWEST TACTILE CHARACTER AND 60 INCHES (1525 MM) MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE HIGHEST TACTILE CHARACTER. WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAFS, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR AT THE RIGHT SIDE OF DOUBLE DOORS, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT WALL. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18 INCHES (455 MM) MINIMUM BY 18 INCHES (455 MM) MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION. EXCEPTION: SIGNS WITH TACTILE CHARACTERS SHALL BE PERMITTED ON THE PUSH SIDE OF DOORS WITH CLOSERS AND WITHOUT HOLD-OPEN DEVICES.

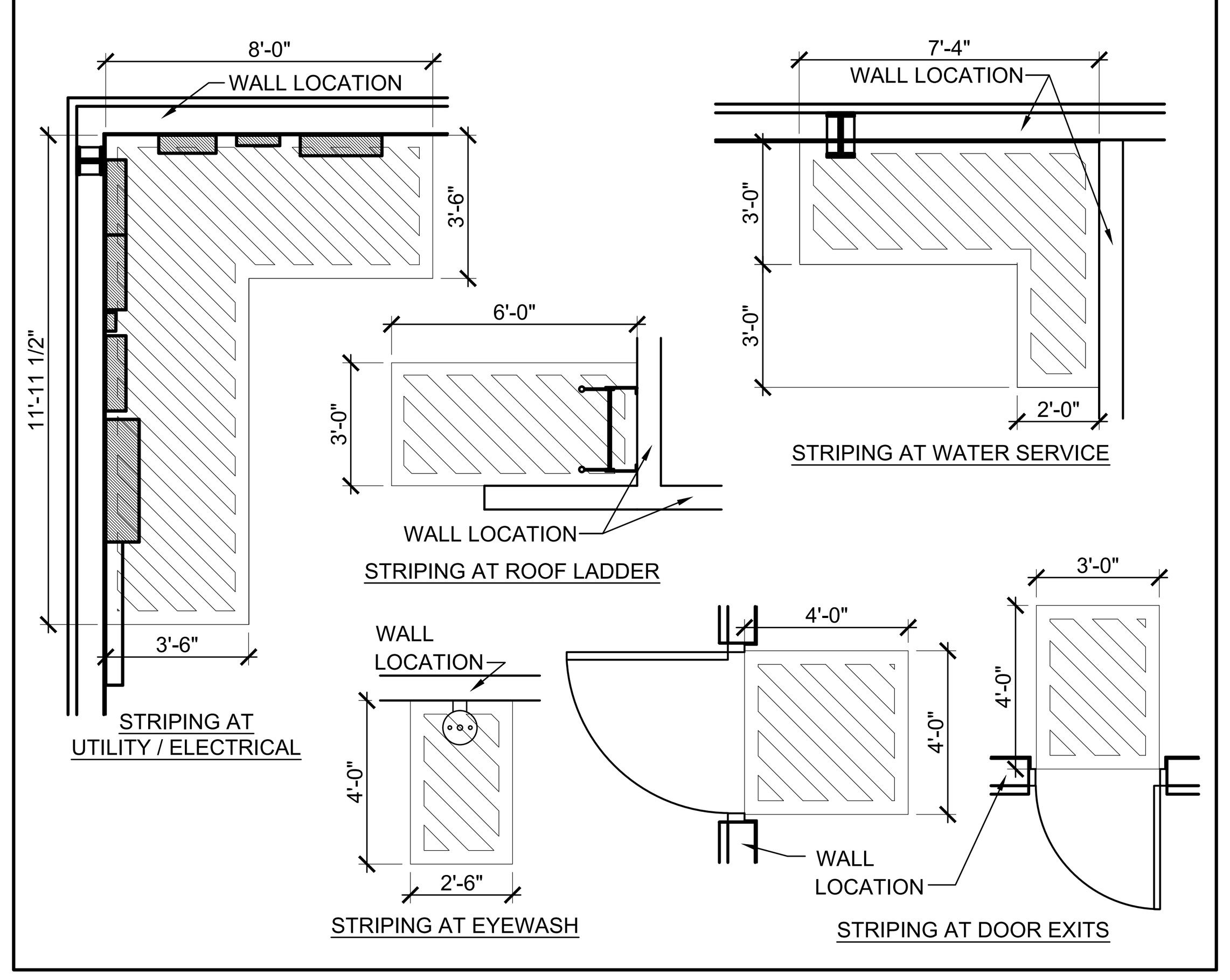
TACTILE EXIT SIGN LEGEND

REF:TACTILE SIGN REQUIREMENTS AND DIMENSIONS ABOVE FOR ACCESSIBLE SIGNAGE PLACEMENT

KEYNOTE	SIGNAGE
E	EXIT

STRIPING CONDITIONS

STRIPING REQUIREMENTS: 4" WIDE PAINTED STRIPES (YELLOW, REF SPECS) AT 12" O.C. AT 45 DEG. ANGLE WITH 4" WIDE BOUNDARY LINE CONTINUOUS AROUND PERIMETER.



SIGNAGE LEGEND

1. REQUIRED ACCESSIBLE ELEMENTS SHALL BE IDENTIFIED BY THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AT THE FOLLOWING LOCATIONS

   -ACCESSIBLE ENTRANCES WHERE NOT ALL ENTRANCES ARE ACCESSIBLE

   -ACCESSIBLE CHECK-OUT AISLES WHERE NOT ALL AISLES ARE ACCESSIBLE. THE SIGN, WHERE PROVIDED, SHALL BE ABOVE THE CHECK-OUT AISLE IN THE SAME LOCATION AS THE CHECK-OUT AISLE NUMBER OR TYPE OF CHECK-OUT IDENTIFICATION

   -UNISEX TOILET

   -ACCESSIBLE DRESSING, FITTING AND LOCKER ROOMS WHERE NOT ALL SUCH ROOMS ARE ACCESSIBLE

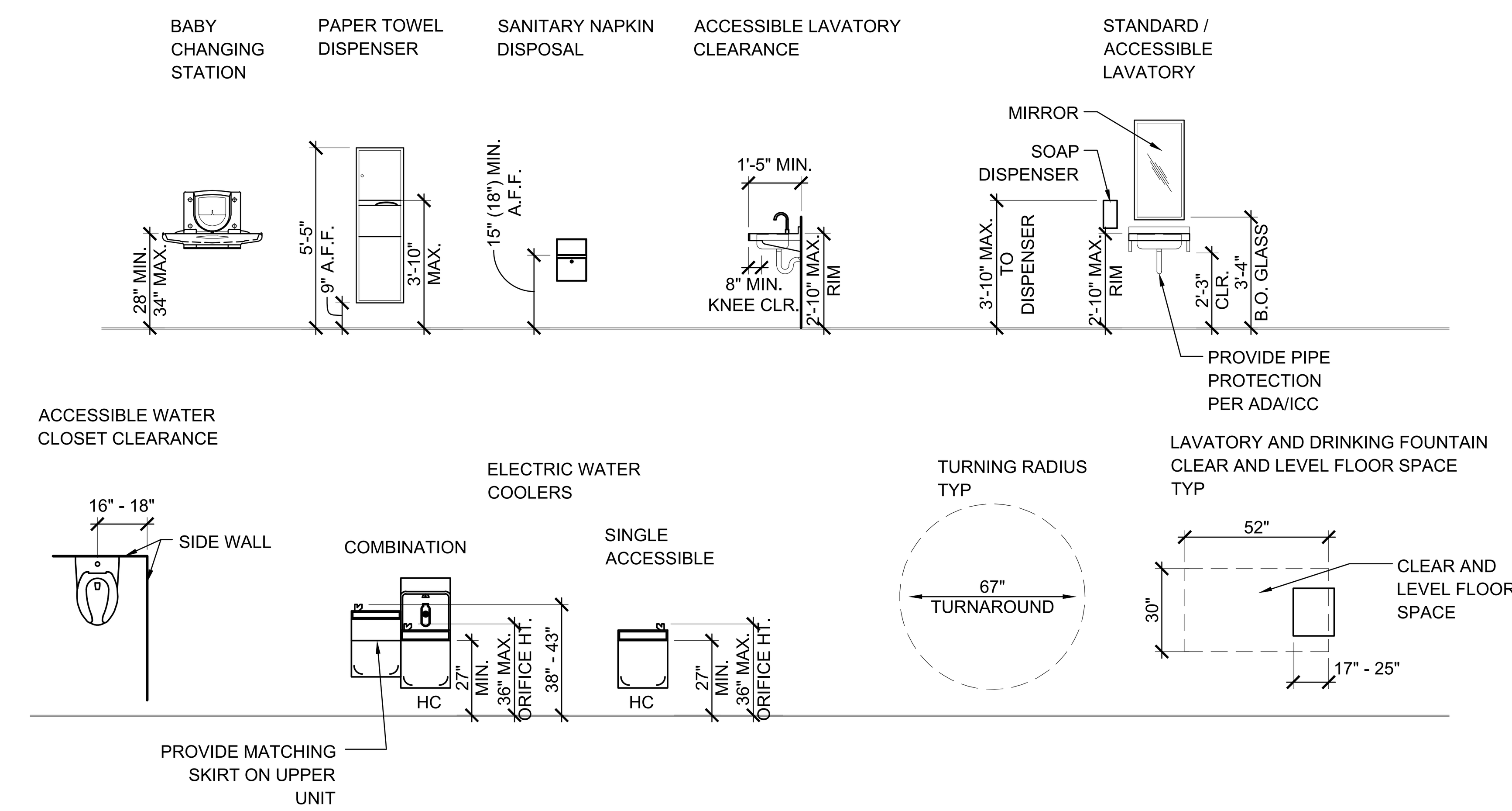
2. TACTILE SIGNAGE SHALL BE LOCATED 48 INCHES (1220 MM) MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASE OF THE LOWEST TACTILE CHARACTER AND 60 INCHES (1525 MM) MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE HIGHEST TACTILE CHARACTER. WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAFS, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR AT THE RIGHT SIDE OF DOUBLE DOORS, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT WALL. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18 INCHES (455 MM) MINIMUM BY 18 INCHES (455 MM) MINIMUM, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION. EXCEPTION: SIGNS WITH TACTILE CHARACTERS SHALL BE PERMITTED ON THE PUSH SIDE OF DOORS WITH CLOSERS AND WITHOUT HOLD-OPEN DEVICES.

3. CHARACTER AND SYMBOLS OF SIGNS SHALL BE IN CONTRAST WITH THEIR BACKGROUND AND SHALL BE EGGSHELL, MATTE, OR OTHER NON-GLARE MATERIALS OR FINISHES

4. ACCESSIBLE SIGNAGE SHALL USE GRADE 2 BRAILLE AND MUST COMPLY WITH ICC ANSI A117.1-2017: 703.4.

FIXTURE HEIGHTS AND CLEARANCES

COMPLY WITH THIS CHART, ICC A117.1-2017, AND ADA STANDARDS FOR ACCESSIBLE DESIGN



MOLD AND MILDEW NOTES

1. THE FOLLOWING REQUIREMENTS SHALL APPLY TO ALL NEW AND REMODEL CONSTRUCTION PROJECTS THE CONTRACTOR SHALL COMPLY WITH FEDERAL ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION REGULATIONS AND ALL LOCAL AND STATE HEALTH DEPARTMENT REQUIREMENTS AND RECOMMENDATIONS REGARDING MOLD AND MILDEW.

2. IN THE EVENT THE CONTRACTOR DISCOVERS, AT ANY TIME THE PRESENCE OF MOLD AND / OR MILDEW, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE AND THE ARCHITECT / ENGINEER OF RECORD, IN WRITING, OF THE CONCERNS AND/OR SUSPICIONS.

3. CONCURRENTLY, THE CONTRACTOR SHALL BE RESPONSIBLE TO RETAIN A MOLD AND MILDEW CERTIFIED TESTING AGENCY TO PERFORM AN INVESTIGATION AND TESTING AS REQUIRED TO EVALUATE THE NATURE AND EXTENT OF THE PROBLEM. IF THE TESTING AGENCY CONFIRMS HAZARDS, THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN A MINIMUM OF THREE (3) BIDS FROM COMPANIES QUALIFIED AND LICENSED TO PERFORM ALL NECESSARY REMEDIATION WORK, COMPLYING WITH ALL LOCAL, STATE AND FEDERAL ENVIRONMENTAL REGULATIONS, CODES, AND STATUTES.

4. ONCE SUSPICION OF MOLD AND / OR MILDEW IS MADE, THE CONTRACTOR SHALL TAKE ALL REASONABLE AND PRACTICAL PRECAUTIONS TO PROTECT ALL CONSTRUCTION PERSONNEL AND THE PUBLIC FROM THE EXPOSURE TO MOLD AND / OR MILDEW, AND SUCH PRECAUTIONS SHALL REMAIN IN PLACE UNTIL SUCH TIME AS THE OWNER OR HEALTH AUTHORITY DIRECTS OTHERWISE. CONSTRUCTION OPERATIONS SHALL NOT BE STOPPED OR CURTAILED, EXCEPT IN THE AREA OF MOLD / MILDEW CONCERN, DUE TO THESE REQUIRED PRECAUTIONS.

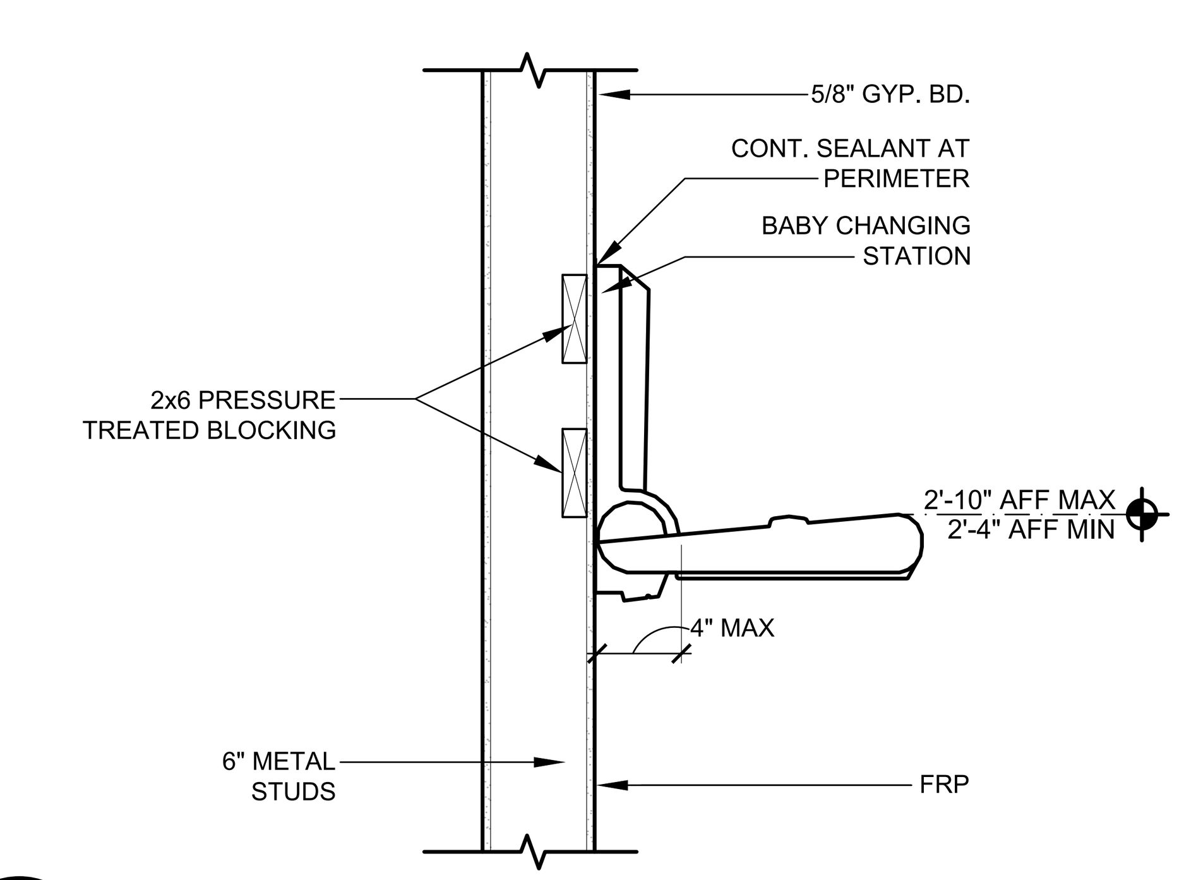
5. THE CONTRACTOR SHALL MAKE ALL REASONABLE EFFORTS TO AVOID CONDITIONS FAVORABLE TO THE DEVELOPMENT OF MOLD AND MILDEW, ESPECIALLY IN VOIDS WHICH WILL BE CONCEALED AND NOT VENTILATED. IN ALL CASES, INTERIOR SPACES AND INTERIOR FINISHED CONSTRUCTION SHALL BE MAINTAINED IN DRY AND WELL-VENTILATED CONDITIONS.
   a. PENETRATIONS SHALL BE SEALED WATER-TIGHT TO PREVENT MOISTURE MIGRATION FROM ENTERING THE BUILDING OR WALL CAVITIES.
   b. ALL CONDENSATE DRAIN PANS SHALL BE CLEANED AND KEPT FREE FROM DEBRIS UNTIL AND WHEN THE FACILITY IS TURNED OVER TO THE OWNER. INSURE POSITIVE DRAINAGE AT ALL DRAIN PANS. INSURE THAT ALL "COLD" SURFACES ARE INSULATED AND COVERED WITH A FULLY SEALED AND CONTINUOUS VAPOR BARRIER. ("COLD" SURFACES INCLUDE, BUT ARE NOT LIMITED TO, DOMESTIC COLD WATER PIPING, INTERIOR RAIN LEADERS, OUTDOOR AIR INTAKES, AND DUCTWORK CARRYING AIR CONDITIONED SUPPLY AIR.)
   c. ALL EXISTING SUPPLY AIR PATHS AND ALL EXISTING DUCTWORK TO BE RE-USED SHALL BE CLEANED AND TREATED AS REQUIRED TO REMOVE THE POTENTIAL FOR MOLD AND MILDEW. ALL DAMP AREAS SHALL BE DRIED THOROUGHLY PRIOR TO ENCLOSURE.

SYMBOLS

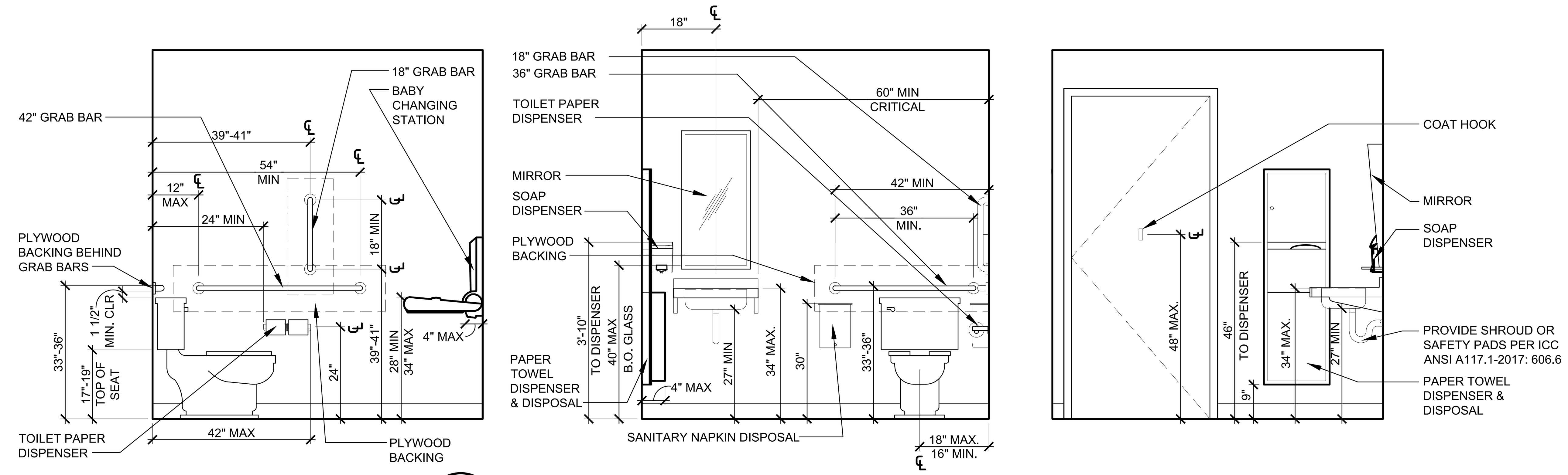
Symbol	Description
XX / XX TITLE SCALE: FULL	TITLE BUBBLE DETAIL NUMBER SHEET NUMBER
$ / AX.X	SECTION CUT SECTION DETAIL SHEET NUMBER
# / # / AX.X	ELEVATION REFERENCE ELEVATION VIEW (OUTSIDE) DETAIL NUMBER SHEET NUMBER
#	REVISION CLOUD
X / AX.X / XXX	DETAIL CLOUD DETAIL NUMBER SHEET NUMBER
TOP OF STEEL 1xx'-xx"	DATUM MARKS LOCATION ELEVATION REFERENCE
00	DOOR INDICATOR
X	WINDOW INDICATOR
OFFICE 102	ROOM NAME AND NUMBER INDICATOR
00	EQUIPMENT INDICATOR
A	COLUMN LINE INDICATOR
MS1	WALL TYPE INDICATOR
A	TOILET ACCESSORIES INDICATOR
VCT	FLOOR FINISH INDICATOR

ABBREVIATIONS

@	AT	L.F.	LINEAR FEET
℄	CENTERLINE	MAS	MASONRY
Ø	DIAMETER OR ROUND	MAX.	MAXIMUM
&	AND	MECH.	MECHANICAL
A, AMP.	AMPERE	MTL.	METAL
ABV.	ABOVE	MFR.	MANUFACTURER
A/C	AIR CONDITIONING	M.H.	MANHOLE
ACT	ACOUSTICAL TILE	MIN.	MINIMUM
ADA	AMERICANS W/ DISABILITIES ACT	MISC.	MISCELLANEOUS
		M.O.	MASONRY OPENING
A.F.F.	ABOVE FINISH FLOOR	MOD	MOTOR OPERATED DAMPER
AL.	ALUMINUM		
ALT.	ALTERNATIVE	MR.	MOISTURE RESISTANT
APPROX.	APPROXIMATE	MSB	MOP SINK BASIN
ARCH.	ARCHITECT	MTD.	MOUNTED
AHJ	AUTHORITY HAVING JURISDICTION	MATL.	MATERIAL (S)
		N.I.C.	NOT IN CONTRACT
BD.	BOARD	NO. OR #	NUMBER
BLDG.	BUILDING	NOM.	NOMINAL
BLK.	BLOCK	N.T.S.	NOT TO SCALE
BM.	BEAM	O	OIL LINE
B.O.	BOTTOM OF	O.C.	ON CENTER (S)
B.O.C.	BASE OF CURB	O.D.	OUTSIDE DIAMETER
BOT.	BOTTOM	O/H	OVERHEAD
BRG.	BEARING	OPG	OPENING
B.U.	BUILT-UP	O.H.	OPPOSITE HAND
C.	CONDUIT OR CELSIUS	OPP.	OPPOSITE
C.A.	COMPRESSED AIR LINE	O.S.A.	OUTSIDE AIR
C.B.	CATCH BASIN	O.S.B.	ORIENTED STRAND BOARD
C.C.	CENTER TO CENTER		
CEM.	CEMENT	O.T.S.	OPEN TO STRUCTURE
CFM.	CUBIC FEET PER MINUTE	PE.	POLYETHYLENE
C.J.	CONTROL JOINT	P/L.	PROPERTY LINE
CLG.	CEILING	PL.	PLATE
CLR.	CLEAR	P.LAM.	PLASTIC LAMINATE
CMU.	CONCRETE MASONRY UNIT	PLUMB.	PLUMBING
C.O.	CLEAN-OUT	PLYWD.	PLYWOOD
COL.	COLUMN	PNL.	PANEL
CONC.	CONCRETE	PR	PAIR
CONT.	CONTINUOUS	PRE-FIN.	PRE-FINISHED
CONTR.	CONTRACTOR	P.S.F.	POUNDS PER SQUARE FOOT
CU	CONDENSING UNIT		
CW	COLD WATER	P.S.I.	POUNDS PER SQUARE INCH
C.T.	CERAMIC TILE		
DBL.	DOUBLE	PVC.	POLYVINYL CHLORIDE
DTL.	DETAIL	R.	RADIUS
DIA.	DIAMETER	RA.	RETURN AIR
DIM.	DIMENSION	RAD.	RADIANT HEATER
DN.	DOWN	RD.	ROUND/ ROOF DRAIN
DWG.	DRAWING	REINF.	REINFORCEMENT
EA.	EACH	REQ'D.	REQUIRED
EF	EXHAUST FAN	RM.	ROOM
E.I.F.S.	EXTERIOR INSULATION FINISH SYSTEM	R.O.	ROUGH OPENING
		RESLT.	RESILIENT
E.J.	EXPANSION JOINT	S.A.	SUPPLY AIR
EL.	ELEVATION	S.C.	SOLID CORE
ELECT.	ELECTRIC	SCHED.	SCHEDULE
EQ.	EQUAL	S.D.	SMOKE DETECTOR
EQP.	EQUIPMENT	SEAL.	SEALANT
E.W.C.	ELECTRIC WATER COOLER	SECT.	SECTION
		S.F.	SQUARE FOOT/FEET
EXP.	EXPANSION	SHT.	SHEET
EXT.	EXTERIOR	SHTG.	SHEETING
F.A.	FIRE ALARM	SIM.	SIMILAR
FAI	FRESH AIR INTAKE	S.J.	SAW CUT JOINT
FCO	FLOOR CLEAN OUT	SPECS.	SPECIFICATIONS
FD.	FIRE DAMPER	SQ.	SQUARE
F.D.	FLOOR DRAIN	S.S.	STAINLESS STEEL
FDC	FIRE DEPARTMENT CONNECTION	SAN.	SANITARY
		STD.	STANDARD
FDN.	FOUNDATION	STL.	STEEL
F.E.	FIRE EXTINGUISHER	STRUCT.	STRUCTURAL
F.F.	FINISH FLOOR	SUSP.	SUSPENDED
FIN.	FINISH (ED)	T.	TREAD AND TRANSFORMER
FLR.	FLOOR (ING)		
F.O.	FACE OF	TBL.	TABLE
FRP.	FIBER REINFORCED PANEL	T&G	TONGUE & GROOVE
		THK.	THICKNESS
FT.	FOOT OR FEET	T.O.	TOP OF
FTG.	FOOTING	T.O.C.	TOP OF CURB/CONCRETE
FURR.	FURRING		
GA.	GAUGE	T.O.P.	TOP OF PAVEMENT/PARAPET
GAL.	GALLON		
GALV.	GALVANIZED	T.S.	TUBE STEEL
G.C.	GENERAL CONTRACTOR	TYP.	TYPICAL
G.F.I.	GROUND FAULT INTERRUPTER	U.D.L.	UNIFORM DISTRIBUTED LOAD
GND.	GROUND	U.N.O.	UNLESS NOTED OTHERWISE
GYP. BD.	GYPSUM BOARD		
H.B.	HOSE BIB	UR	URINAL
H.C.	HANDICAPPED	V.	VOLTS AND VENT
H.M.	HOLLOW METAL	VENT.	VENTILATION
H.P.	HIGH POINT AND HORSE-POWER	VERT.	VERTICAL
		V.I.F.	VERIFY IN FIELD
HVAC	HEATING VENTILATING AND AIR CONDITIONING	V.C.T.	VINYL COMPOSITION TILE
HW	HOT WATER	VTR.	VENT THRU ROOF
I.D.	INSIDE DIAMETER	VTW.	VENT THRU WALL
IE.	INVERT ELEVATION	V.W.C.	VINYL WALL COVERING
I.G.	ISOLATED GROUND	W.	WATTS AND WATER
IN.	INCH	W/	WITH
INSUL.	INSULATION	WC	WATER CLOSET
INT.	INTERIOR	W/O	WITHOUT
INV.	INVERT	WCO	WALL CLEAN OUT
JT.	JOINT	WD.	WOOD
LAM.	LAMINATE	WH.	WATER HEATER
LAV.	LAVATORY	WP.	WATERPROOF
LBS.	POUNDS	W.W.F.	WELDED WIRE FABRIC



1 / N1 BABY CHANGING STATION DETAIL
SCALE: 1"=1'-0"



2 / N1 FIXTURES AND GRAB BAR LOCATIONS
SCALE: 1/2"=1'-0"

SGA Design Group, P.C.
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LEE'S SUMMIT, MISSOURI 64082

MITCHEL RAY GARRETT - ARCHITECT
MO# A-007541

ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.:	160085
6 DIGIT NO.:	906983
4 DIGIT NO.:	78C9
AOR PROJECT NUMBER:	1955B71
TO PERMIT:	DATE: 03/26/2020
TO BID:	DATE: ##-##-##

KMP

SHEET TITLE: GENERAL INFORMATION

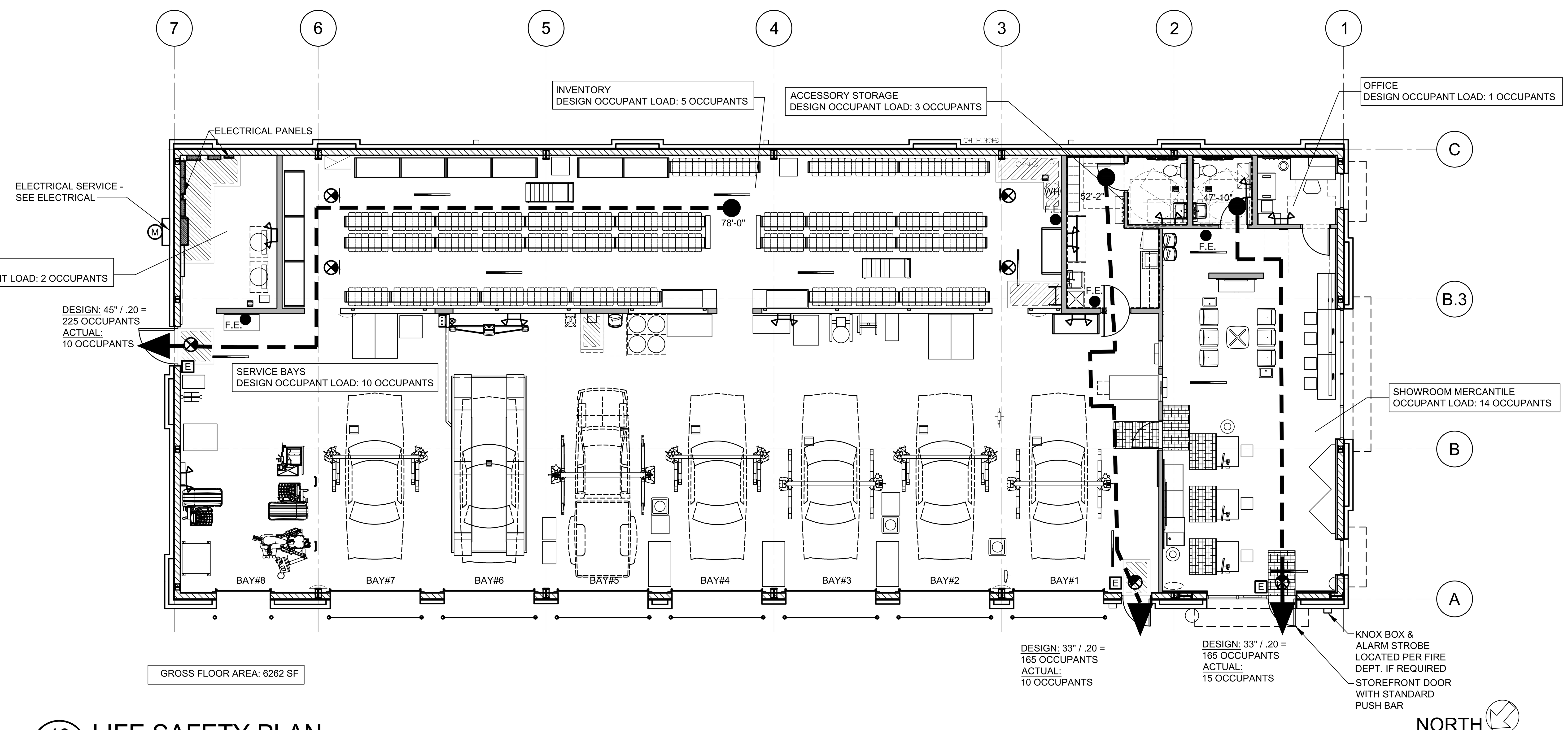
SHEET NUMBER: N1

SHEET NOTES

1. ALL EXIT SIGNS AND EMERGENCY LIGHTS ARE SHOWN ON SHEET A2, E1, (SYMBOL LEGEND ON E3), AND WILL BE SUBJECT TO INSPECTION FROM THE FIRE MARSHAL HAVING AUTHORITY PRIOR TO FINAL APPROVALS.
2. TRAVEL DISTANCE IS SHOWN AS A DASHED LINE.
3. COORDINATE TYPE, SIZE AND FINAL LOCATIONS OF FIRE EXTINGUISHERS WITH LOCAL FIRE OFFICIALS.

LEGEND

- F.E. — FIRE EXTINGUISHER
- TACTILE EXIT SIGNAGE
- EXIT WIDTH IN INCHES/NUMBER OF OCCUPANTS
- EMERGENCY LIGHTS
- EXIT LIGHT



16 / LS1 — LIFE SAFETY PLAN

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

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KMP

SHEET TITLE:
LIFE SAFETY PLAN

SHEET NUMBER:
LS1

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LMF	Lum. Lumens	Lum. Watts	Part Number
	3	P1	SINGLE	1.000	22330	160	OSQ-A-NM-4ME-T-57K-UL-BZ + OSQ-AABZ
	1	P2	2 @ 90 DEGREES	1.000	22330	160	OSQ-A-NM-4ME-T-57K-UL-BZ + OSQ-AABZ
	19	N	SINGLE	1.000	2490	19	XSPW-B-WM-3ME-2L-57K-UL-BK (Wall Light)

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Off Parking lot calcs	Fc	0.60	7.8	0.0	N.A.	N.A.
Parking Lot	Fc	4.20	11.4	1.1	3.82	10.36

FIXTURE MOUNTING HEIGHTS AS SHOWN
POLES MOUNTED ON 2' BASE

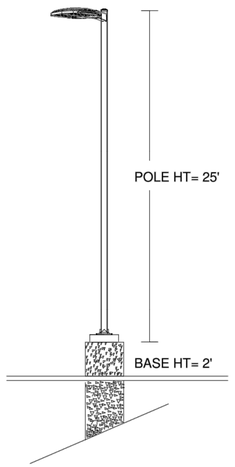
POLE SCHEDULE:
(4) CL-SSP-4011-25-D6-BZ (25' x 4" STEEL SQUARE POLE, 11ga)

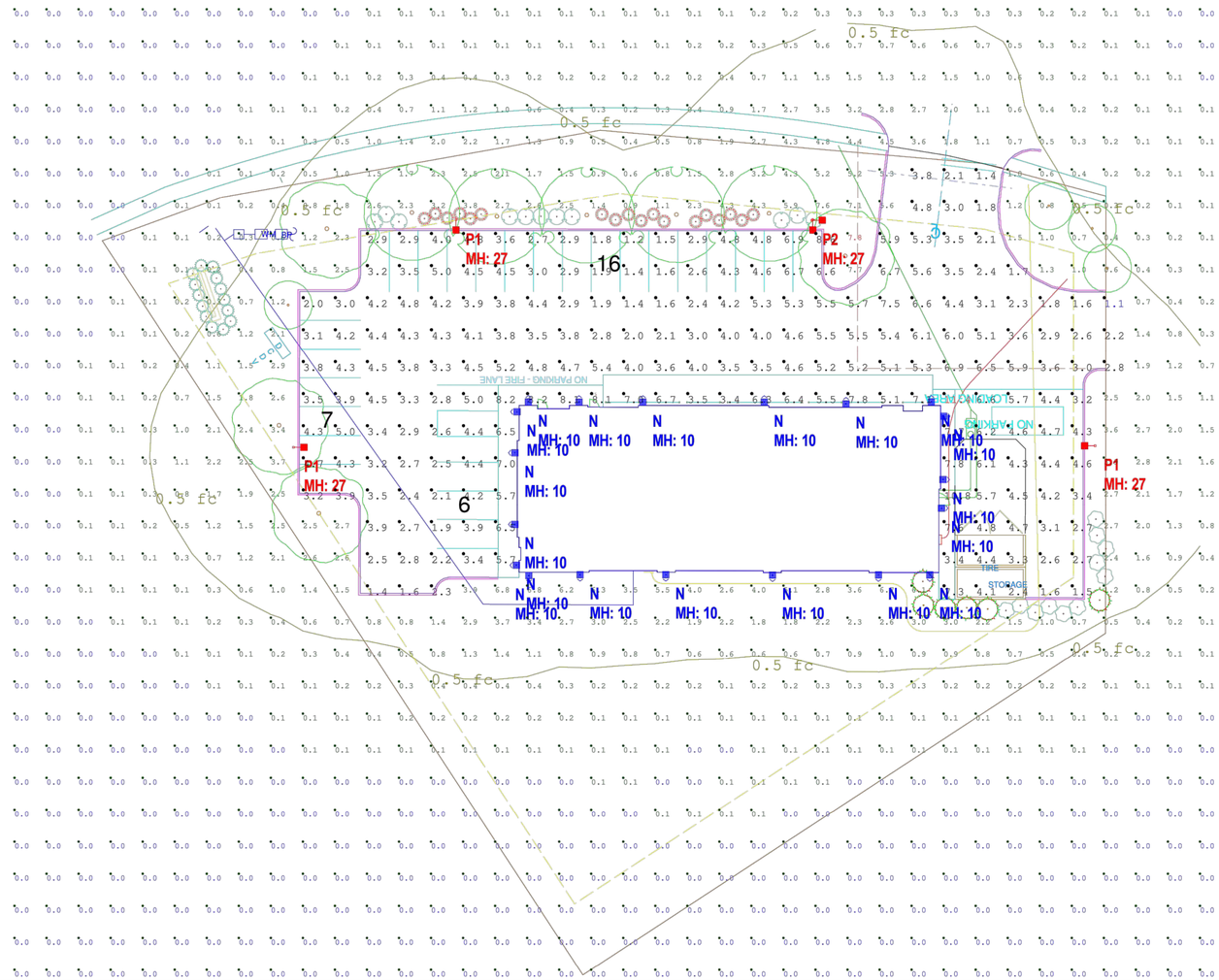
Additional Equipment
(5) OSQ-DABZ (Direct Arm Mount)
(1) PB-2A4 (Twin Mount Tenon)

PROPOSED POLES MEET 120 MPH SUSTAINED WINDS

***CUSTOMER TO VERIFY MOUNTING, VOLTAGE, AND COLOR PRIOR TO PLACING ORDER

OSQ Area Luminaire





CREE
1200 92nd Street - Sturtevant, WI 53177 www.cree.com - (800) 236-6800

Illumination results shown on this lighting design are based on project parameters provided to Cree, Inc. used inconjunction with luminaire test procedures conducted under laboratory conditions. Actual project conditions differing from these design parameters may affect field results. The customer is responsible for verifying dimensional accuracy along with compliance with any applicable electrical, lighting,or energy code.

Project Name: BSRO Firestone - 3544 SW Market St Lee's Summit, MO

SR-40708 | Footcandles calculated at grade | Filename: FRS-200212LSMOBAF.AGI

Layout By: Ben Foster Date:3/26/2020

Scale 1" = 20'
0 40 80

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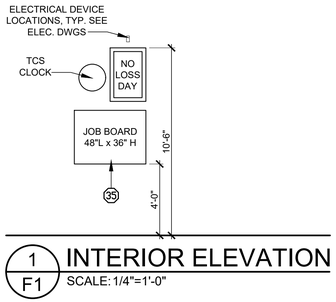
4 DIGIT NO.: 78C9

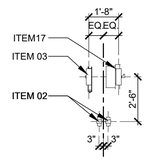
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-###-##
KMP

SHEET TITLE:
PHOTOMETRIC SITE LIGHTING

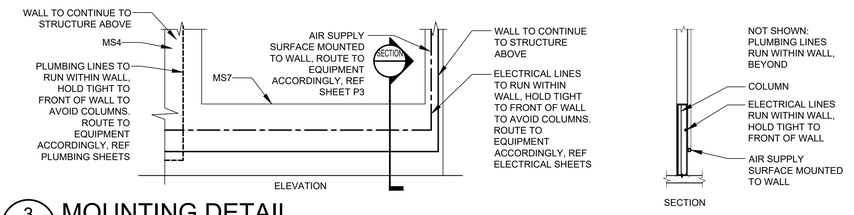
SHEET NUMBER:
PSL1



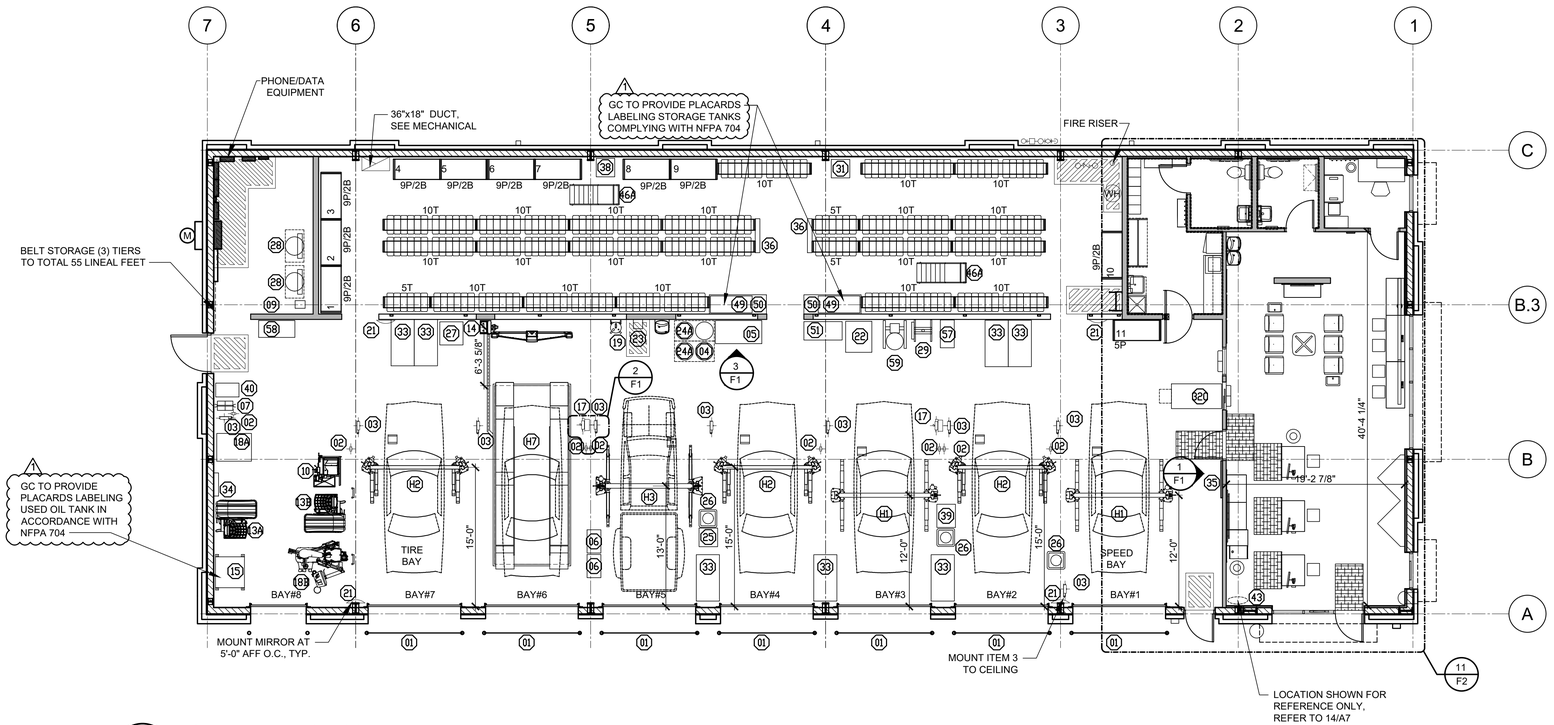
1 F1 **INTERIOR ELEVATION**
SCALE: 1/4"=1'-0"



2 F1 **ENLARGED EQUIPMENT DETAIL**
SCALE: 1/4"=1'-0"



3 F1 **MOUNTING DETAIL**
SCALE: 1/4"=1'-0"

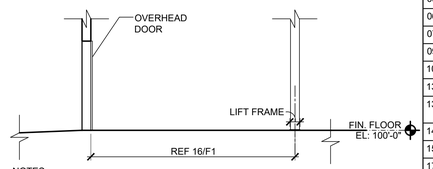


16 F1 **FIXTURE PLAN**
SCALE: 1/8"=1'-0"

NORTH

HOIST KEY

H1	SP010 10,000 lbs.	BSRO / ROTARY
H2	SP0A10 10,000 lbs.	BSRO / ROTARY
H3	SP012 12,000 lbs.	BSRO / ROTARY
H7	FLUSH-MOUNT SCISSOR LIFT (RX16)	BSRO / HUNTER



NOTES:
1) CONTRACTOR SHALL FIELD DETERMINE THE EXACT FINISH FLOOR ELEVATION AT THE HOIST, PER MANUFACTURERS RECOMMENDATION FLOOR SLOPE & JOIST LOCATIONS VARY.
2) HOIST INSTALLER TO BE CERTIFIED BY THE MANUFACTURER.
3) WHEEL SPOTTING DISH, REFER TO MANUFACTURERS RECOMMENDED INSTALLATION INSTRUCTIONS.

INVENTORY COUNT

1,182 - UNITS/TIRES (5 TIERS OF TIRES)
475 - LF PARTS

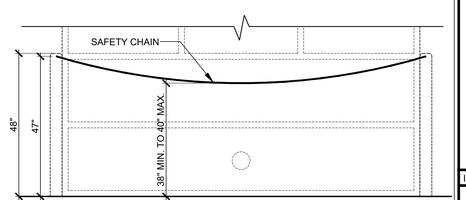
BUILDING AREAS	S.F.
SHOWROOM AREA	802
SERVICE AREA	3,421
INVENTORY AREA	1,508
ACCESSORY USE AREAS	531
FACADE UPGRADES	0
TOTAL BUILDING	6,262

SHOP EQUIPMENT KEY:
FURNISHED BY BSRO U.NO. ALL ITEMS INSTALLED BY G.C.
REFER TO P3/P4/E2/E3/E4/E5 SHEETS FOR FURTHER REQUIREMENTS.

#	QTY	DESCRIPTION
01	7	SETS (BANNER/ BRACKETS/CHAIN) SEE 20/F1 & 15/A7
02	8	O.H. CORD REEL LIGHT
03	9	O.H. AIR HOSE REEL
04	1	USED OIL FILTER CONTAINER (MOBILE)
05	1	SERVICE BENCH
06	2	BRAKE TOOL STAND (MOBILE)
07	1	FLAT REPAIR STATION
09	1	AIR DRYER
10	1	BRAKE SHOP (INSTALLED BY HUNTER)
13A	1	ELECTRONIC WHEEL BALANCER (INST. BY HUNTER). GSP9700 ROAD FORCE
13B	1	ELECTRONIC WHEEL BALANCER (INST. BY HUNTER). GSP9200 NON-ROAD FORCE
14	1	WHEEL ALIGNMENT COMPUTER (FLOOR MTD INSTALLED BY HUNTER)
15	1	USED OIL TANK / BENCH
17	2	HEAVY DUTY CORD REEL
18A	1	RIM CLAMP TIRE CHANGER
18B	1	TIRE CHANGER TCR1S REVOLUTION (INSTALLED BY HUNTER)
19	1	GAS CADDIE (25 GAL) SEE A1 FOR TOX ALERT OVERRIDE NOTE AT MVS DESK
21	4	MIRROR
22	1	BATTERY RACK
23	1	EYE WASH
24A	2	SPILL SKID 6"HX26"WX52"L
25	1	COOLANT FLUSH MACHINE (MOBILE)
26	3	USED OIL RECEPTOR (MOBILE)
27	1	USED TIRE CART (MOBILE)
28	2	5 HP COMPRESSOR
29	1	SHOP PRESS
31	1	ELECTRICAL SYSTEM TESTER (MOBILE)
32C	1	65" MVS DESK
33	7	MECHANIC'S TOOL CABINETS (MOBILE)
34	1	WHEEL WEIGHT RACK
35	1	JOB BOARD 48" LONG
36	2	1 OF EACH NUT & BOLT BIN
38	1	STRUT COMPRESSOR (MOBILE)
39	1	REFRIGERANT CHARGER (MOBILE)
40	1	TIRE TEST TANK
43	1	SATELLITE DISH - VENDOR SUPPLIED REFER 14/A7
46A	2	5 TIER ROLLING LADDER
49	2	STACKABLE 2 TANK OIL SYSTEM
50	2	120/120 GALLON CONTAINMENT PAN
51	1	ECOBOX OIL RACK
57	1	LOCKABLE TOOL CABINET
58	1	SPEED SCRUB 2001E
59	1	PROCUT WARTHOG RMS
H1	2	SP010 10,000 LBS. (SEE HOIST KEY)
H2	3	SP0A10 10,000 LBS. (SEE HOIST KEY)
H3	1	SP012 12,000 LBS. (SEE HOIST KEY)
H7	1	ALIGNMENT RACK IN RECESSED SLAB (SEE HOIST KEY)

SERVICE SAFETY CHAINS

GC TO INSTALL A BSRO PROVIDED YELLOW PLASTIC CHAIN AT ALL OVERHEAD DOORS ON THE OUTSIDE OF BUILDING. GC TO FURNISH AND INSTALL 1" LONG AND 1/4" DIA. CLOSED EYE BOLT HOOK ON BOLLARDS AT EVERY OVERHEAD DOOR MOUNTED 47" AFF (1" BELOW TOP OF BOLLARD). MOUNT BETWEEN THE WALL AND BACK SIDE OF BOLLARD THROUGH 1/4" HOLE IN BOLLARD AND BOLTED ON THE INSIDE PRIOR TO FILLING BOLLARD WITH CONCRETE. GC TO FURNISH A SPRING LOADED SNAP HOOK ON BOTH ENDS OF THE CHAIN. GC TO CUT THE CHAIN TO LENGTH SO THAT CENTER HANGS BETWEEN 38" AND 40" AFF (ALMOST HORIZONTAL) SO THAT THE APPEARANCE IS CONSISTENT AT ALL DOOR OPENINGS. GC TO FURNISH AND INSTALL A 1" LONG AND 1/4" DIA. CLOSED EYE SCREW HOOK AT 60" AFF INTO THE WOOD BUCK ON THE DRIVER'S SIDE OF EVERY DOOR TO STORE THE LOOSE END OF THE CHAIN WITH THE SPRING LOADED SNAP HOOK. THIS ALLOWS THE OVERHEAD DOOR TO BE CLOSED AND STORED INSIDE THE BUILDING.



20 F1 **SERVICE BAY SAFETY CHAIN**
SCALE: 1/2"=1'-0"

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MITCHEL RAY GARRETT - ARCHITECT
MO# A-007541

ISSUE BLOCK

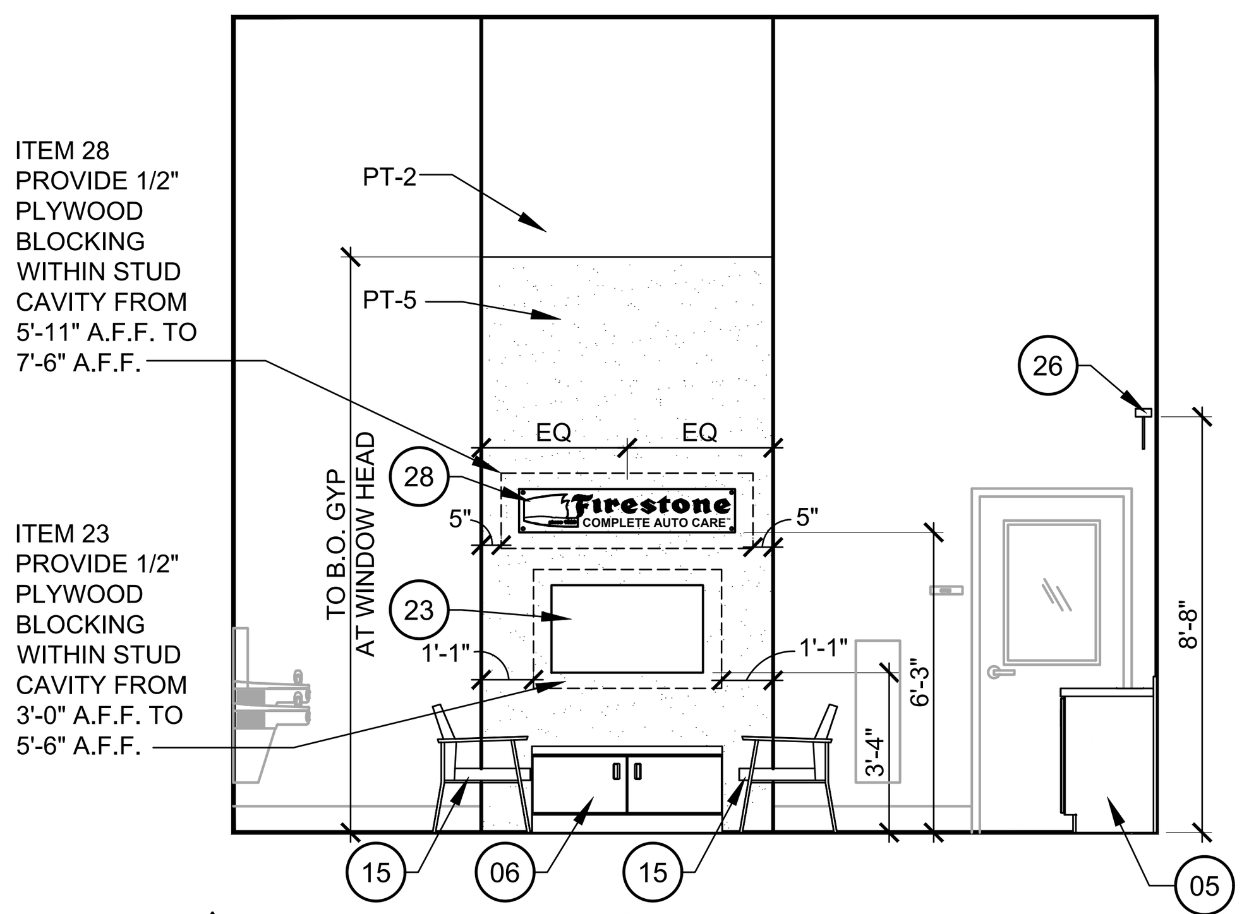
1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9

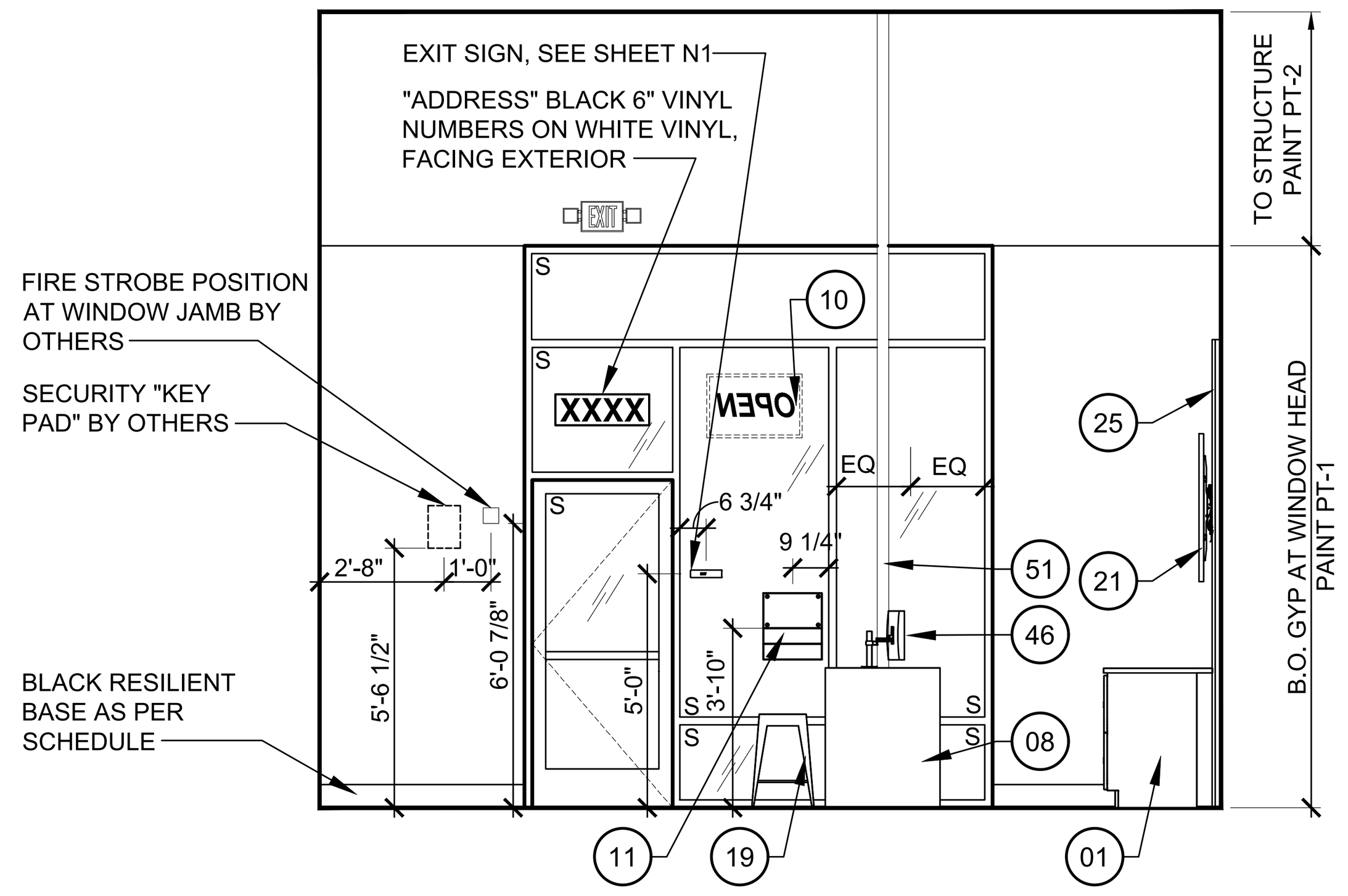
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##
KMP

SHEET TITLE:
FIXTURE PLAN & NOTES

SHEET NUMBER:
F1



ELEVATION "A"



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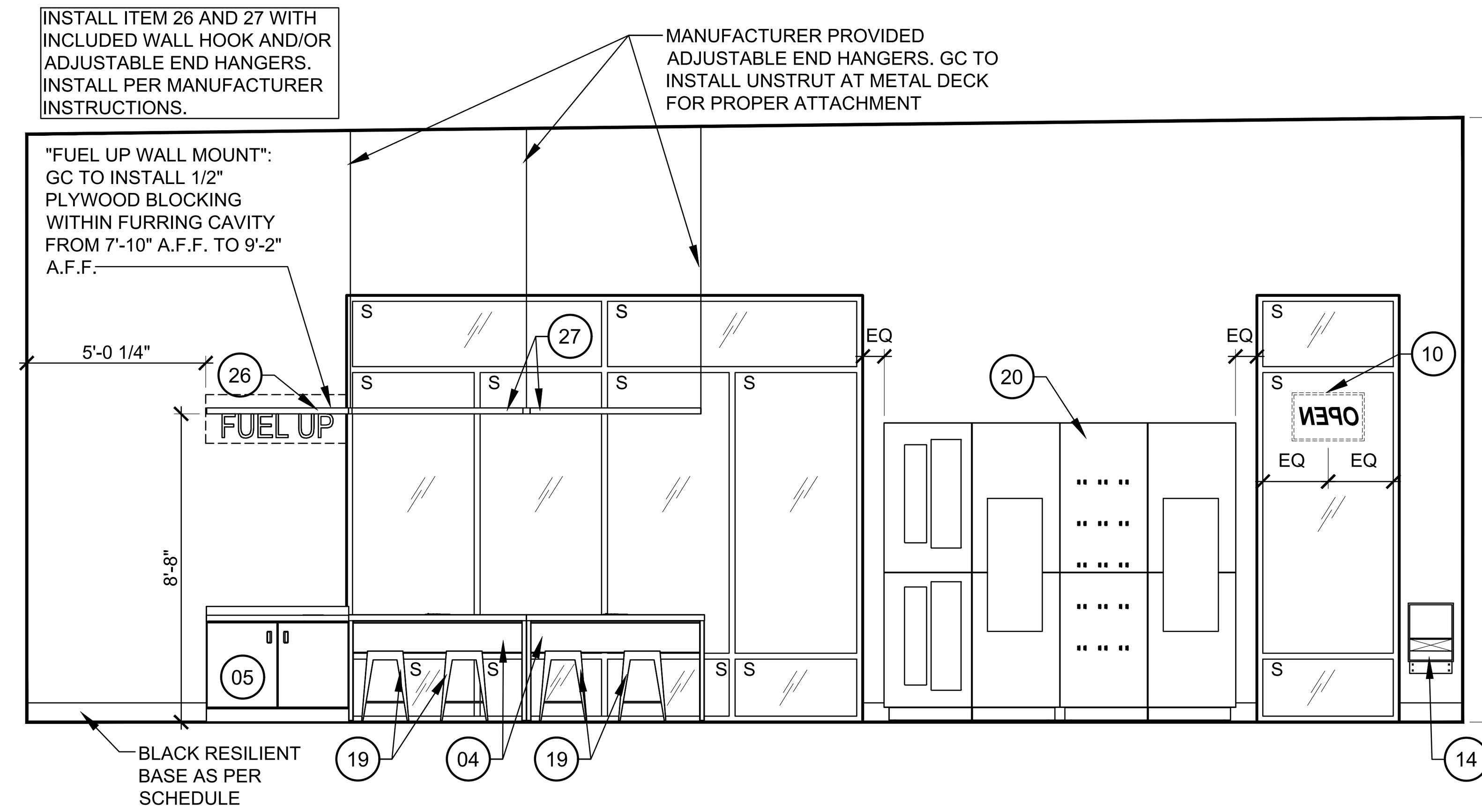

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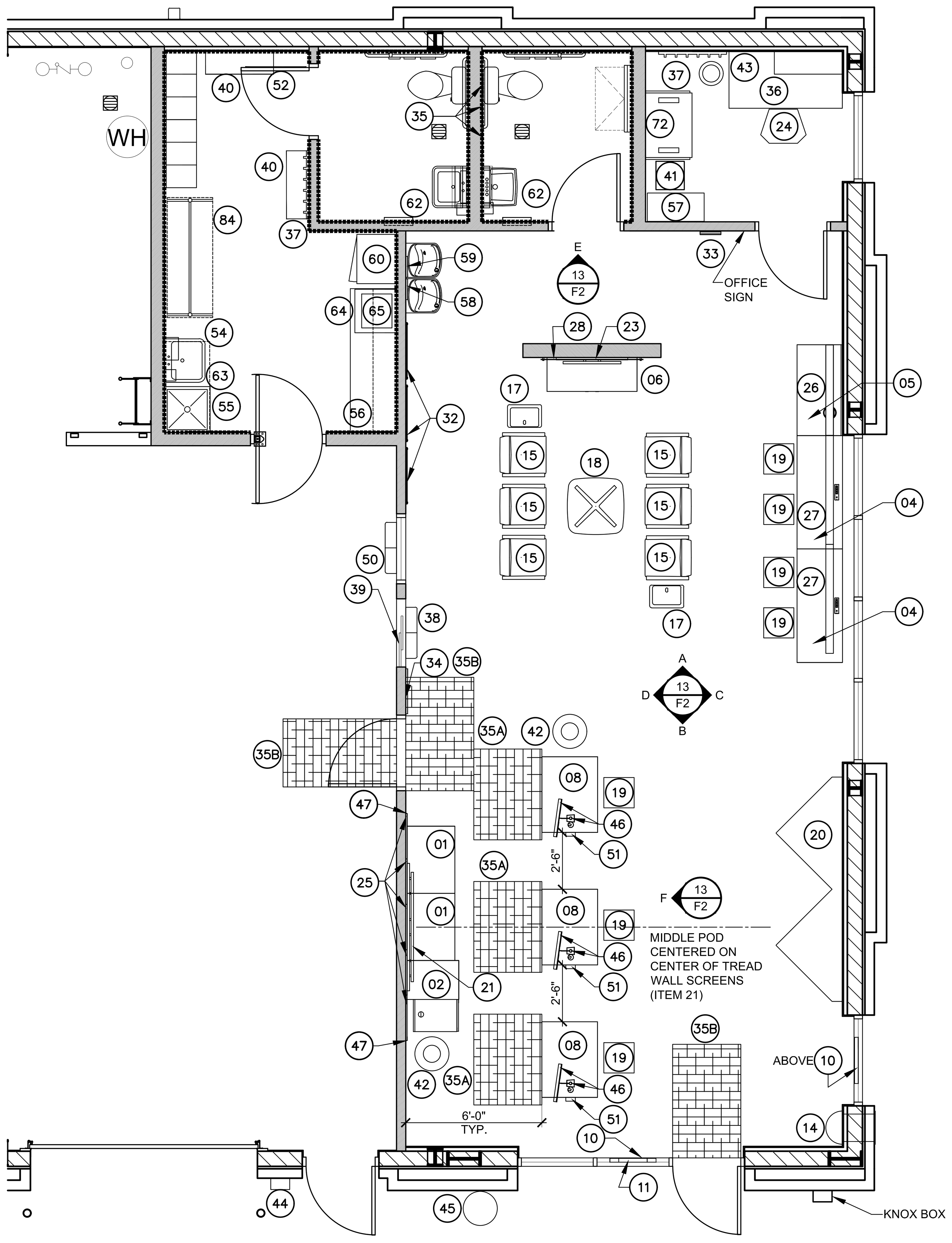
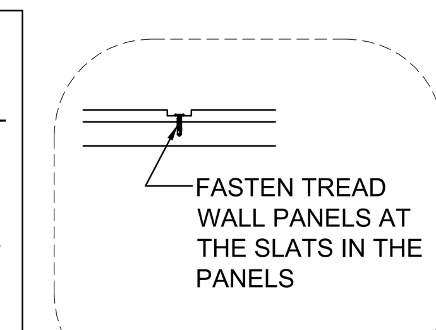
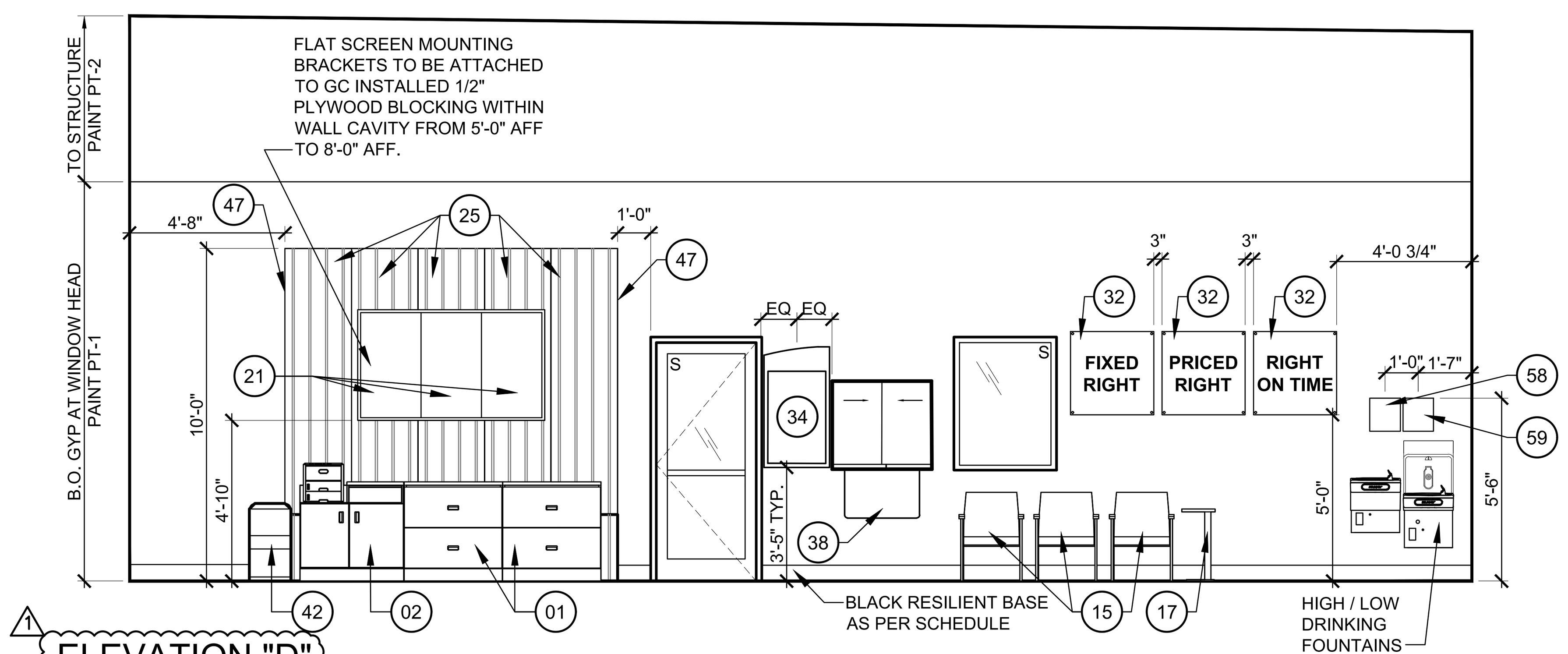


ITEM 25 INSTALLATION INSTRUCTIONS:

1. FIND THE STUDS ON THE WALL AND MARK THEM WHERE YOU WILL BE ATTACHING TO PANELS.
2. APPLY THE CONSTRUCTION GRADE ADHESIVE TO THE BACK OF THE PANEL AS RECOMMENDED BY THE ADHESIVE MANUFACTURER.
3. SET THE PANEL TO THE WALL IN THE DESIRED LOCATION. BE SURE TO PRESS THE BOARD TIGHT TO THE WALL SO THE ADHESIVE WILL SPREAD OUT EVENLY ALONG THE BOARD AND WALL. YOU MAY NEED TO SLIDE THE BOARD BACK AND FORTH SLIGHTLY TO SMOOTH THE ADHESIVE.
4. SECURE PANEL TO THE WALL EITHER WITH BRACES OR MECHANICALLY TO KEEP THE BOARD FROM MOVING AS THE ADHESIVE SETS. TO DO THIS YOU NEED TO FIRE A 1 1/4" PIN (WITH PIN NAILED INTO THE STUD THROUGH THE PANEL NEAR EACH CORNER OF THE PANEL AND 2-4 THROUGHOUT THE MID-SECTION. THE FINISH PINS ARE VERY THIN AND WILL NOT BE NOTICEABLE, HOWEVER FEEL FREE TO COVER THEM WITH EITHER TOUCH UP PAINT OR PUTTY. WITHOUT THE ADHESIVE THE PINS WILL NOT BE SUFFICIENT TO HOLD THE PANEL TO THE WALL, THEY ARE ONLY INTENDED TO KEEP THE PANEL FROM MOVING WHILE THE ADHESIVE IS CURING.
5. PREFINISHED EDGE TRIM TO MATCH TIRE TREAD PANELS PROVIDED BY MANUFACTURER. INSTALL PER MANUFACTURER INSTRUCTIONS.



SLAT DETAIL



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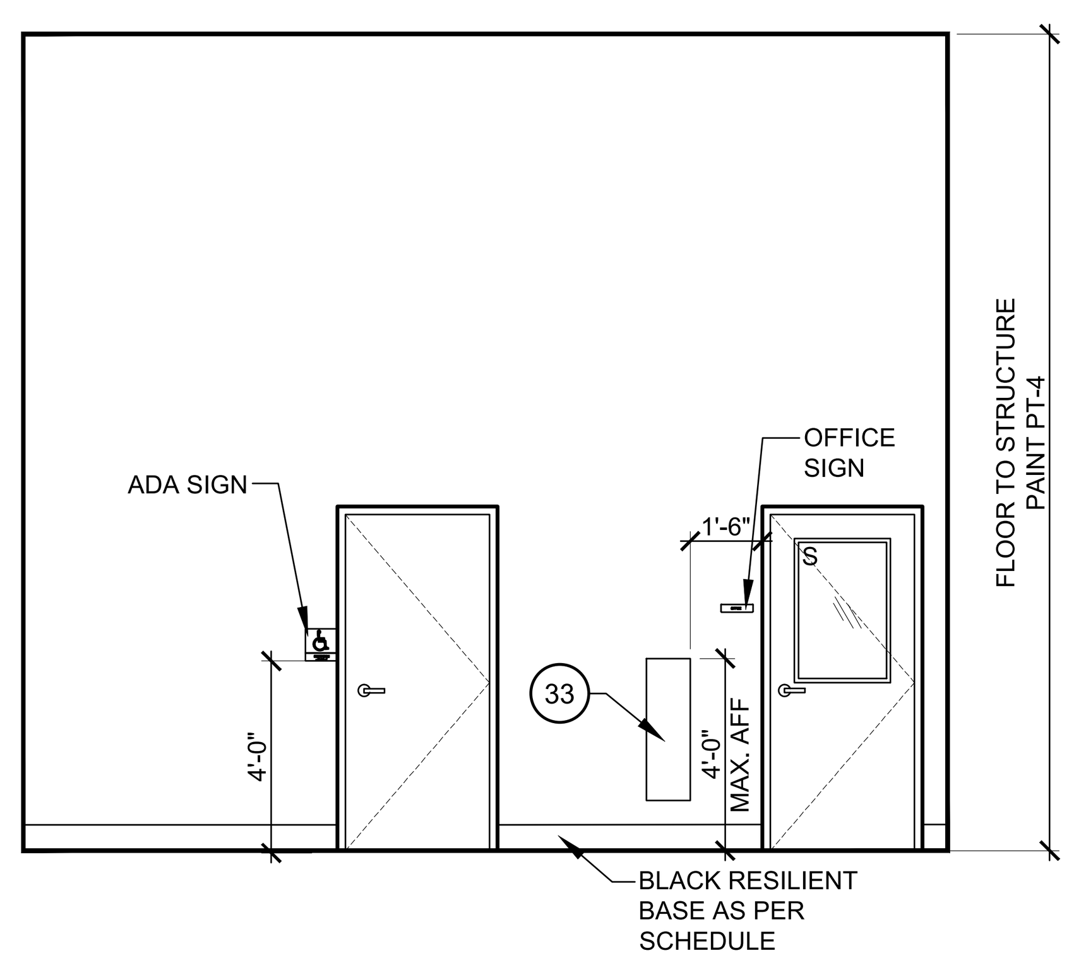

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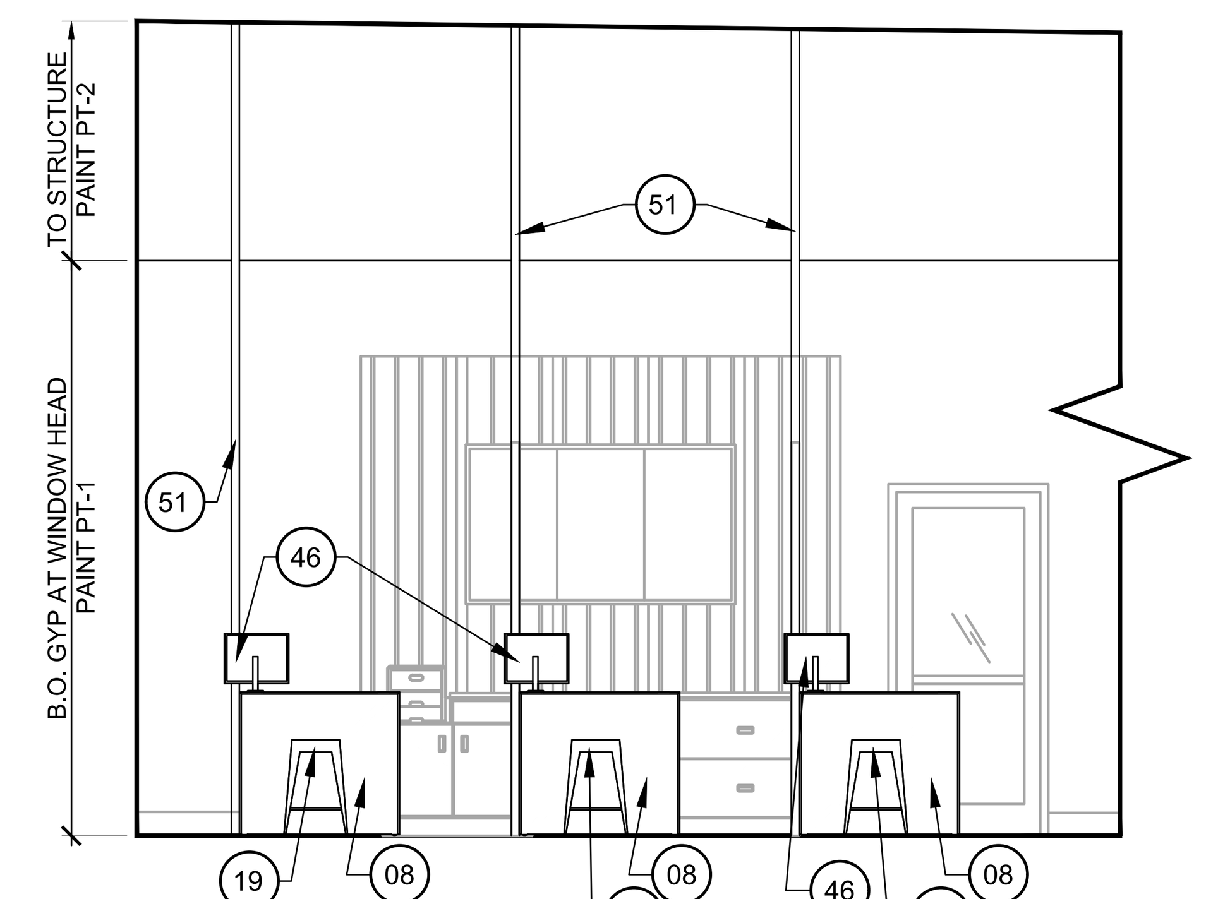
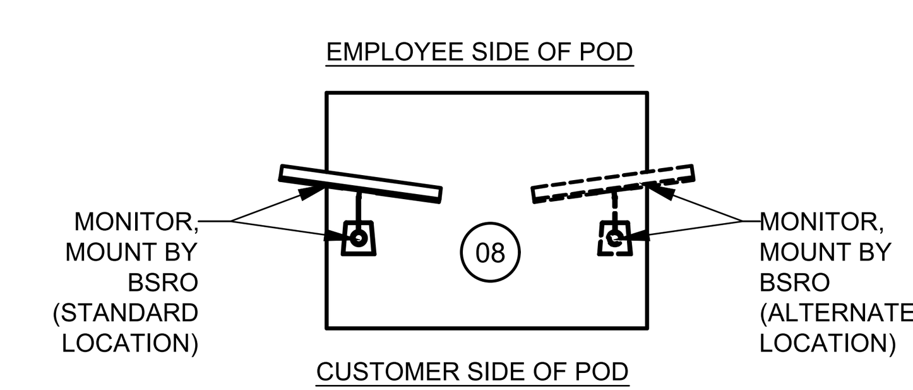


ELEVATION "F"



11 / F2 ENLARGED SHOWROOM FIXTURE PLAN
SCALE: 1/4"=1'-0"

13 / F2 INTERIOR ELEVATIONS
SCALE: 1/4"=1'-0"

15 / F2 SALES POD PLAN
SCALE: 1/2"=1'-0"

DISPLAY FIXTURES & ACCESSORY KEY:
FURNISHED BY BSRO U.N.O. ALL ITEMS INSTALLED BY G.C.
REFER TO E2/E3/E4/E5 SHEETS FOR FURTHER REQUIREMENTS.

#	QTY	DESCRIPTION
01	2	2020 LATERAL FILE CREDENZA
02	1	2020 PRINTER CABINET CREDENZA
04	2	2020 PRODUCTIVITY COUNTER
05	1	2020 COFFEE BAR
06	1	2020 TV STAND
08	3	2020 CONSULT POD
10	2	2020 OPEN SIGN
11	1	2020 STORE HOURS SIGN KIT
14	1	KEY DROP BOX, SEE DETAIL 16/A7
15	6	2020 STD LOUNGE CHAIR
17	2	2020 SIDE TABLE
18	1	2020 COFFEE TABLE
19	7	2020 INDUSTRIAL STOOL
20	1	2020 MRT UNIT
21	1	2020 MENU BOARD 43" TV'S WITH 3 SCREEN TV BRACKETS
23	1	2020 LOUNGE SCREEN 43" TV WITH ARTICULATING TV BRACKET
24	1	MANAGER'S CHAIR
25	1	2020 TIRE TREAD WALL PANEL
26	1	2020 FUEL UP SHELF
27	2	2020 FUEL UP SHELF EXTENSION
28	1	2020 FIRESTONE WALL SIGN
32	1	2020 TRIPLE PROMISE WALL STAND OFF
33	1	2020 MAGAZINE RACK
34	1	2020 ASE WALL PLAQUE
35	1	2020 RESTROOM GRAPHICS
35A	3	2020 3 X 4 FATIGUE MAT
35B	3	2020 3 X 5 PERFORMANCE MAT
36	1	MANAGER'S DESK 5'-0"
37	2	COAT RACK
38	1	2020 JOB ENVELOPE WALL BOX
39	1	OVERFLOW BAR
40	2	CLEANING SUPPLY RACK (3'-0" EACH)
41	1	ABOVE GROUND SAFE
42	2	2020 18 GALLON INSIDE TRASH CAN
43	1	2020 10 GALLON INSIDE TRASH CAN
44	1	EXTERIOR WALL MOUNTED SMOKER STATION, MOUNT 48" TO TOP
45	1	2020 34 GAL OUTDOOR TRASH CAN
46	3	2020 CONSULT POD MONITOR ARM & SCREEN
47	4	2020 TIRE TREAD TRIM CAP
50	1	SPECIAL ORDER & PENDING BIN
51	3	2020 15' POWER POLE QPA5210-BFRC
52	1	SAFETY GRAPHIC 24” X 36” MOUNTED 4’-7” A.F.F. ON DOOR
54	1	PAPER TOWEL DISPENSER (ROLL)
55	1	GOVERNMENT POSTER
56	1	OSHA POSTER
57	1	FOUR DRAWER VERTICAL FILING CABINETS
58	1	WALL MOUNTED FRAME (CERTIFICATE OF OCCUPANCY)
59	1	WALL MOUNTED FRAME (BUSINESS LICENSE)
60	1	SOILED GARMENT CABINET
62	2	HAND SOAP DISPENSER
63	1	HAND GREASE CLEANER DISPENSER
64	1	COMPACT REFRIGERATOR
65	1	MICROWAVE
72	1	WALL MOUNTED IT SERVER CABINET
84	1	MOBILE COAT RACK

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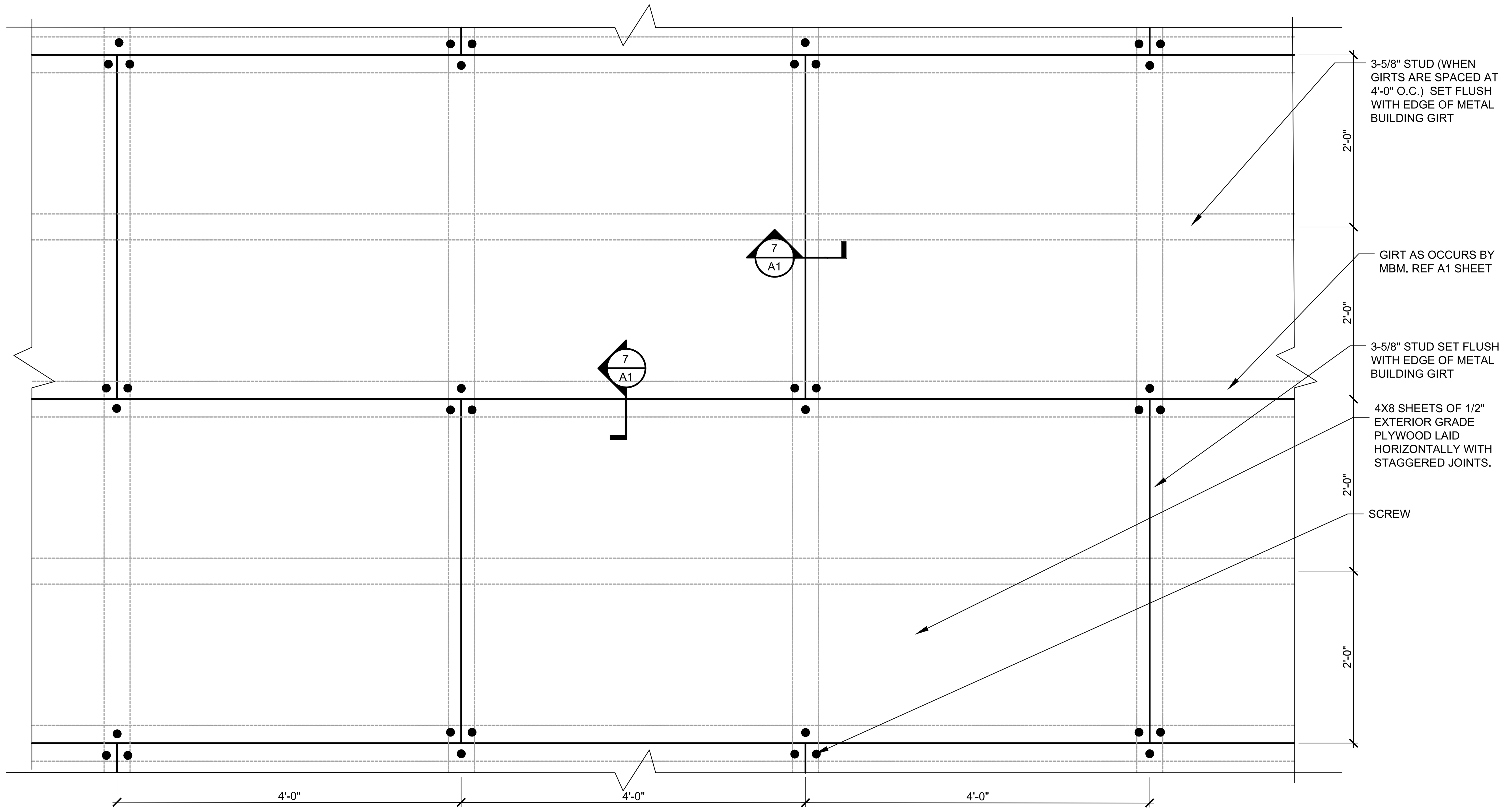
SHEET TITLE:
SHOWROOM FIXTURE PLAN & ELEVATIONS

SHEET NUMBER:
F2

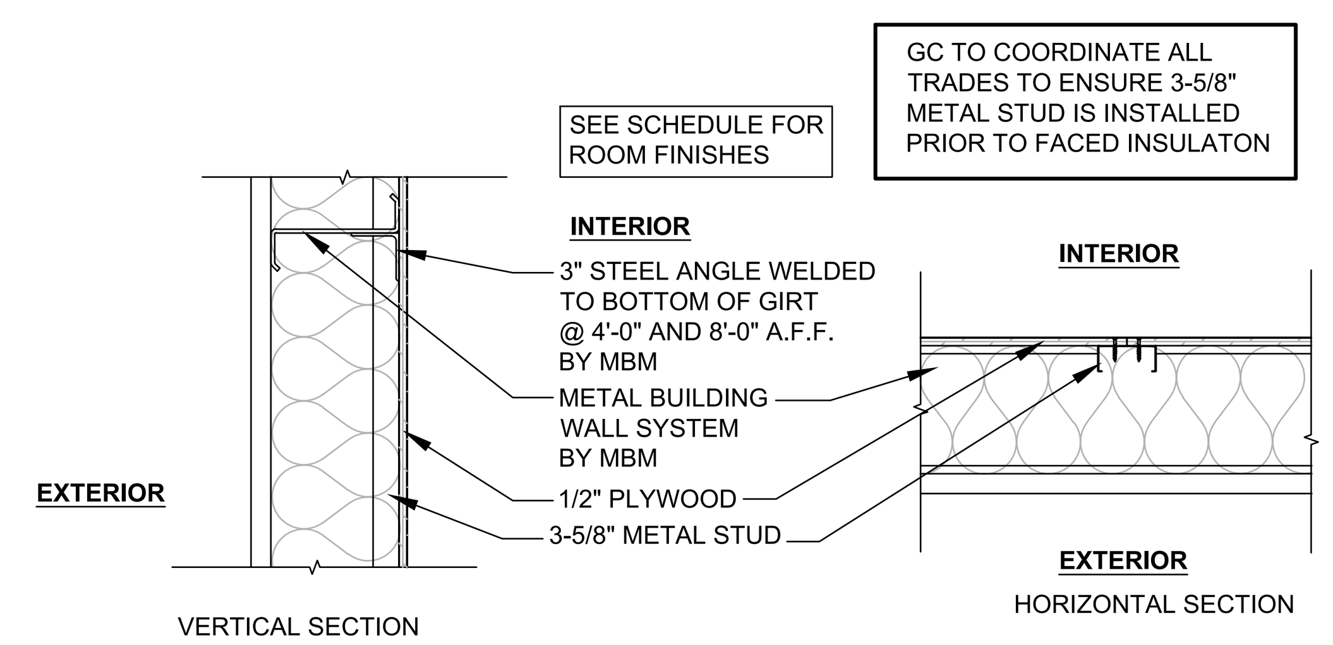
GC NOTES AND REQUIREMENTS

1. GC TO PROVIDE ANY NECESSARY INTERMEDIATE FRAMING FLUSH WITHIN GIRT CAVITY FOR ATTACHMENT OF INTERIOR FINISH MATERIAL.
2. GC TO VERIFY THAT NO METAL BUILDING COMPONENTS ARE WARPED OR DAMAGED PRIOR TO ERECTION.



SCREW PATTERN:
EACH 4X8 SHEET OF PLYWOOD TO HAVE SCREWS IN ALL (4) CORNERS AND (1) AT TOP AND BOTTOM AT MIDPOINT OF EACH SHEET. TOTAL (6) SCREWS PER 4X8 SHEET.

6 / A1 PLYWOOD FRAMING LAYOUT
SCALE: 1"=1'-0"



7 / A1 PLYWOOD FRAMING DETAIL
SCALE: 1"=1'-0"

METAL BUILDING NOTES/REQUIREMENTS

WALL PANELS

- METAL BUILDING WALL PANELS: NRC (NUCOR REVERSE CLASSIC) 24-GAUGE PANEL MINIMUM, PAINTED GALVANIZED OR PAINTED GALVALUME. REFER ELEVATIONS ON SHEET A4.
- METAL BUILDING WALL INSULATION: SIMPLE SAVER, U-0.052
  - o MBM CAN PROVIDE INSULATION, IF IT IS SIMPLE SAVER
- ON NON-INSULATED PANELS, MBM TO PROVIDE BASE CLOSURES, BUT NO BASE FLASHING.

ROOF PANELS

- METAL BUILDING ROOF PANELS: CFR 24 GALVANIZED
- METAL PARAPET BACKER PANELS: CFR 26 POLAR WHITE.
- METAL BUILDING ROOF INSULATION: SIMPLE SAVER, U-0.035 MBM TO PROVIDE ROOF CLIPS AND THERMAL BLOCKS AS REQUIRED.
  - o MBM CAN PROVIDE INSULATION, IF IT IS SIMPLE SAVER
- MBM TO PROVIDE ROOF CURBS AND REINFORCING FOR ROOF TOP MECHANICAL EQUIPMENT (RTU, EXHAUST FAN, ETC).
- MBM TO PROVIDE ROOF HATCH AND CURB AND REINFORCING FOR HATCH.

GIRTS

- GIRTS WITH NRC: 8" WIDE METAL BUILDING GIRTS MAXIMUM 2'-0" O.C., TO BE FLUSH WITHIN THE WALL CAVITY
- MBM TO TOE DOWN GIRTS AT 12' AFF. MBM TO PROVIDE 3" STEEL ANGLE ATTACHED TO GIRTS AT 4' AND 8' AFF GIRTS FOR INSTALLATION OF PLYWOOD.
- WITH PARAPET GUTTER, GIRTS MUST BE PLACED TO ALLOW PLACEMENT FOR SCUPPERS AND OVERFLOW SCUPPERS. REFER TO A4 SHEET.
- C CHANNEL AT PARAPET CAP TO BE PROVIDED TOE DOWN.
- MBM TO PROVIDE CONTINUOUS C CHANNEL AT CONCRETE SLAB - INCLUDING BETWEEN THE COLUMNS AND O.H. DOOR JAMBS.
- MBM TO ENSURE ACCURACY OF THE ALIGNMENT OF THE C CHANNELS THE COLUMN FACE.
- MBM TO PROVIDE HORIZONTAL GIRTS BETWEEN O.H. DOORS.
- GIRTS MUST BE PROVIDED CONSISTENTLY AROUND THE BUILDING.

COLUMNS & BRACING

- COLUMN LINE 2 - ALL COLUMNS IN SHOWROOM TO BE STRAIGHT COLUMNS. COLUMNS IN BATHROOMS TO BE SUPERMARKET COLUMNS THAT START TAPERING AT MINIMUM 10'-0" AFF.
- ALL METAL BUILDING COLUMNS AS SHOWN ON SHEETS A1 AND S2 ARE SET AND TO BE PROVIDED AS NOTED. NO COLUMN CHANGES EXCEPT IF SPECIFIC SITE CONDITIONS REQUIRE CHANGES.
- ALL METAL BUILDING MAINFRAME COLUMNS TO BE TAPERED UNLESS NOTED OTHERWISE AND HAVE A MAXIMUM BASE PLATE AT CONCRETE SLAB OF 14" DEEP.
- COLUMN LINES 3-6 (SERVICE BAY), PROVIDE OVERHEAD CLEARANCE OF 15'-6" MINIMUM ON HIGH EAVE, 14'-6" MINIMUM ON LOW EAVE.
- REFER TO SHEET S2 FOR BRACING LOCATIONS THAT WERE ASSUMED BY STRUCTURAL IN PRELIMINARY DESIGN. NO BRACING CHANGES EXCEPT IF SPECIFIC SITE CONDITIONS REQUIRE CHANGES.
- NO FIXED BASE BRACING ALLOWED.
- MBM TO CENTER ANCHOR BOLTS ON COLUMNS AT THE PORTAL FRAMES.
- 1 ~~ALL BRACING TO BE WITHIN THE GIRT SPACING.~~
- NO FLANGE BRACES ALLOWED ON COLUMNS.

FRAMING AND OPENINGS

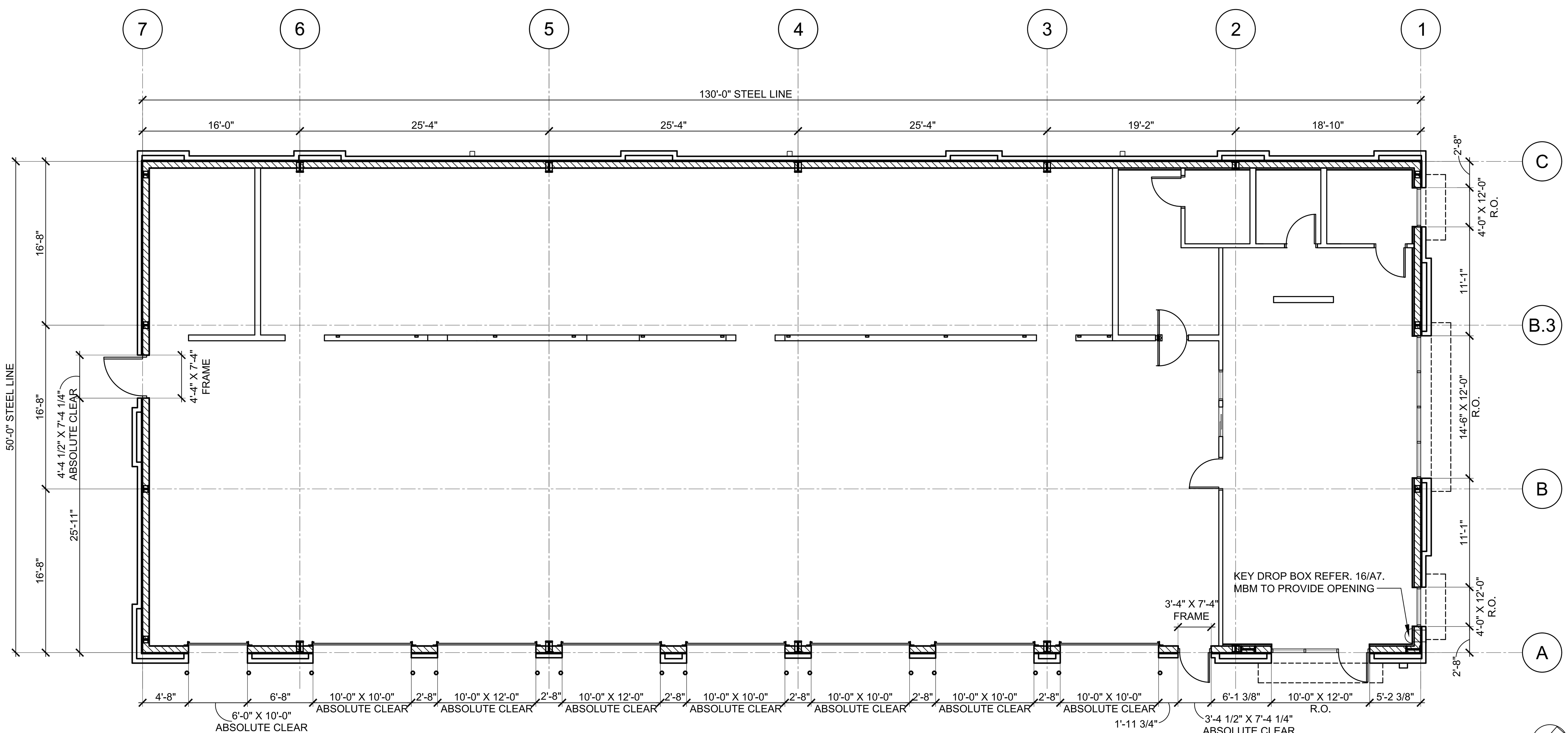
- AT ALL AWNING/CANOPY LOCATIONS, MBM TO PROVIDE MINIMUM OF ONE BOX BEAM AT TOP AND BOTTOM. REFER TO A4 SHEET.
- INTERMEDIATE SUPPORTS FOR ALL EXTERIOR WALL LOUVER/VENT OPENINGS TO BE PROVIDED BY MBM.
- MBM TO PROVIDE STEEL ANGLE ATTACHED TO TOP OF O.H. DOOR FRAMING MEMBER FOR ATTACHMENT OF O.H. DOOR BLOCKING. REFER TO DETAIL 15/A7.
- ENSURE OPENING IN METAL BUILDING IS PROVIDED FOR KEY DROP BOX. REFER TO F1 AND A1.1 SHEETS FOR LOCATION.
- ALL HOLLOW METAL DOOR OPENINGS TO BE 3'-4 ½" OR 4'-4 ½" WIDE BY 7'-4 ¼" TALL.
- ALL ROUGH OPENINGS AS NOTED ON SHEET A1.1 ARE NOT ALLOWED TO BE REDUCED FOR METAL BUILDING TRIM OR FLASHING.
- MBM TO PROVIDE NECESSARY ANGLES BETWEEN THE COLUMNS AND THE O.H. DOOR JAMBS.
- CONNECTIONS BETWEEN O.H. DOOR VERTICAL CHANNELS AND HEADER CHANNELS CANNOT BE EXPOSED.

WARRANTIES

- 20-YEAR WEATHER TIGHTNESS WARRANTY ON ROOF.
- 25-YEAR FINISH WARRANTY FOR GALVANIZED/GALVALUME PANELS.
- BUILDING WARRANTY - 1-YEAR.

MISCELLANEOUS

- MEET MBDP CRITERIA PROVIDED BY STRUCTURAL AT THE START OF THE PROJECT.
- MBM TO PROVIDE ROOF PIPE JACKS.
- MBM TO PROVIDE 2 INSPECTIONS. 1 PRE-ERECTION MEETING AND 1 FINAL INSPECTION OF THE METAL BUILDING (MIN. 30 DAYS FROM CONSTRUCTION COMPLETION), TO INCLUDE A PUNCH LIST OF ITEMS NOT ERECTED CORRECTLY.
- ALL SIGN LOCATIONS, GC TO PROVIDE BLOCKING FOR ATTACHMENT. MBM DOES NOT NEED TO PROVIDE ADDITIONAL GIRT FOR SIGNAGE.
- RED OR GRAY PRIMER STRUCTURE.
- ALL GIRTS/CHANNELS/ETC. MUST BE STEEL.
- ON PROJECTS WITH NON-INSULATED PANELS, MBM TO PROVIDE STRAPS/CLIPS FOR THE INSULATION IN THE WALLS.



16 / A1 FLOOR PLAN
SCALE: 1/8"=1'-0"

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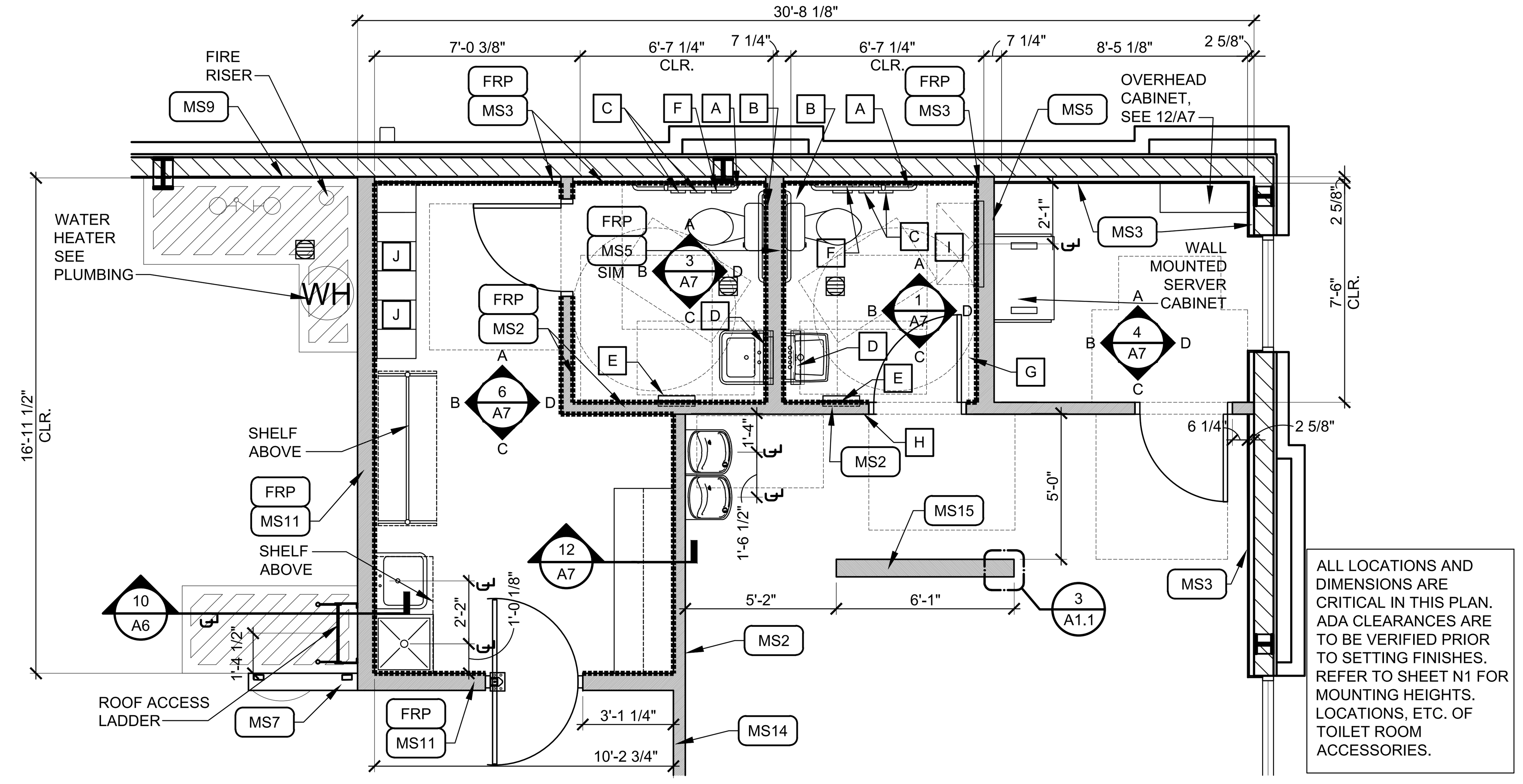
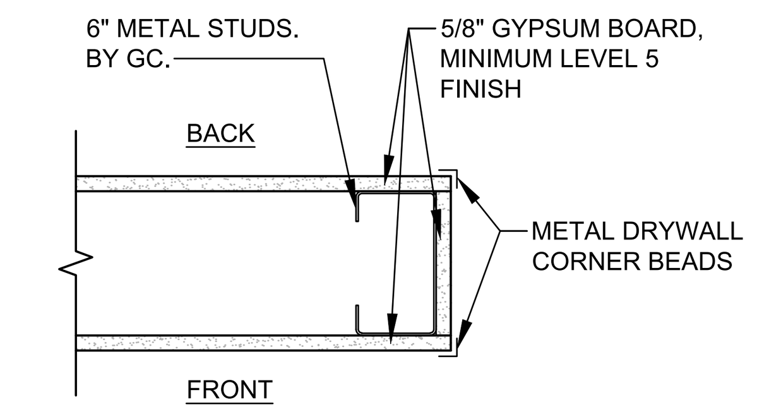
SHEET TITLE:
METAL BUILDING PLAN & NOTES

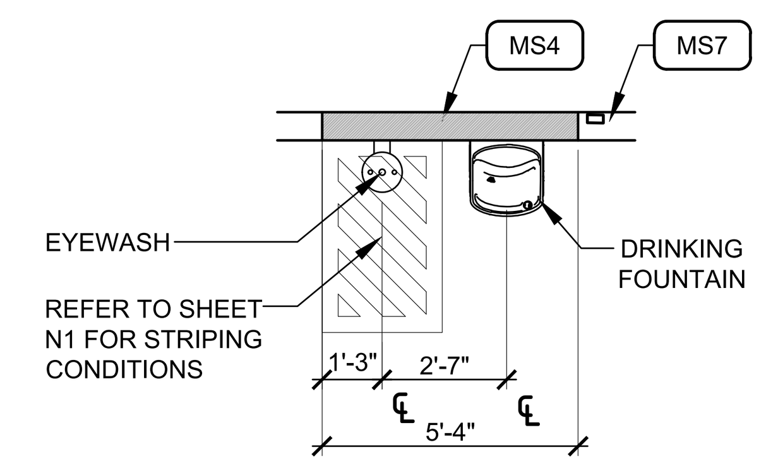
SHEET NUMBER:
A1



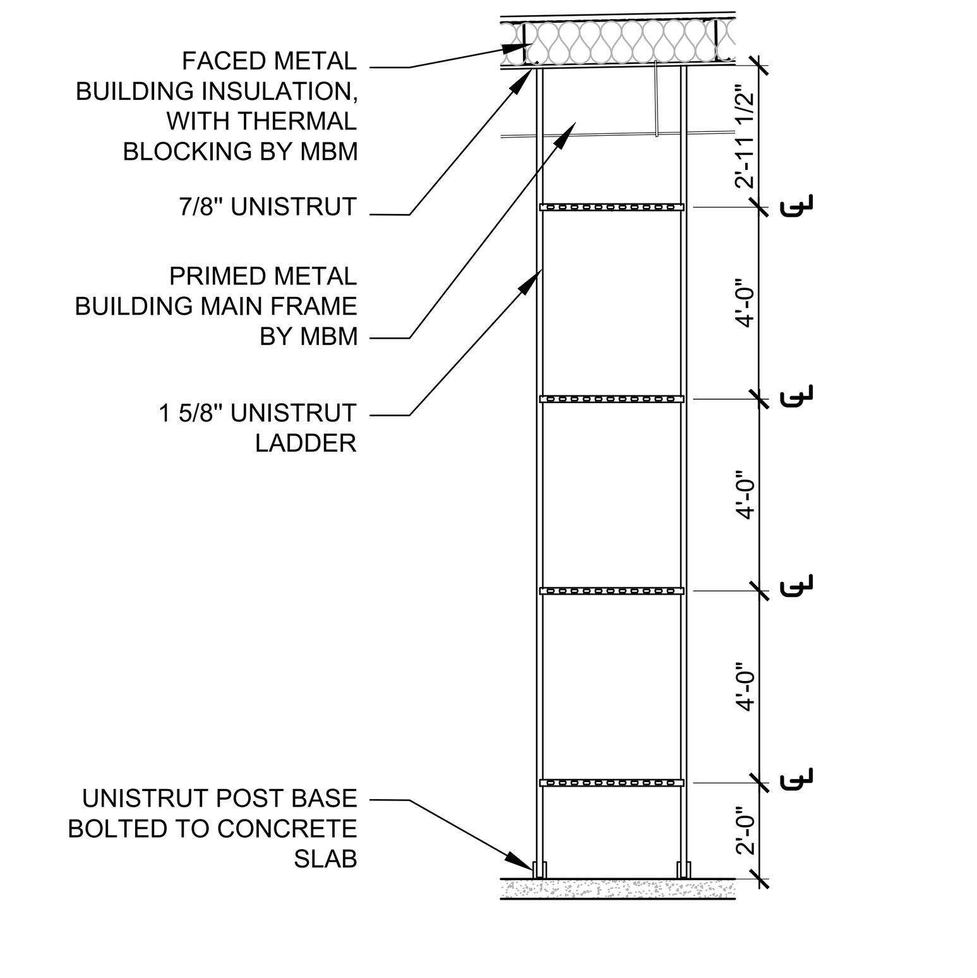
2 A1.1 ENLARGED PLAN
SCALE: 1/4"=1'-0"



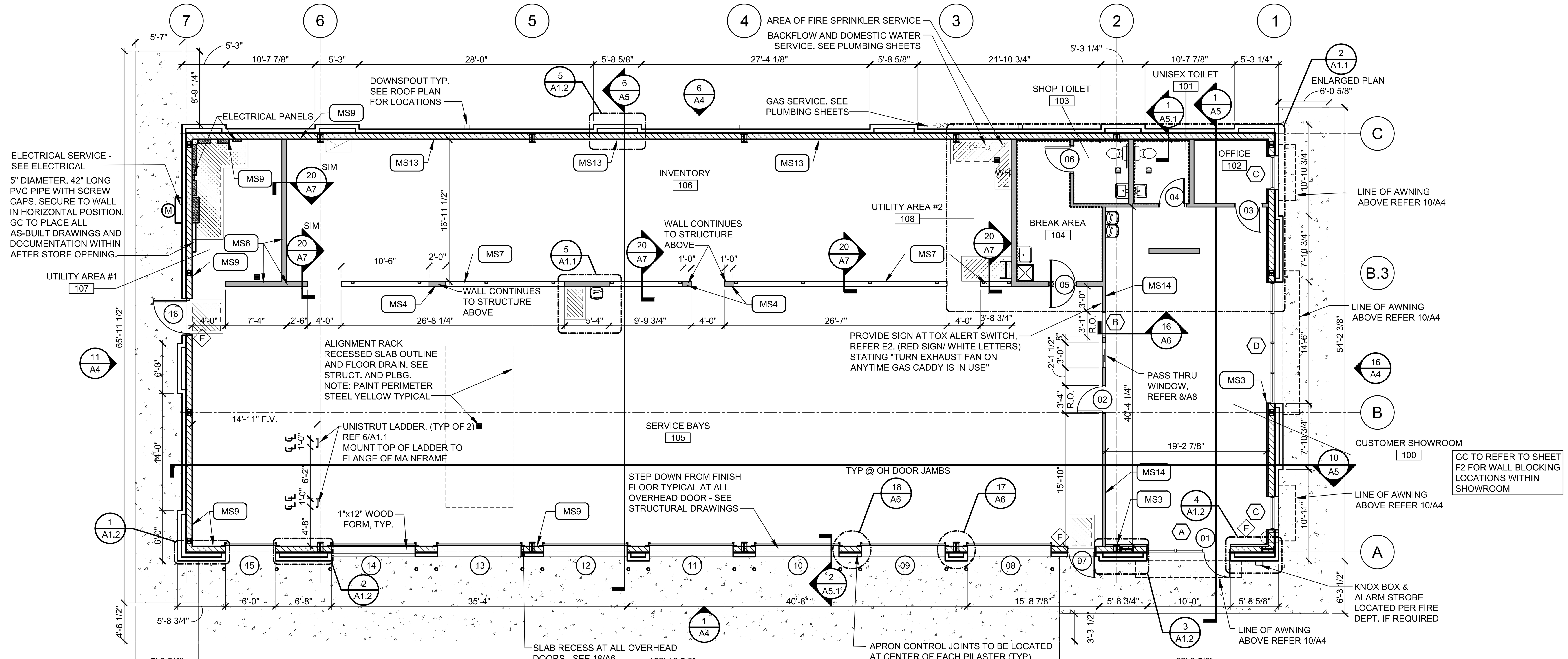
3 A1.1 ENLARGED PLAN
SCALE: 1-1/2"=1'-0"



5 A1.1 ENLARGED PLAN
SCALE: 1/4"=1'-0"



6 A1.1 ENLARGED ELEVATION
SCALE: 1/4"=1'-0"



16 A1.1 FLOOR PLAN
SCALE: 1/8"=1'-0"

STANDARD WALL TYPES

NOTES:
1. SOME WALL TYPES MAY NOT BE USED. REFER TO PLANS
2. REFER TO STRUCTURAL DRAWINGS FOR STUD GAUGES AND ADDITIONAL FRAMING INFORMATION.

MS1	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES. EXTEND PARTITION TO DECK (TYPICAL U.N.O.). USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS2	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION TO DECK (TYPICAL U.N.O.) USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS AND BEHIND DRINKING FOUNTAINS.
MS3	(METAL BUILDING FRAME WALL SYSTEM) WITH 2" FURRING WITH 5/8" GYPSUM BOARD TO METAL DECK
MS4	6" METAL STUDS AT 16" O.C. WITH 1/2" PLYWOOD BOTH SIDES TO METAL DECK, PAINTED (TYPICAL UNLESS NOTED OTHERWISE).
MS5	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION TO DECK (TYPICAL U.N.O.) AT SIM. CONDITION, EXTEND PARTITION 4" MIN. ABOVE CEILING. USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS6	6" METAL STUDS AT 16" O.C. TO DECK, WITH 1/2" PLYWOOD BOTH SIDES TO 8' A.F.F., PAINTED.
MS7	6" METAL STUDS TO 4' A.F.F AT 16" O.C., STEEL COLUMNS WITHIN WALL FOR SUPPORT WITH 1/2" PLYWOOD BOTH SIDES, PAINTED. REFER STRUCTURAL DRAWINGS FOR STEEL COLUMNS.
MS8	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES, 4' TALL, 3/4" PLYWOOD ATTACHED TO WALL ON SHOP SIDE ONLY FOR ELECTRICAL PANEL MOUNTING.
MS9	METAL BUILDING FRAME WALL SYSTEM WITH 1/2" PLYWOOD TO 8'-0" A.F.F ON INTERIOR SIDE. OPEN TO WALL STRUCTURE ABOVE.
MS10	2 1/2" METAL STUDS FURRING WITH 5/8" GYPSUM BOARD. EXTEND PARTITION 4" MIN. ABOVE CEILING (12'-0" A.F.F. IN CUSTOMER SHOWROOM). USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AREA. FIELD VERIFY EXACT EXTENTS AFTER TAPERED COLUMNS ARE PLACED IN ORDER TO COMPLETELY CONCEAL COLUMNS.
MS11	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ON BREAK AREA SIDE AND 1/2" PLYWOOD ON UTILITY AREA OR SERVICE SIDE WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION AND FINISHES TO DECK (TYPICAL U.N.O.) AT SIM. CONDITION, EXTEND PARTITION 4" MIN. ABOVE CEILING. USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS12	2 1/2" METAL STUDS WITH 1/4" PLYWOOD ON OUTSIDE FACE. PAINT.
MS13	METAL BUILDING FRAME WALL SYSTEM WITH 1/2" PLYWOOD TO 12'-0" A.F.F ON INTERIOR SIDE. OPEN TO WALL STRUCTURE ABOVE.
MS14	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ON SHOWROOM AND BREAK AREA SIDE AND 1/2" PLYWOOD ON UTILITY AREA OR SERVICE SIDE WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION TO DECK (TYPICAL U.N.O.) USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS AND BEHIND DRINKING FOUNTAINS.
MS15	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ALL SIDES. EXTEND PARTITION TO DECK (TYPICAL U.N.O.)
FRP	FRP BOARD GLUE EDGE TO EDGE OF SUBSTRATE. REFER TO INTERIOR ELEVATIONS ON SHEET A7 FOR HEIGHTS A.F.F.

ACCESSORIES

MARK	DESCRIPTION
A	42" GRAB BAR WITH WOOD BACKER, WITH 18" VERTICAL BAR AS REQUIRED.
B	36" GRAB BAR WITH WOOD BACKER
C	TOILET TISSUE DISPENSER
D	MIRROR - SEE ELEVATIONS FOR SIZE
E	PAPER TOWEL DISPENSER & DISPOSAL
F	SANITARY NAPKIN DISPOSAL UNIT
G	COAT HOOK
H	HANDICAP SIGN-MOUNT 5'-0" AFF TO CENTER: 8" EDGE TO JAMB EDGE.
I	BABY CHANGING STATION. SEE DETAIL 1/N1
J	6 HALF LOCKER UNIT QTY(2)-(SECURE TO WALL)

NOTES
1. PROVIDE WOOD BLOCKING AS REQUIRED FOR MOUNTING ACCESSORIES
2. ACCESSORY PACKAGE AVAILABLE FROM NATIONAL VENDOR.
3. REFER TO SHEET N1 FOR MOUNTING HEIGHTS, LOCATIONS, ETC OF TOILET ROOM ACCESSORIES.

GENERAL NOTES

1. WALL DIMENSIONS ARE TO FINISH CLEAR DIMENSION, ALL MATERIALS MUST BE FIGURED INTO THE LAYOUT OF THE FRAMING.
2. MASONRY OPENING SHALL BE COORDINATED WITH WINDOW OR DOOR MANUFACTURERS REQUIREMENTS.
3. PLUMBING ROUGH INS ARE CRITICAL FOR ADA CLEARANCES, VERIFY ALL PLUMBING ROUGH INS PRIOR TO INSTALLING ROOM FINISHES.
4. ALL MASONRY DIMENSIONS ARE NOMINAL DIMENSIONS, MASONRY CONTRACTOR TO ADJUST COURSING AS NEEDED.
5. ALL GYP. BRD. WALLS SHALL HAVE LATERAL BRACING AND CONTROL JOINTS AS REQUIRED IN SPECIFICATION SECTION 092900.

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2020 ER
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JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

MITCHEL RAY GARRETT - ARCHITECT
MO# A-007541

ISSUE BLOCK

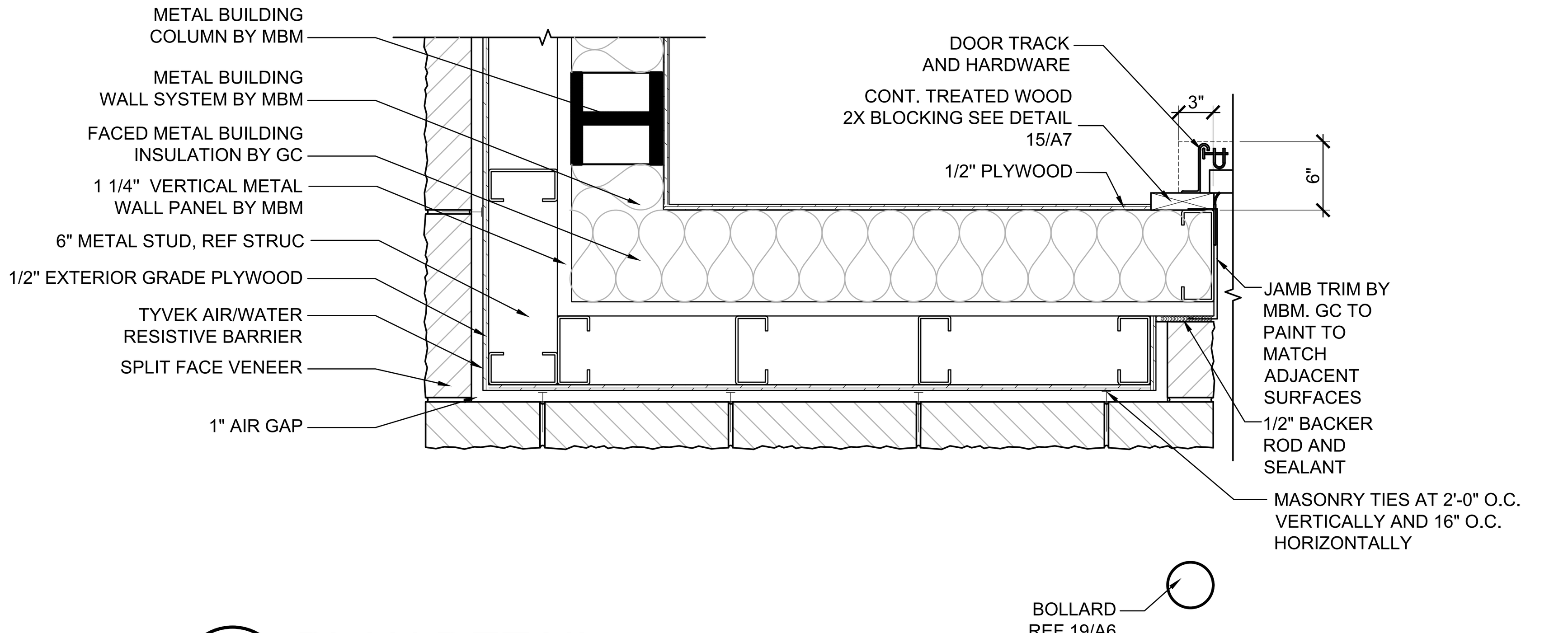
1	04/16/20	ADD #1

PROPERTY NO.:	160085
6 DIGIT NO.:	906983
4 DIGIT NO.:	78C9
AOR PROJECT NUMBER:	1955B71
TO PERMIT: DATE:	03/26/2020
TO BID: DATE:	##-##-##

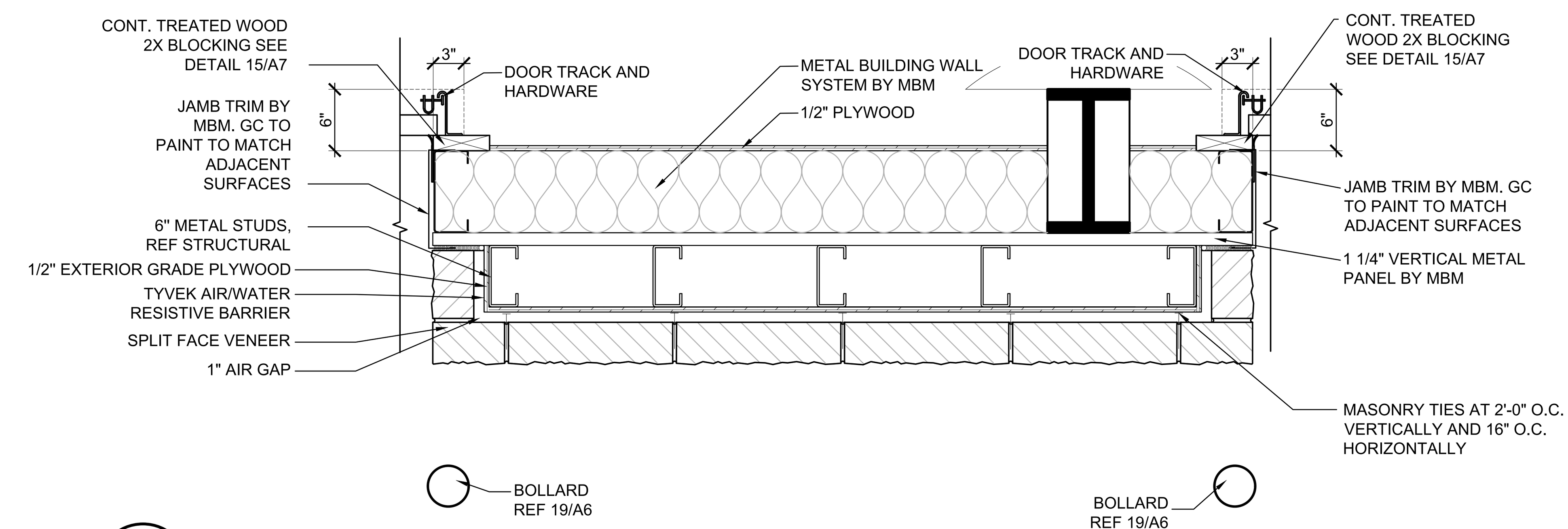
KMP

SHEET TITLE:
FLOOR PLAN & NOTES

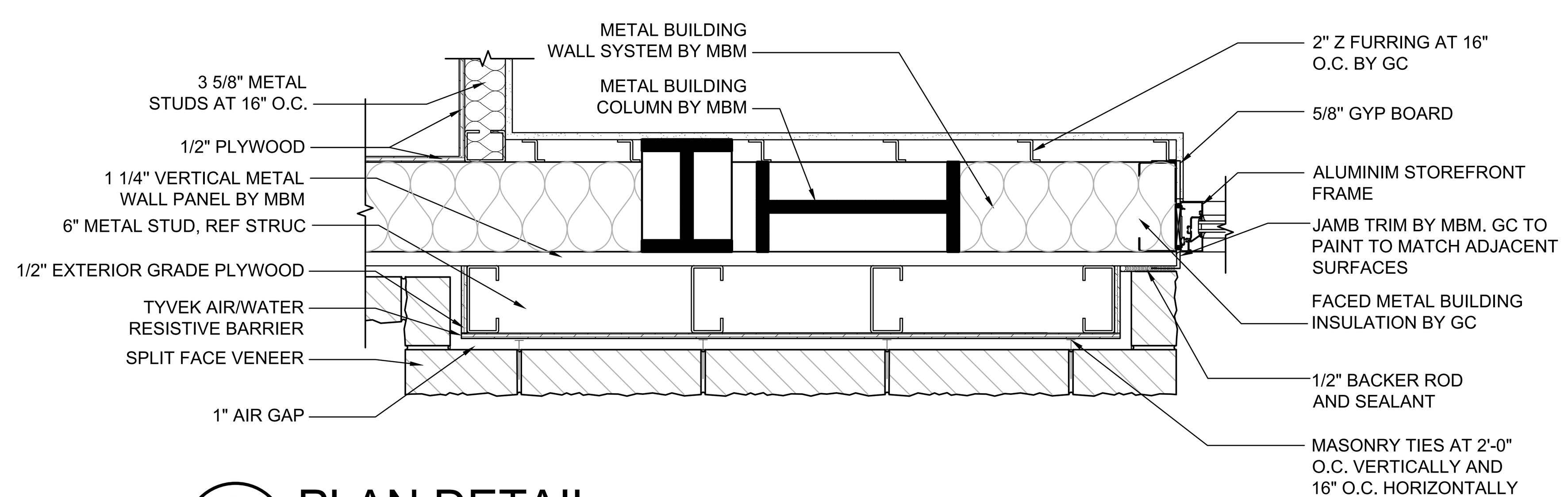
SHEET NUMBER:
A1.1



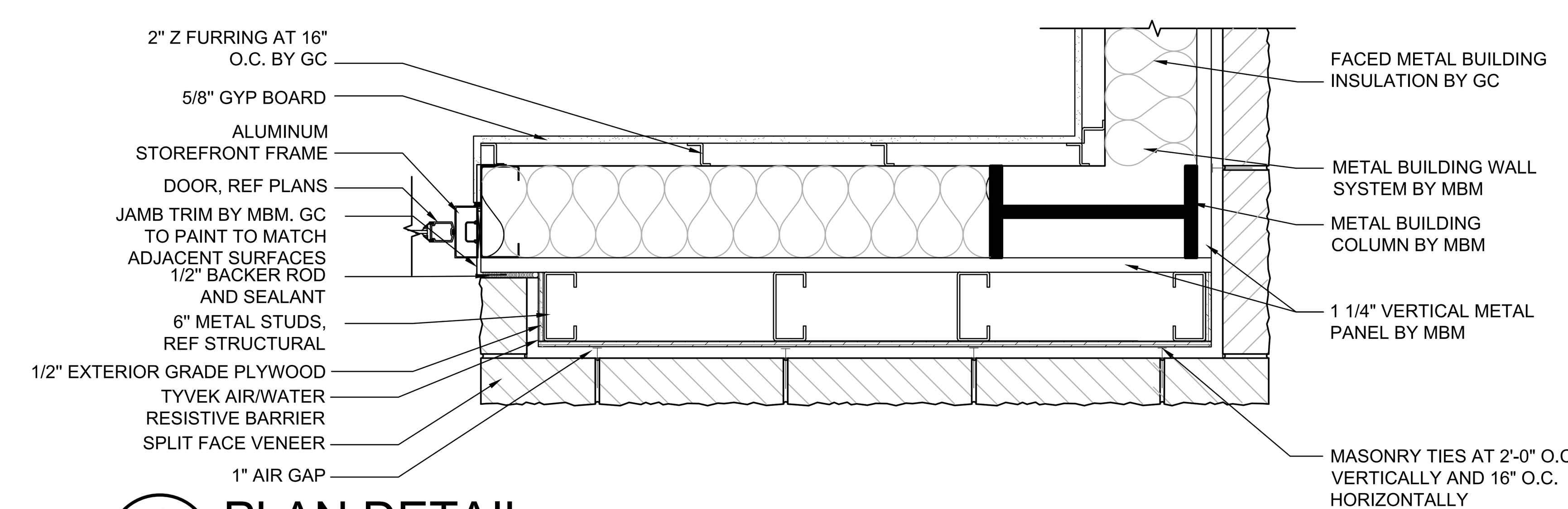
1 A1.2 PLAN DETAIL
SCALE: 1"=1'-0"



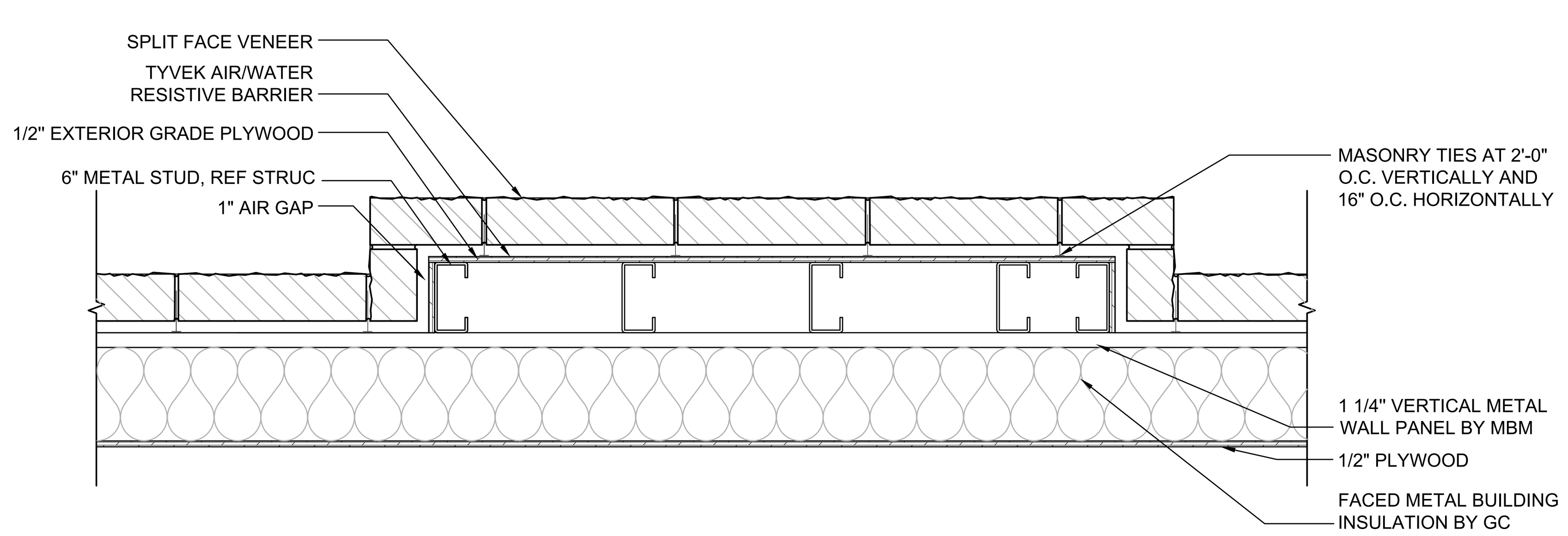
2 A1.2 PLAN DETAIL
SCALE: 1"=1'-0"



3 A1.2 PLAN DETAIL
SCALE: 1"=1'-0"



4 A1.2 PLAN DETAIL
SCALE: 1"=1'-0"



5 A1.2 PLAN DETAIL
SCALE: 1"=1'-0"

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SHEET TITLE:
ENLARGED PLAN DETAILS

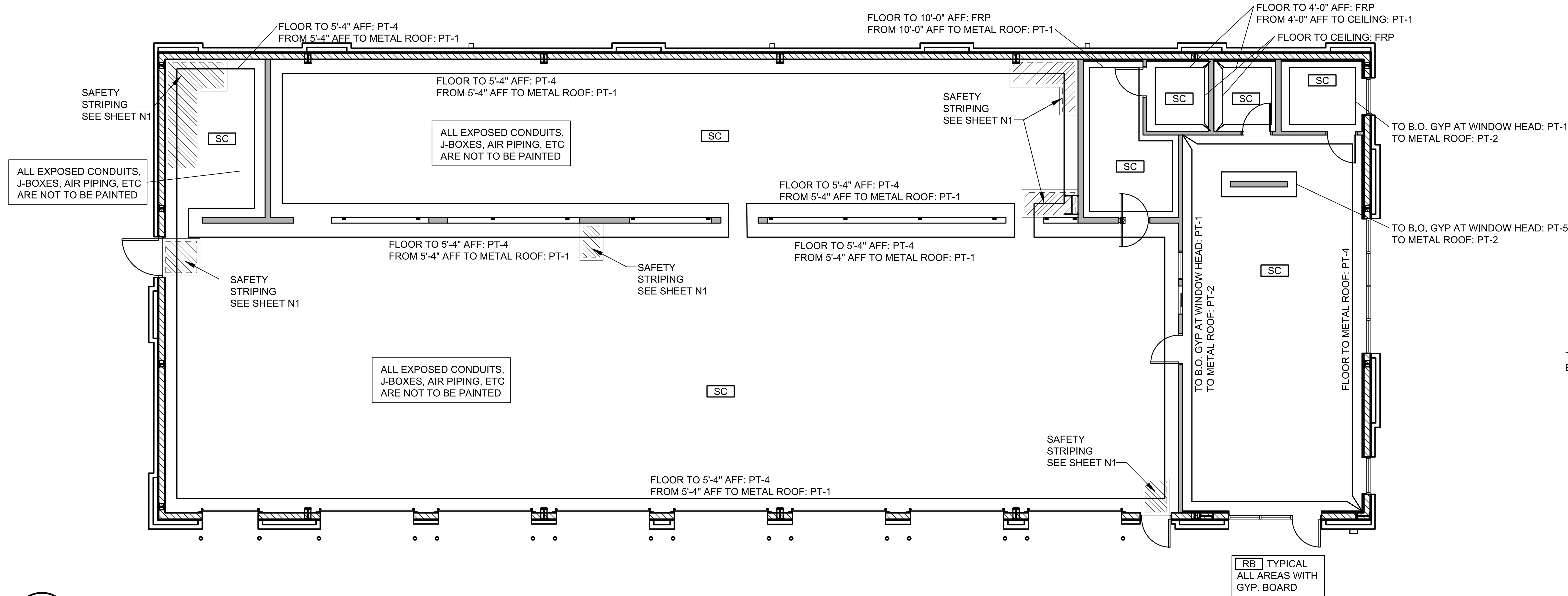
SHEET NUMBER:
A1.2

FLOOR FINISH KEY

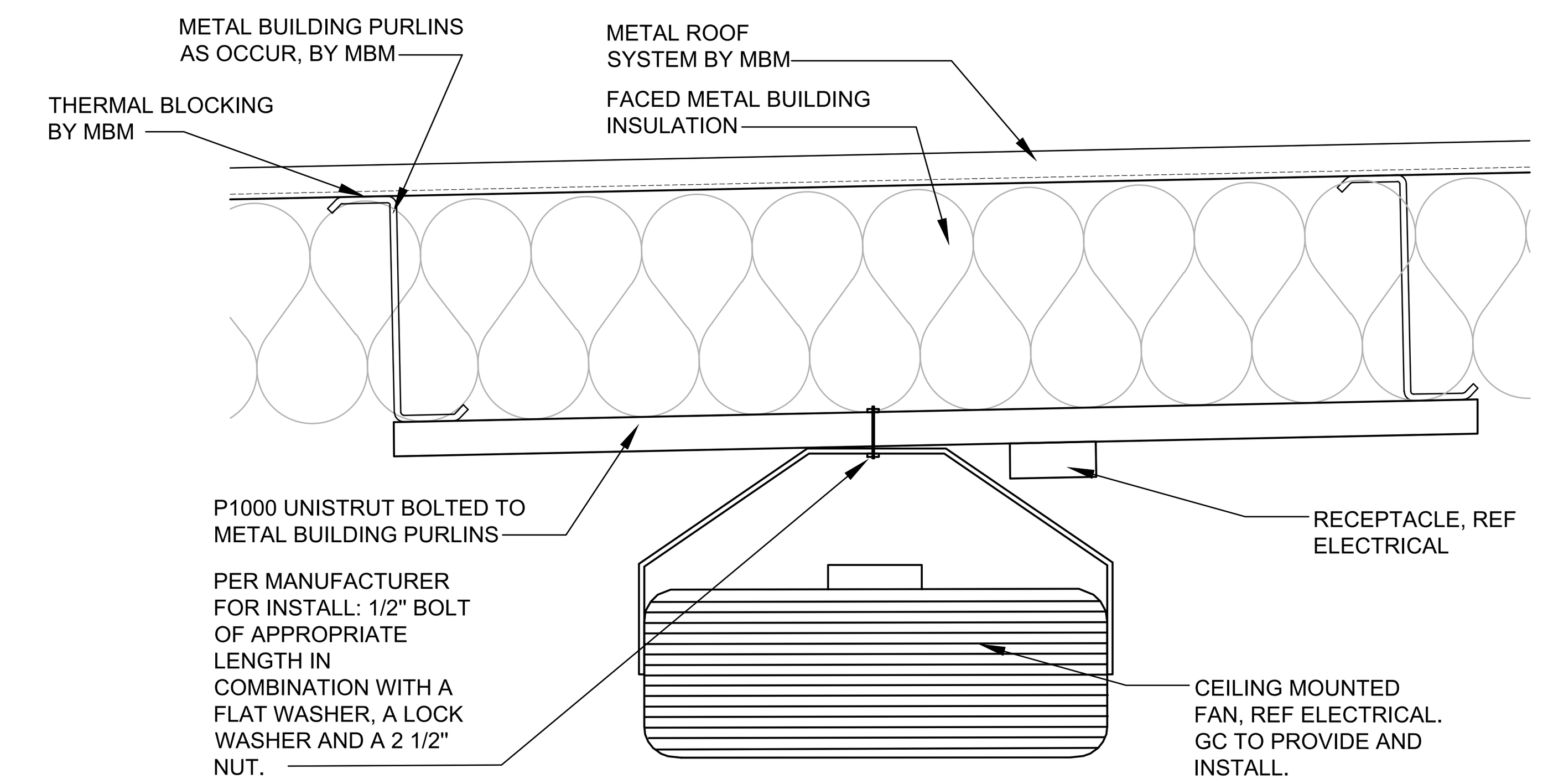
NOTE: SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR, UNLESS OTHERWISE NOTED.

SC: SEALED CONCRETE, REFER TO SPECIFICATION

RB: RESILIENT BASE: 6" WALL BASE (BLACK)



1 A2 WALL/FLOOR FINISH PLAN
SCALE: 1/8"=1'-0"

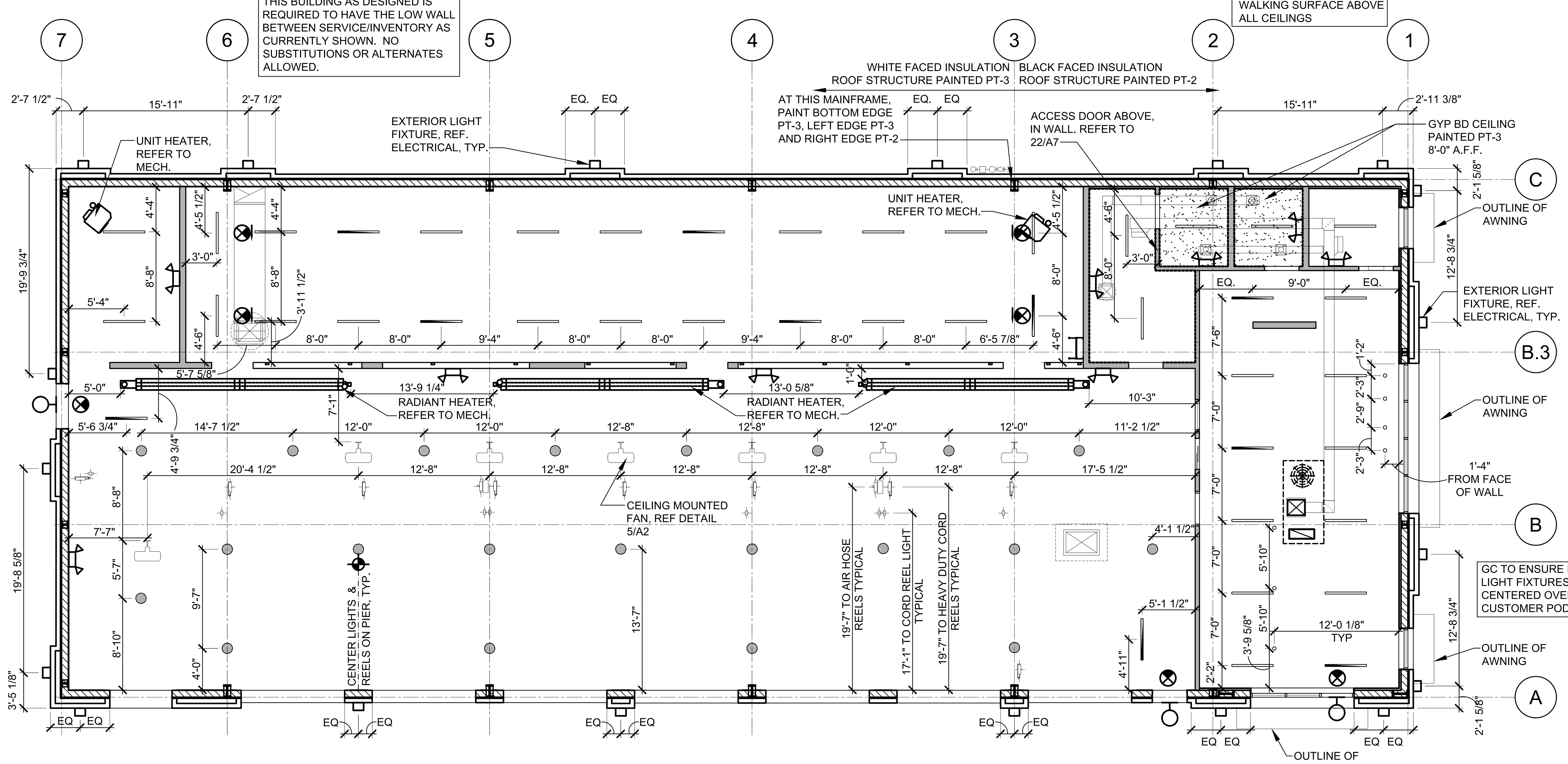


5 A2 CEILING MOUNTED FAN
SCALE: 1 1/2"=1'-0"

REFLECTED CEILING PLAN NOTES:
1. LOCATE LIGHT FIXTURES CENTERED IN THE ROOM OR OVER DOOR AS APPLIES, UNLESS DIMENSIONS NOTE OTHERWISE.
2. SEE MECHANICAL AND ELECTRICAL SHEETS FOR SYMBOL SPECIFICATION.

THIS BUILDING AS DESIGNED IS REQUIRED TO HAVE THE LOW WALL BETWEEN SERVICE/INVENTORY AS CURRENTLY SHOWN. NO SUBSTITUTIONS OR ALTERNATES ALLOWED.

NOTE: PROVIDE PLYWOOD SHEETS AS TEMP. WALKING SURFACE ABOVE ALL CEILINGS



MOUNT ALL EMERGENCY LIGHT FIXTURES TO CEILING WHERE NOT AT WALL, UNO

16 A2 REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"

NORTH

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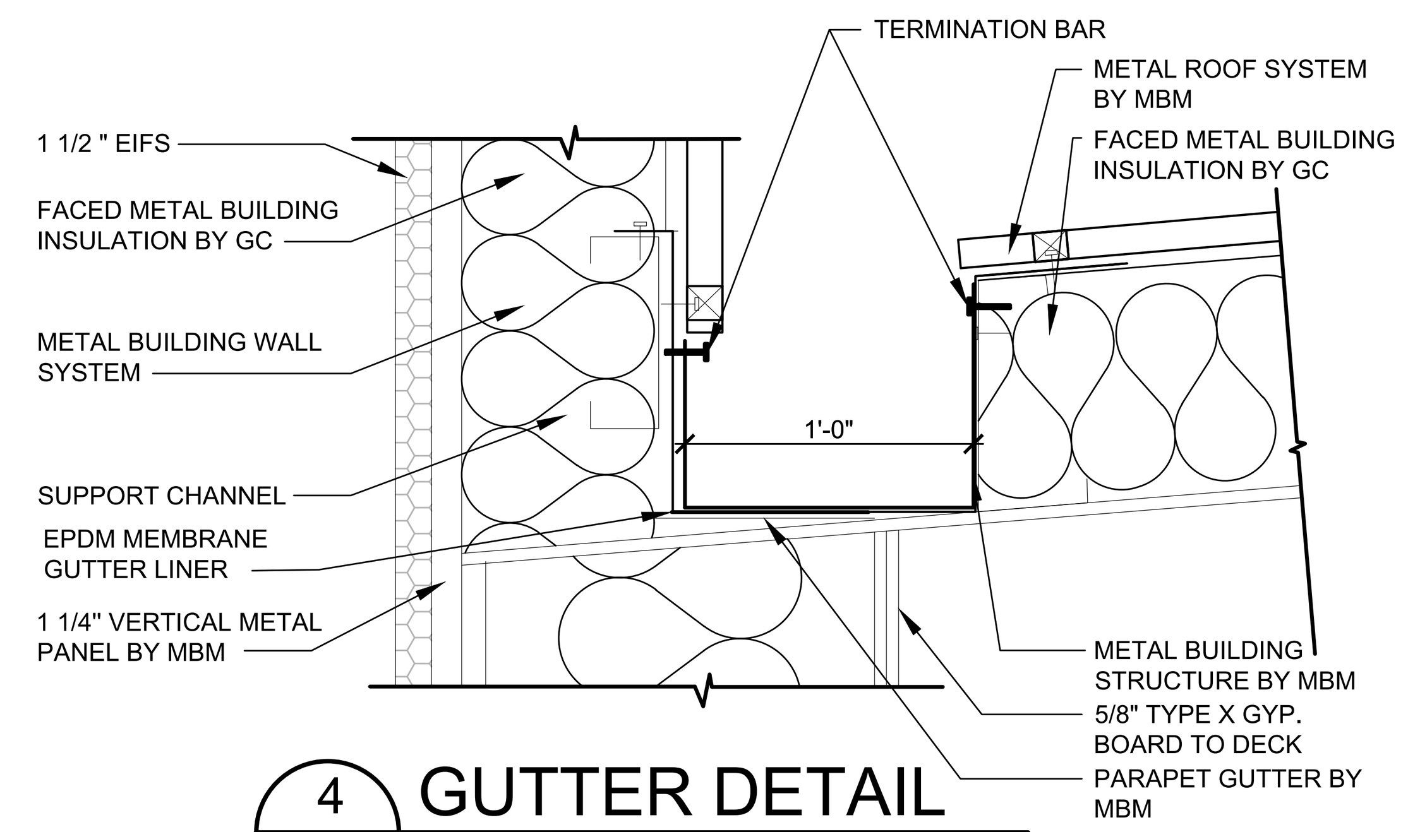
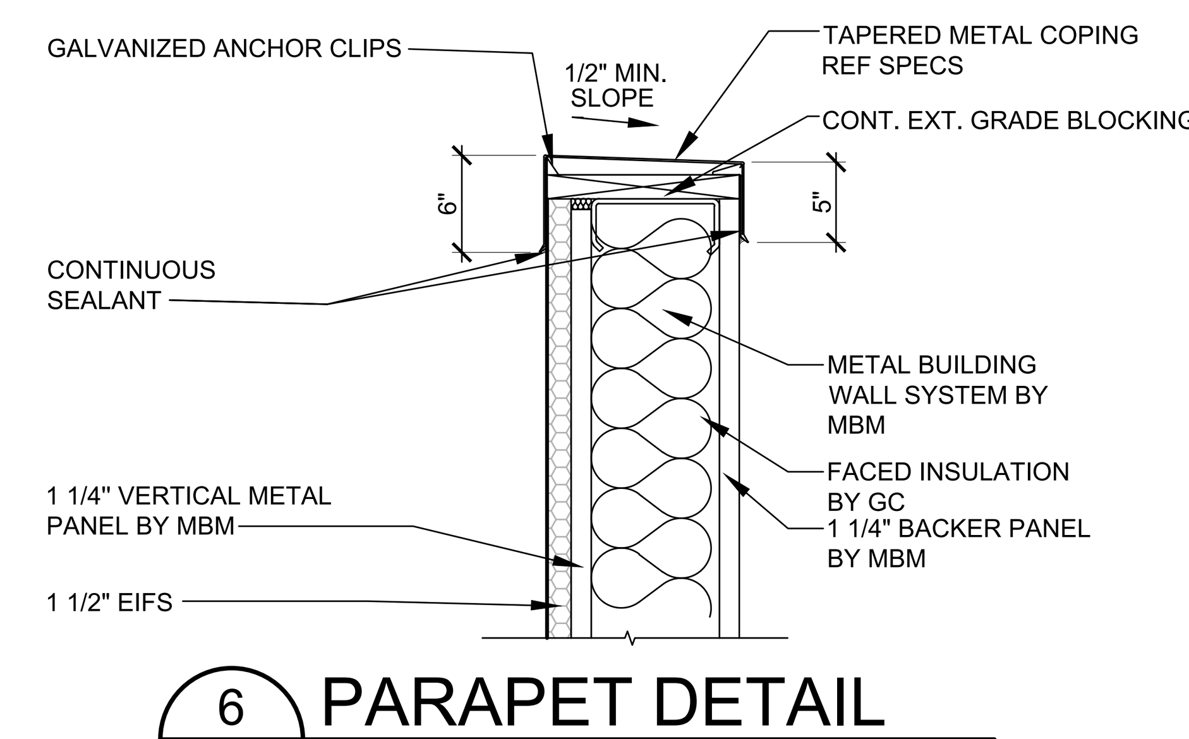
KMP

SHEET TITLE:
REFLECTED CEILING & FINISH PLAN

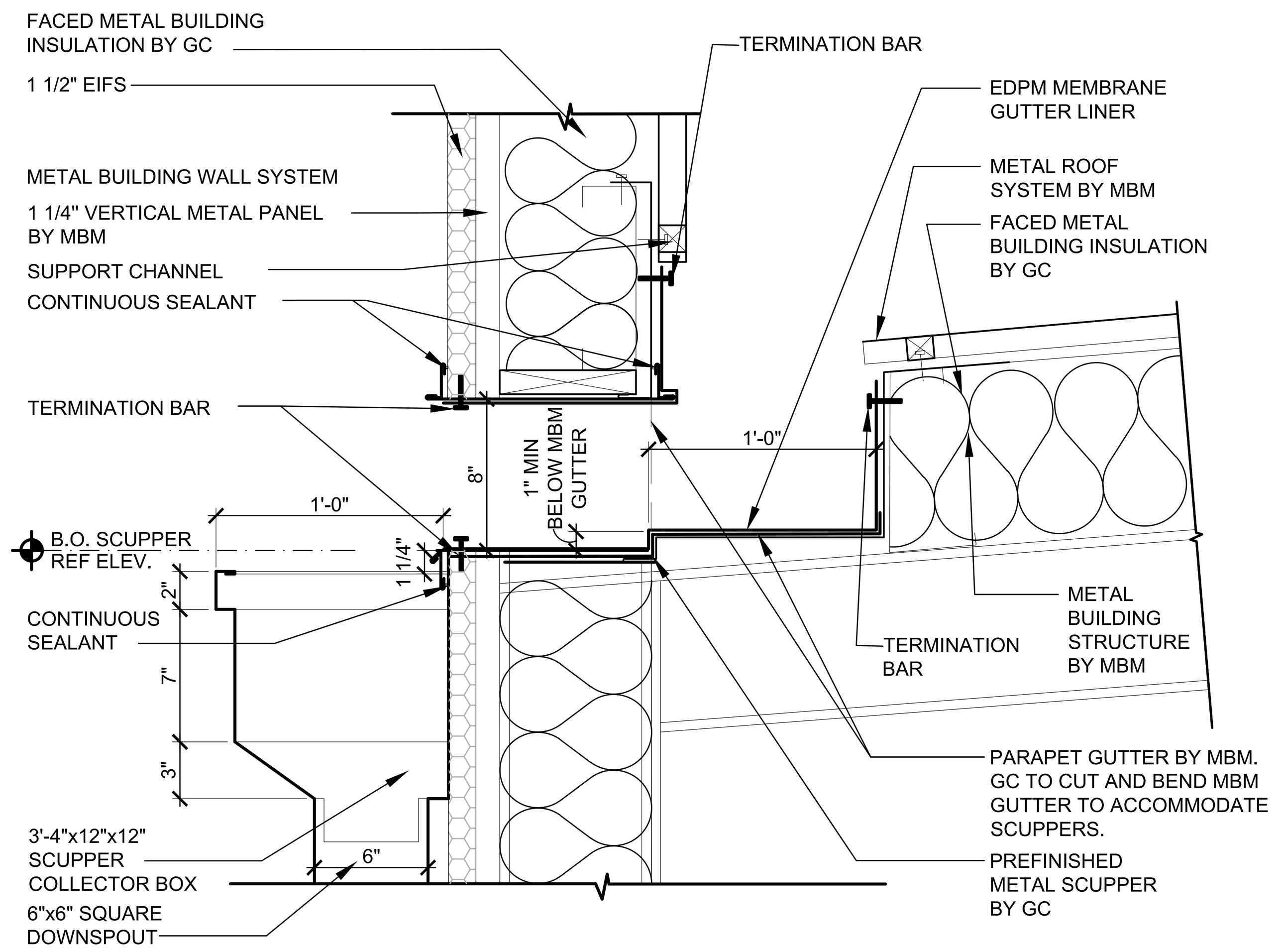
SHEET NUMBER:
A2



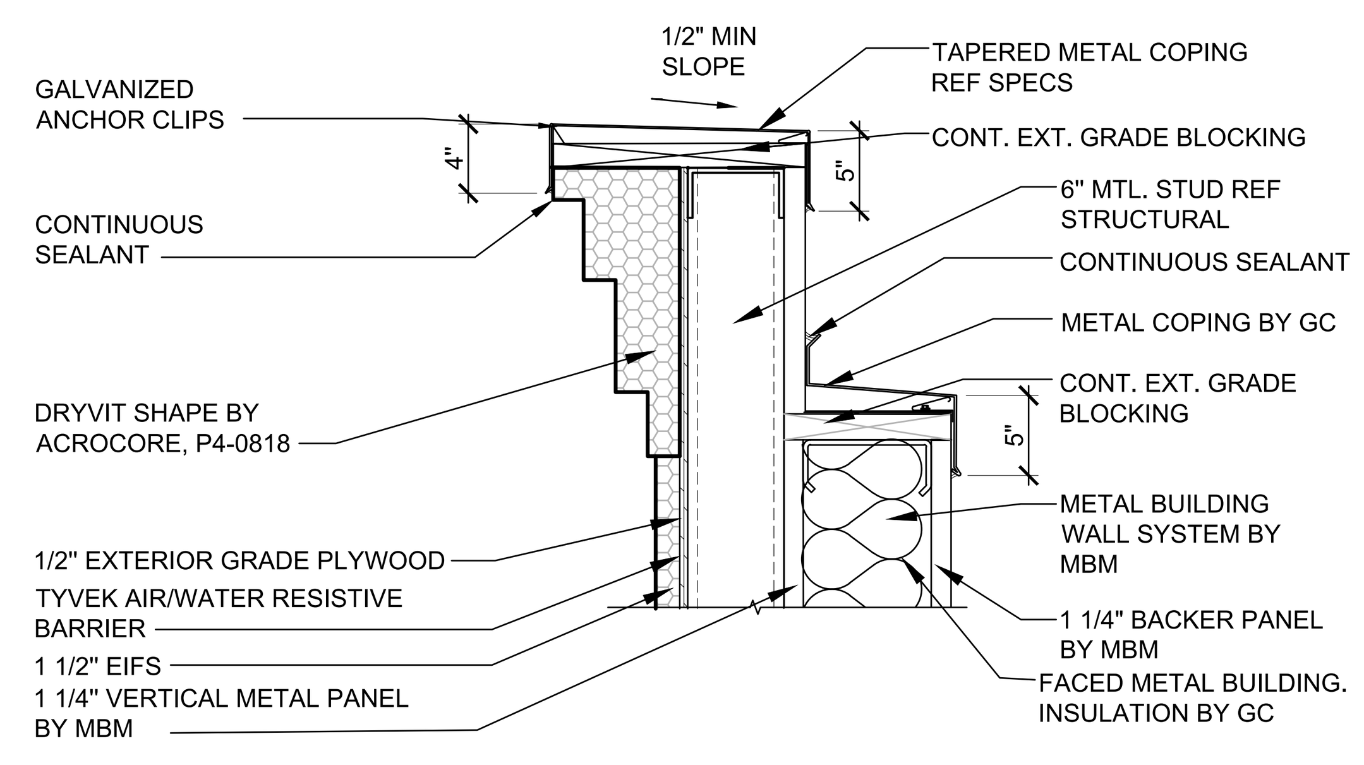
4 / A3 GUTTER DETAIL
SCALE: 1 1/2"=1'-0"



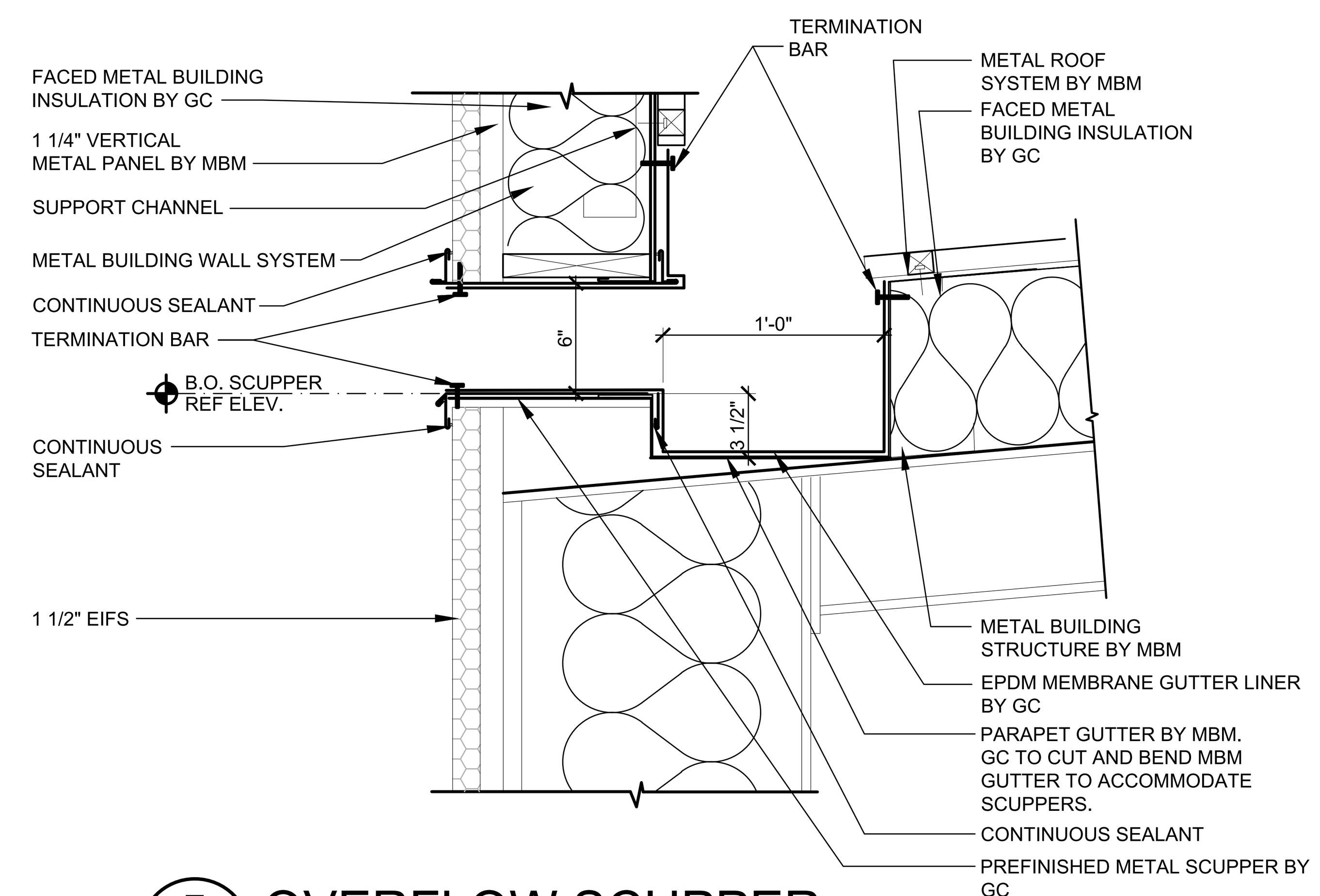
6 / A3 PARAPET DETAIL
SCALE: 1"=1'-0"



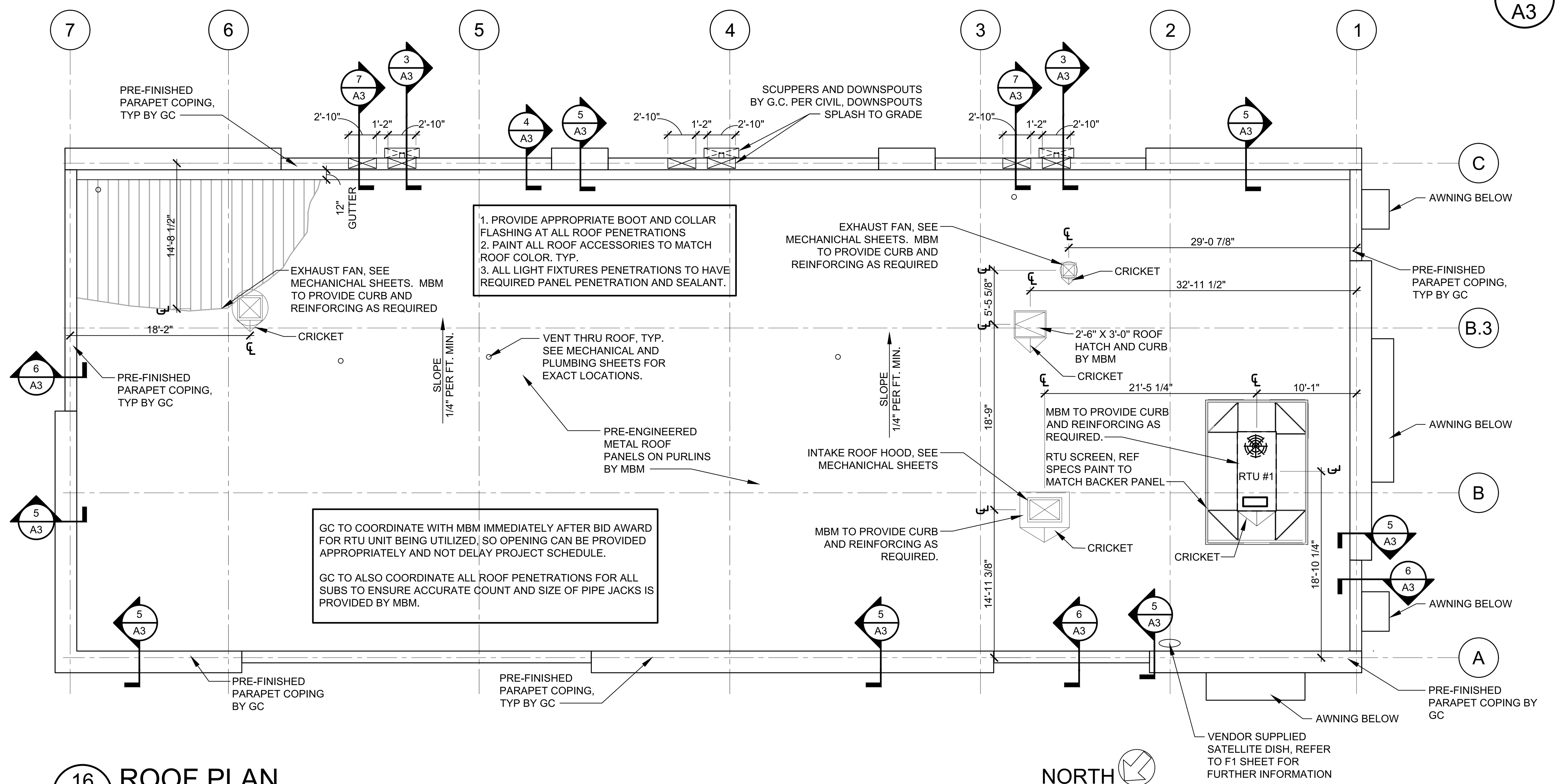
3 / A3 SCUPPER/GUTTER DETAIL
SCALE: 1 1/2"=1'-0"



5 / A3 PARAPET DETAIL
SCALE: 1"=1'-0"



7 / A3 OVERFLOW SCUPPER
SCALE: 1 1/2"=1'-0"



16 / A3 ROOF PLAN
SCALE: 1/8"=1'-0"

GC TO PROVIDE "PIPE PROP" APS-1 WITH SADDLE SUPPORT FOR ALL GAS PIPING ON ROOF. SUPPORT TO BE INSTALLED MINIMUM EVERY 2'-0" OC. INSTALL TO ROOF WITH MASTIC PER ROOFING MANUFACTURER'S RECOMMENDATION. INSTALL SUPPORT PER MANUFACTURER'S INSTALLATION REQUIREMENTS.

ROOF DRAINAGE CALCULATIONS
PRIMARY AND SECONDARY DRAINS
Based on 2018 IPC table 1106.3, 6" downspouts

ZONE	AREA (SQ FT)	ACTUAL GPM CAPACITY	CAPACITY OF 6" DOWNSPOUT IN GPM PER TABLE 1106.2
ZONE 1	2221	272	538
ZONE 2	2221	252	538
ZONE 3	2221	275	538

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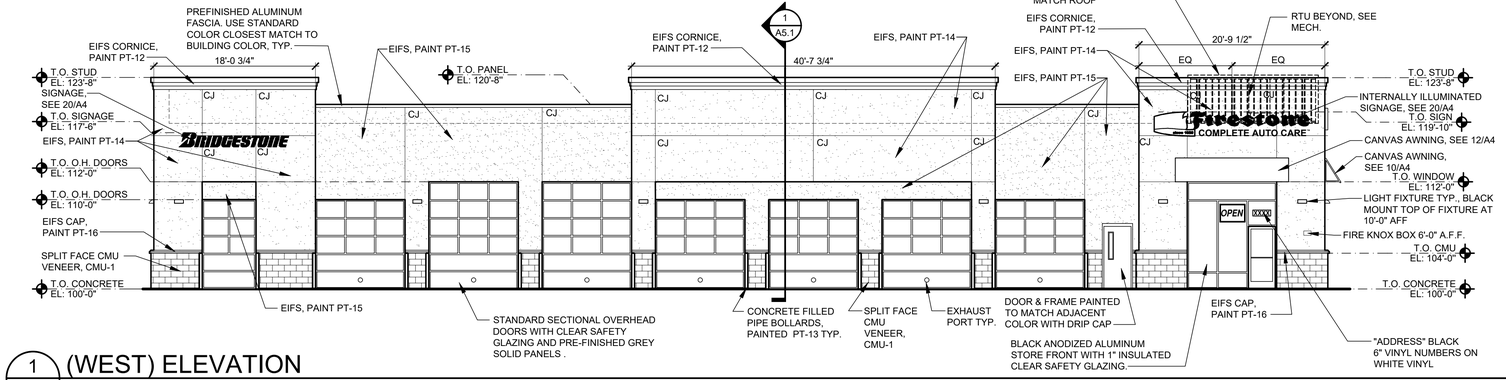
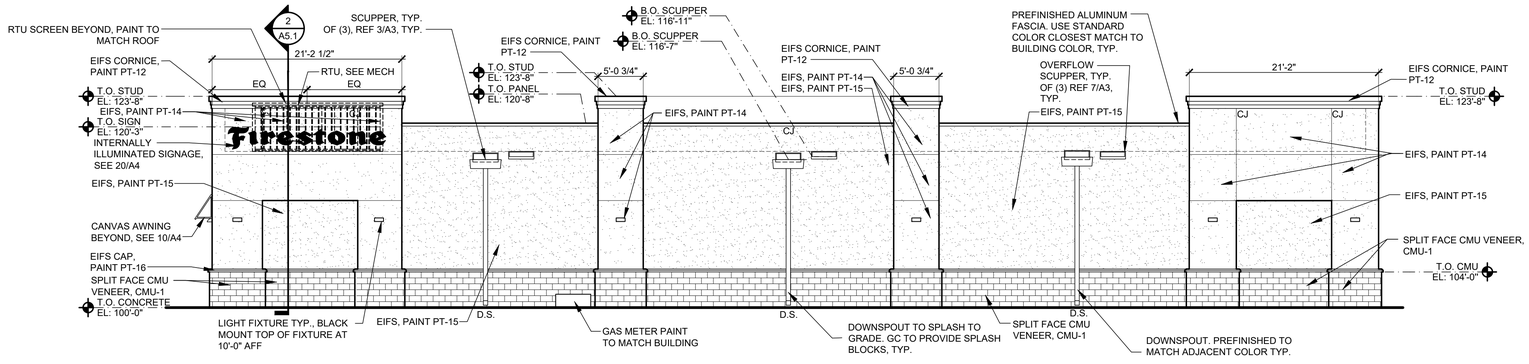
SHEET TITLE:
ROOF PLAN & DETAILS

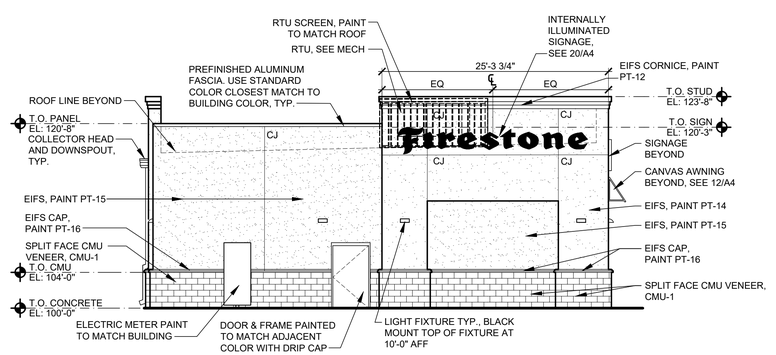
SHEET NUMBER:
A3



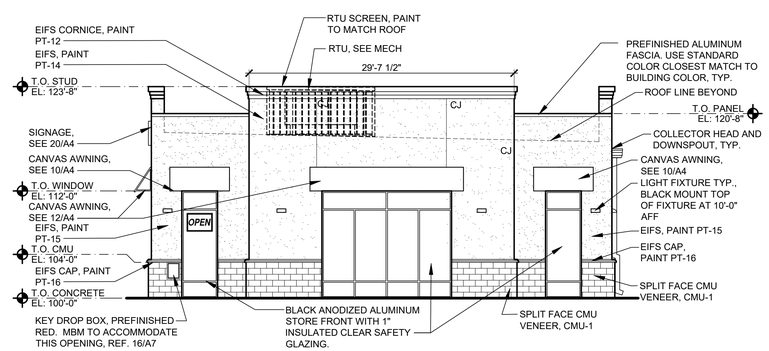
1 A4 (WEST) ELEVATION
SCALE: 1/8"=1'-0"



6 A4 (EAST) ELEVATION
SCALE: 1/8"=1'-0"



11 A4 (NORTH) ELEVATION
SCALE: 1/8"=1'-0"

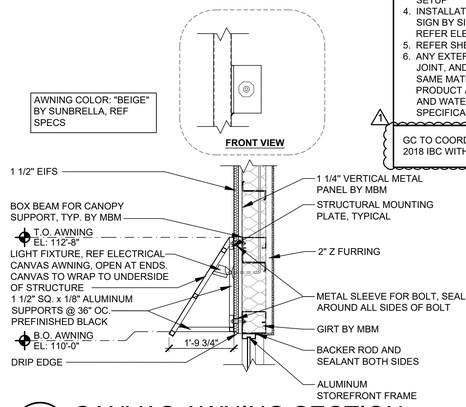


16 A4 (SOUTH) ELEVATION
SCALE: 1/8"=1'-0"

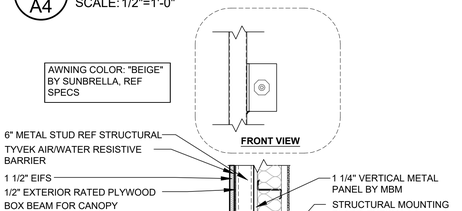
MATERIAL KEY:
CMU-1: ECHELON SPLIT FACE VENEER (OR EQUAL) "ASH"

GENERAL NOTES:
1. PROVIDE DRIP CAP OVER ALL MAN DOORS SEE DETAIL 1C/A8
2. PAINT ALL EXPOSED LINTELS & JAMBS TO MATCH ADJACENT BUILDING COLOR.
3. SEE ELECTRICAL FOR SIGNAGE OPERATING TIME SETUP.
4. INSTALLATION OF BUILDING SIGNS AND STREET SIGN BY SIGN VENDOR, G.C. TO PROVIDE WIRING. REFER ELECTRICAL.
5. REFER SHEET A8 FOR PAINT COLOR KEY.
6. ANY EXTERIOR CONSTRUCTION JOINT, EXPANSION JOINT, AND CRACK OF ABUTTING DISSIMILAR OR SAME MATERIALS MUST HAVE APPROPRIATE PRODUCT APPLIED TO PROVIDE AN AIR, MOISTURE, AND WATER TIGHT EXTERIOR. REFER TO SPECIFICATION SECTION 079200 FOR PRODUCTS.

1 GC TO COORDINATE ADDRESS IDENTIFICATION PER 2018 IBC WITH THE FIRE MARSHAL.



10 A4 CANVAS AWNING SECTION
SCALE: 1/2"=1'-0"

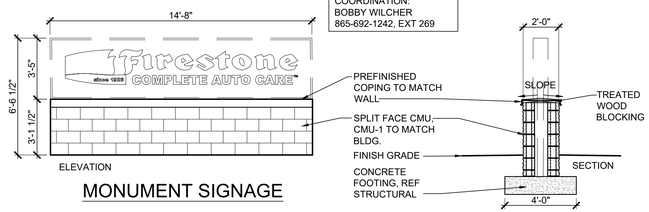


12 A4 CANVAS AWNING SECTION
SCALE: 1/2"=1'-0"

ALL SIGNS AND NECESSARY SUPPORT(S) BY SIGN VENDOR.

CONTACT AGI SIGNS FOR COORDINATION:
BOBBY WILCHER
865-692-1242, EXT 269

MONUMENT SIGN BASE AND POWER FOR SIGN BY GENERAL CONTRACTOR.



MONUMENT SIGNAGE

BRIDGESTONE
NON ILLUMINATED SIGNAGE INDIVIDUAL MOUNTED
18" WEARABLE LETTERSET

Firestone COMPLETE AUTO CARE™
INTERNALLY ILLUMINATED SIGNAGE, INDIVIDUAL MOUNTED
24" WEARABLE LETTERSET

Firestone
INTERNALLY ILLUMINATED SIGNAGE, INDIVIDUAL MOUNTED
36" WEARABLE LETTERSET

BUILDING SIGNAGE

20 A4 SIGNAGE DETAIL
SCALE: 1/4"=1'-0"

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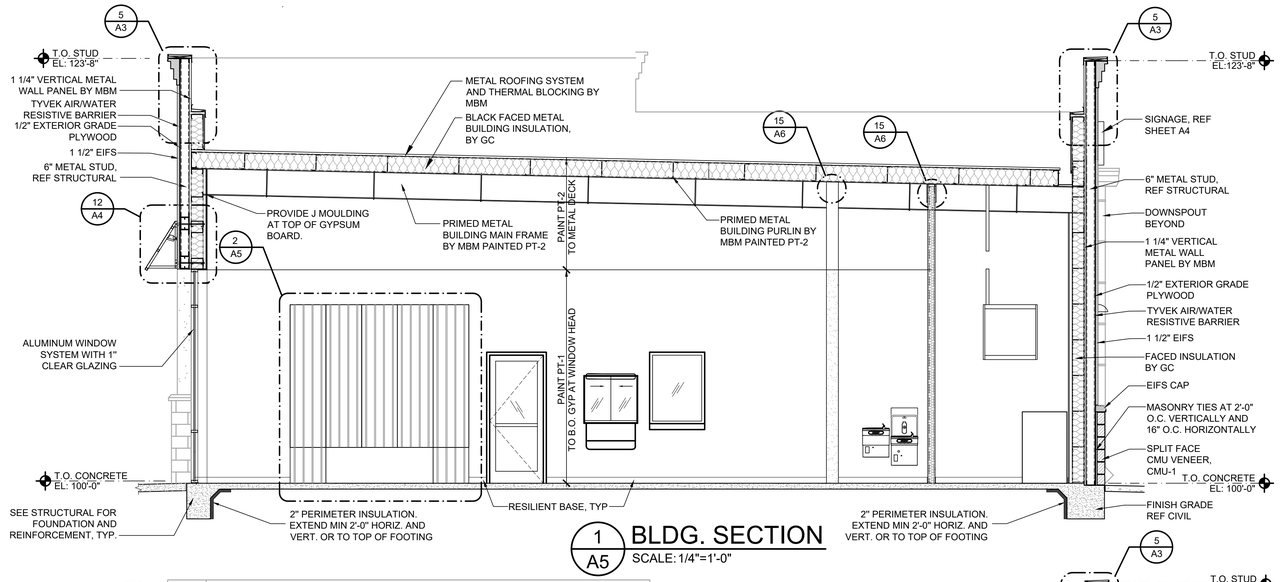
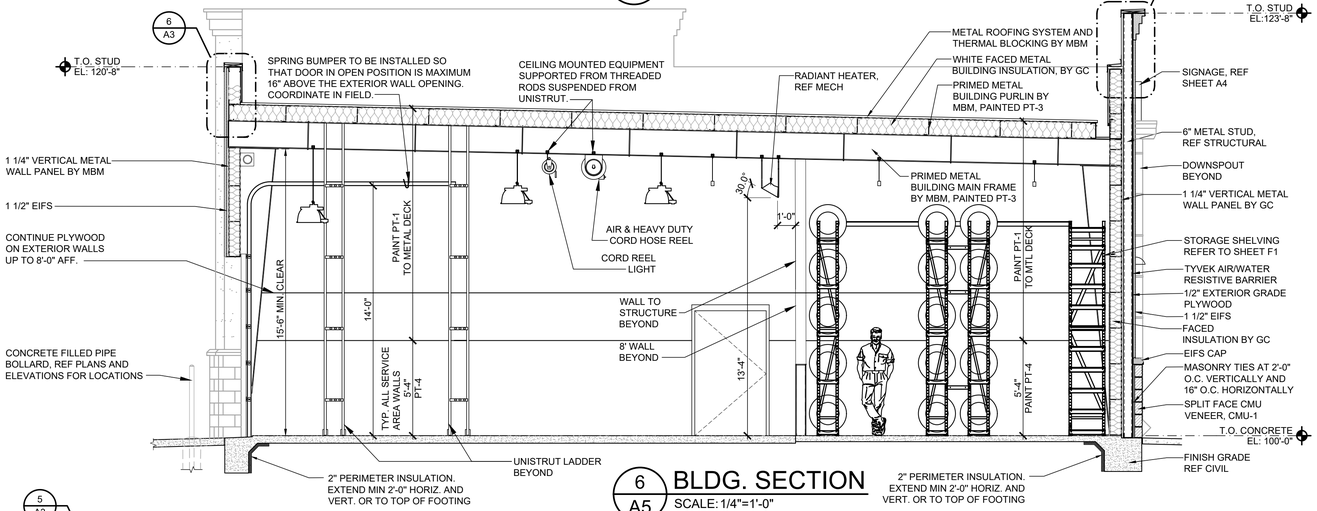
SHEET TITLE:
EXTERIOR ELEVATIONS & DETAILS

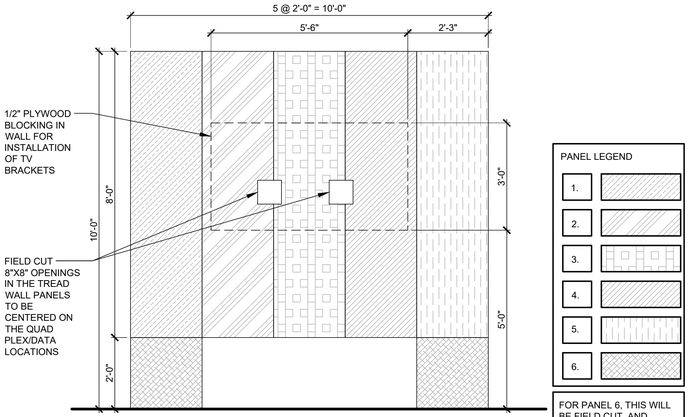
SHEET NUMBER:
A4



1 A5 BLDG. SECTION
SCALE: 1/4"=1'-0"



6 A5 BLDG. SECTION
SCALE: 1/4"=1'-0"



2 A5 TREAD WALL DETAIL
SCALE: 1/2"=1'-0"

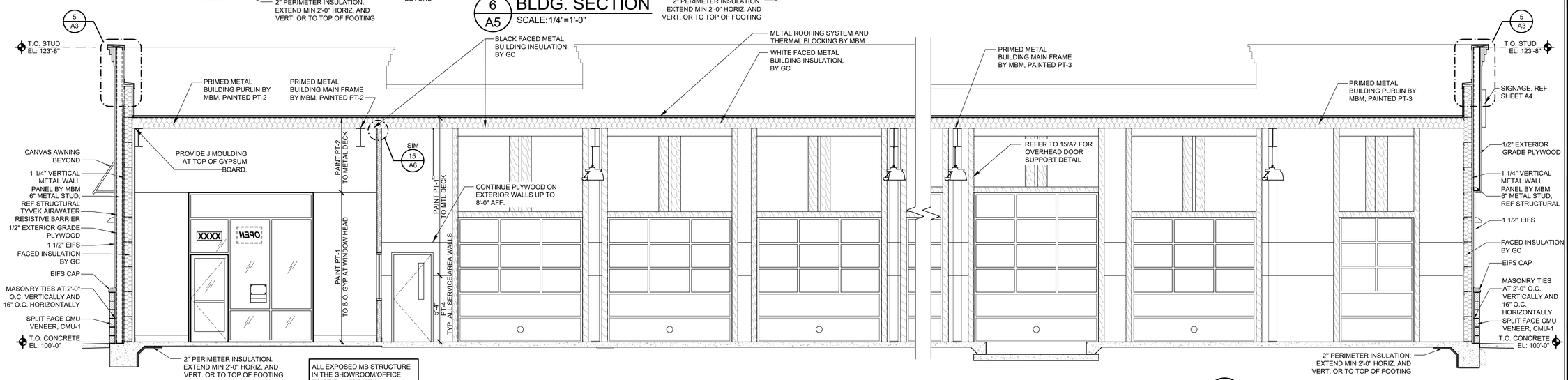
MECHANICAL NOTE:

SEE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR DUCT WORK, PIPING, LIGHT FIXTURES, ETC.

SEE FIXTURE PLAN, REFLECTED CEILING, AND ELECTRICAL PLANS FOR ALL DIMENSIONS.

VERIFY LOCATIONS WITH M.E.P. SHEETS.

VERIFY LOCATIONS WITH EQUIPMENT MANUFACTURERS.



10 A5 BLDG. SECTION
SCALE: 1/4"=1'-0"

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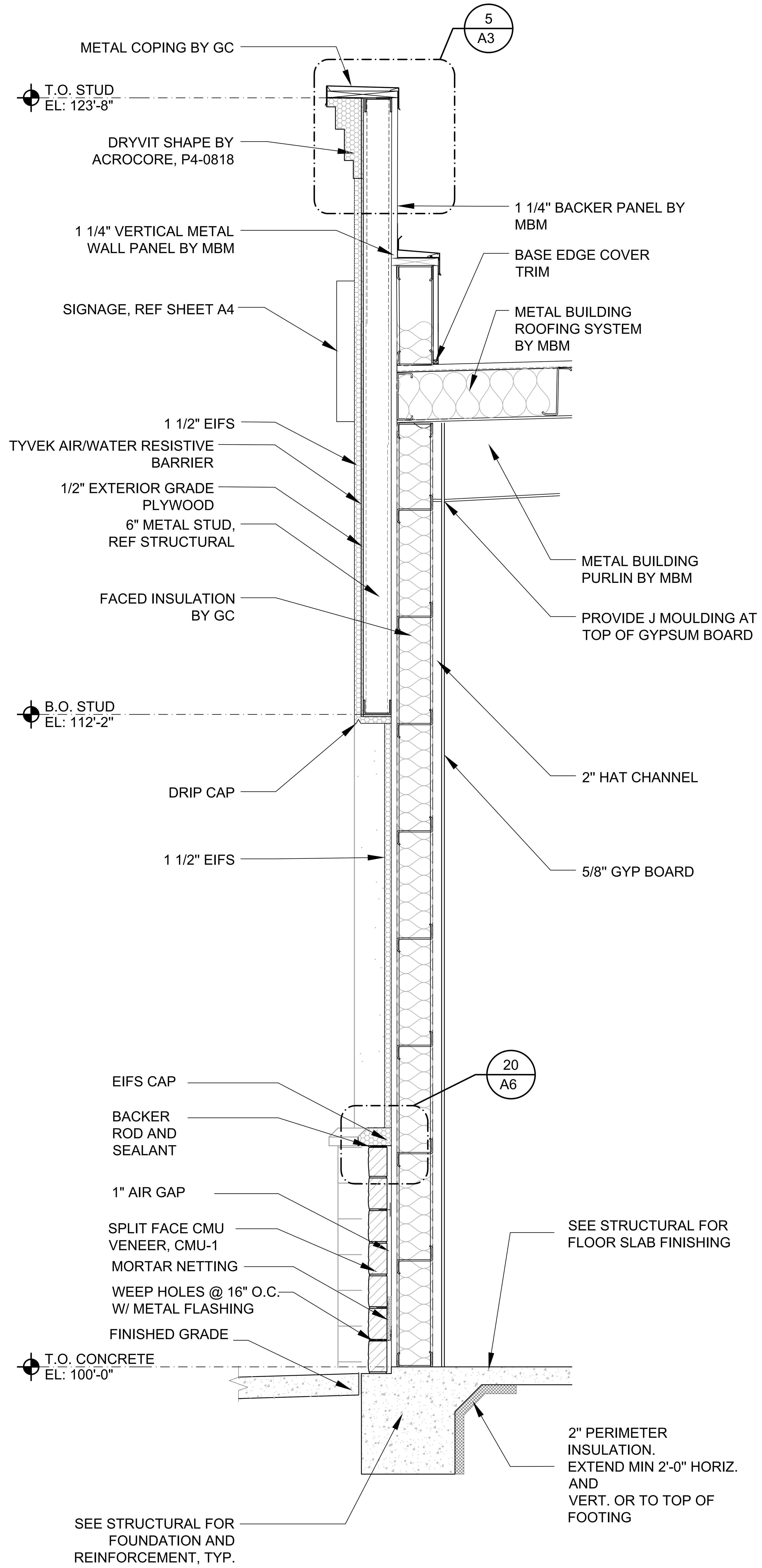
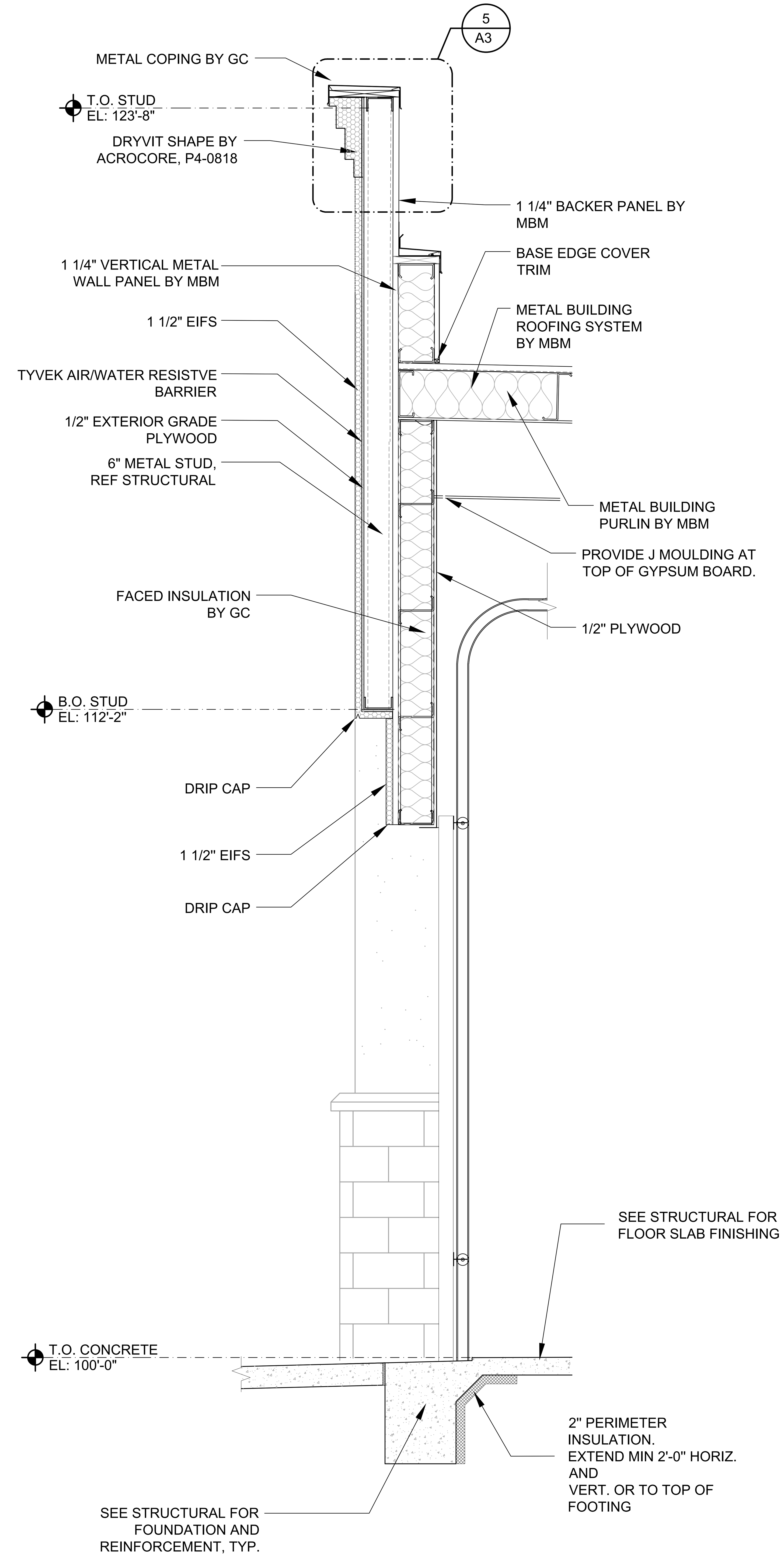
SHEET TITLE:
BUILDING SECTIONS & DETAILS

SHEET NUMBER:
A5



1 A5.1 WALL SECTION
SCALE: 1/2"=1'-0"



2 A5.1 WALL SECTION
SCALE: 1/2"=1'-0"

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Firestone COMPLETE AUTO CARE

NEW FCAC STORE
2020 ER
3561 SW MARKET ST
JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

MITCHEL RAY GARRETT - ARCHITECT
MO# A-007541

ISSUE BLOCK

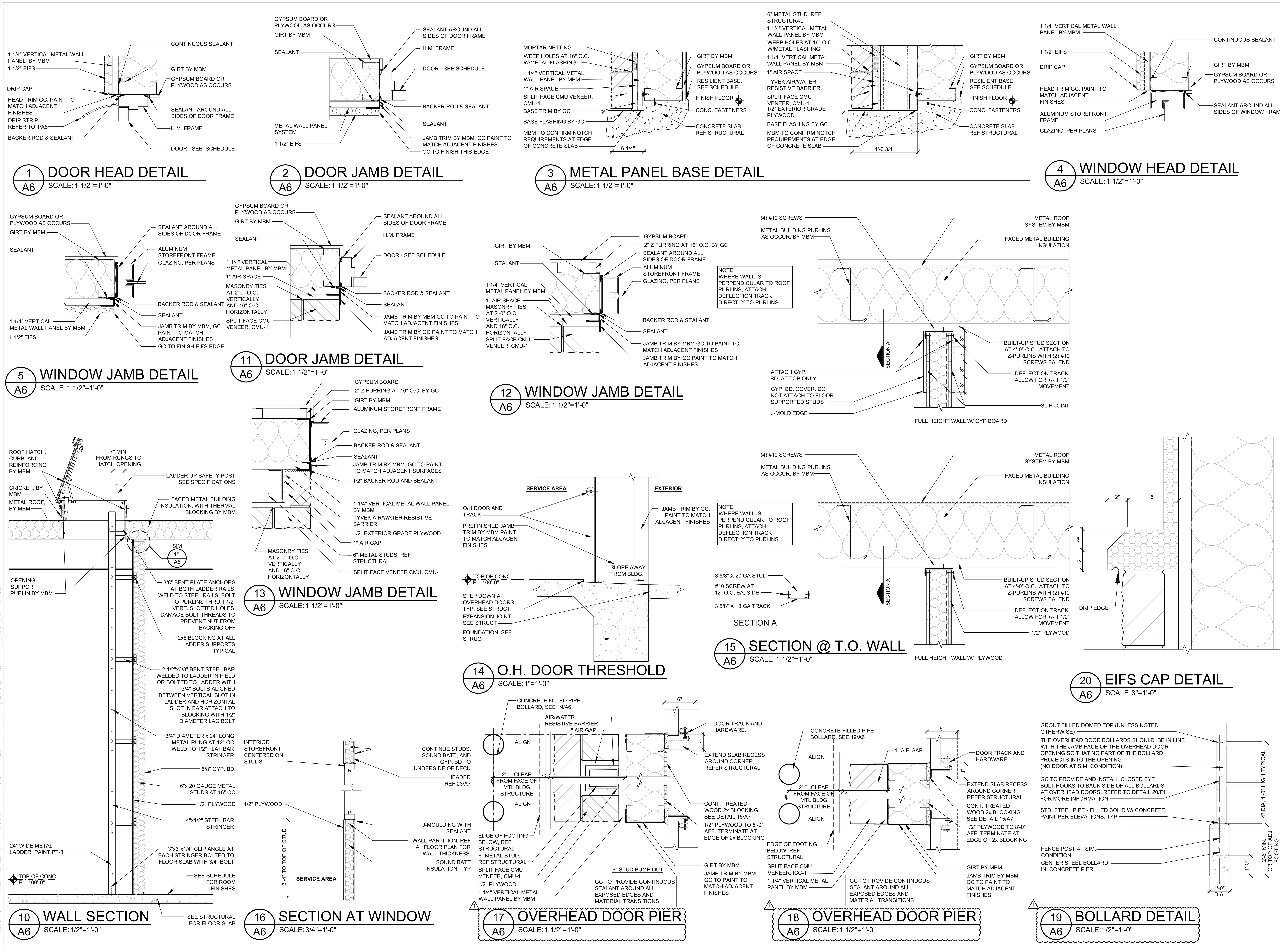
1	04/16/20	ADD #1

PROPERTY NO.:		160085
6 DIGIT NO.:		906983
4 DIGIT NO.:		78C9
AOR PROJECT NUMBER:		1955B71
TO PERMIT:	DATE:	03/26/2020
TO BID:	DATE:	##-##-##

KMP

SHEET TITLE:
WALL SECTIONS

SHEET NUMBER:
A5.1



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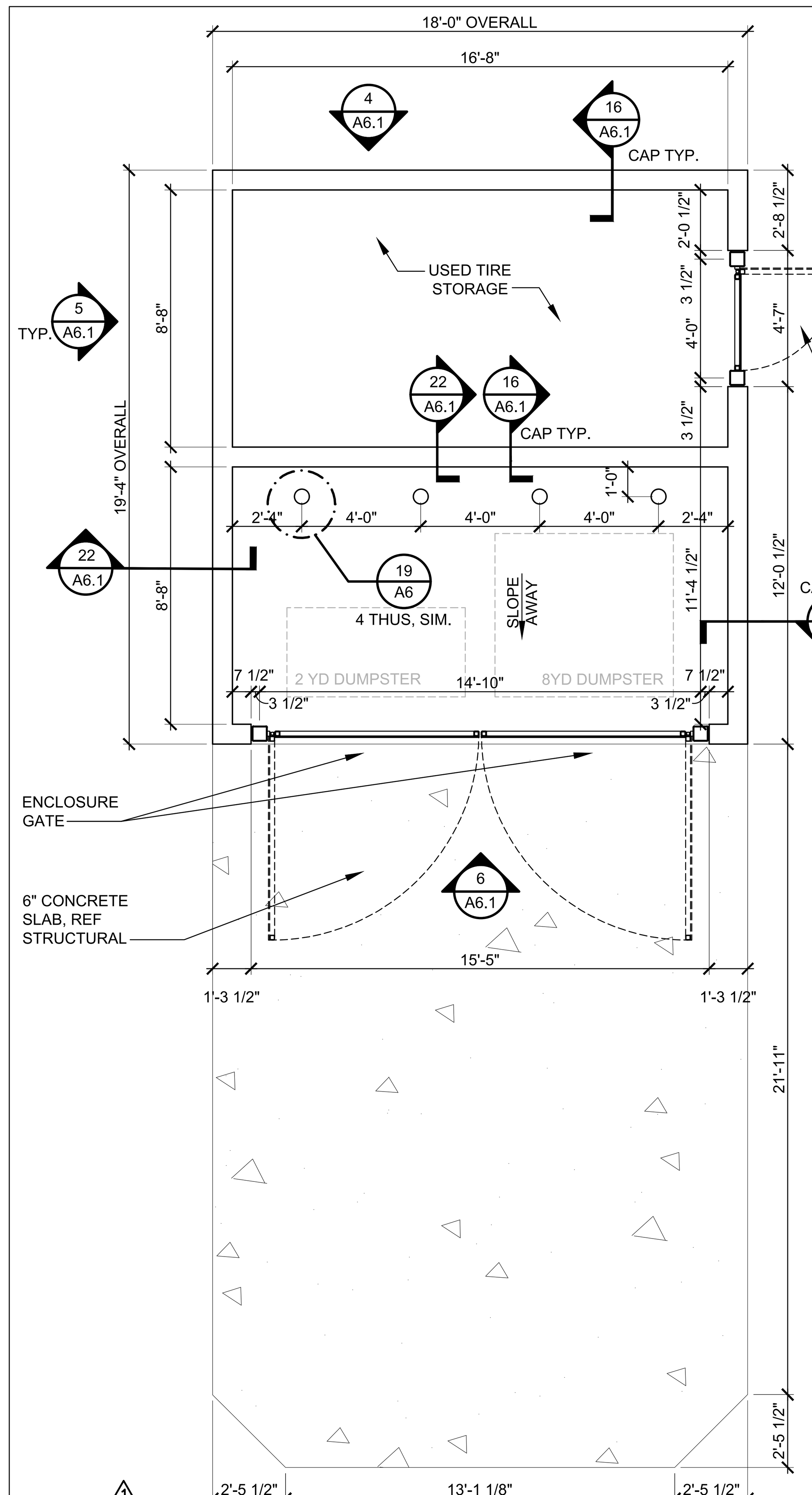
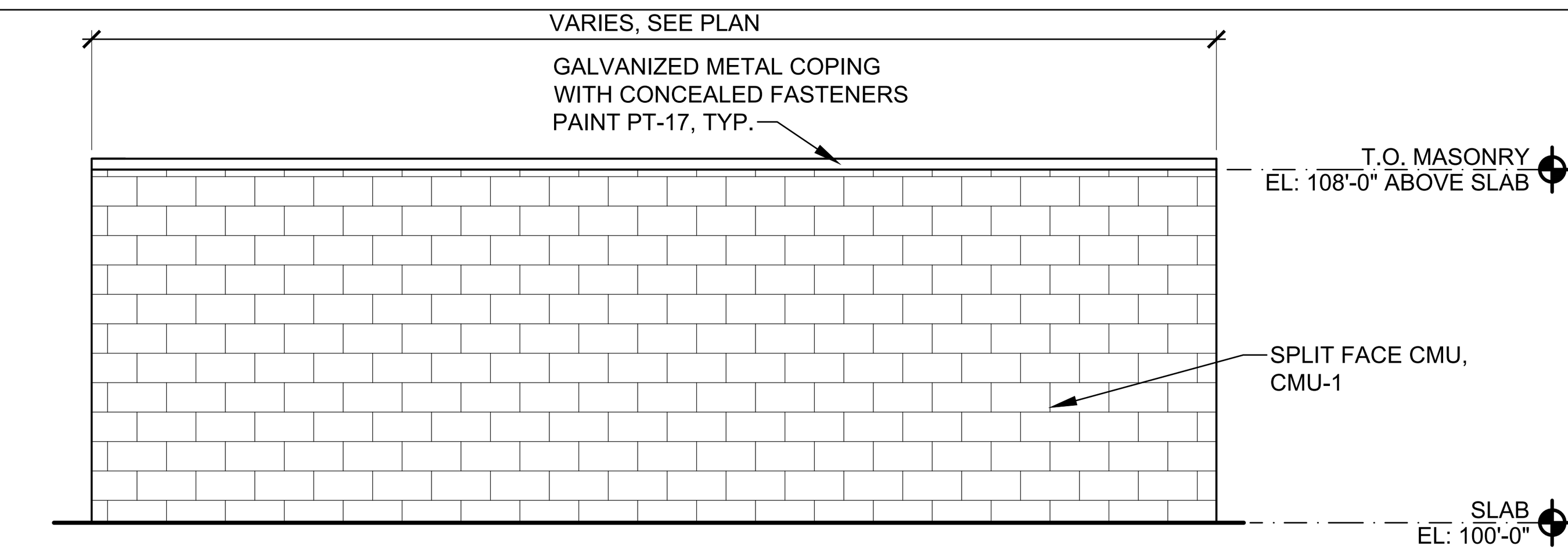
SHEET TITLE:
WALL SECTIONS & DETAILS

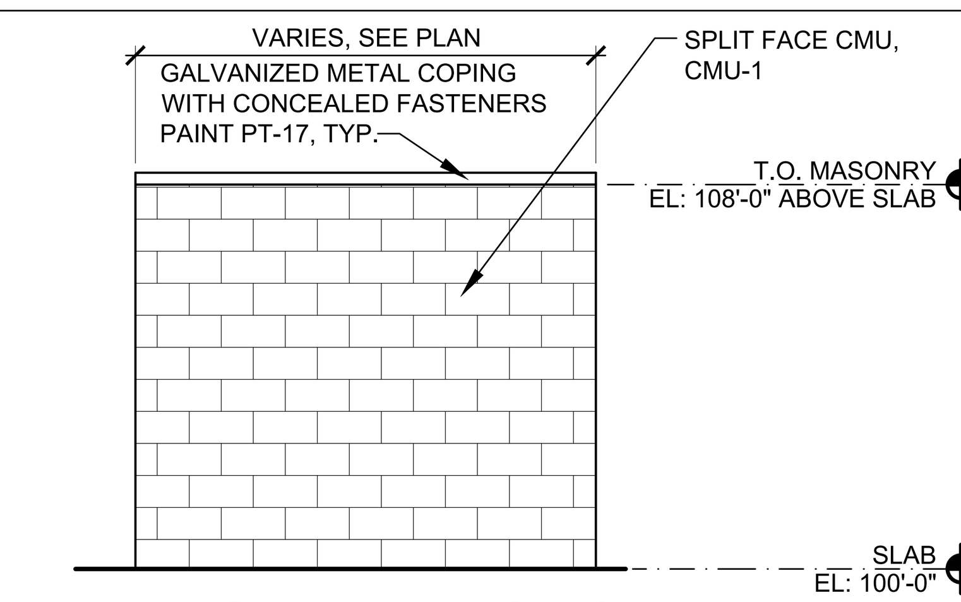
SHEET NUMBER:
A6



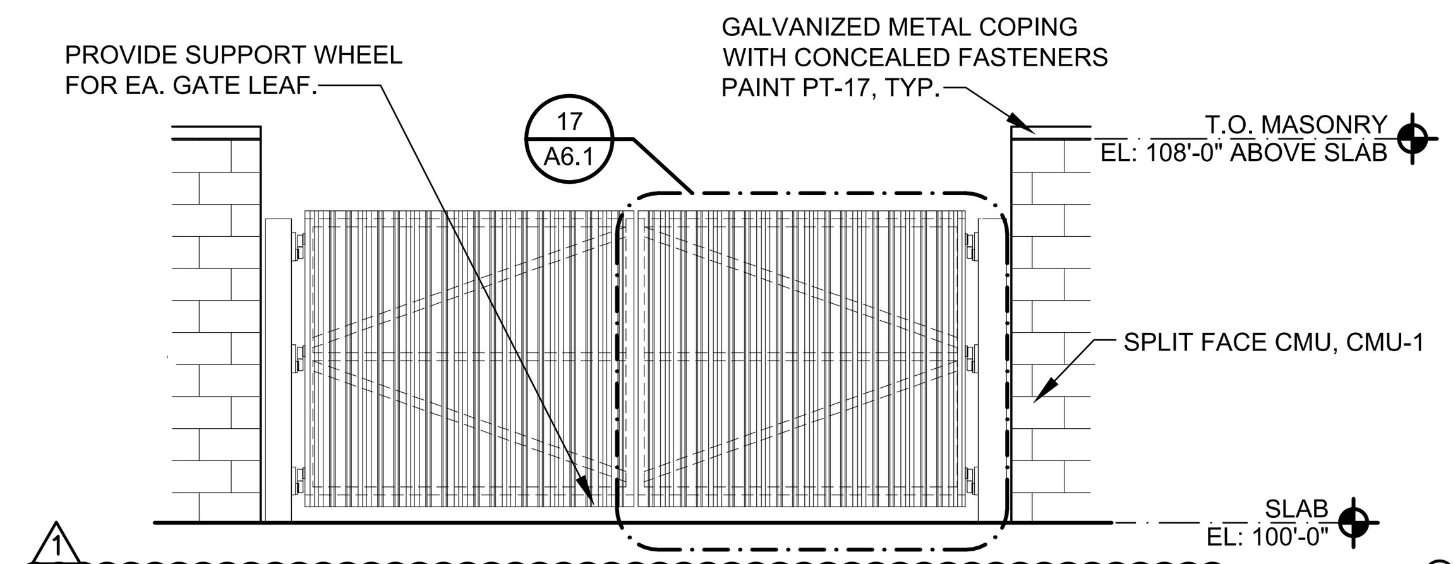
1 TRASH/TIRE ENCLOSURE PLAN
A6.1 SCALE: 1/4"=1'-0"



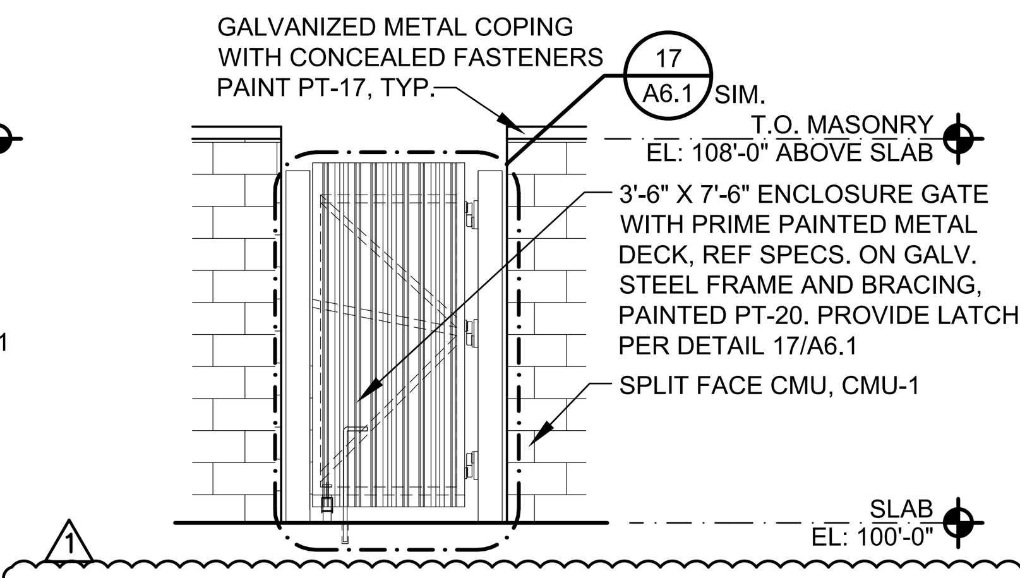
4 TRASH/TIRE ENCLOSURE ELEV.
A6.1 SCALE: 1/4"=1'-0"



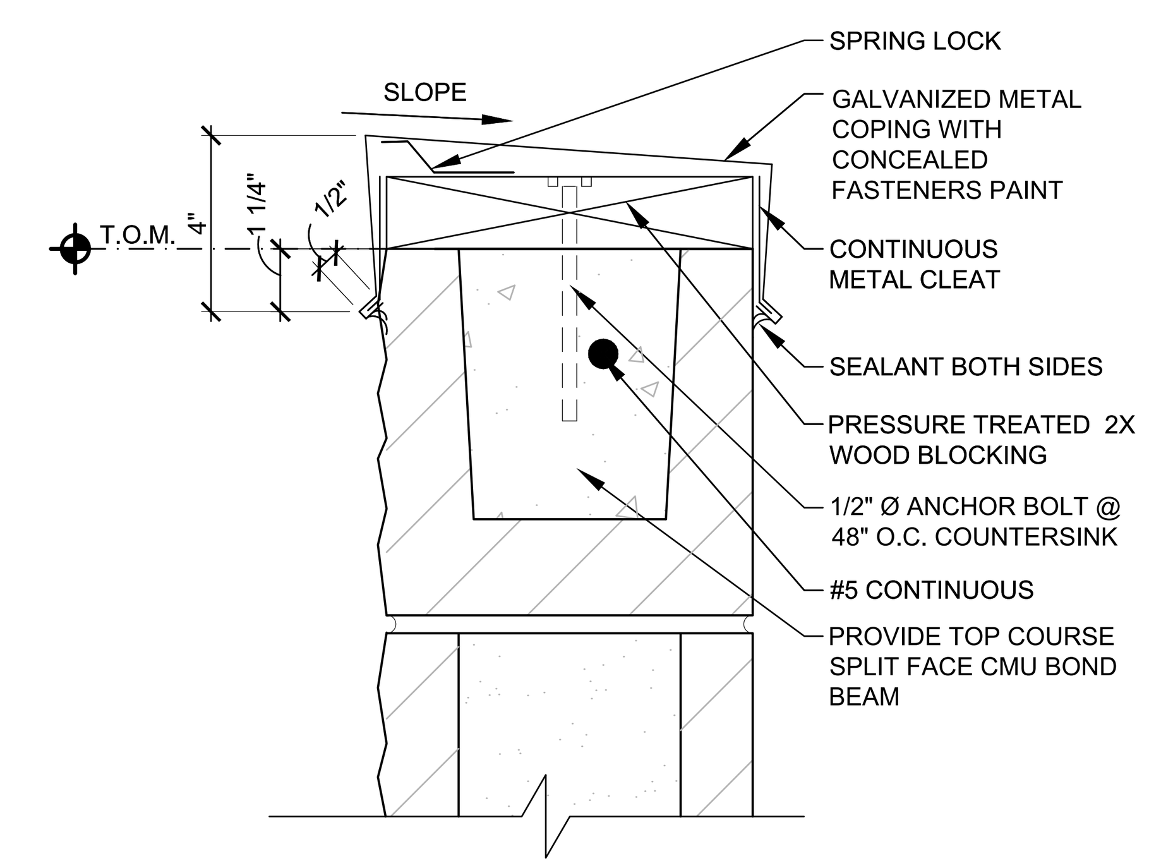
5 TYPICAL TRASH/ TIRE ENCLOSURE ELEV.
A6.1 SCALE: 1/4"=1'-0"



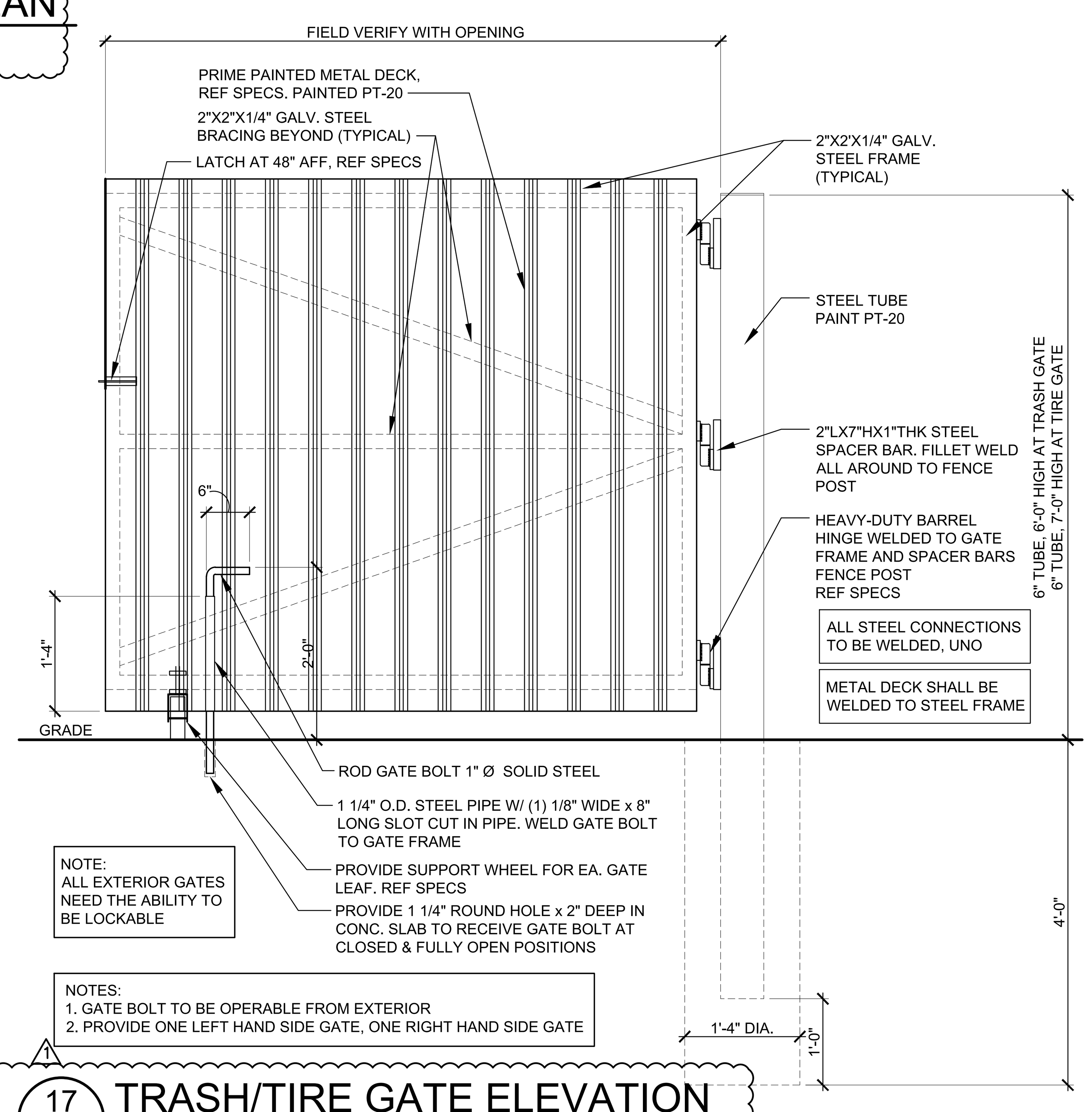
6 TRASH/TIRE ENCLOSURE ELEV.
A6.1 SCALE: 1/4"=1'-0"



7 TRASH/TIRE ENCLOSURE ELEV.
A6.1 SCALE: 1/4"=1'-0"

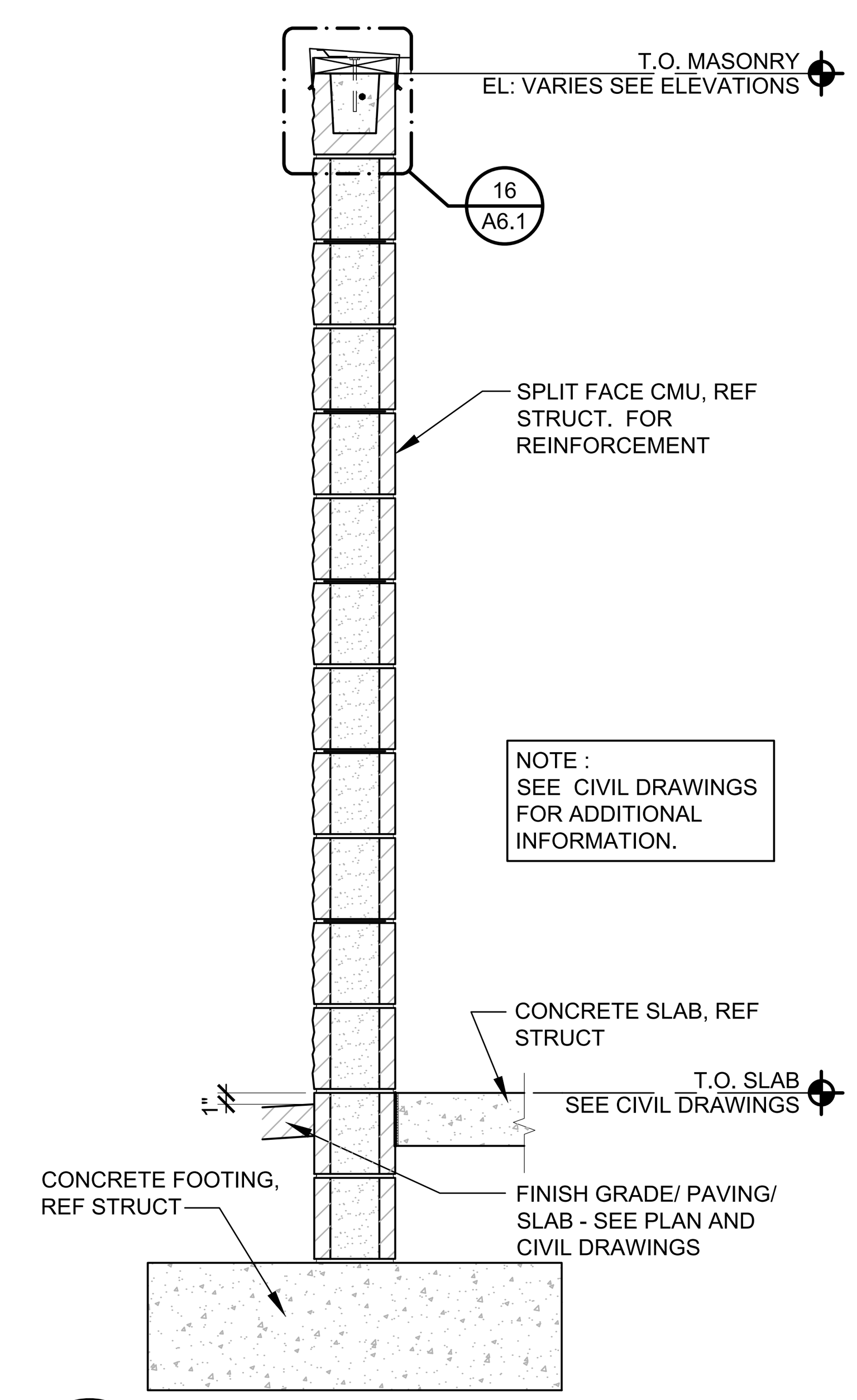


16 TRASH ENCLOSURE MASONRY CAP DETAIL
A6.1 SCALE: 3"=1'-0"



NOTES:
1. GATE BOLT TO BE OPERABLE FROM EXTERIOR
2. PROVIDE ONE LEFT HAND SIDE GATE, ONE RIGHT HAND SIDE GATE

17 TRASH/TIRE GATE ELEVATION
A6.1 SCALE: 3/4"=1'-0"



22 MASONRY SECTION
A6.1 SCALE: 3/4"=1'-0"

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4 DIGIT NO.:	78C9
AOR PROJECT NUMBER:	1955B71
TO PERMIT: DATE:	03/26/2020
TO BID: DATE:	##-##-##

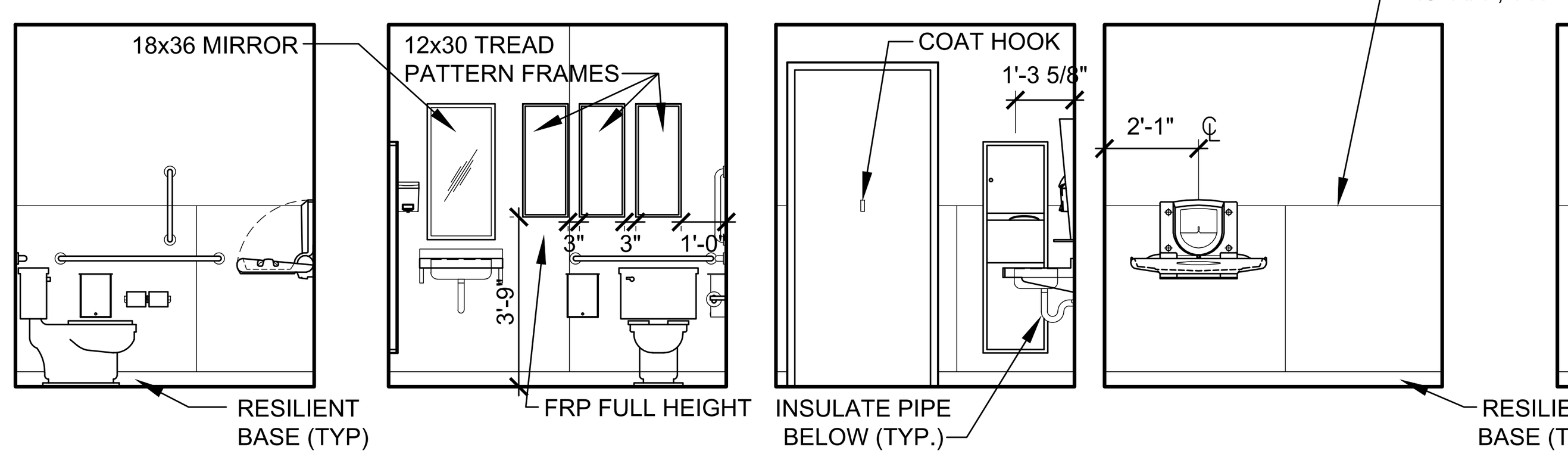
KMP

SHEET TITLE:
TRASH/TIRE ENCLOSURE DETAILS

SHEET NUMBER:
A6.1

GENERAL NOTES:

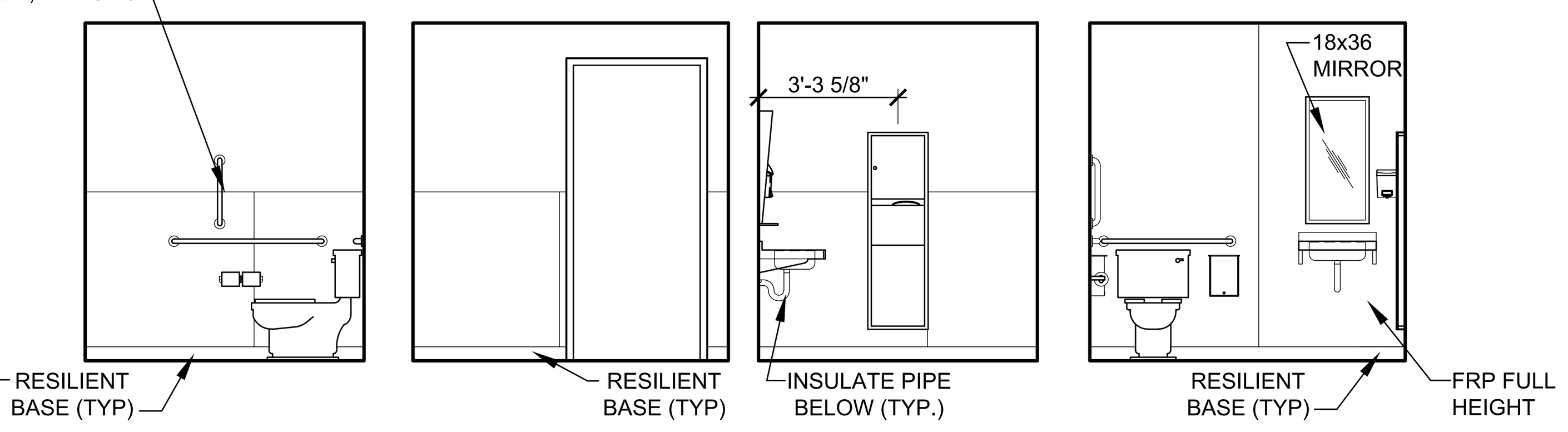
1. SEE SHEET N1 FOR ALL CLEARANCE REQUIREMENTS AND MOUNTING HEIGHTS FOR ACCESSORIES
2. INSTALL WOOD BLOCKING AS REQUIRED FOR MOUNTING ACCESSORIES
3. COUNTERSINK ALL CABINET MOUNTING SCREWS



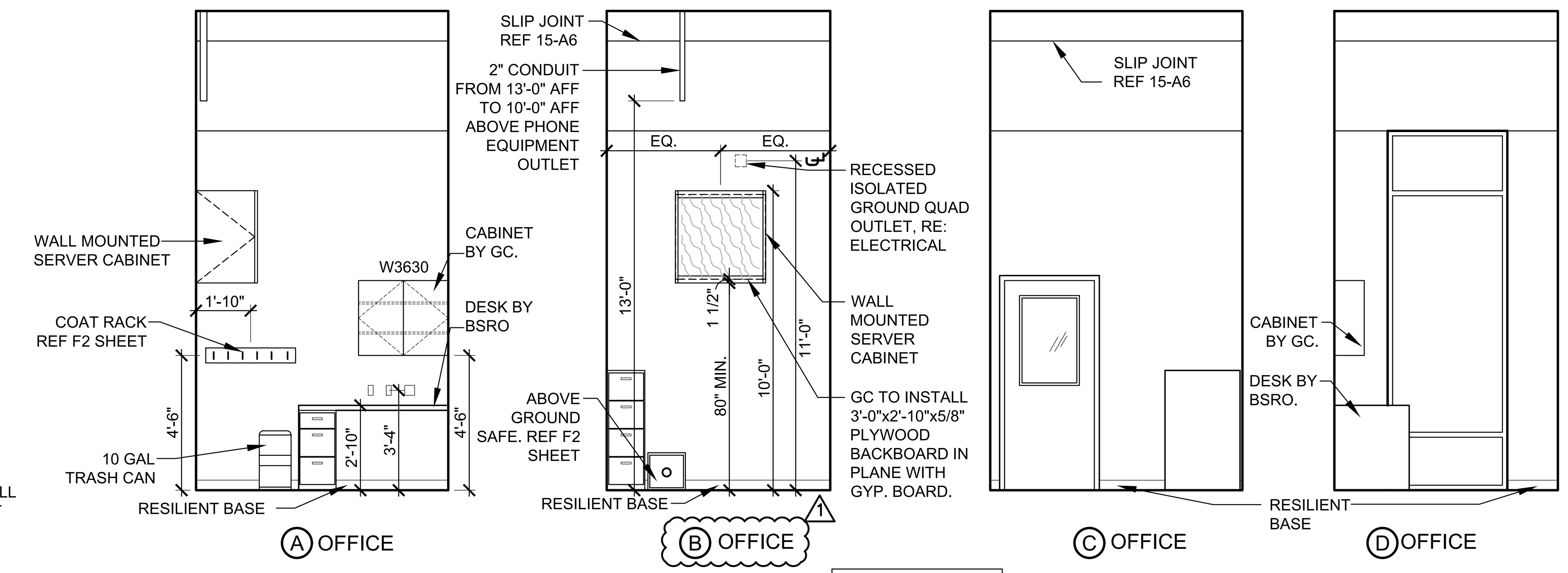
1 INTERIOR ELEVATIONS
A7 SCALE: 1/4"=1'-0"

GENERAL NOTES:

1. SEE SHEET N1 FOR ALL CLEARANCE REQUIREMENTS AND MOUNTING HEIGHTS FOR ACCESSORIES
2. INSTALL WOOD BLOCKING AS REQUIRED FOR MOUNTING ACCESSORIES
3. COUNTERSINK ALL CABINET MOUNTING SCREWS

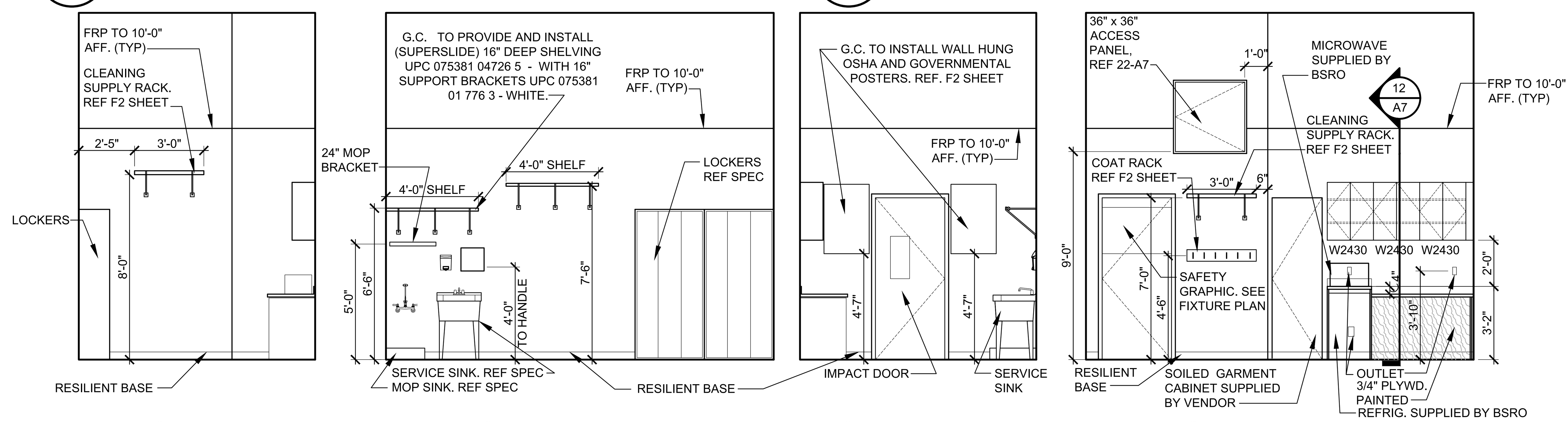


3 INTERIOR ELEVATIONS
A7 SCALE: 1/4"=1'-0"

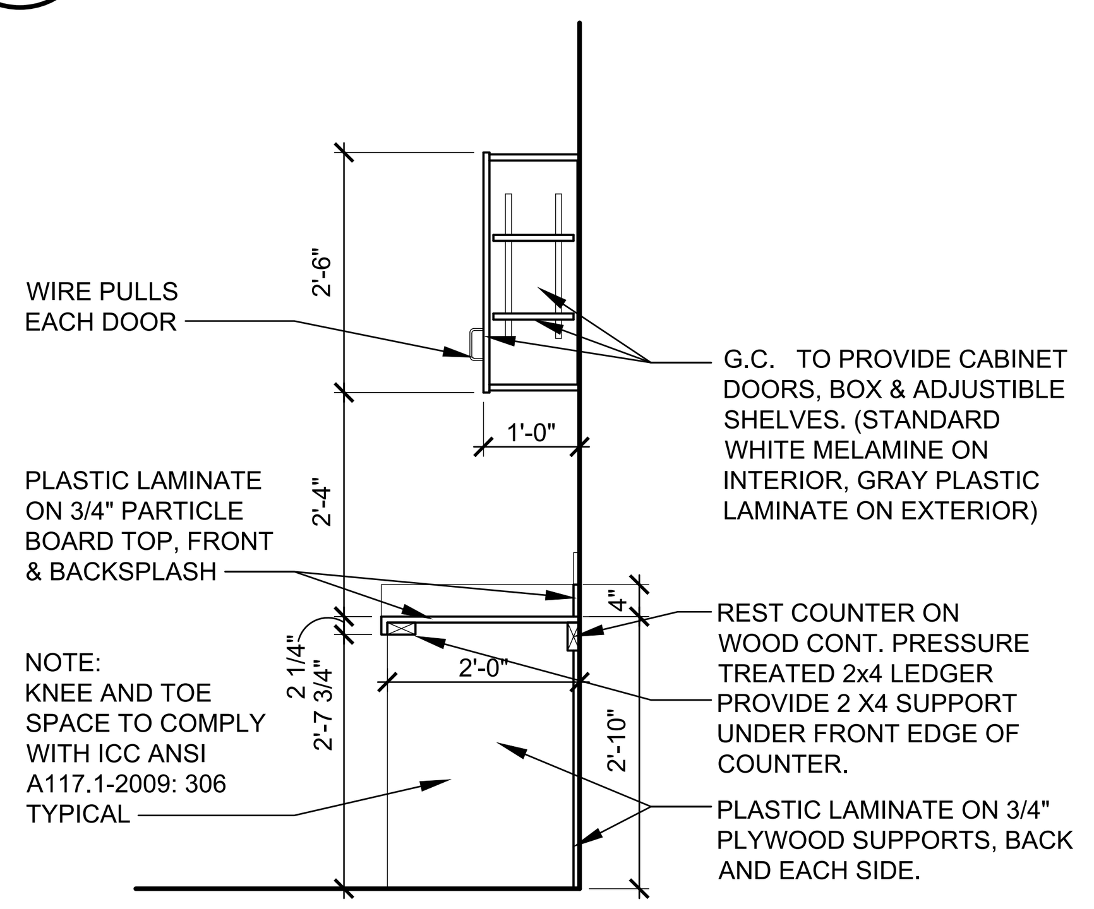


4 INTERIOR ELEVATIONS
A7 SCALE: 1/4"=1'-0"

PAINT 2" CONDUITS TO MATCH ADJACENT WALL

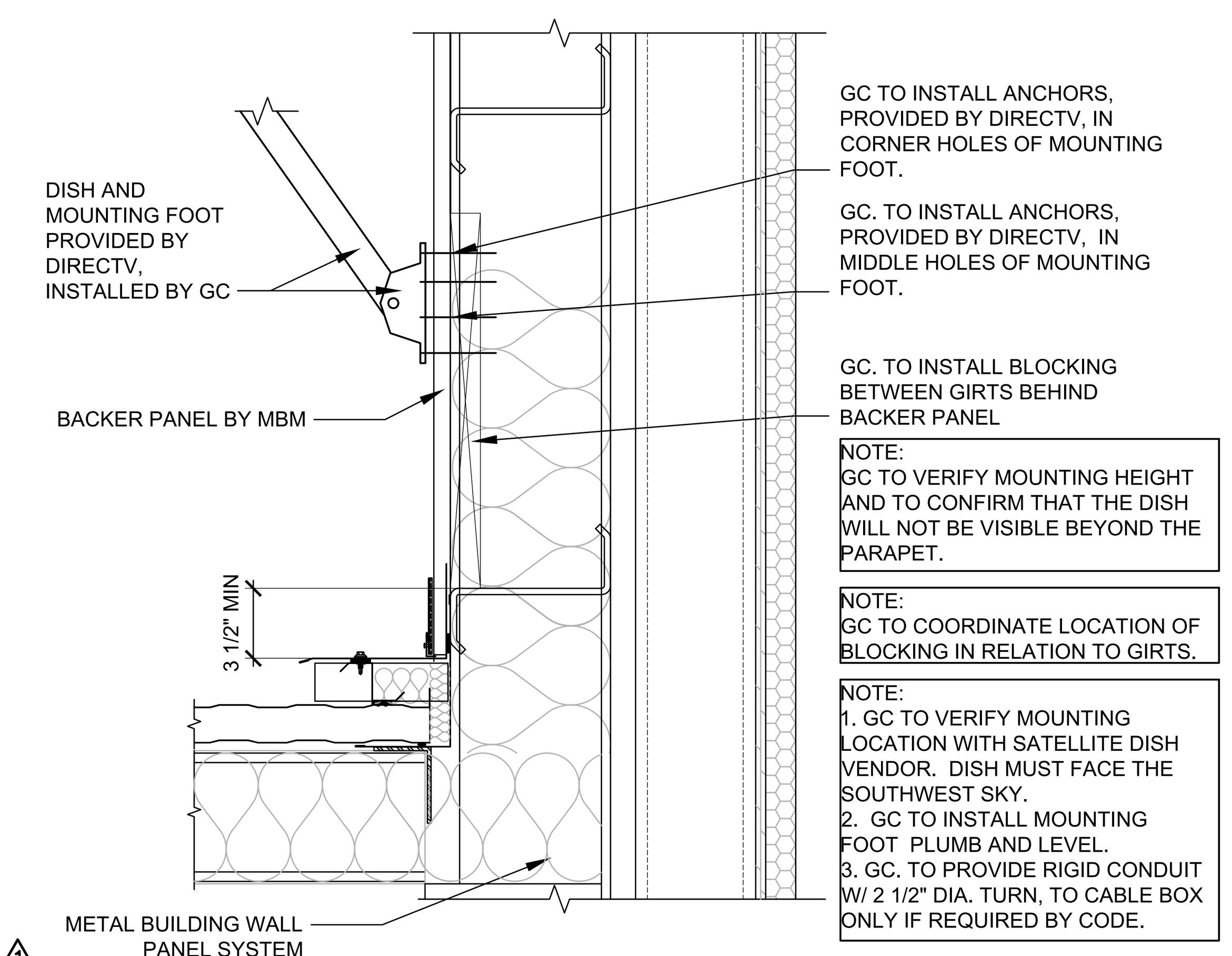


6 INTERIOR ELEVATIONS
A7 SCALE: 1/4"=1'-0"



NOTE: USE GRAY PLASTIC LAMINATE PER SPECIFICATIONS.

12 CABINET SECTION
A7 SCALE: 1/2"=1'-0"



NOTE: GC TO VERIFY MOUNTING HEIGHT AND TO CONFIRM THAT THE DISH WILL NOT BE VISIBLE BEYOND THE PARAPET.

NOTE: GC TO COORDINATE LOCATION OF BLOCKING IN RELATION TO GIRTS.

NOTE:
1. GC TO VERIFY MOUNTING LOCATION WITH SATELLITE DISH VENDOR. DISH MUST FACE THE SOUTHWEST SKY.
2. GC TO INSTALL MOUNTING FOOT PLUMB AND LEVEL.
3. GC. TO PROVIDE RIGID CONDUIT W/ 2 1/2" DIA. TURN, TO CABLE BOX ONLY IF REQUIRED BY CODE.

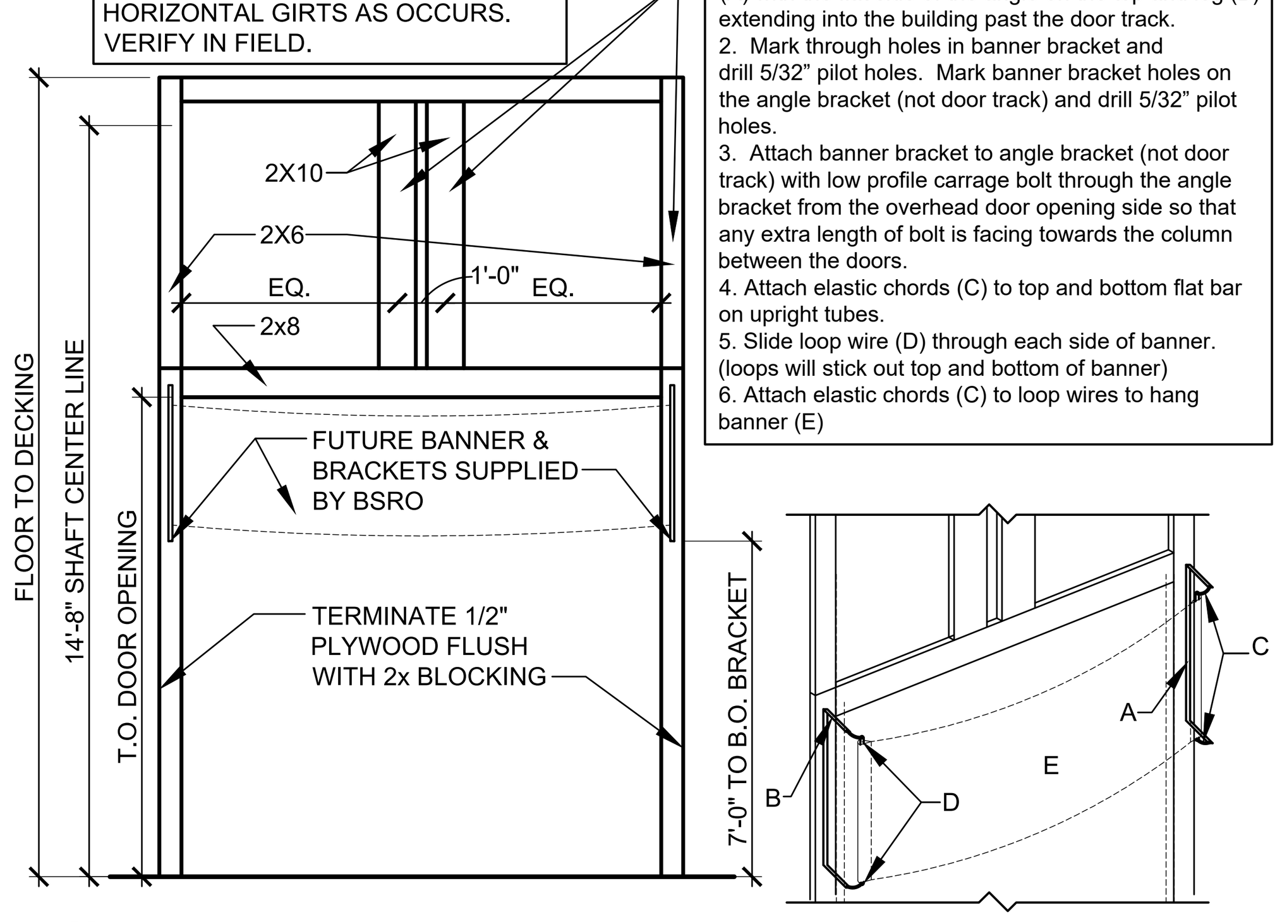
14 SATELLITE MOUNTING DETAIL
A7 SCALE: 1 1/2"=1'-0"

NOTE: G.C. TO VERIFY LOCATION OF WOOD SUPPORTS WITH INSTALLER PRIOR TO DOOR INSTALLATION; WOOD TO BE TREATED LUMBER, PAINTED TO MATCH WALL, PLYWOOD AND METAL BUILDING WALL SYSTEM.

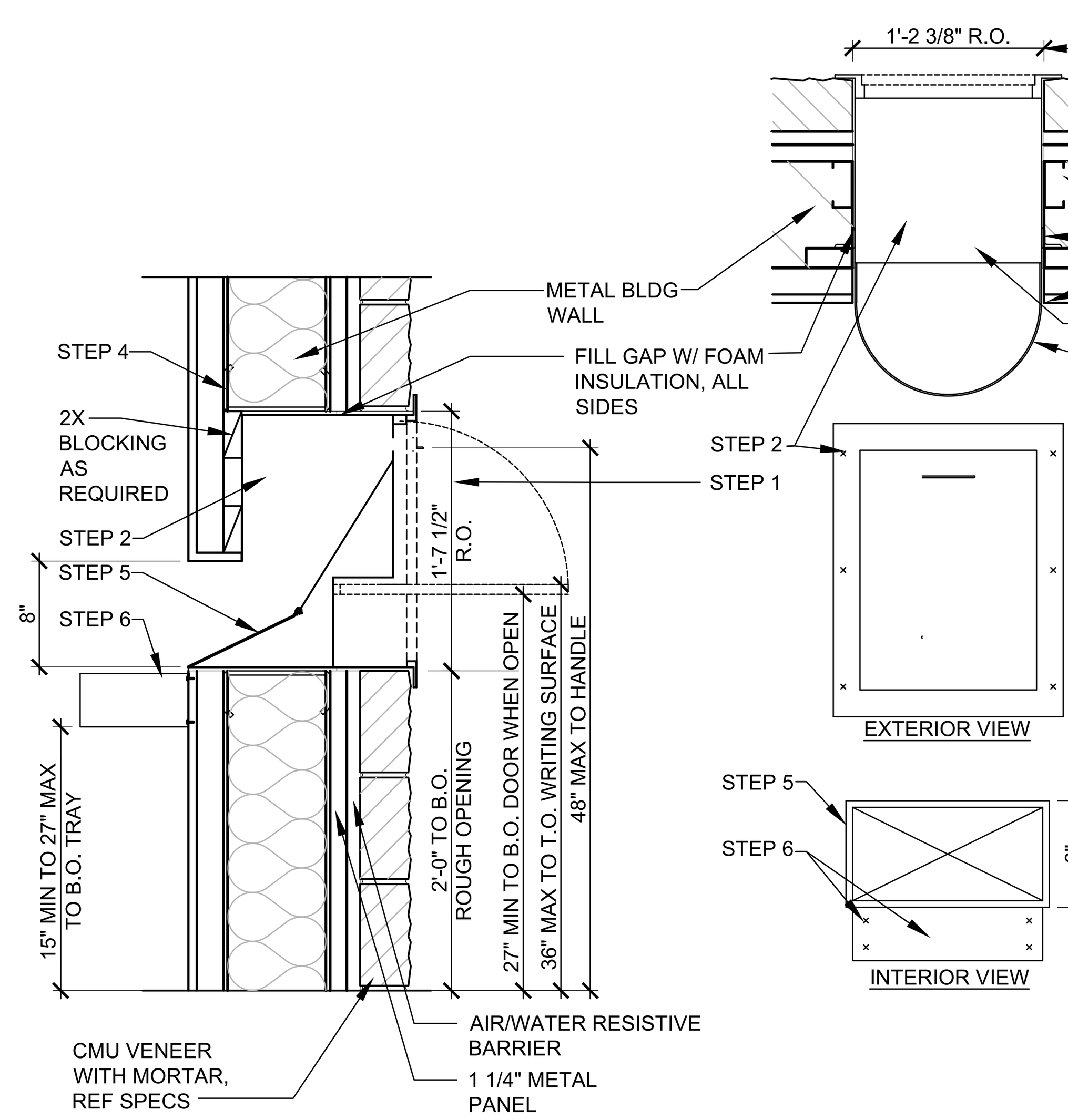
2X10 SUPPORTS TO BE RUN VERTICALLY FROM O.H. DOOR HEAD AND TO BE SECURED AT MINIMUM 3 HORIZONTAL GIRTS AS OCCURS. VERIFY IN FIELD.

MBM TO INSTALL STEEL ANGLE TO GIRT AS REQUIRED TO PROVIDE NECESSARY ATTACHMENT OF 2X10s. VERIFY IN FIELD.

BANNER INSTALLATION INSTRUCTIONS:
1. Place banner bracket adjacent to outside of the overhead door angle bracket supporting the door track (A) with the flat side of the angle on the top and leg (B) extending into the building past the door track.
2. Mark through holes in banner bracket and drill 5/32" pilot holes. Mark banner bracket holes on the angle bracket (not door track) and drill 5/32" pilot holes.
3. Attach banner bracket to angle bracket (not door track) with low profile carrage bolt through the angle bracket from the overhead door opening side so that any extra length of bolt is facing towards the column between the doors.
4. Attach elastic chords (C) to top and bottom flat bar on upright tubes.
5. Slide loop wire (D) through each side of banner. (loops will stick out top and bottom of banner)
6. Attach elastic chords (C) to loop wires to hang banner (E)



15 OH DOOR SUPPORT DETAIL
A7 SCALE: 1/4"=1'-0"



REQUEST UNIT EXTENSION FROM MANUFACTURER FOR INCREASED WALL THICKNESS. VERIFY SCREWS DO NOT EXTEND TOWARD PUBLIC

STEP 1:
PROVIDE OPENING IN METAL BUILDING WALL PANEL. VERIFY SIZE WITH UNIT SHIPPED.

STEP 2:
INSERT UNIT INTO OPENING, MARK (6) MOUNTING HOLE LOCATIONS & INSTALL 1/4" LAG SHIELDS (NOT INCLUDED). BOLT UNIT TO BUILDING W/ 1/4"x1 1/2" LAG BOLTS (NOT INCLUDED) CAULK AROUND TOP SIDES OF UNITS ONLY.

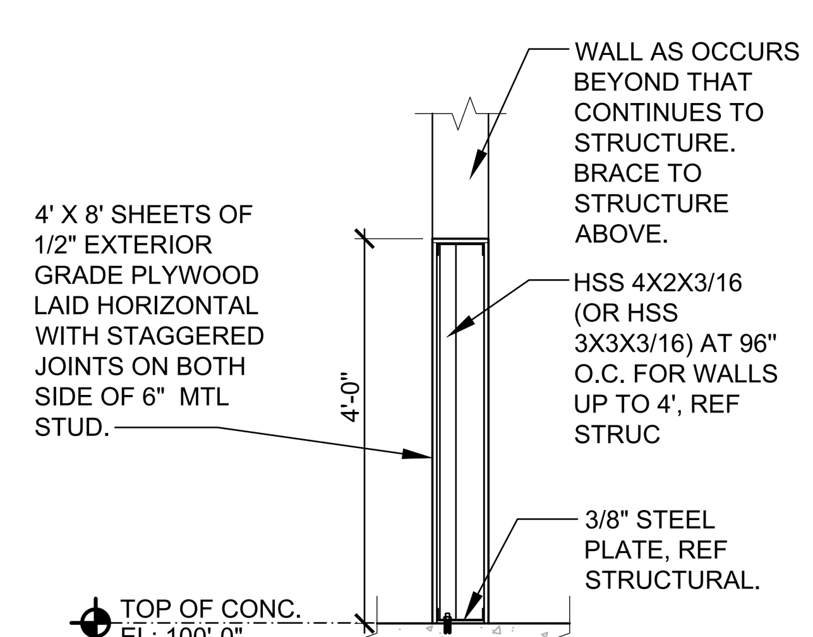
STEP 3:
SECURE MOUNTING ANGLES TO INSIDE OF BUILDING WALL, USING LARGE HOLES W (6) 1/4" LAG SHIELDS & 1/4"x 1-1/2" LAG BOLTS. (NOT INCLUDED) USING SMALL HOLES IN MOUNTING ANGLES AS TEMPLATE, DRILL .128" DIA. (#30) HOLES IN UNIT & SECURE ANGLES TO UNIT W (6) #10x1/2" SHEET METAL SCREWS

STEP 4:
INSTALL METAL STUDS @ PERIMETER OF BOX OPENING @ INTERIOR WALL. USE J-CLIP TO ATTACH DRYWALL TO STUD @ OPENING.

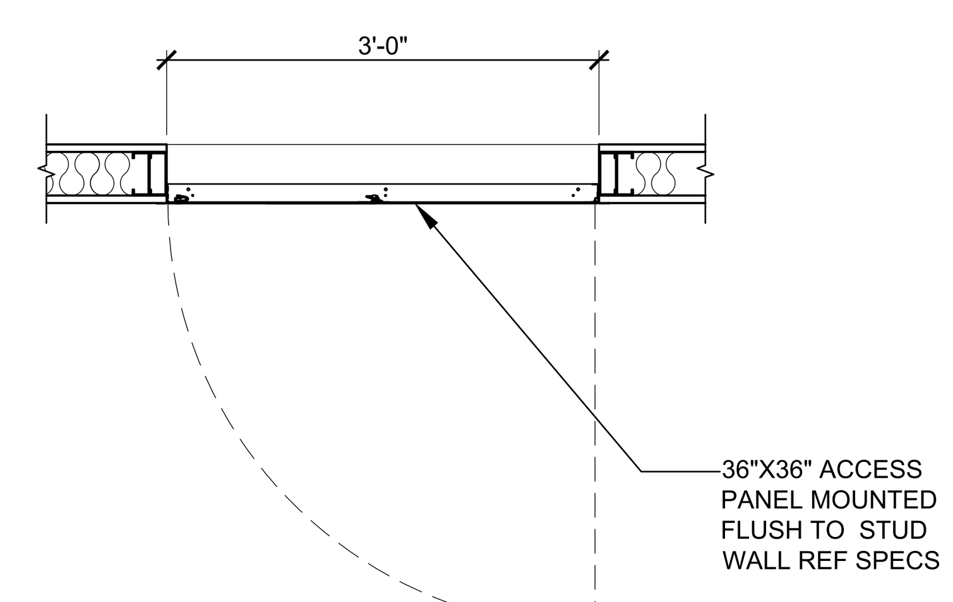
STEP 5:
INSTALL SHEET METAL INSERT TO CLOSE GAP BETWEEN UNIT AND INTERIOR WALL OPENING. GRIND AND SMOOTH ALL EXPOSED EDGES. ENSURE THAT TRANSITION BETWEEN THE UNIT AND SHEET METAL INSERT IS A SMOOTH AND CONSISTENT EDGE.

STEP 6:
ATTACH TRAY TO INTERIOR WALL W/ (4) #10 X 1/2" SHEET METAL SCREWS

16 KEY DROP BOX
A7 SCALE: 1"=1'-0"

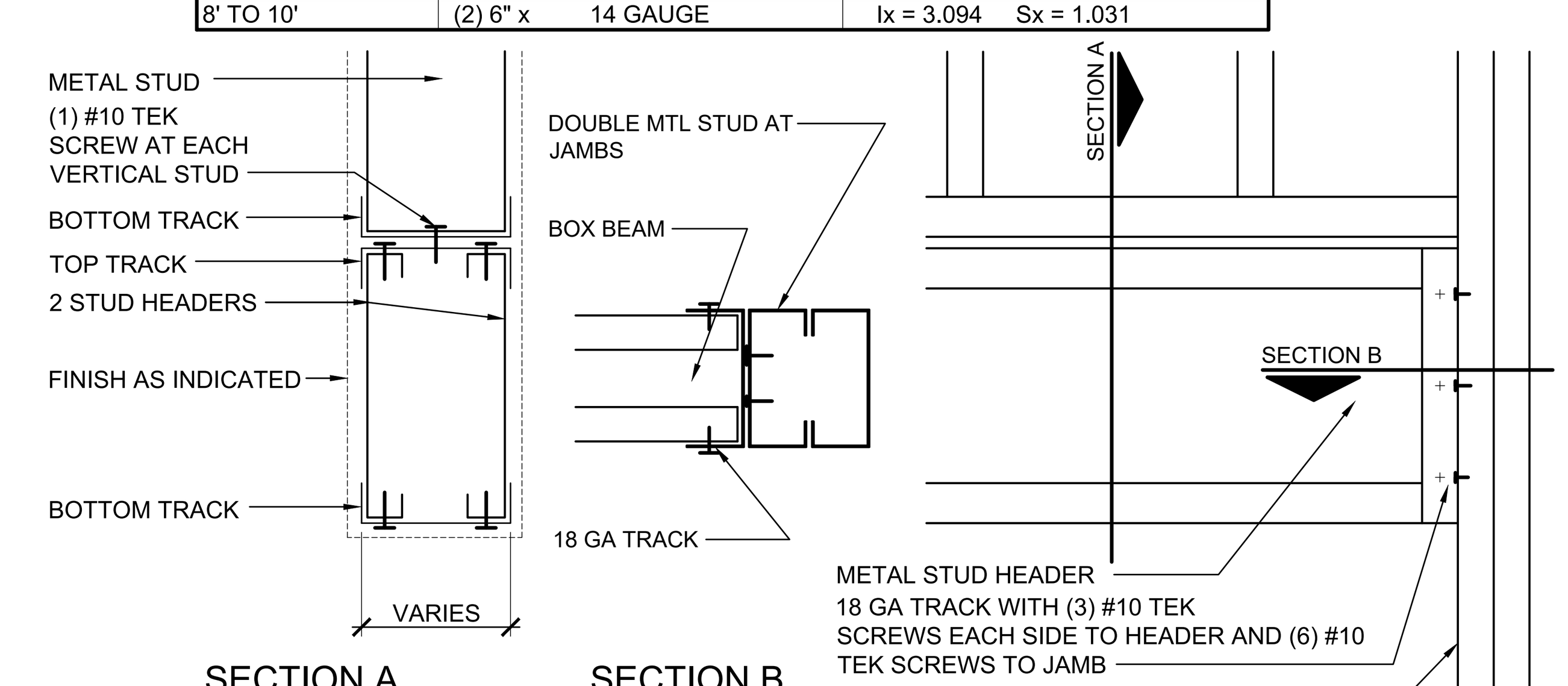


20 PARTIAL HEIGHT WALL SECTION
A7 SCALE: 1/2"=1'-0"



22 ACCESS PANEL DETAIL
A7 SCALE: 3/4"=1'-0"

INTERIOR NON-LOAD BRG PARTITION HEADER SCHEDULE		
HEADER LENGTH	HEADER MEMBERS	MINIMUM EFFECTIVE PROPERTIES PER STUD
2' TO 6'	(2) 6" x 18 GAUGE	Ix = 2.042 Sx = 0.670
6' TO 8'	(2) 6" x 16 GAUGE	Ix = 2.518 Sx = 0.839
8' TO 10'	(2) 6" x 14 GAUGE	Ix = 3.094 Sx = 1.031



23 HEADER CONNECTION DETAIL
A7 SCALE: 1 1/2"=1'-0"

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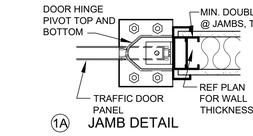
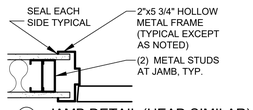
SHEET TITLE:
INTERIOR ELEVS, SECTIONS & DETAILS

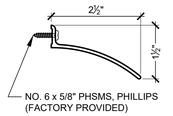
SHEET NUMBER:
A7



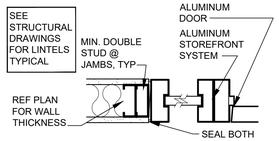
1A JAMB DETAIL



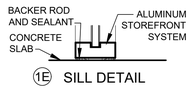
1B JAMB DETAIL (HEAD SIMILAR)



1C DRIP CAP DETAIL
INSTALLED OVER ALL EXTERIOR MAN DOORS



1D JAMB DETAIL (HEAD SIMILAR)



1E SILL DETAIL

1 A8 DOOR DETAILS
SCALE: NOT TO SCALE

DOOR SCHEDULE

NOTE: CONTRACTOR TO FURNISH AND INSTALL ALL DOORS, DOOR FRAMES, SIGNS AND HARDWARE.

DOOR							FRAME			LABEL	SIGN	DETAIL	REMARKS
MARK	ROOM NAME	TYPE	QTY	SIZE W xH xT	MAT'L	FINISH	MAT'L	FINISH	TYPE	"UL"			
01	CUSTOMER SHOWROOM	F	1	3'-0" X 7'-0" X 1 3/4"	AL	BLACK ANODIZED	AL	BLACK ANODIZED	P	-	EXIT	5/A6	SEE-D04, D14, D15 & D17
02	CUSTOMER SHOWROOM	F	1	3'-0" X 7'-0" X 1 3/4"	AL	BLACK ANODIZED	AL	BLACK ANODIZED	P	-	-	1-D/A8	SEE-D04
03	OFFICE	H	1	3'-0" X 7'-0" X 1 3/4"	HM	PT-4 (SHOWROOM) PT-1 (OFFICE)	HM	PT-4 (SHOWROOM) PT-1 (OFFICE)	P	-	OFFICE	1-B/A8	SEE-D06, D13 & D15
04	UNISEX TOILET	G	1	3'-0" X 7'-0 X 1 3/4"	HM	PT-4 (SHOWROOM) PT-1 (TOILET)	HM	PT-4 (SHOWROOM) PT-1 (TOILET)	P	-	REST ROOM	1-B/A8	SEE-D10, D13 & D15
05	BREAK AREA	L	1	3'-0" X 7'-0" - TRAFFIC	PE	MANUFACTURER'S GRAY	HM NO STOP	PT-1 (BREAK AREA) PT-4 (SERVICE BAYS)	P	-	BREAKROOM	1-A/A8	SEE-D06, D07, D08, D09, & D15
06	SHOP TOILET	G	1	3'-0" X 7'-0" X 1 3/4"	HM	PT-1	HM	PT-1	P	-	SHOP REST ROOM	1-B/A8	SEE- D10 & D15
07	SERVICE BAY	K	1	3'-0" X 7'-0" X 1 3/4"	HM	PT-4 (SERVICE BAYS) EXTERIOR - SEE A4	HM	PT-4 (SERVICE BAYS) EXTERIOR - SEE A4	M	-	EXIT	1/A6 & 2/A6	SEE-D01, D06, & D13
08	SERVICE BAY	J	1	10'-0" X 10'-0" X 1 3/4"	-	PRE-FINISHED	-	-	-	-	-	15/A7	SEE-D01, D02, D03, D04 & D09
09	SERVICE BAY	J	1	10'-0" X 10'-0" X 1 3/4"	-	PRE-FINISHED	-	-	-	-	-	15/A7	SEE-D01, D02, D03, D04 & D09
10	SERVICE BAY	J	1	10'-0" X 10'-0" X 1 3/4"	-	PRE-FINISHED	-	-	-	-	-	15/A7	SEE-D01, D02, D03, D04 & D09
11	SERVICE BAY	J	1	10'-0" X 10'-0" X 1 3/4"	-	PRE-FINISHED	-	-	-	-	-	15/A7	SEE-D01, D02, D03, D04 & D09
12	SERVICE BAY	J	1	10'-0" X 12'-0" X 1 3/4"	-	PRE-FINISHED	-	-	-	-	-	15/A7	SEE-D01, D02, D03, D04 & D09
13	SERVICE BAY	J	1	10'-0" X 12'-0" X 1 3/4"	-	PRE-FINISHED	-	-	-	-	-	15/A7	SEE-D01, D02, D03, D04 & D09
14	SERVICE BAY	J	1	10'-0" X 10'-0" X 1 3/4"	-	PRE-FINISHED	-	-	-	-	-	15/A7	SEE-D01, D02, D03, D04 & D09
15	SERVICE BAY	N	1	6'-0" X 10'-0" X 1 3/4"	-	PRE-FINISHED	-	-	-	-	-	15/A7	SEE-D01, D02, D03, D04 & D09
16	SERVICE BAY	G	1	4'-0" X 7'-0" X 1 3/4"	HM	PT-4 (SERVICE BAYS) EXTERIOR - SEE A4	HM	PT-4 (SERVICE BAYS) EXTERIOR - SEE A4	M	-	EXIT	1/A6 & 2/A6	SEE-D01 & D13

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR		WALLS												CEILING			NOTES
		MAT'L	FIN.	LEFT	FIN.	BASE	TOP	FIN.	BASE	RIGHT	FIN.	BASE	BOTTOM	FIN.	BASE	MAT'L	FIN.	HEIGHT	
100	CUSTOMER SHOWROOM	CONC.	SEALED	GYP. BD.	SEE F2	RB	GYP. BD.	SEE F2	RB	GYP. BD.	SEE F2	RB	GYP. BD.	SEE F2	RB	O.T.S.	PT-2	-	SEE RF2, RF3, RF8
101	UNISEX TOILET	CONC.	SEALED	GYP. BD./ FRP	SEE A2	RB	GYP. BD./ FRP	SEE A2	RB	GYP. BD./ FRP	SEE A2	RB	GYP. BD./ FRP	SEE A2	RB	GYP. BD.	PT-3	8'-0"	SEE RF2, RF4, RF6, RF8
102	OFFICE	CONC.	SEALED	GYP. BD.	SEE A2	RB	GYP. BD.	SEE A2	RB	GYP. BD.	SEE A2	RB	GYP. BD.	SEE A2	RB	O.T.S.	PT-2	-	SEE RF2, RF3, RF8
103	SHOP TOILET	CONC.	SEALED	GYP. BD./ FRP	SEE A2	RB	GYP. BD./ FRP	SEE A2	RB	GYP. BD./ FRP	SEE A2	RB	GYP. BD./ FRP	SEE A2	RB	GYP. BD.	PT-3	8'-0"	SEE RF2, RF4, RF6, RF8
104	BREAK AREA	CONC.	SEALED	GYP. BD. / FRP	SEE A2	RB	GYP. BD. / FRP	SEE A2	RB	GYP. BD. / FRP	SEE A2	RB	GYP. BD. / FRP	SEE A2	RB	O.T.S.	PT-2	-	SEE RF2, RF3, RF6, RF8
105	SERVICE BAYS	CONC.	SEALED	PLYWD.	SEE A2	-	PLYWD.	SEE A2	-	PLYWD.	SEE A2	-	PLYWD.	SEE A2	-	O.T.S.	PT-2 PT-3	-	SEE RF1, RF3, RF5, RF7, RF8
106	INVENTORY	CONC.	SEALED	PLYWD.	SEE A2	-	PLYWD.	SEE A2	-	OPEN	-	-	PLYWD.	SEE A2	-	O.T.S.	PT-2 PT-3	-	SEE RF3, RF7, RF8
107	UTILITY AREA #1	CONC.	SEALED	PLYWD.	SEE A2	-	PLYWD.	SEE A2	-	PLYWD.	SEE A2	-	PLYWD.	SEE A2	-	O.T.S.	PT-3	-	SEE RF3, RF5, RF7
108	UTILITY AREA #2	CONC.	SEALED	OPEN	-	-	PLYWD.	SEE A2	-	PLYWD.	SEE A2	-	PLYWD.	SEE A2	-	O.T.S.	PT-2 PT-3	-	SEE RF5, RF7, RF8

DOOR SCHEDULE NOTES

GC PACKAGE AVAILABLE FROM NATIONAL VENDOR - DH PACE, INC. (417)831-5585

GENERAL NOTES:
1. ALL THRESHOLDS AT EXTERIOR DOORS TO BE SET IN FULL BED OF MASTIC.
2. ALL HARDWARE SHALL CONFORM WITH ICC A117.1 AND GOVERNING CODES.

D01. INSULATE EXTERIOR DOORS AS REQUIRED BY CRITERIA IN SPECIFICATIONS.
D02. TRACK AND HARDWARE BY O.H. DOOR MANUFACTURER.
D03. ACTUAL DOOR SIZE IS 2" WIDER AND 1" HIGHER THAN DOOR OPENING (PROVIDE FOR 1" LAP AT HEAD AND JAMBS)
D04. HARDWARE BY DOOR MANUFACTURER REFER TO SPECIFICATIONS.
D05. ELECTRIC OPERATOR
D06. PROVIDE DOOR LITE REFER DOOR TYPES.
D07. GC. TO FIELD VERIFY DOOR SIZE PRIOR TO ORDERING DOOR.
D08. DOOR COLOR GRAY.
D09. BRUSH EDGE SEALS BY DOOR MANUFACTURER.
D10. UNDERCUT DOOR 1/2".
D11. PREP GATE FOR ELECTRIC STRIKE (REMOTE BUZZER TO BE LOCATED AT MVS DESK.)
D13. DOOR & FRAME TO BE PAINTED TO MATCH ADJACENT WALL UNO.
D14. LOCKING HARDWARE ON ENTRY DOOR TO HAVE KEYED ACCESS FROM THE EXTERIOR AND THUMB TURNS ON INTERIOR.
D15. GC. TO PROVIDE TACTILE DOOR SIGNAGE AS NOTED TO COMPLY WITH ADA.
D16. VERIFY HARDWARE QUANTITIES FOR PER LEAF (EA. LEAF).
D17. PROVIDE PLATE REINFORCEMENT FOR HOLD OPEN AT DOOR FRAME AND ON THE EXTERIOR OF THE ALUMINUM DOORS WITH THROUGH BOLTS FOR CRASH CHAIN.
D18. G.C. TO PROVIDE SIGN ON DOOR - "REQUEST STORE MANAGER TO DISABLE ALARM PRIOR TO OPENING DOOR".
D19. G.C. TO PROVIDE & INSTALL SLIDING DOORS , FRAME, TRIM, AND HARDWARE. COORDINATE WITH DOOR HARDWARE SPECIFICATIONS.
D20. NO KICK PLATE OR PLYWOOD REQUIRED.
D21. PROVIDE DOOR SILENCERS (3)

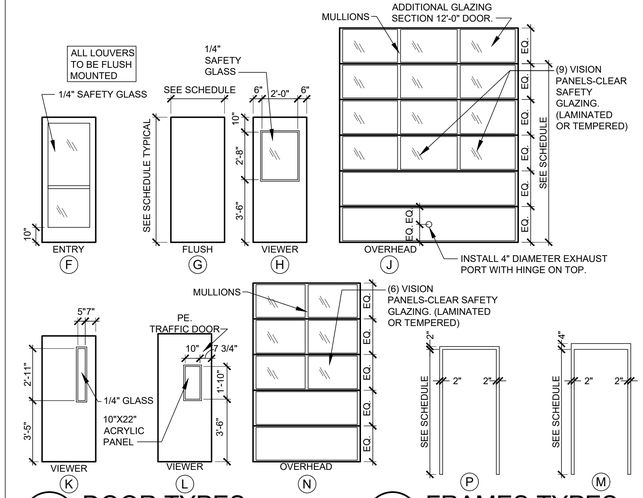
DOOR SCHEDULE MATERIAL KEY

MARK	DESCRIPTION
AL	ALUMINUM
CL	CHAIN LINK
HM	HOLLOW METAL
PE	POLYETHYLENE
WD	WOOD

ROOM FINISH REMARKS

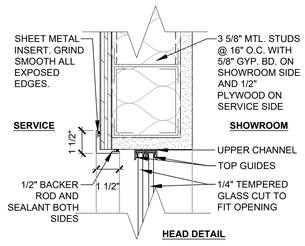
RF1. SERVICE AREA PAINT SCHEME
- ALL GIRTS, COLUMNS, PURLINS AND METAL BUILDING STRUCTURE TO BE PRIMED BY METAL BUILDING MANUFACTURER
- PAINT FROM DIMENSION: FLOOR TO 5'-4" AFF PT-4
- PAINT FROM DIMENSION: 5'-4" AFF TO STRUCTURE PT-1

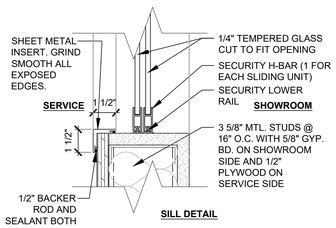
RF2. PAINT ALL EXPOSED CONDUITS, J-BOXES AND EXPOSED SURFACES VISIBLE TO PUBLIC VIEW. PIPING FOR AIR, AND SPRINKLER SYSTEMS ARE NOT TO BE PAINTED. DUCT WORK TO BE PAINT PT-2.
RF3. ALL EXPOSED GIRTS, COLUMNS, GIRTS AND METAL BUILDING STRUCTURE TO BE PRIMED. PAINT EXPOSED STRUCTURE AS NOTED ON SHEET A2.
RF4. USE SHERWIN WILLIAMS WATER BASED CATALYZED EPOXY FOR WALLS. THIS IS A 2-PART PAINT WITH (PART A# / PART B#) = (B70W0211 w/ epoxy hardener B60V25)
RF5. PROVIDE YELLOW SAFETY STRIPING AS SHOWN ON PLANS.
RF6. FRP COLOR: VIK #1276 SATIN LINEN TEXTURE FINISH (WALL PRIMER REQUIRED)
RF7. PROVIDE WHITE FACED INSULATION AT ROOF DECK TO COMPLY WITH 2018 IECC.
RF8. PROVIDE BLACK FACED INSULATION AT ROOF DECK TO COMPLY WITH 2018 IECC.

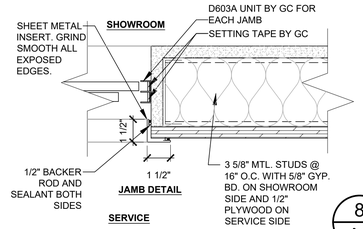


2 A8 DOOR TYPES
SCALE: 1/4"=1'-0"

3 A8 FRAMES TYPES
SCALE: 1/4"=1'-0"







PASS THRU WINDOW TO BE C.R. LAURENCE S710A36 PRECUT UNIT.
S710A36 PRECUT UNIT SHOULD BE PROVIDED WITH:
- (1) UPPER DOUBLE CHANNEL (CATALOG #D603A)
- (1) SECURITY LOWER RAIL (CATALOG #S702A)
- (1) SECURITY H-BAR (CATALOG #710A)
- (12) WHEEL ASSEMBLY (CATALOG #TA20)
- (12) TOP GUIDES (CATALOG #D652)
- GLAZING VINYL (CATALOG #SDV732C)
- (1) KEYED LOCK FOR #S710 (CATALOG #TA11)

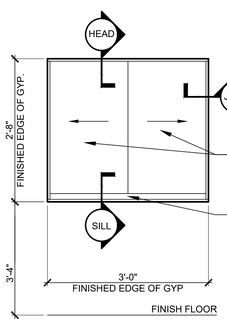
FOR SIDE JAMBS GC WILL NEED TO ORDER (2) CATALOG #D603A UNITS ALONG WITH CRL SEALSTRIP RUBBER GLASS SETTING TAPE (CATALOG #A4261) FOR COMPLETE INSTALLATION OF JAMBS.

8 A8 PASS THRU DETAIL
SCALE: NTS

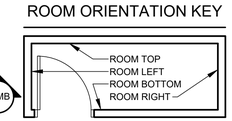
ROOM SCHEDULE MATERIAL KEY

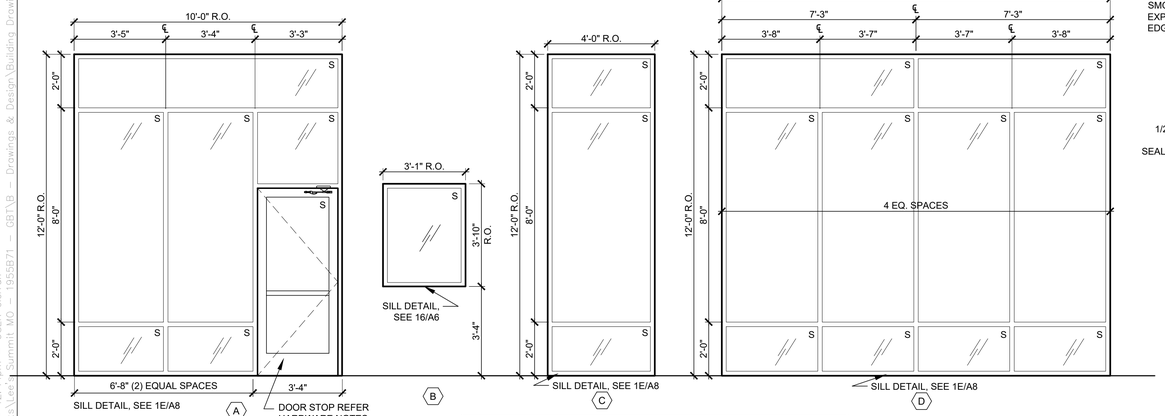
MARK	DESCRIPTION
CONC.	CONCRETE
SEALED	CONCRETE WITH APPLIED SEALER
GYP. BD.	GYPSUM BOARD
O.T.S.	OPEN TO STURUCTURE

SHEET METAL INSERT TO BE UNPAINTED.



ROOM ORIENTATION KEY





4 A8 WINDOWS TYPES
SCALE: 3/8"=1'-0"

GENERAL NOTES:
1. ALL STOREFRONT & INTERIOR WINDOWS ARE TO BE FIELD VERIFIED PRIOR TO INSTALLATION BY G.C.
2. PROVIDE DOUBLE PANE INSULATED GLASS FOR ALL STOREFRONT LOCATIONS.
3. "S"-INDICATES SAFETY GLASS REQUIRED. GC TO CONFIRM SAFETY GLAZING IS LABELED PER CODE.

PAINT COLOR SCHEDULE:

NOTE: ALL COLOR NAMES INDICATED ARE FOR SELECTION PURPOSES ONLY. SEE PAINT SPECS FOR SPECIFIC REQUIREMENTS

DESCRIPTION: (ALL "SHERWIN / WILLIAMS" NUMBERS 'SW' & 'CC'-CUSTOM COLORS)

KEY:	COLOR:	S.W. #
PT-1	"REFLECTION"	-SW7661
PT-2	"CAVIAR"	-SW6990
PT-3	"PURE WHITE"	-SW7005
PT-4	"IRON ORE"	-SW7069
PT-5	"SAFETY RED"	-CUSTOM COLOR
PT-6	"ANTIQUE WHITE"	-SW6119
PT-7	"BLACK"	-SW4090
PT-8	"SAFETY YELLOW"	-SW4084
PT-9	"ROW HOUSE TAN"	-SW7689
PT-10	"LATTE"	-SW6108
PT-11	"WARM STONE"	-SW7032
PT-12	"SANDY RIDGE"	-SW7535
PT-13	"SAFETY RED"	-SW4301
PT-14	"ANTIQUE WHITE"	-SW6119
PT-15	"ROWHOUSE TAN"	-SW7689
PT-16	"LAZY GRAY"	-SW6254
PT-17	"CLASSIC FRENCH GREY"	-SW0077
PT-20	"MORNING FOG"	-SW6255
PT-21	"CROSSROADS"	-SW3521
PT-22	"EMPIRE GOLD"	-SW0012

PT-5 "SAFETY RED" CUSTOM MATCH

CCE	COLORANT	OZ	32	64	128
R4	NEW RED	10	63	1	1

ONE GALLON: K43R00058 EXTERIOR RESILIENCE SATIN
PRIMARY RED: 650097140

SGA Design Group, P.C.
1437 South Boulder, Suite 550
Tulsa, Oklahoma 74119-3609
p: 918.587.8600
f: 918.587.8601
www.sgadesigngroup.com
Certificate of Authority #A-2006031944
Architecture

Firestone COMPLETE AUTO CARE

NEW FCAC STORE
2020 ER
3561 SW MARKET ST
JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

MITCHEL RAY GARRETT - ARCHITECT
MO# A-007541

ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: #####
KMP

SHEET TITLE:
ROOM FINISH & DOOR SCHEDULES

SHEET NUMBER:
A8

BUILDING DESIGN DATA

GOVERNING BUILDING CODE: 2018 INTERNATIONAL BUILDING CODE (IBC)

1.	ROOF DEAD LOADS	
	A. FRAMING AND ROOF PANEL WEIGHT	BY BLDG. MFR.
	B. OTHER DEAD LOAD	=8 PSF
2.	MINIMUM ROOF LIVE LOADS, Lr	= 20.0 PSF
3.	ROOF SNOW LOADS, S	
	A. GROUND SNOW LOAD, Pg	= 20 PSF
	B. SNOW EXPOSURE FACTOR, Ce	= 1.0
	C. SNOW LOAD IMPORTANCE FACTOR, Is	= 1.0
	D. THERMAL FACTOR, Ct	= 1.0
	E. ALL APPLICABLE EFFECTS DUE TO SNOW DRIFTING	
4.	WIND LOADS, W	
	A. BASIC WIND SPEED (3 SECOND GUST), V	= 110 MPH
	B. WIND LOAD IMPORTANCE FACTOR, Iw	= 1.0
	C. BUILDING CATEGORY:	BY BUILDING MFR.
	D. OVERALL EXPOSURE CATEGORY:	= C
	E. HEIGHT AND EXPOSURE ADJUSTMENT COEFFICIENT, Kh	BY BUILDING MFR.
	F. INTERNAL PRESSURE COEFFICIENT, GCpi	BY BUILDING MFR.
	G. WIDTH OF EDGE/CORNER ZONE, a	BY BUILDING MFR.
	H. COMPONENT AND CLADDING WALL DESIGN PRESSURES	BY BUILDING MFR.
	I. COMPONENT AND CLADDING ROOF DESIGN PRESSURES (NET)	BY BUILDING MFR.
5.	SEISMIC DESIGN DATA	
	A. OCCUPANCY CATEGORY	= II
	B. MAPPED SPECTRAL RESPONSE COEFFICIENTS	
	Ss	= 0.101
	S1	= 0.069
	C. SITE CLASS	= C
	D. SPECTRAL RESPONSE COEFFICIENTS	
	SDS	= 0.086
	SD1	= 0.068
	E. SEISMIC DESIGN CATEGORY	= B
	F. BASIC SEISMIC-FORCE-RESISTING SYSTEM:	BY BUILDING MFR.
	G. RESPONSE MODIFICATION COEFFICIENT, R	BY BUILDING MFR.
	H. ANALYSIS PROCEDURE:	BY BUILDING MFR.
	I. SEISMIC RESPONSE COEFFICIENT, Cs	BY BUILDING MFR.
	J. BASE SHEAR: V	BY BUILDING MFR.
6.	FOUNDATION DESIGN DATA	
	A. ALLOWABLE BEARING PRESSURE	= 3000 PSF (NET)
	B. MINIMUM BEARING DEPTH	= 36 IN
	C. FREEZE-THAW EXPOSURE SEVERITY:	SEVERE
	D. SLAB SUBGRADE REACTION MODULUS	= 140 PCI

FOUNDATIONS, SLAB-ON-GRADE - GENERAL

1. THE FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE GEOTECHNICAL REPORT BY PROFESSIONAL SERVICE INDUSTRIES, INC. DATED JULY 24, 2019 (PROJECT No. 03381947)
2. SPREAD FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUSTAINING AN ALLOWABLE BEARING PRESSURE AS NOTED ABOVE FOR FOOTINGS UNDER FULL SERVICE DEAD AND LIVE LOADS.
3. ALL BEARING MATERIAL SHALL BE INSPECTED BY THE INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.
4. FOOTINGS MAY BE POURED INTO AN EARTH-FORMED TRENCH IF SOIL CONDITIONS PERMIT.
5. THE TOP OF EXTERIOR FOOTING ELEVATION SHALL BE SET A MINIMUM OF 8" BELOW LOWEST FINAL ADJACENT EXTERIOR GRADE AND A MINIMUM OF 8" BELOW FINISH FLOOR. THE BOTTOM OF EXTERIOR FOOTINGS SHALL BEAR AT MINIMUM BEARING DEPTH BELOW LOWEST FINAL ADJACENT EXTERIOR GRADE.
6. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACKFILLING PRESSURES UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE, OR UNTIL THE CONCRETE OR MASONRY HAS ATTAINED ITS FULL COMPRESSIVE STRENGTH FOR CANTILEVER WALLS.
7. WHERE FOUNDATION WALLS ARE TO HAVE EARTH PLACED ON EACH SIDE, PLACE FILL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.
8. VERIFY THE USE AND EXTENT OF PERIMETER INSULATION WITH THE ARCHITECTURAL DRAWINGS PRIOR TO THE INSTALLATION OF FOUNDATIONS. INSTALL PERIMETER INSULATION AS REQUIRED.
9. STANDARD PROCEDURES OF FROST PROTECTION FOR FOUNDATIONS AND EXCAVATIONS SHALL BE EMPLOYED FOR WINTER CONSTRUCTION. BACK FILLING OF EXCAVATIONS SHALL BE DONE AS SOON AS POSSIBLE TO PROTECT FOUNDATIONS FROM FROST.
10. HORIZONTAL BARS IN FOOTINGS AND CONCRETE WALLS SHALL BE CONTINUOUS. PROVIDE CORNER BARS AT ALL CORNERS AND INTERSECTIONS, UNO.
11. FOUNDATION PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT/ENGINEER. PENETRATIONS SHALL BE FOUNDATION STEM WALL OR 6" CLEAR BELOW FOOTING.

CONCRETE

1. ALL CONCRETE SHALL BE NORMAL-WEIGHT (DENSITY=145 PCF) AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF AS NOTED IN THE FOLLOWING TABLE:

CONCRETE USE	SPECIFIED COMPRESSIVE STRENGTH (PSI)	MAXIMUM W/C RATIO
COLUMN FOOTINGS	3,000 PSI	PER SPECIFICATIONS
EXTERIOR STRUCTURAL CONCRETE	4,500 PSI	PER SPECIFICATIONS
INTERIOR SLAB ON GRADE AND PERIMETER BEAM/FOOTING	4,000 PSI	PER SPECIFICATIONS
EXTERIOR SLAB ON GRADE	4,500 PSI	PER SPECIFICATIONS
SIDEWALKS	3,500 PSI	PER SPECIFICATIONS

2. FOR ALL OTHER CONCRETE PROPERTIES SEE THE PROJECT SPECIFICATIONS.
3. ALL EXTERIOR CONCRETE SHALL BE AIR-ENTRAINED PER ACI-318, LATEST EDITION, BASED ON FREEZE-THAW EXPOSURE SEVERITY AND AGGREGATE SIZE.
4. ALL REINFORCED CONCRETE WORK SHALL BE PER "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" ACI 318, LATEST EDITION.
5. THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR REVIEW A MINIMUM OF TWO WEEKS PRIOR TO THE PLACEMENT OF ANY CONCRETE. THE CONCRETE MIX DESIGNS SHALL INCLUDE ALL DATA NECESSARY TO SHOW COMPLIANCE WITH THE PROJECT SPECIFICATIONS.
6. CONCRETE REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
7. CONCRETE REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706.
8. HOOK ENDS OF BARS INTERRUPTED BY OPENINGS. HOOK TOP BARS AT ALL EDGES. AT ALL WALL AND SLAB OPENINGS, PROVIDE 2 - #5BARS x OPENING WIDTH PLUS 4 FEET(EACH SIDE) EACH FACE UNLESS SHOWN OTHERWISE.
9. ALL REINFORCING SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE DETAILING MANUAL.
10. ALL REINFORCING SHALL BE SUPPORTED IN FORMS, SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER, IN ACCORDANCE WITH THE LATEST EDITION OF THE CRSI "MANUAL OF STANDARD PRACTICE".
11. THE MINIMUM CONCRETE CLEAR COVER OVER REINFORCING STEEL, UNLESS NOTED OTHERWISE, SHALL BE:
    - UNFORMED SURFACE IN CONTACT WITH THE GROUND..........................3 IN.
    - FORMED SURFACES EXPOSED TO EARTH OR WEATHER:
        - #6 BARS AND LARGER..2 IN.
        - #5 BARS AND SMALLER...1 1/2 IN.
    - FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER:
    - BEAMS, GIRDERS, AND COLUMNS...1 1/2 IN.
    - SLABS, WALLS, AND JOISTS:
        - #11 BARS AND SMALLER...3/4 IN.
        - #14 AND #18 BARS..1 1/2 IN.
12. ALL LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE.

CONCRETE REINFORCING LAP SPLICE SCHEDULE

	TENSION SPLICES (IN.)	
BAR SIZE	TOP BARS	OTHER BARS
#3	16	16
#4	20	16
#5	25	19
#6	29	23

-COMPRESSION DOWEL EMBEDMENT: 22 BAR DIAMETERS LAP
-WELDED WIRE FABRIC: ONE SPACING OF CROSS WIRES PLUS 2" LAP

15. LEAN CONCRETE - MIN 2 1/2 SACKS PORTLAND CEMENT PER CUBIC YARD.

REINFORCED MASONRY

1. MASONRY WALLS HAVE BEEN DESIGNED TO SPAN VERTICALLY, AS SIMPLE SPANS, FROM FOUNDATION TO ROOF, AND ARE DEPENDENT UPON THE COMPLETED ROOF STRUCTURE, ROOF SHEATHING, AND COMPLETION OF ALL MASONRY WALLS FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES. THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING ALL NECESSARY BRACING AS REQUIRED FOR STABILITY, RESISTANCE OF CONSTRUCTION LOADS, AND FOR RESISTANCE TO WIND AND SEISMIC FORCES UNTIL THE ENTIRE STRUCTURE IS COMPLETE. THE SHORING SHALL NOT RELY ON ANY MOMENT RESISTANCE CAPACITY OF THE FOOTINGS.
2. REINFORCED MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH, f'm = 2000 PSI. MASONRY UNITS SHALL BE NORMAL WEIGHT BLOCK CONFORMING TO ASTM C90, GRADE N, TYPE 1, AND SHALL HAVE A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 2800 PSI. MORTAR SHALL CONFORM TO ASTM C270, TYPE S. PORTLAND CEMENT TYPE 1 OR 2, LOW ALKALI PER ASTM C150 NON AIR ENTRAINED OR HYDRATED LIME PER ASTM C207 TYPES. GROUT SHALL CONFORM TO ASTM C476 AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000 PSI. GROUT SHALL BE MECHANICALLY CONSOLIDATED USING A VIBRATOR WITH A MAXIMUM 3/4" DIAMETER HEAD.
3. PROVIDE VERTICAL CONTROL JOINTS IN MASONRY WALLS AT LOCATIONS NOTED ON PLANS HORIZONTAL BOND BEAM AND LINTEL REINFORCING SHALL BE CONTINUOUS ACROSS VERTICAL CONTROL JOINTS. JOINT REINFORCING SHALL BE STOPPED EITHER SIDE OF VERTICAL CONTROL JOINTS.
4. MORTAR SHALL MEET THE PROPORTION SPECIFICATIONS OF ASTM C270 TYPE "S" MORTAR. MASONRY CEMENT SHALL NOT BE USED FOR MORTAR.
5. MASONRY REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
6. CONTINUOUS WIRE REINFORCING (JOINT REINFORCING) SHALL BE GALVANIZED TRUSS OR LADDER TYPE FORMED FROM 9 GAUGE COLD-DRAWN STEEL WIRE COMPLYING WITH ASTM A82. JOINT REINFORCING SHALL BE SPACED AT 16" O.C. VERTICALLY IN ALL MASONRY WALLS.
7. ALL REINFORCED CELLS AND ALL CELLS BELOW THE FINISHED FLOOR ELEVATION SHALL BE GROUTED SOLID. CONCRETE MASONRY BELOW FINISHED FLOOR SHALL BE NORMAL WEIGHT UNITS. CONCRETE MASONRY UNITS ABOVE FINISHED FLOOR SHALL BE LIGHT WEIGHT OR NORMAL WEIGHT.
8. GROUTING SHALL BE STOPPED 1 1/2" BELOW THE TOP OF A COURSE SO AS TO FORM A KEY AT THE POUR JOINT.
9. GROUTING OF MASONRY BEAMS AND LINTELS OVER OPENINGS SHALL BE DONE IN ONE CONTINUOUS OPERATION.
10. ALL BOLTS, ANCHORS, ETC., INSERTED IN THE WALLS, SHALL BE GROUTED SOLID INTO POSITION. COORDINATE LOCATIONS OF EMBEDDED STEEL ITEMS FOR OVERHEAD DOORS WITH DOOR MANUFACTURER.
11. ALL REINFORCING LAP SPLICES SHALL BE PER THE FOLLOWING TABLE , UNLESS NOTED OTHERWISE.

MASONRY REINFORCING LAP SPLICE SCHEDULE

BAR SIZE	SPLICE (IN.)
#3	20
#4	26
#5	32
#6	39
#7	45

12. USE OPEN KNOCK OUT BOND BEAM BLOCK. DO NOT USE TROUGH TYPE BLOCKS FOR BOND BEAMS.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
    - ALL CHANNELS, ANGLES, PLATES, ETC. (U.N.O.)................A36 (Fy=36 KSI)
    - ALL WIDE FLANGES (U.N.O.)..A992 (Fy=50 KSI)
    - HOLLOW STRUCTURAL SECTIONS (SHAPED).......................A500 GRADE B (Fy=46 KSI)
    - HOLLOW STRUCTURAL SECTIONS (ROUND)........................A500 GRADE B (Fy=42 KSI)
    - STEEL PIPE..A53 GRADE B (Fy=35 KSI)
    - BOLTS..A325 (U.N.O.)
    - ANCHOR RODS...F1554 (GRADE 36)
    - WELDING ELECTRODES..E70XX, LOW HYDROGEN
2. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE, EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
3. ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE" AWS D1.1. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS. ALL WELDING SHALL BE TO CLEAN BARE STEEL.
4. SPLICING OF STEEL MEMBERS, UNLESS SHOWN ON THE DRAWINGS, IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER -OF-RECORD.
5. PROVIDE SUB-FRAMING FOR EQUIPMENT SUPPORTED ON OR SUSPENDED FROM THE STRUCTURE. ALL SHALL BE SHOP COATED WITH PRIME PAINT AS SPECIFIED. MASK SURFACES TO BE WELDED AND AT BOLT HOLES IN FAYING SURFACES OF FRICTION CONNECTIONS.

DEFERRED STRUCTURAL SUBMITTALS

1. THE FOLLOWING STRUCTURAL COMPONENTS SHALL BE DESIGNED AND SUBMITTED BY OTHERS FOR APPROVAL IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
    A. PRE-MANUF. METAL BUILDINGS.
2. DOCUMENTS FOR DEFERRED STRUCTURAL SUBMITTAL ITEMS SHALL BE DESIGNED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. THE DEFERRED SUBMITTAL DOCUMENTS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL AS REQUESTED WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED.
3. STRUCTURAL FOUNDATION DESIGN WAS BASED ON FOUNDATION REACTIONS FROM ONE PRE-MANUF. BUILDING MANUFACTURER. ALTERATIONS MAY BE NECESSARY IF A DIFFERENT BUILDING MANUFACTURER IS SELECTED OR DIFFERENT REQUIREMENTS ARE PROVIDED IN THE BUILDING SUBMITTAL. BASED ON THE EXTENT OF THE CHANGES, ADDITIONAL SERVICES FOR STRUCTURAL REDESIGN AND COSTS OF ADDITIONAL OR MODIFIED FOUNDATIONS MAY BE REQUIRED. DURING SELECTION OF BUILDING SUPPLIER, GENERAL CONTRACTOR SHALL INCLUDE A CONTINGENCY TO COVER THESE FEES AND COSTS. COSTS OF THE DESIGN AND CONSTRUCTION REVISIONS SHALL BE BORNE BY THE CONTRACTOR.

PRE-MANUF. METAL BUILDING

1. PRE-MANUF. METAL BUILDING ELEMENTS SHALL BE DESIGNED BY THE MANUFACTURER AND SHALL COMPLY WITH THE REQUIREMENTS OF LOCAL BUILDING CODES AS LISTED IN "BUILDING DESIGN DATA" AND THE METAL BUILDING MANUFACTURERS' ASSOCIATION DESIGN MANUAL. IN ADDITION, THE METAL BUILDING ELEMENTS SHALL BE DESIGNED FOR ALL LOADS INDICATED ON THE DRAWINGS.
2. THE METAL BUILDING MANUFACTURER IS RESPONSIBLE FOR PROVIDING THE MATERIAL TYPE, DIAMETER, AND LOCATION OF ANCHOR BOLTS FOR THE METAL BUILDING COLUMNS.
3. THE METAL BUILDING COLUMNS SHALL BEAR AS INDICATED ON PLANS.
4. REFER TO 1-S1 FOR DEFLECTION LIMITS.
5. SHOP DRAWING SUBMITTALS (INCLUDING DRAWINGS AND CALCULATIONS) SHALL BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. INCLUDE FOUNDATION REACTIONS OF ALL FRAMING MEMBERS ON THE SHOP DRAWINGS FOR ALL LOAD COMBINATIONS. INDICATE WHETHER THESE LOADS ARE ULTIMATE OR SERVICE LOADS. INDICATE WHICH LOAD COMBINATION APPLIES THE LARGEST LOAD TO FOUNDATIONS.
6. FOUNDATIONS PROVIDING SUPPORT TO THE METAL BUILDING FRAMES OF THE BUILDING HAVE BEEN DESIGNED FOR PINNED TYPE CONNECTIONS ONLY. DO NOT FIX THE BASE OF THE COLUMNS.
7. A 1/3 INCREASE IN ALLOWABLE STRESS SHALL NOT BE USED FOR DESIGN. HOWEVER, A LOAD REDUCTION SHALL BE ALLOWED IN ACCORDANCE WITH ASCE-7 WHEN TWO OR MORE TRANSIENT LOADS IN COMBINATION WITH DEAD LOADS ARE APPLIED.
8. METAL BUILDING MANUFACTURER SHALL PROVIDE ROOF BRACING, WALL BRACING AND/OR PORTAL FRAMES AS REQUIRED TO ADEQUATELY RESIST WIND AND SEISMIC LOADS. THEIR LOCATIONS AND SIZES SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS AND INTENT.
9. METAL BUILDING MANUFACTURER SHALL BE RESPONSIBLE FOR ALL FRAMING ABOVE SLAB. THIS INCLUDES, BUT IS NOT LIMITED TO, WIND GIRTS AND COLUMNS, EXTERIOR JAMBS AND LINTELS, A AND MECHANICAL/ELECTRICAL EQUIPMENT SUPPORT. ALL SUPPLEMENTAL FRAMING SHALL MEET OR EXCEED THE LOAD AND DEFLECTION REQUIREMENTS OF THE MANUFACTURER.
10. THE METAL BUILDING MANUFACTURER IS RESPONSIBLE FOR COORDINATING METAL BUILDING ELEMENTS WITH THE CONSTRUCTION DRAWINGS AND INTENT.
11. NO OVERSTRESS OF METAL BUILDING MEMBERS IS ALLOWED.

MISCELLANEOUS

1. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING REQUIREMENTS FROM SUCH DRAWINGS INTO THEIR SHOP DRAWINGS AND WORK.
3. NO OPENINGS SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL-OF-RECORD.
4. NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL-OF-RECORD.
5. DO NOT SCALE THESE DRAWINGS. USE SPECIFIED DIMENSIONS.
6. STEEL FRAMING IS NON-SELF SUPPORTING AND REQUIRES INTERACTION WITH OTHER ELEMENTS NOT CLASSIFIED AS STRUCTURAL STEEL TO PROVIDE THE REQUIRED STABILITY AND RESISTANCE TO LATERAL FORCES.
7. THE STEEL FRAMING AND ALL CONCRETE AND CMU WALLS SHALL BE TEMPORARILY BRACED UNTIL ALL STEEL BRACING, FLOOR AND ROOF DECKS, AND CONCRETE AND CMU WALLS HAVE BEEN INSTALLED AND ALL CONNECTIONS BETWEEN THESE ELEMENTS HAVE BEEN MADE.

SPECIAL INSPECTIONS

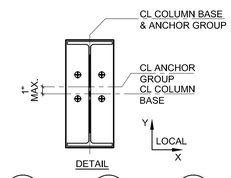
1. THE OWNER WILL EMPLOY THE SERVICES OF ONE OR MORE SPECIAL INSPECTORS TO PROVIDE SPECIAL INSPECTIONS DURING CONSTRUCTION FOR THE REQUIRED SPECIAL INSPECTION ITEMS.
2. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL RESPONSIBLE FOR THE DESIGN OF THE STRUCTURE, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
3. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
    A. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS. THE INSPECTOR MAY NOT ALTER, MODIFY, ENLARGE OR WAVE ANY OF THE REQUIREMENTS OF THE DOCUMENTS.
    B. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE PROFESSIONAL-OF-RECORD, AND THE CONTRACTOR. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, SUBMIT A COMPLETE LIST OF ALL OUTSTANDING DISCREPANCIES ON A WEEKLY BASIS TO THE OWNER, THE BUILDING OFFICIAL, AND THE PROFESSIONAL-OF-RECORD, UNTIL ALL CORRECTIONS HAVE BEEN COMPLETED.
    C. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE BUILDING CODE.
4. SPECIAL INSPECTIONS SHALL BE REQUIRED FOR THE FOLLOWING GENERAL AREAS. REFERENCE THE FOLLOWING TABLE FOR MORE DETAILED INSPECTION REQUIREMENTS IN EACH AREA.
    A. INSPECTION OF FABRICATORS: PER IBC SECTION 1704.2.
    B. STEEL CONSTRUCTION: PER IBC SECTION 1704.3 AND IBC TABLE 1704.03.
    C. CONCRETE: PER IBC SECTION 1704.4 AND IBC TABLE 1704.4.
    D. MASONRY CONSTRUCTION: PER IBC SECTION 1704.5. AND IBC TABLE 1704.5.1.
    E. SOILS: PER IBC SECTION 1704.7 AND THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT.
5. STRUCTURAL OBSERVATION (AS DEFINED IN CHAPTER 17 OF THE BUILDING CODE) IS NOT REQUIRED, UNLESS SPECIFICALLY REQUIRED BY THE BUILDING OFFICIAL.

MAXIMUM DEFLECTION AND DRIFT LIMITS

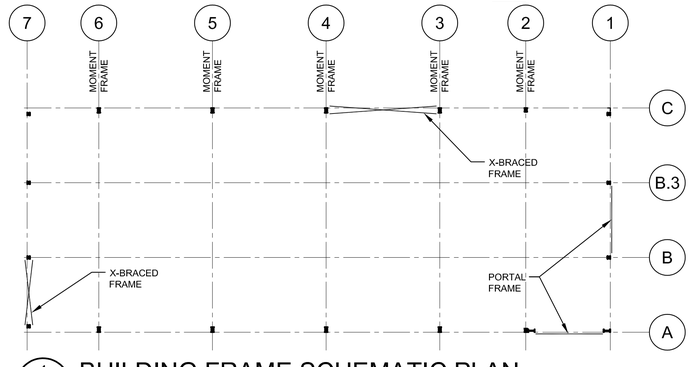
MEMBER	VERTICAL DEFLECTION	HORIZONTAL DEFLECTION
PURLINS	L/240	---
RAFTERS	L/240	---
METAL ROOF PANELS	L/240	---
METAL WALL PANELS	---	L/240
GIRTS	---	L/240

1. DESIGN SECONDARY-FRAMING SYSTEM TO ACCOMMODATE DEFLECTION OF PRIMARY FRAMING AND CONSTRUCTION TOLERANCES AND TO MAINTAIN CLEARANCES AT OPENINGS.
2. LATERAL DRIFT: MAXIMUM OF L/200 OF BUILDING HEIGHT.
3. L = MEMBER SPAN

1. BLDG. MFR. TO PROVIDE FRAMES & BRACING IN LOCATIONS NOTED BELOW
2. SEE ARCH FOR CLEARANCES & SPECIAL COLUMN DEPTH LIMITATIONS.
3. CENTER LINE OF ANCHOR BOLT GROUP SHALL BE NO MORE THAN 1" FROM CENTER LINE OF COLUMN SECTION AT THE BASE IN THE LOCAL Y-DIRECTION AND SHALL MATCH IN THE LOCAL X-DIRECTION. SEE DETAIL.



DETAIL



1/S1 **BUILDING FRAME SCHEMATIC PLAN**

SCALE: 1/16" = 1'-0"

SPECIAL INSPECTIONS SCHEDULE

SPECIAL INSPECTION	FREQ.	REFERENCED STANDARD(S)
SOILS:		
1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	PERIODIC	IBC 1705.6
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	PERIODIC	
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	PERIODIC	
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	CONT.	
5. PRIOR TO THE PLACEMENT OF COMPACTED FILL, OBSERVE SUBGADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY.	PERIODIC	
CONCRETE (NOT APPLICABLE TO ISOLATED SPREAD FOOTINGS OR NON-STRUCTURAL SLABS ON GROUND):		
1. INSPECTION OF REINFORCING STEEL, SIZE AND PLACEMENT	PERIODIC	ACI 318: 3.5, 7.1-7.7
2. VERIFYING USE OF REQUIRED DESIGN MIX	PERIODIC	ACI 318: Ch. 4, 5.2-5.4
3. SAMPLING FRESH CONCRETE AND PERFORMING SLUMP, AIR CONTENT, AND DETERMINING THE TEMPERATURE OF FRESH CONCRETE AT THE TIME OF MAKING SPECIMENS FOR STRENGTH TESTS.	CONT.	ASTM C 172; ASTM C 31; ACI 318: 5.6, 5.8
4 INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	CONT.	ACI 318: 5.9, 5.10
5. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	PERIODIC	ACI 318: 5.11-5.13
STEEL CONSTRUCTION:		
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS, HIGH-STRENGTH BOLTING:		APPLICABLE ASTM MATERIAL SPECIFICATIONS; AISC 360, SEC. A3.4
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	PERIODIC	
B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED	PERIODIC	
2. INSPECTION OF BEARING-TYPE CONNECTIONS	PERIODIC	AISC LRFD Sec. M2.5
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD FORMED METAL DECK:		
A. FOR STRUCTURAL STEEL IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	---	AISC 360, SEC. M5.5; ASTM A-6 OR ASTM A-568
B. FOR OTHER STEEL, IDENTIFICATION MARKING TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	---	APPLICABLE ASTM MATERIAL STANDARDS
C. MANUFACTURER'S CERTIFIED MILL TEST REPORTS REQUIRED		
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:		
A. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS	PERIODIC	AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENTS
B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED	PERIODIC	
5. INSPECTION OF WELDING:		
A. SINGLE-PASS FILLET WELDS ≤ 5/16"	PERIODIC	AWS D1.1
B. ROOF DECK WELDS	PERIODIC	AWS D1.3
MASONRY CONSTRUCTION		
1. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:		
A. PROPORTIONS OF SITE PREPARED MORTAR.	PERIODIC	ACI 530.1/ASCE 6/TMS 602: Art. 2.6A
B. CONSTRUCTION OF MORTAR JOINTS.		ACI 530.1/ASCE 6/TMS 602: Art. 3.3B
C. LOCATION OF REINFORCEMENT AND CONNECTORS.		ACI 530.1/ASCE 6/TMS 602: Art. 3.4, 3.6A
D. VERIFICATION OF f'm.		ACI 530.1/ASCE 6/TMS 602: Art. 1.5
2. DURING CONSTRUCTION THE INSPECTION PROGRAM SHALL VERIFY:		
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	PERIODIC	ACI 530.1/ASCE 6/TMS 602: Art. 3.3F
B. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.		ACI 530/ASCE 5/TMS 402: Sec. 1.2.2(e), 1.16.1
C. SPECIFIED SIZE, GRADE, AND TYPE OF REINFORCEMENT AND ANCHOR BOLTS		ACI 530.1/ASCE 6/TMS 402: Sec. 1.15; ACI 530.1/ASCE 6/TMS 602: Art. 2.4, 3.4
E. PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40° F) OR HOT WEATHER (TEMPERATURE ABOVE 90° F)		ACI 530.1/ASCE 6/TMS 602: Art. 1.8C, 1.8D IBC SECTION 2104.3:2104.4
3. PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:		
A. GROUT SPACE IS CLEAN.	PERIODIC	ACI 530.1/ASCE 6/TMS 602: Art. 3.2D
B. PLACEMENT OF REINFORCEMENT AND CONNECTORS.		ACI 530/ASCE 5/TMS 402: Sec. 1.13; ACI 530.1/ASCE 6/TMS 602: Art. 3.4
C. PROPORTIONS OF SITE PREPARED GROUT.		ACI 530.1/ASCE 6/TMS 602: Art. 2.6B
D. CONSTRUCTION OF MORTAR JOINTS.		ACI 530.1/ASCE 6/TMS 602: Art. 3.3B
4. GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH CODE AND CONSTRUCTION DOCUMENT PROVISIONS.	CONT.	ACI 530.1/ASCE 6/TMS 602: Art. 3.5
5. PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS SHALL BE OBSERVED.	PERIODIC	IBC SECTION 2105.2.2, 2105.3 ACI 530.1/ASCE 6/TMS 602: Art. 1.4
6. COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED.	PERIODIC	ACI 530.1/ASCE 6/TMS 602: Art. 1.5
ADHESIVE ANCHORS/REINFORCEMENT:		
1. DURING PLACEMENT OF ADHESIVE ANCHORS OR REINFORCEMENT EMBEDDED WITH ADHESIVE (AS SPECIFIED ON THE CONSTRUCTION DOCUMENTS) IN MASONRY AND CONCRETE:		
A. SIZE AND EMBEDMENT OF ANCHORS/REINF.	CONTINUOUS	MANUFACTURERS INSTALLATION INSTRUCTIONS
B. ANCHORS/REINFORCEMENT INSTALLED PER MANUFACTURERS RECOMMENDATIONS.	CONTINUOUS	

wallace

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Structural and Civil Consultants
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Tulsa, Oklahoma 74103
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WALLACE ENGINEERING – STRUCTURAL CONSULTANTS, INC.
PROFESSIONAL ENGINEERING CORPORATION
MISSOURI CERTIFICATE OF AUTHORIZATION
#001268

CARRIE J. JOHNSON
NUMBER PE-2008005213
2020.04.15 13:33:45-05'00'

ISSUE BLOCK

△1	ADD #1	04/16/20

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
S1

Apr 15, 2020 – 11:13am – USER Colby Brown
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FOUNDATION PLAN NOTES

1. SEE SHEET S1 FOR GENERAL NOTES AND S3 FOR TYPICAL DETAILS
2. ALL ELEVATIONS BASED ON FINISH FLOOR ELEVATION = 100'-0" FOR REFERENCE ONLY. SEE SITE PLAN FOR ACTUAL FINISH FLOOR ELEVATIONS.
3. SEE PLAN AND GENERAL STRUCTURAL NOTES FOR TOP OF EXTERIOR FOOTING ELEVATIONS. THE GENERAL CONTRACTOR SHALL COORDINATE ALL TOP OF FOOTING ELEVATIONS WITH THE CIVIL ENGINEERING DRAWINGS AND SITE CONDITIONS.
4. PROVIDE CORNER BARS IN ALL CORNERS AND INTERSECTIONS PER 5-S3. LAP SPLICE FOOTING CORNER BAR REINFORCING PER TABLE ON SHEET S1.
5. REFER TO MECHANICAL DRAWINGS FOR ALL DRAIN LOCATIONS AND SLOPES TO DRAINS.

SLAB SCHEDULE

LOCATION	THICKNESS* AND REINFORCING	REMARKS
4" INTERIOR SLAB ON GRADE	4" CONCRETE SLAB ON GRADE REINFORCED WITH 6 x 6 - W1.4 x W1.4 W.W.F. - CENTER	15 MIL VAPOR RETARDER OVER COMPACTED GRANULAR SUBBASE PER THE GEOTECHNICAL REPORT
5" INTERIOR SLAB ON GRADE	5" CONCRETE SLAB ON GRADE REINFORCED WITH 6 x 6 - W2.9 x W2.9 W.W.F. - CENTER	15 MIL VAPOR RETARDER OVER COMPACTED GRANULAR SUBBASE PER THE GEOTECHNICAL REPORT
6" EXTERIOR SLAB ON GRADE	6" CONCRETE SLAB ON GRADE REINFORCED WITH 6 x 6 - W2.9 x W2.9 W.W.F. - CENTER	COMPACTED SUBBASE PER THE GEOTECHNICAL REPORT
SIDEWALK	4" CONCRETE SLAB ON GRADE REINFORCED WITH 6 x 6 - W1.4 x W1.4 W.W.F. - CENTER	COMPACTED SUBBASE PER GEOTECHNICAL REPORT - SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION

* THICKNESS OF SLABS AS SPECIFIED IN SCHEDULE ARE MINIMUMS. THERE SHALL BE NO TOLERANCE FOR SLABS THINNER THAN THOSE SPECIFIED IN SCHEDULE.

* COORDINATE LOCATIONS AND EXTENTS OF EXTERIOR CONCRETE SLAB WITH ARCH. AND CIVIL DRAWINGS.

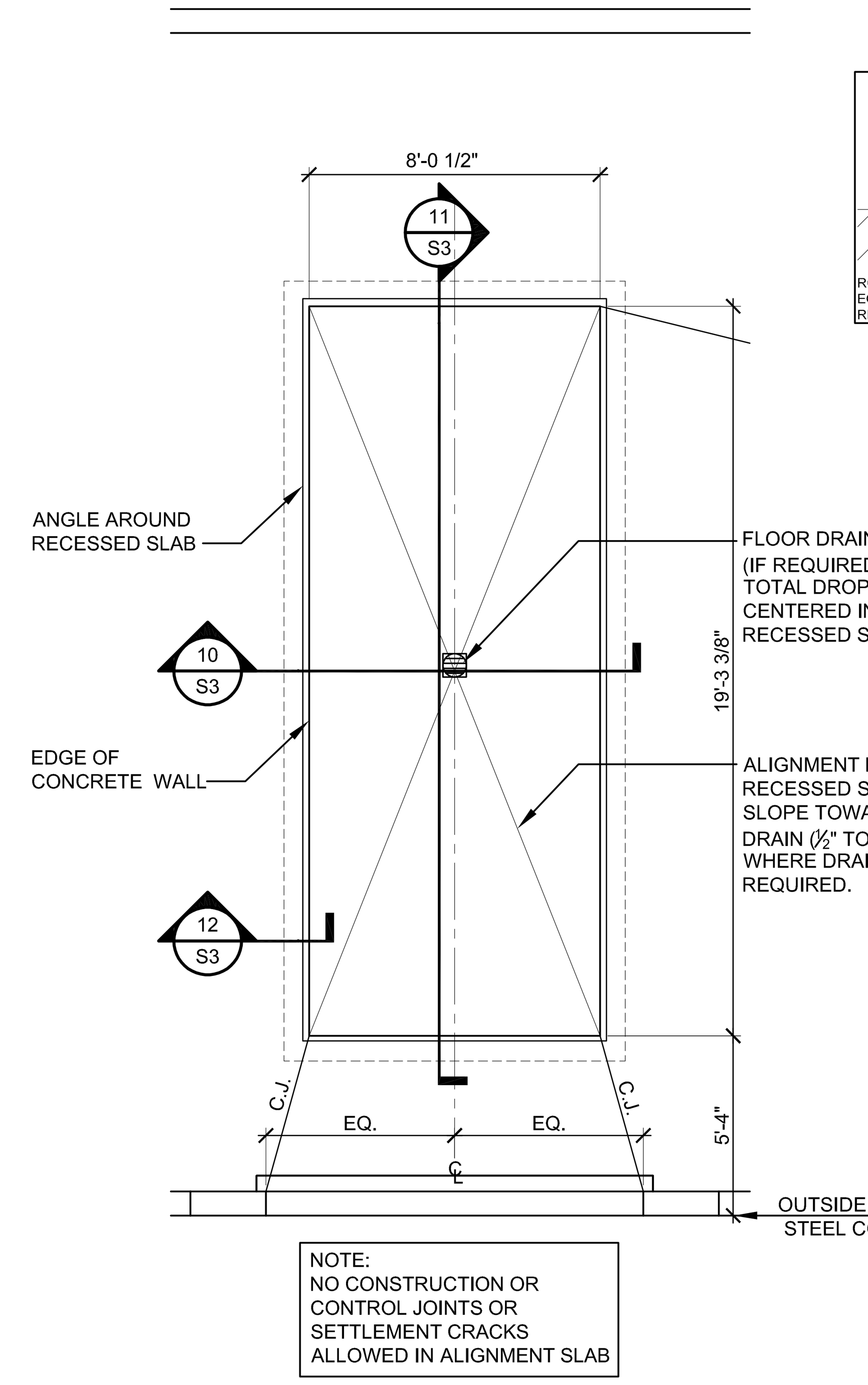
* SEE ARCH AND SPECIFICATIONS FOR SLAB FINISH REQUIREMENTS.

* CONTRACTOR SHALL OBTAIN FLOOR FLATNESS AND LEVELNESS TESTING (FF & FL) AND PROVIDE FINAL REPORT TO OWNER, SEE SPECIFICATIONS.

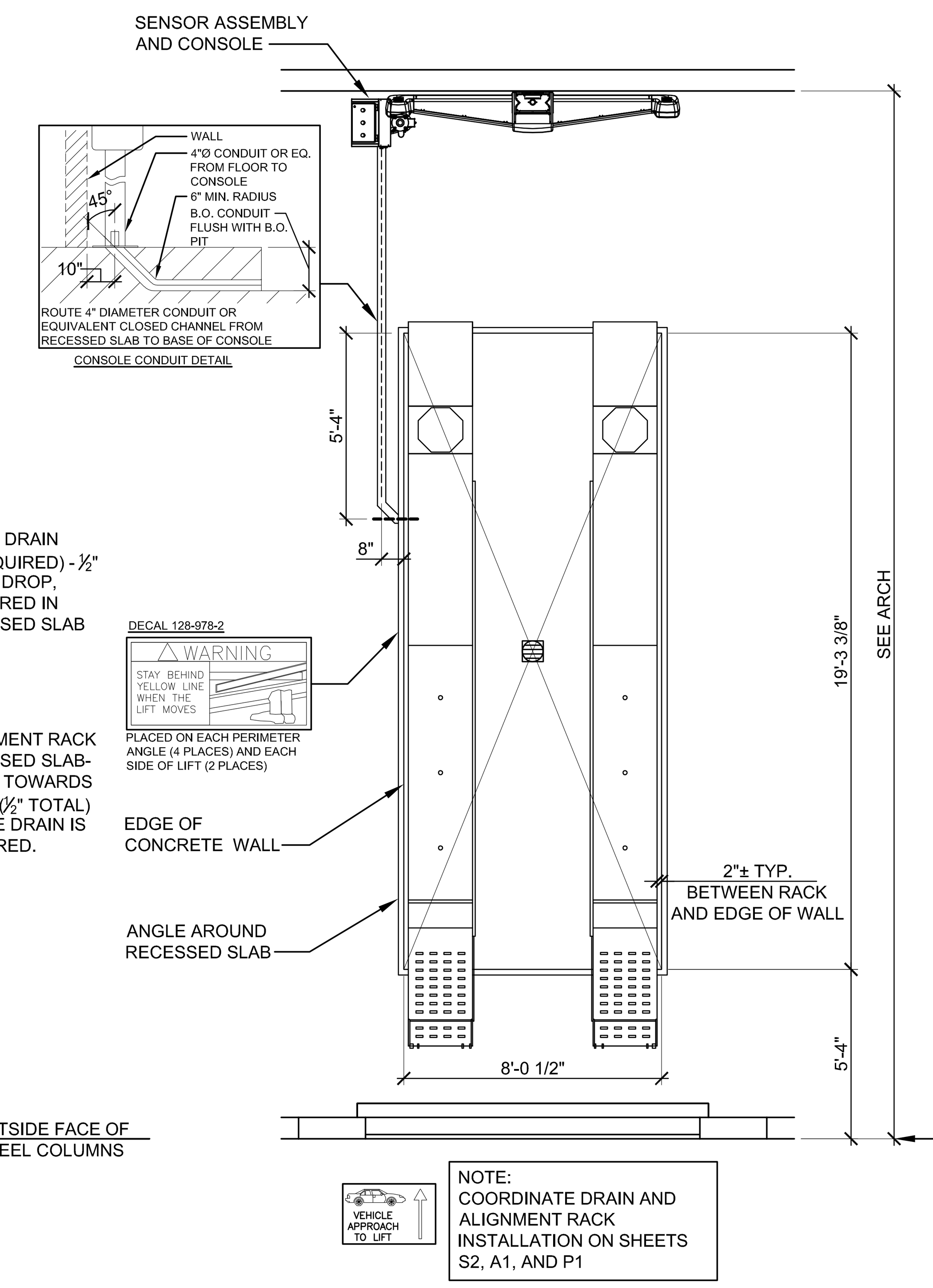
FOOTING SCHEDULE

MARK	SIZE	REINFORCING
F1	* 4'-0" x 4'-0" x 1'-0"	(4) #5 - EACH WAY, BOTTOM
F2	* 5'-0" x 5'-0" x 1'-0"	(5) #5 - EACH WAY, BOTTOM
F3	* 6'-0" x 6'-0" x 1'-0"	(6) #5 - EACH WAY, BOTTOM

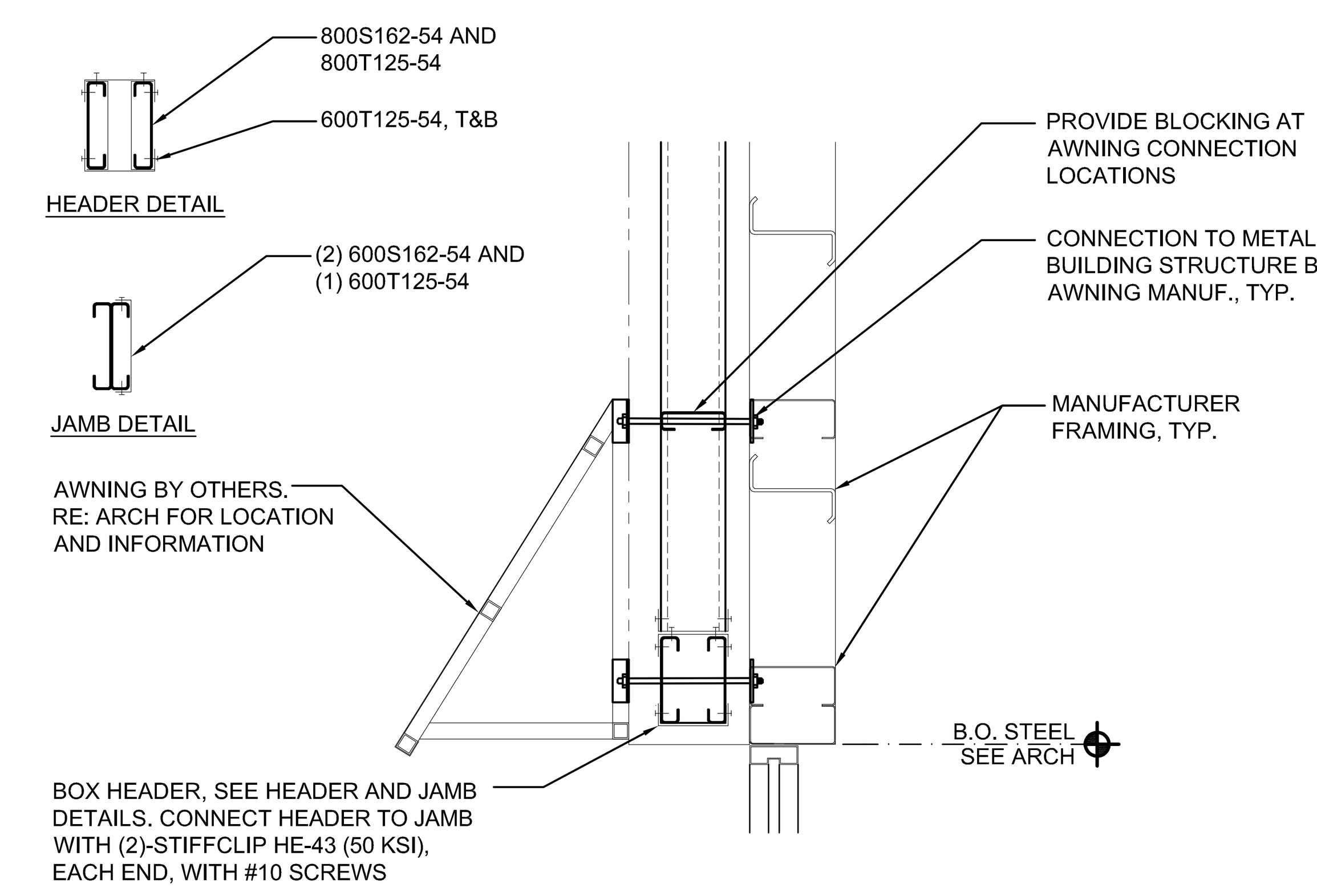
* ALL FOUNDATION SIZES ARE FOR BIDDING PURPOSES ONLY. FINAL SIZES WILL BE DETERMINED AFTER COMPLETION OF METAL BUILDING DRAWINGS. DO NOT INSTALL FOUNDATIONS PRIOR TO RECEIPT OF REVISED FOUNDATION DRAWINGS.



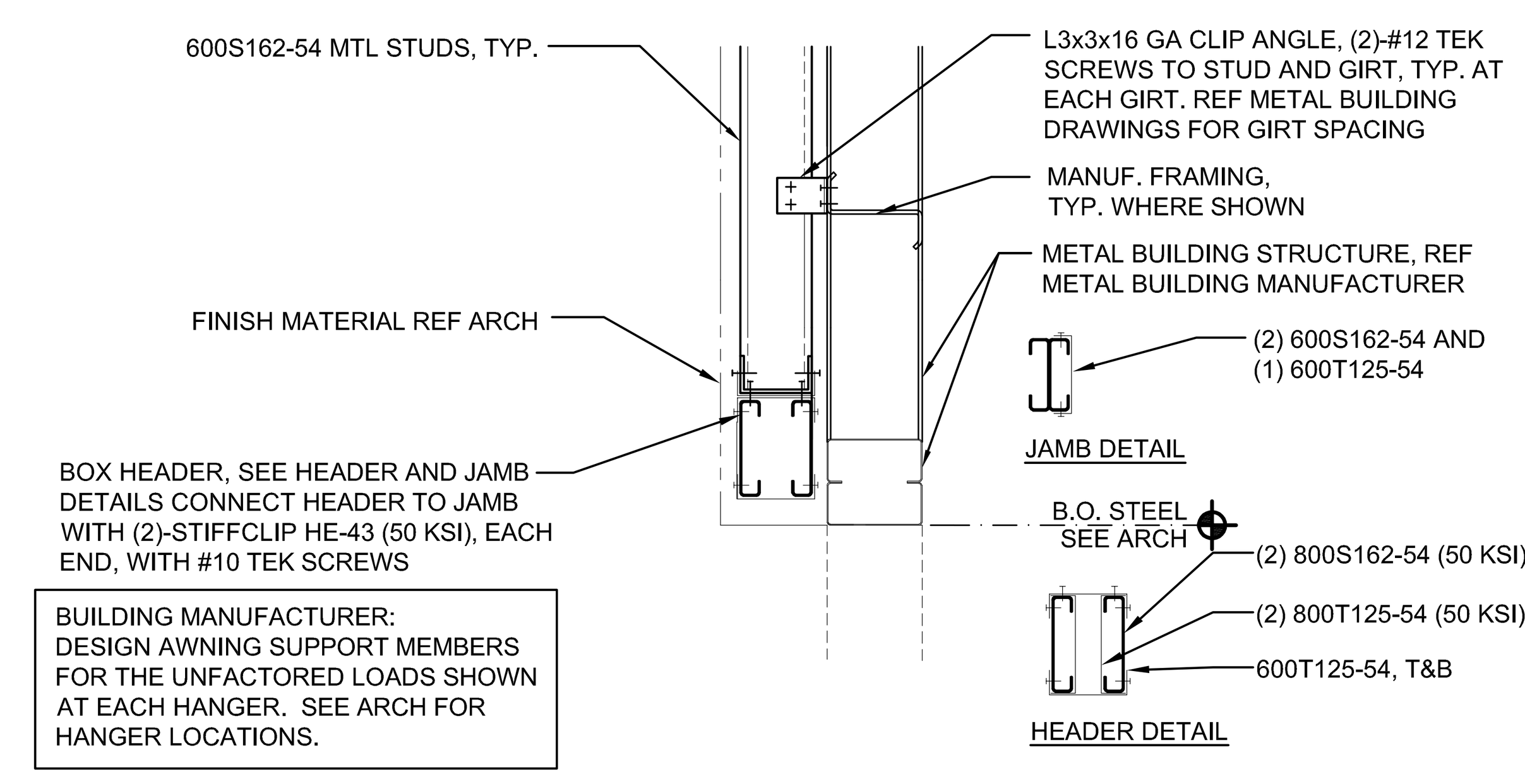
2 / S2 ALIGNMENT SLAB PLAN
SCALE: 1/4" = 1'-0"



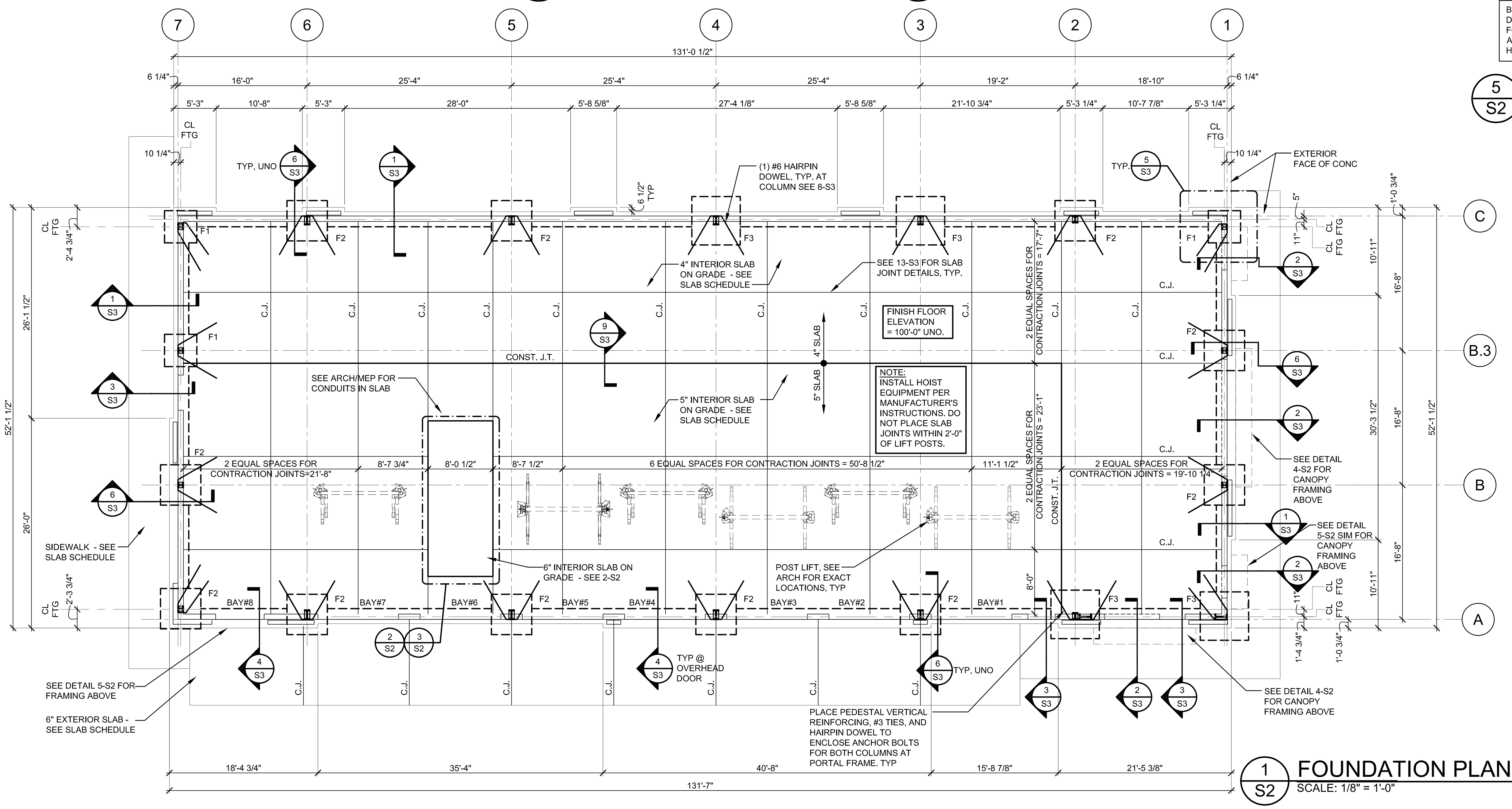
3 / S2 ALIGNMENT RACK PLAN
SCALE: 1/4" = 1'-0"



4 / S2 SECTION AT AWNING
SCALE: 3/4"=1'-0"



5 / S2 SECTION AT HEADER
SCALE: 3/4" = 1'-0"



1 / S2 FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

REF 15/S3 FOR LIGHT POLE FOUNDATION. REF ARCH FOR LOCATION AND CONFIGURATION

REF 16/S3 FOR MONUMENT SIGN WALL/FOOTING. REF ARCH FOR LOCATION AND CONFIGURATION

REF 14/S3 FOR TRASH ENCLOSURE WALL/FOOTING. REF ARCH FOR LOCATION AND CONFIGURATION

EXTERIOR LIGHT GAGE STUDS SHALL BE 600S162-54 AT 16" OC. TYP. UNO. REF ARCH FOR LOCATIONS. STUDS SHALL BE ATTACHED TO EACH METAL BUILDING GIRT WITH 16 GA CLIP ANGLES WITH (2) #10 SCREWS EACH LEG.

PRELIMINARY DESIGN

1. COLUMN LAYOUT AND FOUNDATIONS ARE FOR PERMITTING AND BIDDING PURPOSES ONLY.
2. FOUNDATION DESIGN AND ANCHOR BOLT EMBEDMENT LENGTHS ARE BASED ON ASSUMED METAL BUILDING REACTIONS. THE FOUNDATION DESIGN AND ANCHOR BOLT EMBEDMENT LENGTHS ARE REQUIRED TO BE VERIFIED BY THE STRUCTURAL ENGINEER OF RECORD AFTER FINAL SIGNED AND SEALED SHOP DRAWINGS AND REACTIONS ARE SUBMITTED BY THE METAL BUILDING MANUFACTURER. FOUNDATION CONSTRUCTION SHALL NOT BEGIN UNTIL METAL BUILDING SHOP DRAWINGS HAVE BEEN SUBMITTED AND APPROVED AND FOUNDATION DESIGN VERIFIED.

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PROFESSIONAL ENGINEERING CORPORATION
MISSOURI CERTIFICATE OF AUTHORIZATION #001268

2020.04.15 13:34:00-05'00'

ISSUE BLOCK

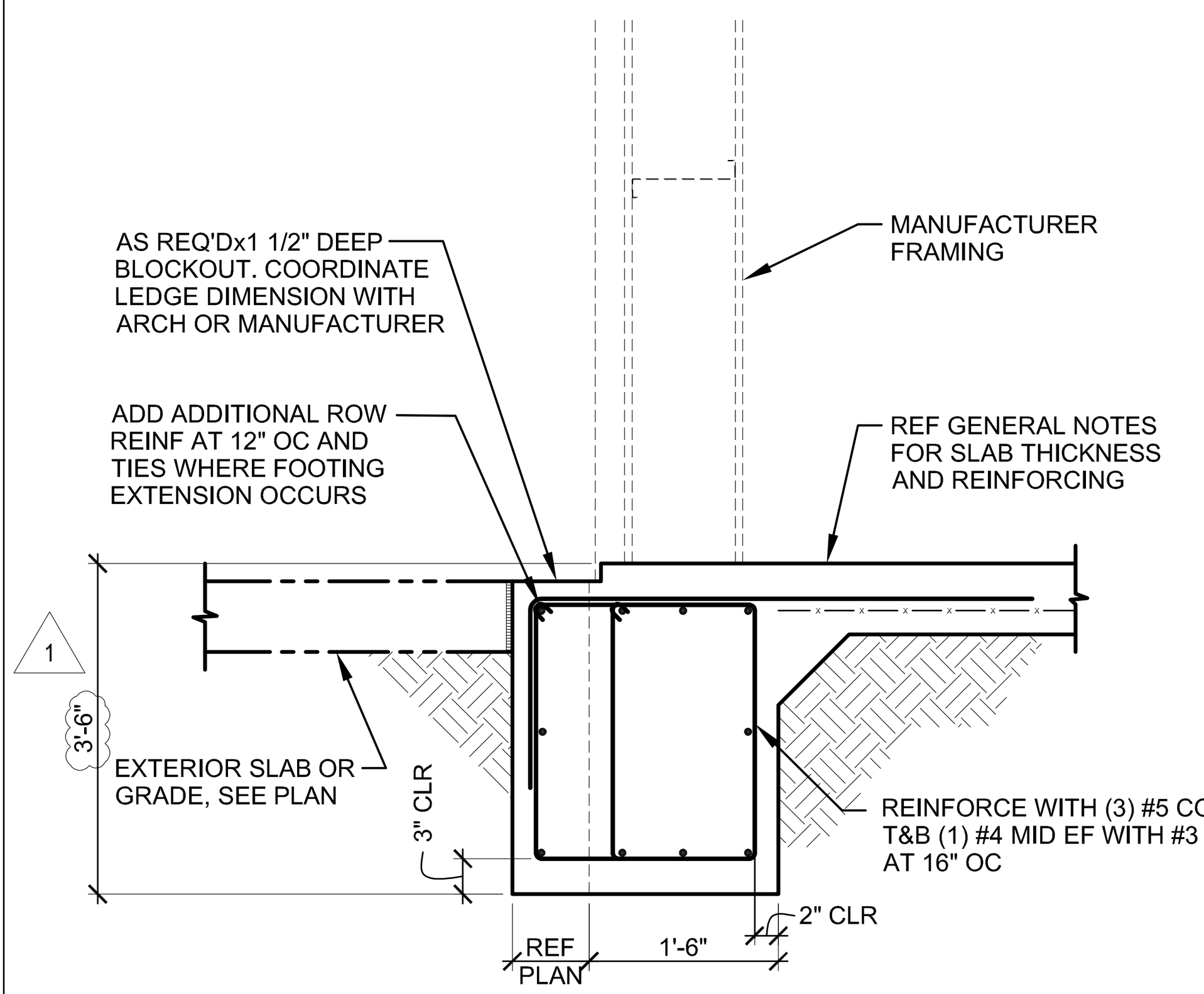
1	ADD #1	04/16/20

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

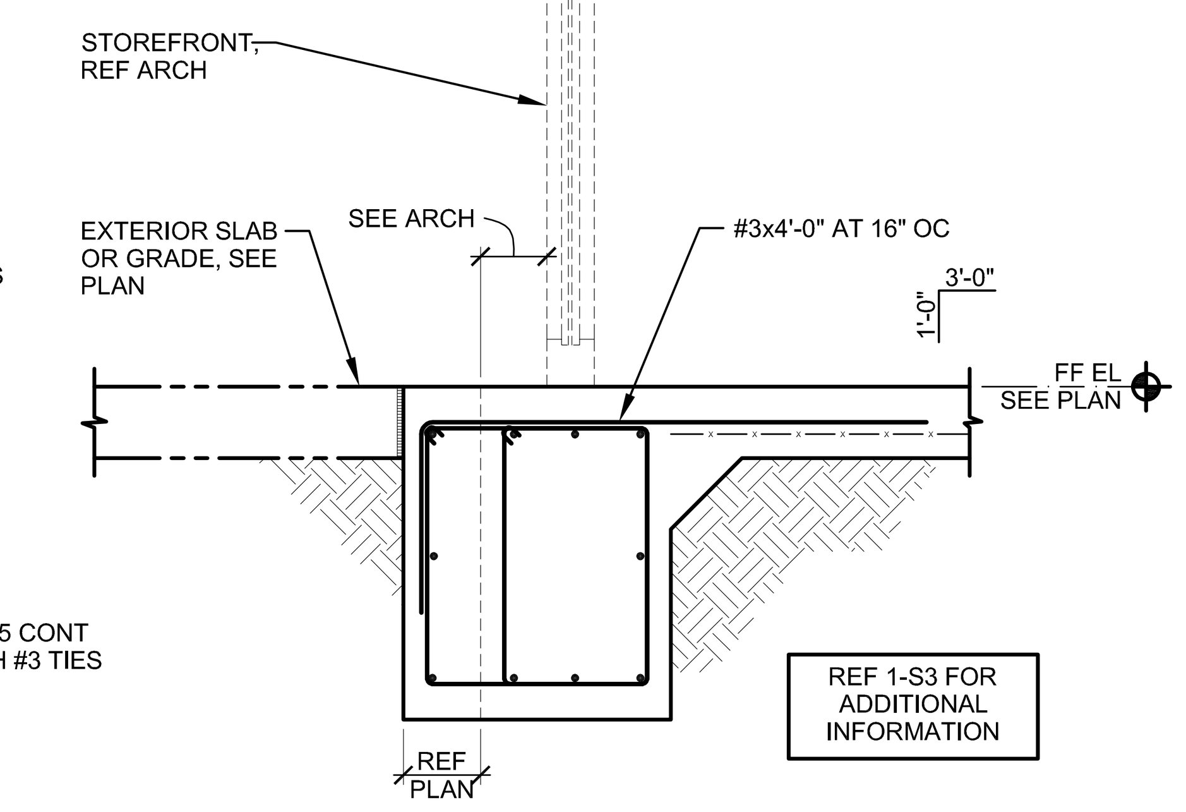
SHEET TITLE:
FOUNDATION PLAN AND NOTES

SHEET NUMBER:
S2

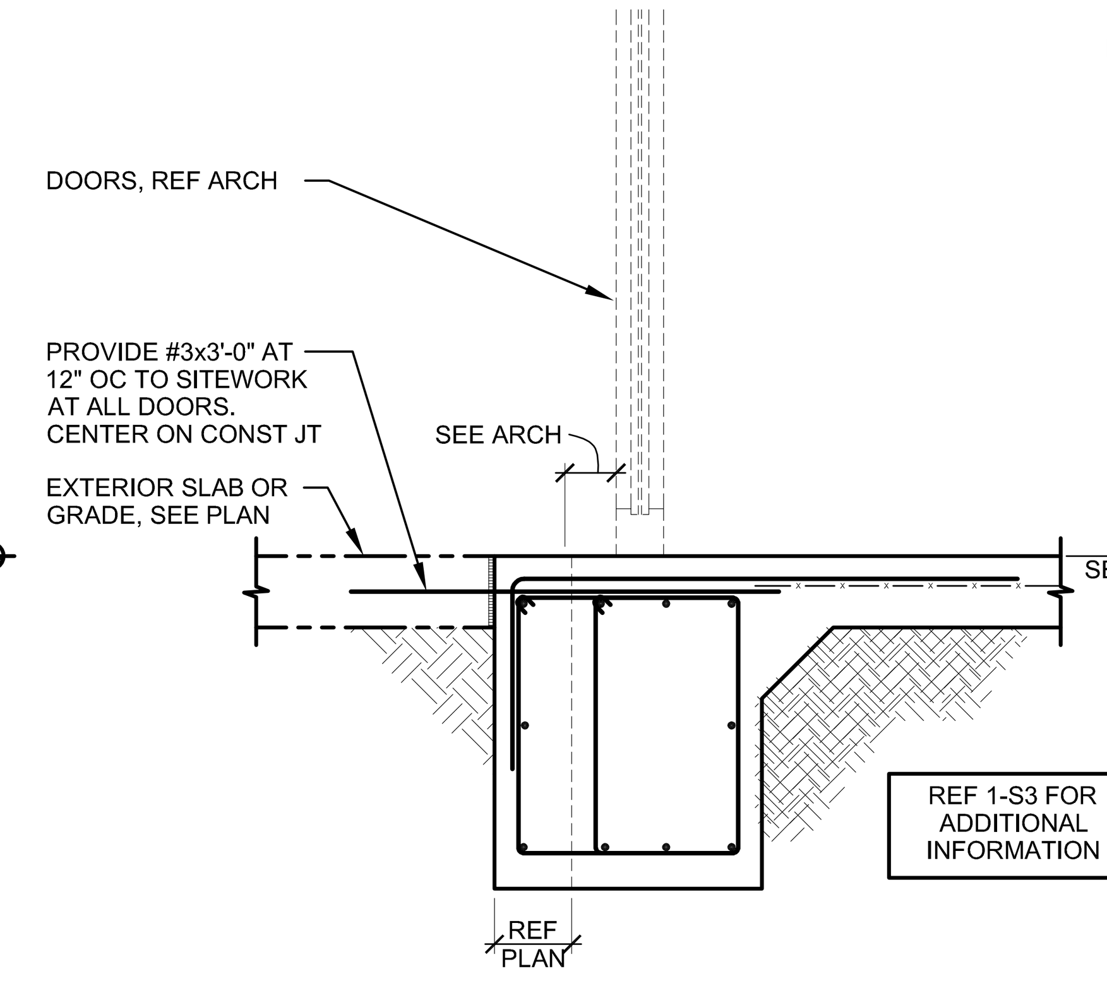
Apr 15, 2020 – 11:14am – USER Colby Brown
\\Struct-Server\Volume\BSRO\1912865 – Lee's Summit, MO\Struct_ER_L_S2.dwg



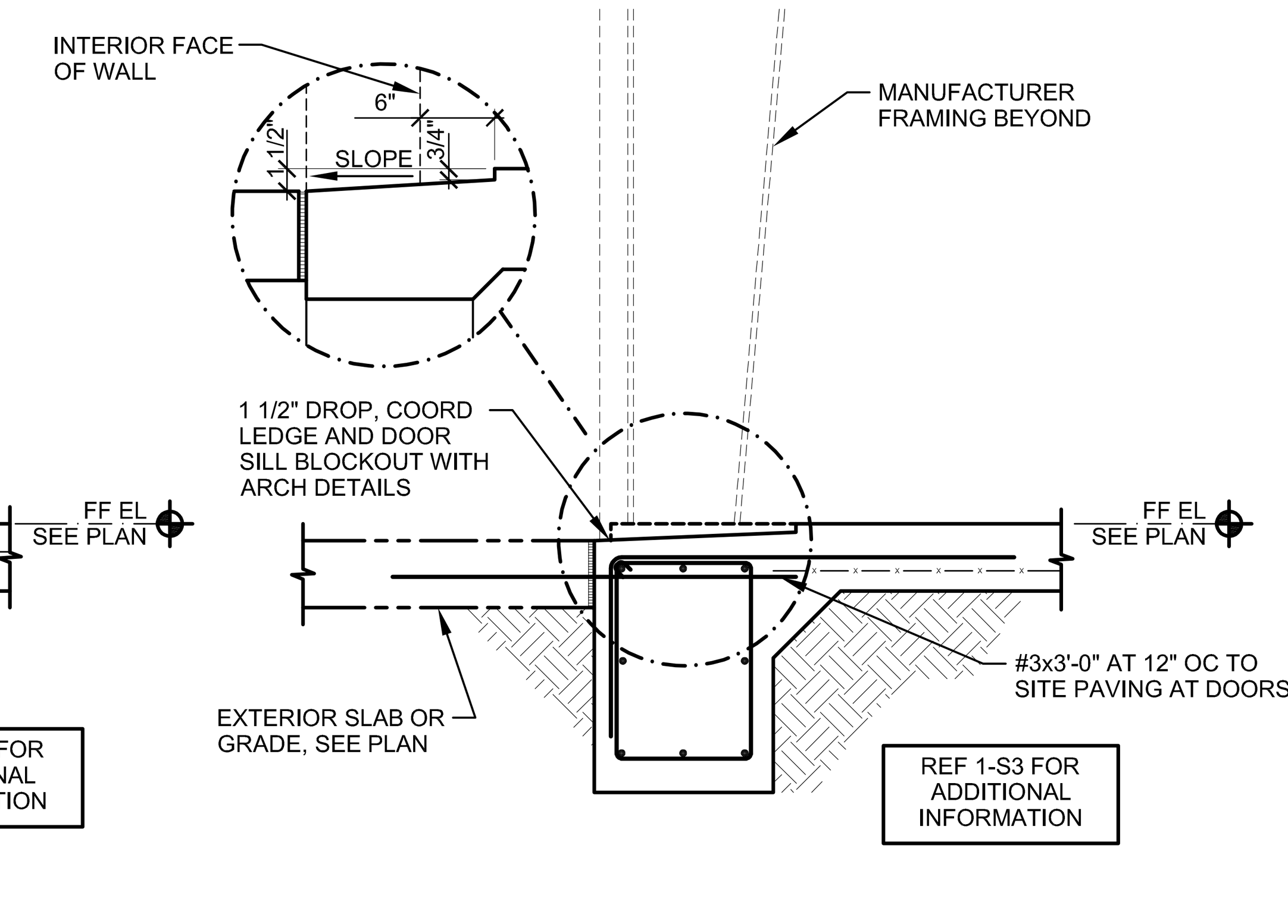
1 S3 EXTERIOR FOOTING DETAIL
SCALE: 3/4" = 1'-0"



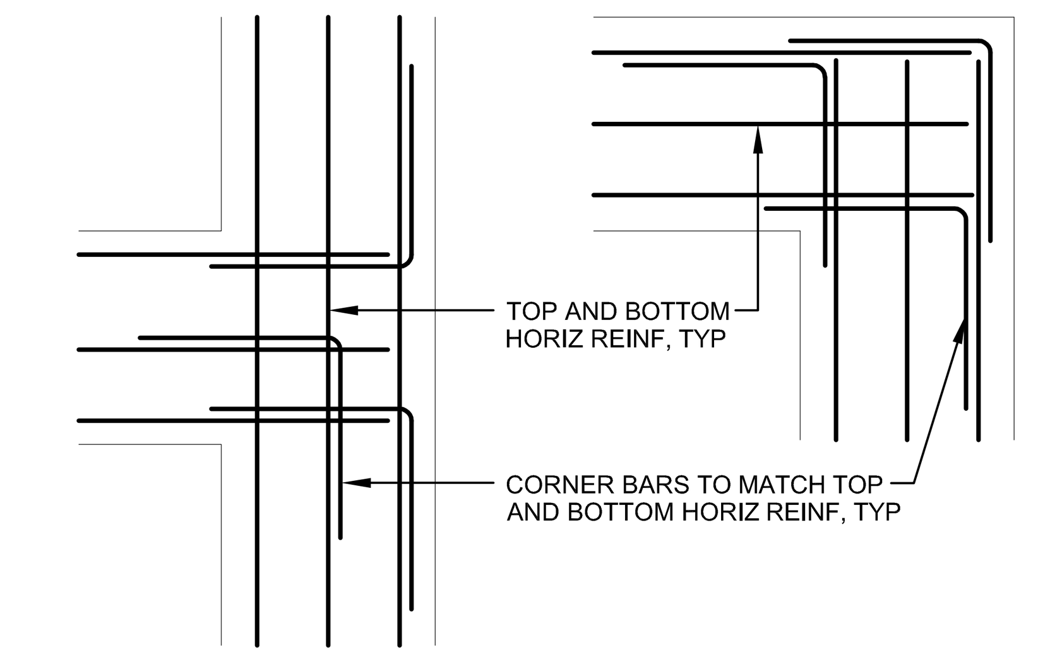
2 S3 EXTERIOR FOOTING DETAIL
SCALE: 3/4" = 1'-0"



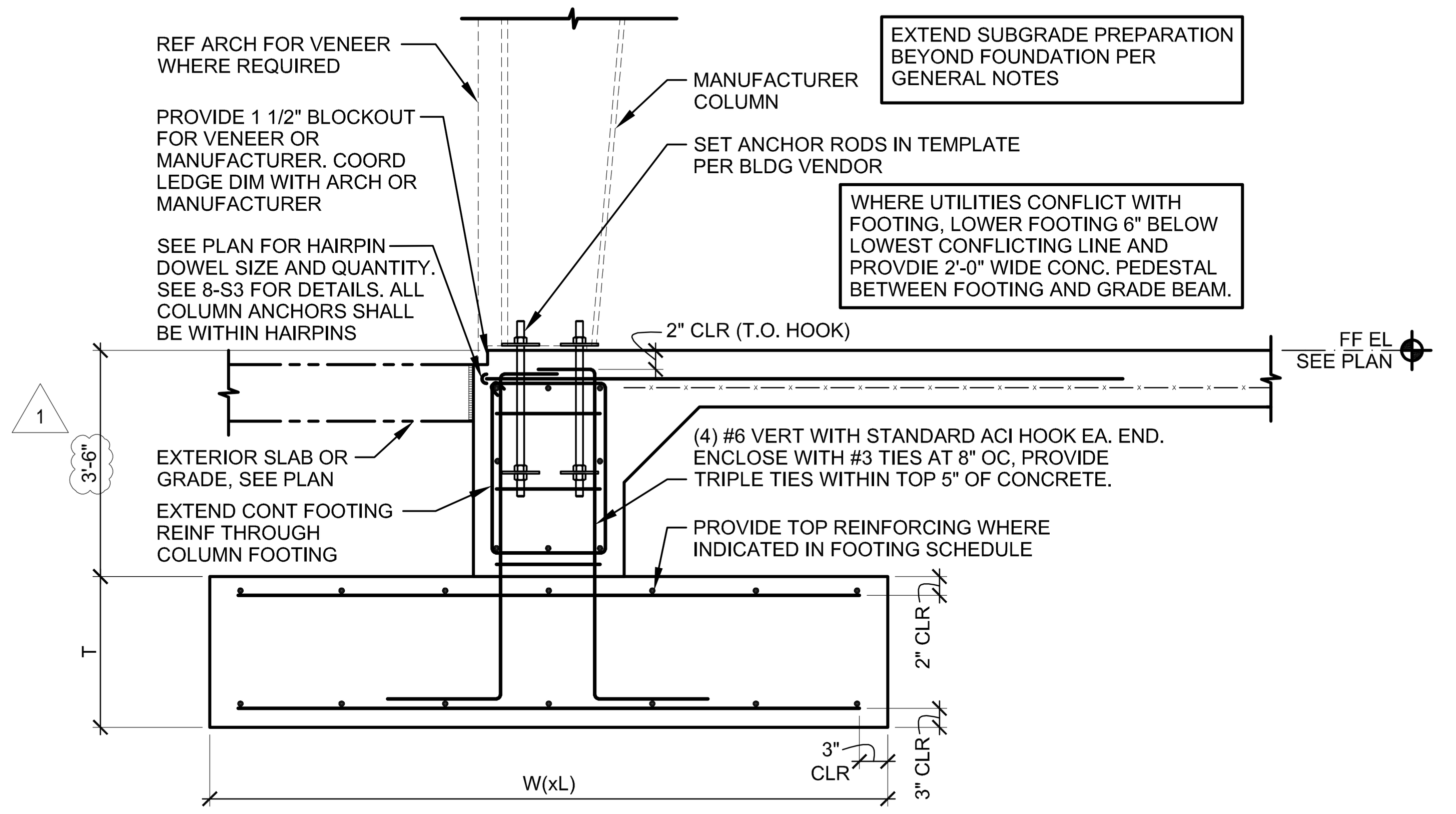
3 S3 DOOR SECTION
SCALE: 3/4" = 1'-0"



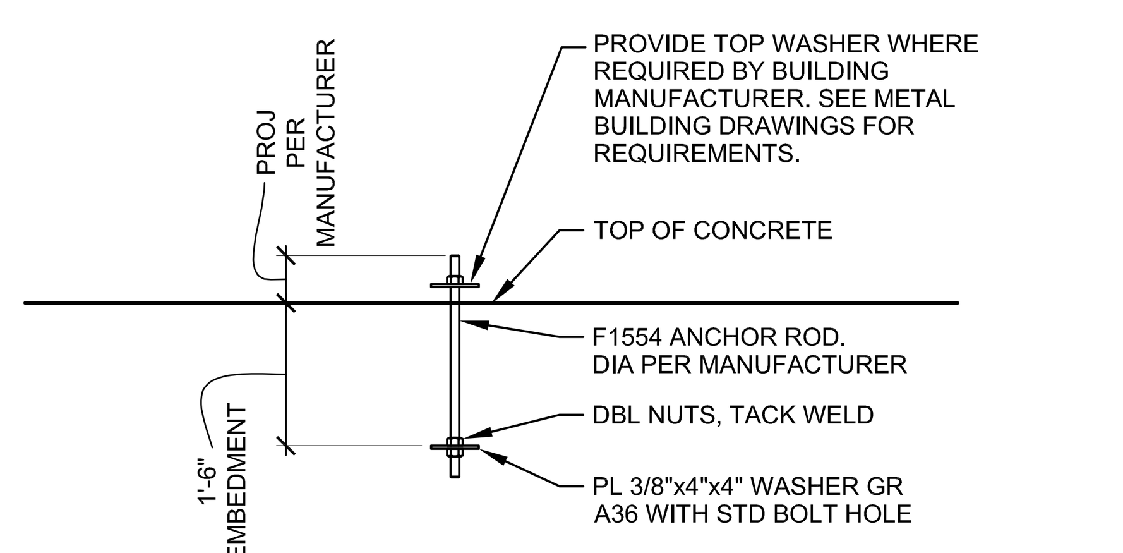
4 S3 OVERHEAD DOOR SECTION
SCALE: 3/4" = 1'-0"



5 S3 CORNER BAR REINFORCING
SCALE: 3/4" = 1'-0"



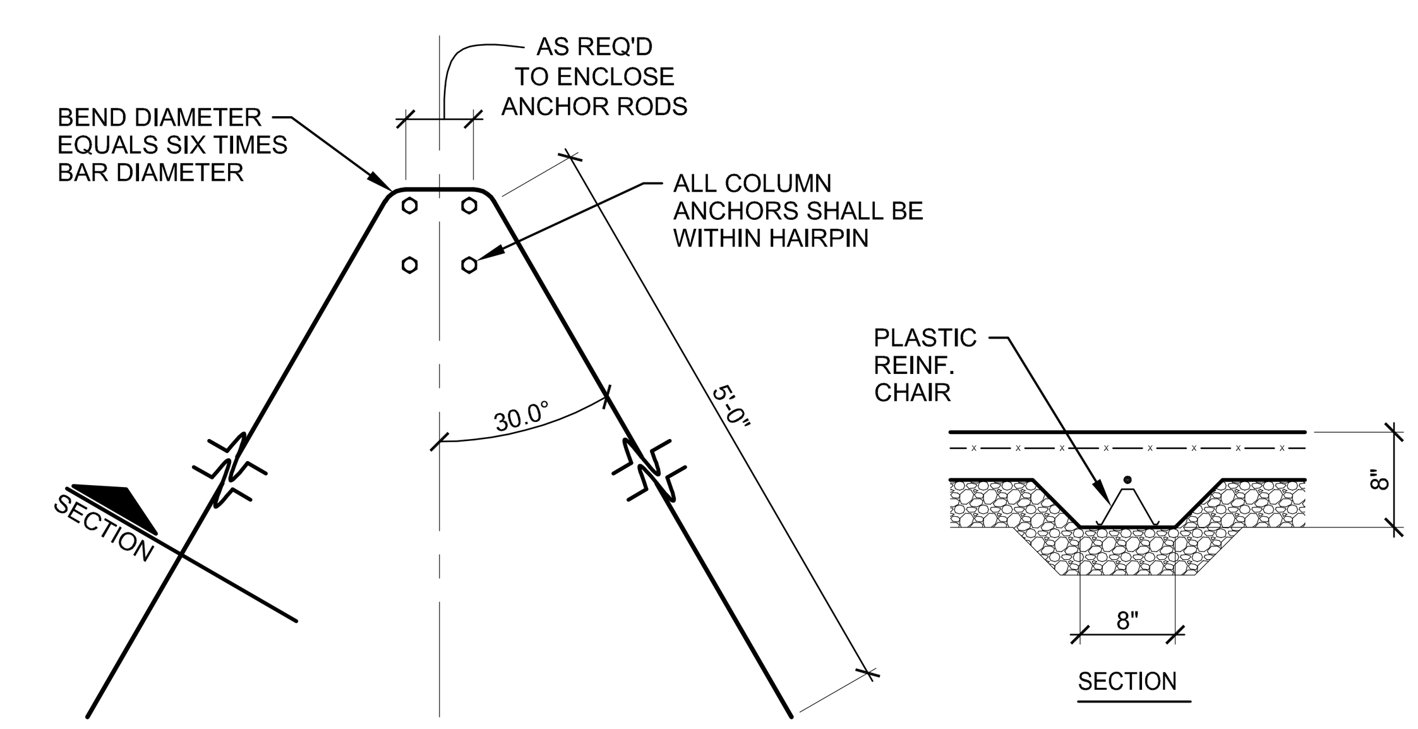
6 S3 SECTION AT PERIMETER COLUMN FOOTING
SCALE: 3/4" = 1'-0"



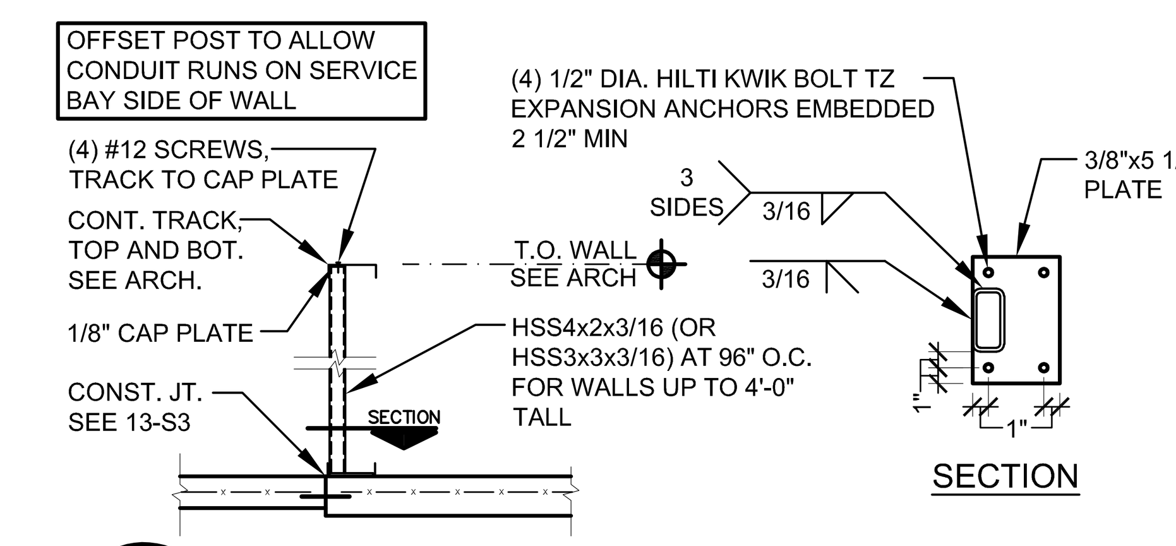
NOTES:

1. COORDINATE/VERIFY COL LOCATIONS AND ANCHOR RODS WITH ARCH AND MANUFACTURER.
2. PROVIDE QUANTITY OF ANCHOR RODS TO MATCH BASE PLATE CONFIGURATION FURNISHED BY MANUFACTURER.
3. SET ANCHOR RODS WITH TEMPLATE PROVIDED BY MANUFACTURER.

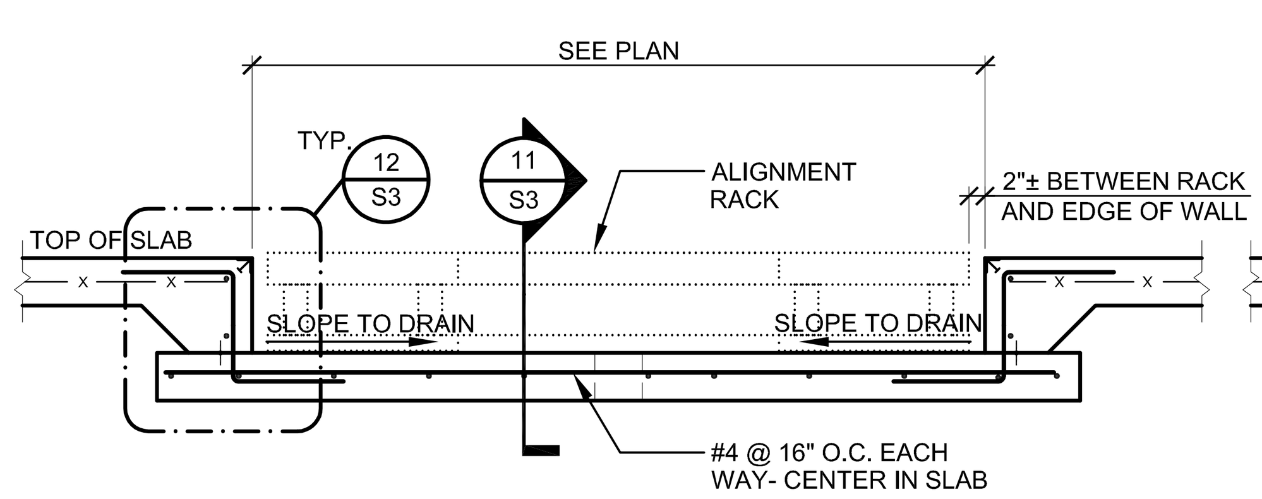
7 S3 TYPICAL ANCHOR RODS
SCALE: 3/4" = 1'-0"



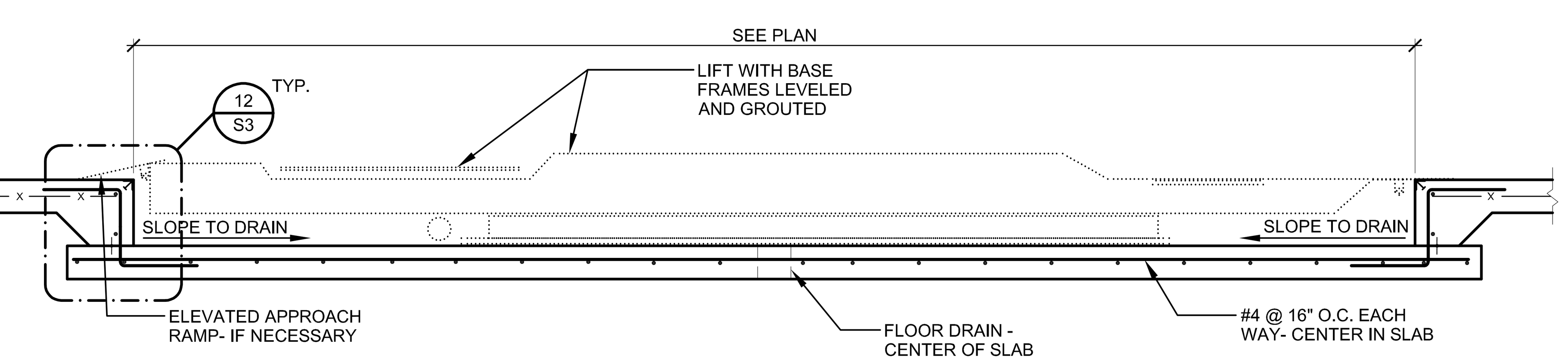
8 S3 TYPICAL HAIRPIN DETAIL
SCALE: 3/4" = 1'-0"



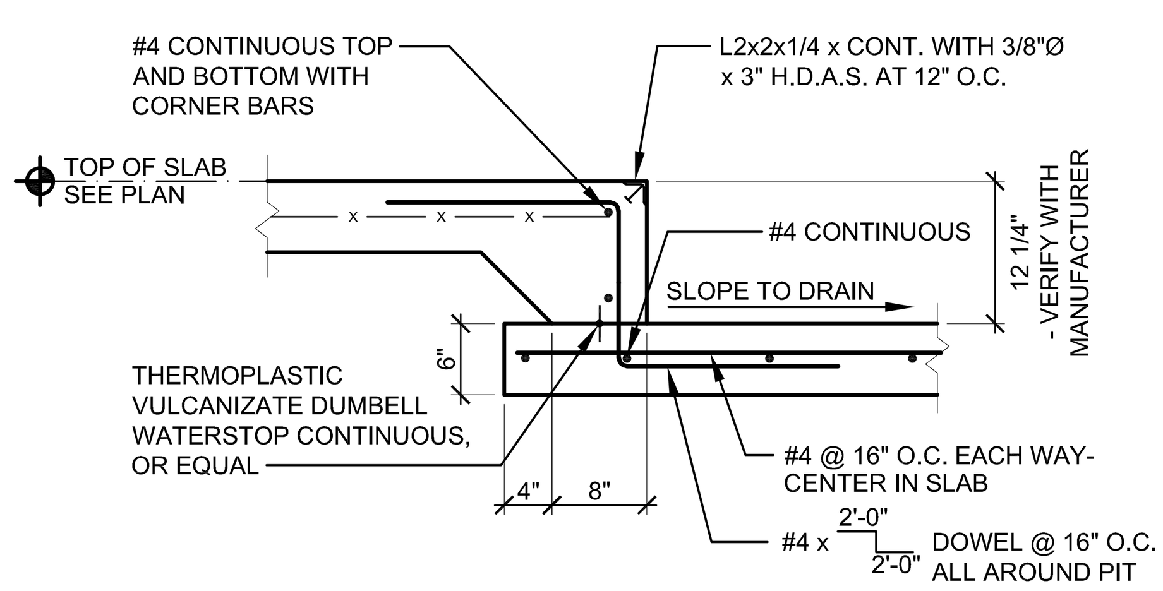
9 S3 KNEE WALL SECTION
SCALE: 1/2" = 1'-0"



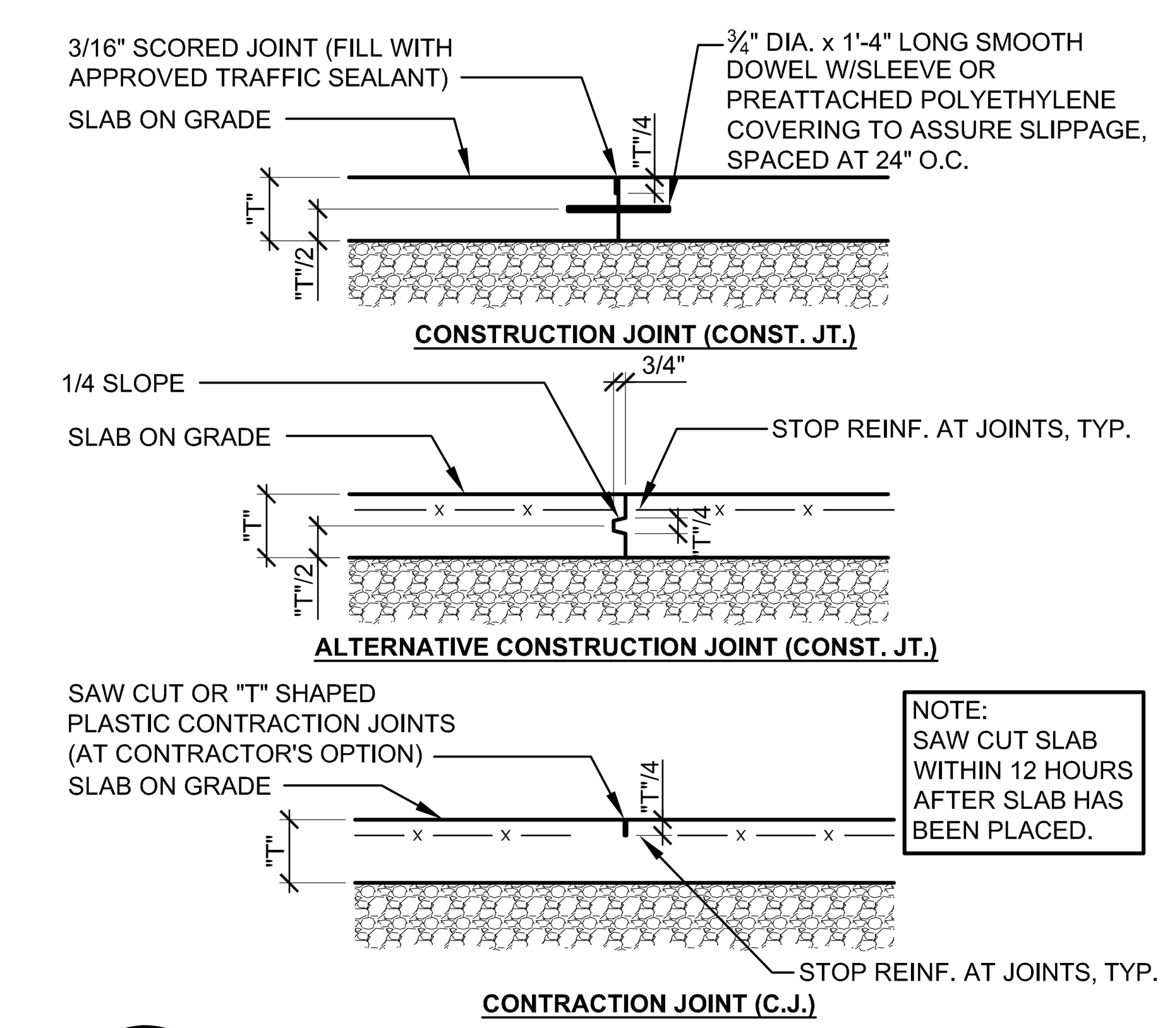
10 S3 SECTION AT ALIGNMENT SLAB
SCALE: 1/2" = 1'-0"



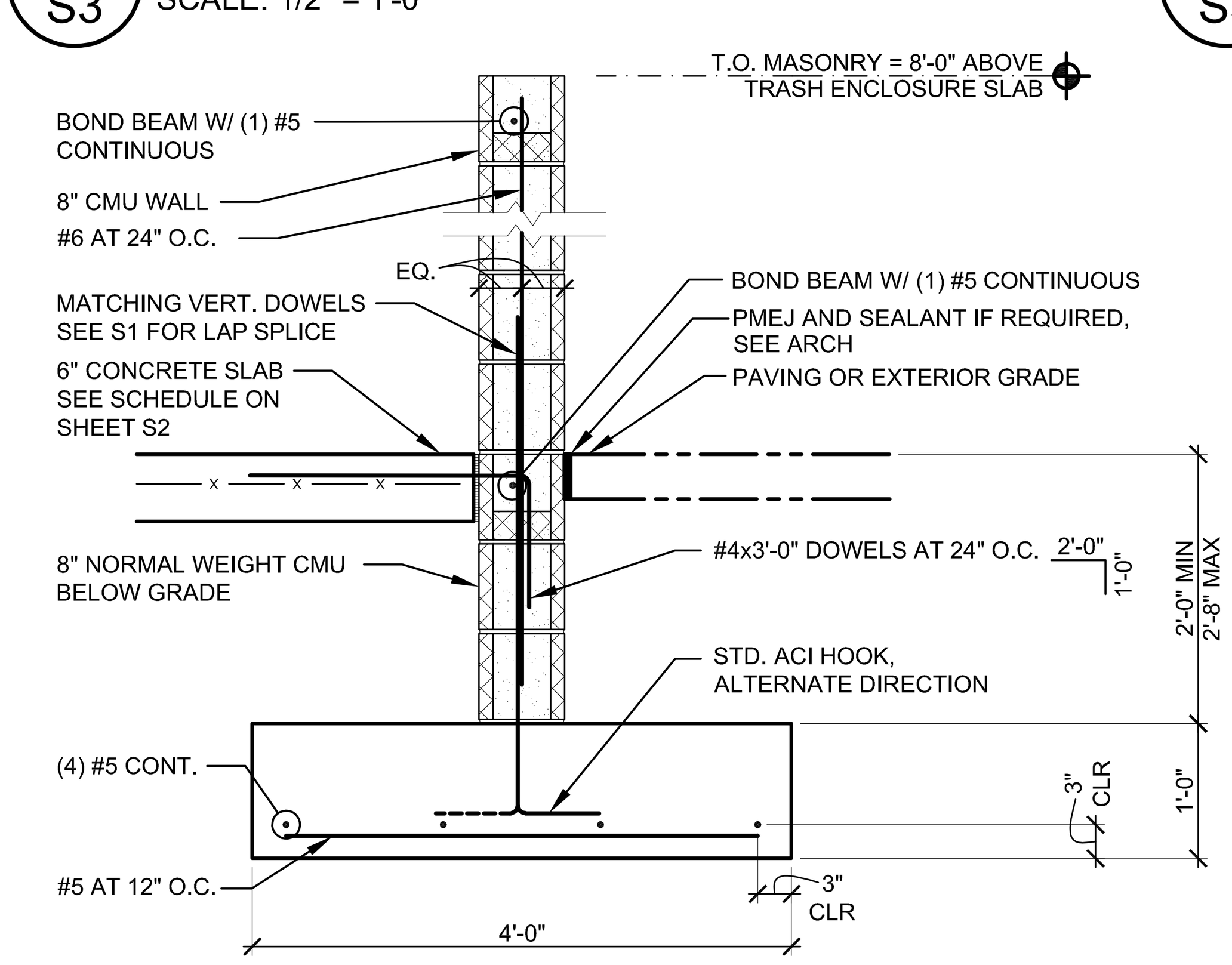
11 S3 SECTION AT ALIGNMENT SLAB
SCALE: 1/2" = 1'-0"



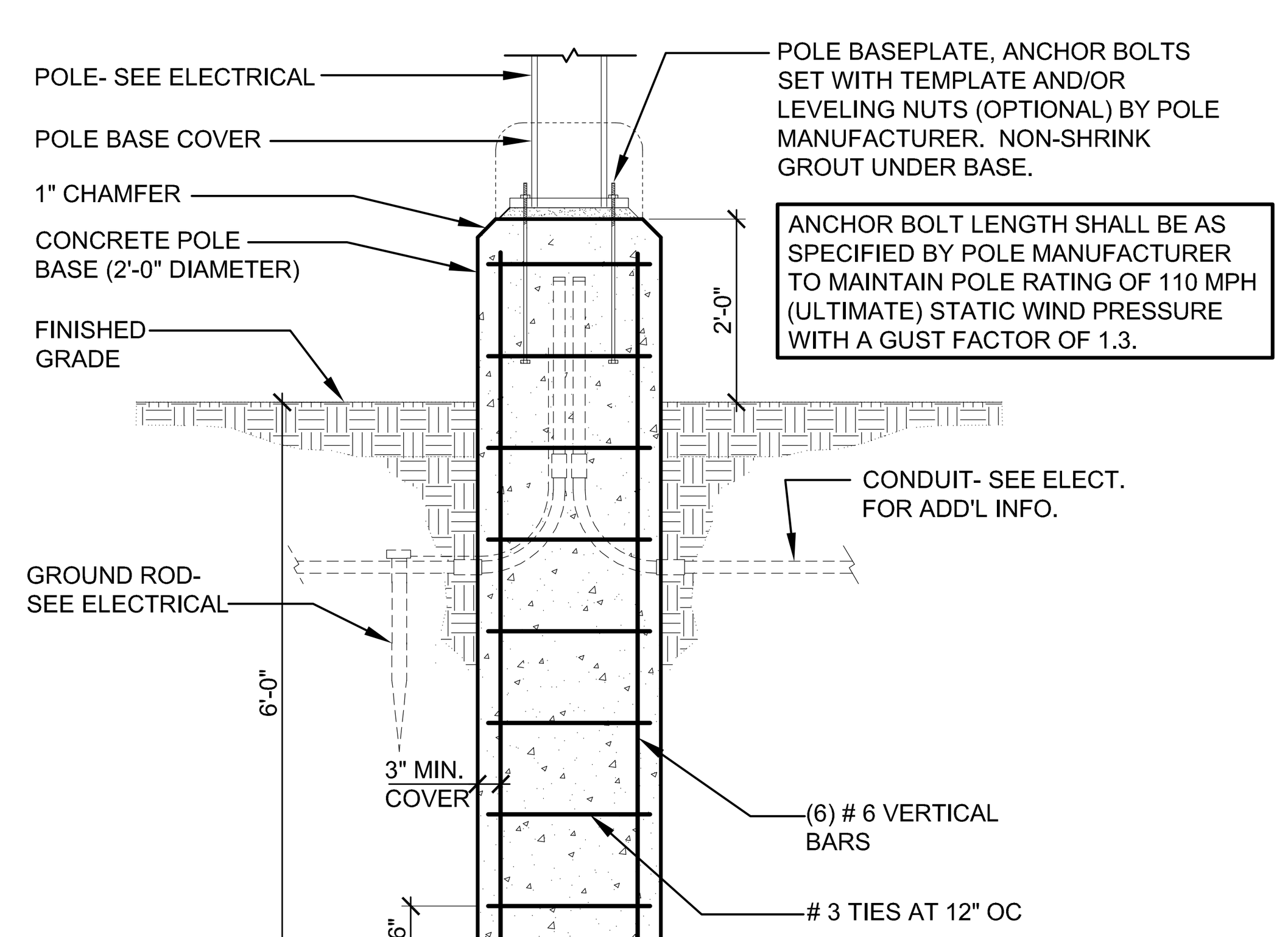
12 S3 SECTION DETAIL
SCALE: 3/4" = 1'-0"



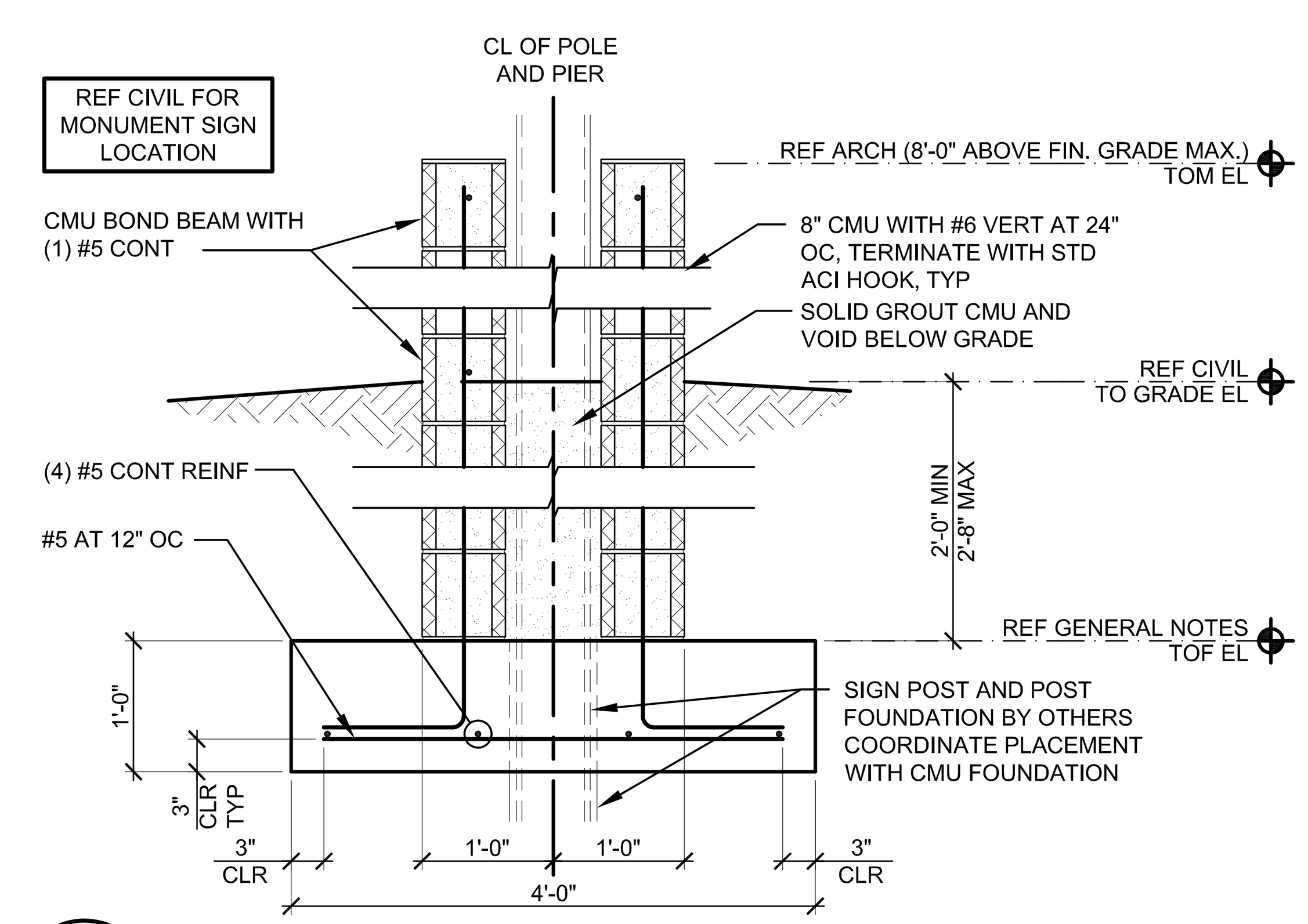
13 S3 TYP. SLAB JOINT DETAILS
SCALE: 1" = 1'-0"



14 S3 TRASH ENCLOSURE SCREEN WALL SECTION
SCALE: 3/4" = 1'-0"



15 S3 LIGHT POLE FOUNDATION
SCALE: 1/2" = 1'-0"



16 S3 CMU BASE AT MONUMENT SIGN
SCALE: 3/4" = 1'-0"

wallace
Wallace Engineering Structural Consultants, Inc.
Structural and Civil Consultants
123 N. Martin Luther King Jr. Blvd.
Tulsa, Oklahoma 74103
918.584.5858 800.364.5858

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LEE'S SUMMIT, MISSOURI 64082

WALLACE ENGINEERING – STRUCTURAL CONSULTANTS, INC. PROFESSIONAL ENGINEERING CORPORATION MISSOURI CERTIFICATE OF AUTHORIZATION #001268

STATE OF MISSOURI
PROFESSIONAL ENGINEER
2020.04.15 13:33:28-05'00'

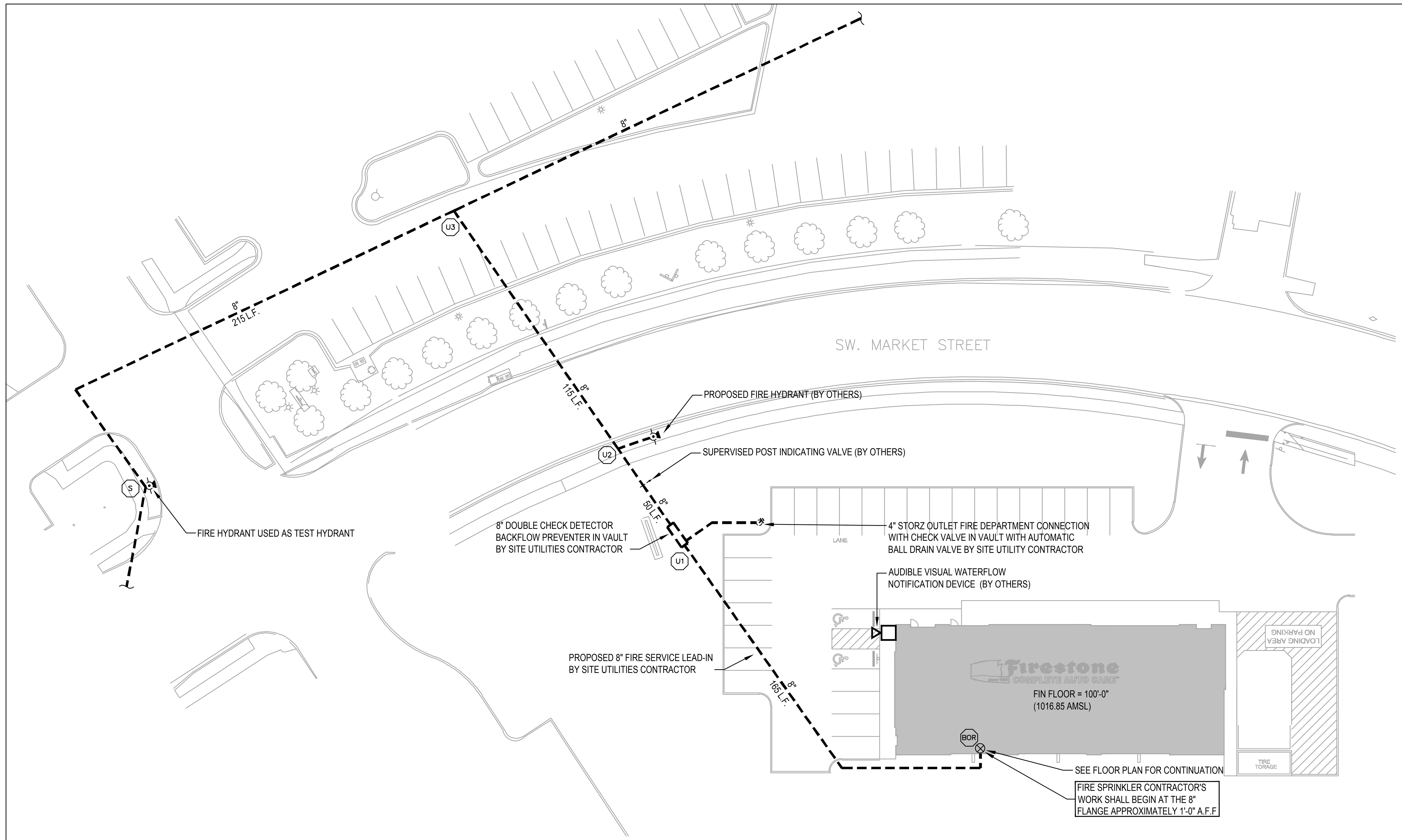
ISSUE BLOCK

1	ADD #1	04/16/20

PROPERTY NO.:	160085
6 DIGIT NO.:	906983
4 DIGIT NO.:	78C9
AOR PROJECT NUMBER:	1955B71
TO PERMIT:	DATE: 03/26/2020
TO BID:	DATE: ##-##-##

SHEET TITLE:
FOUNDATION DETAILS

SHEET NUMBER:
S3



FIRE PROTECTION SITE PLAN

SCALE 1" = 30'- 0"

FFE: 1,016.85 FT AMSL

UNDERGROUND PIPING NOTE

ALL UNDERGROUND PIPING, VALVES, FITTINGS, DIMENSIONS, ETC. ARE SHOWN FOR REFERENCE ONLY. REFER TO CIVIL DRAWINGS FOR EXACT LOCATIONS, TYPES, AND SIZES OF ALL COMPONENTS IN ADDITION TO DETAILS OF CONSTRUCTION.

FIRE SPRINKLER CONTRACTOR (FSC) BIDDING AND INSTALLATION TIMELINE

1. FIRE SPRINKLER CONTRACTORS SHALL PREPARE SPRINKLER BID BASED ON THESE CONTRACT DOCUMENTS (CDS). THE FSC SHALL DELIVER THEIR SHOP DRAWING SUBMITTAL (SDS) TO ARCHITECT FOR REVIEW NO MORE THAN TWO (2) WEEKS PRIOR TO THE START OF THE FSC'S WORK. SEE SPECIFICATION FOR ADDITIONAL DETAILS REGARDING THE FSC'S SDS.

2. THE ELECTRONIC VERSIONS (AUTOCAD) AND HYDRAULIC CALCULATION FILES WILL BE MADE AVAILABLE TO THE SUCCESSFUL FIRE SPRINKLER CONTRACTOR (FSC) FOR USE IN PREPARING THE SHOP DRAWING SUBMITTAL. THE FSC'S REQUEST SHALL BE MADE WITHIN TWO (2) WEEK OF SPRINKLER CONTRACT AWARD. ELECTRONIC DATA FILES WILL BE ELECTRONICALLY TRANSMITTED TO THE FSC UPON RECEIPT OF SIGNED ELECTRONIC RELEASE FORM. NOTE: THE FSC MAY UTILIZE OTHER HYDRAULIC CALCULATION PROGRAMS TO PRODUCE SHOP DRAWING SUBMITTAL.

3. AFTER SATISFACTORY REVIEW OF THE SDS, THE FSC SHALL SUBMIT TO ALL AUTHORITIES HAVING JURISDICTION FOR INSTALLATION PERMIT APPROVAL. WHERE APPLICABLE, THE FSC SHALL ALSO SUBMIT TO THE INSURANCE UNDERWRITER FOR INSURANCE PURPOSES. SUBMITTALS MAY OCCUR CONCURRENTLY WHERE SCHEDULES REQUIRE, BUT FIRE PROTECTION ENGINEER OF RECORDS REVIEW SHALL TAKE PRECEDENCE OVER ALL OTHER SUBMITTAL REVIEWS (NO EXCEPTIONS).

4. THE FSC SHALL BE RESPONSIBLE FOR RESPONDING, IN WRITING, TO ANY COMMENTS FROM ALL AUTHORITIES HAVING JURISDICTION WITHIN TEN (10) WORKING DAYS AFTER THE RECEIPT OF THEIR COMMENTS. COPIES OF THE RESPONSE SHALL BE SENT TO FIRE PROTECTION ENGINEER OF RECORD, ARCHITECT AND OWNER REPRESENTATIVES.

5. THE FSC SHALL COMPLETE ALL PRELIMINARY TESTING PROCEDURES PRIOR TO FINAL TESTING. SEE SPECIFICATION FOR ADDITIONAL DETAILS ON PRELIMINARY AND FINAL TESTING.

6. THE FSC SHALL COMPLETE AND SUBMIT ALL CONTRACTOR'S MATERIAL AND TEST CERTIFICATES (INCLUDE UNDERGROUND PIPING CERTIFICATE WHERE APPLICABLE) TO OWNER REPRESNTATIVE, PRIOR TO FINAL SYSTEM ACCEPTANCE.

7. THE FSC SHALL SUBMIT ALL PROJECT CLOSE-OUT DOCUMENTS TO OWNER REPRESENTATIVE, PRIOR TO FINAL SYSTEM ACCEPTANCE, IN ACCORDANCE WITH PROJECT REQUIREMENTS IN HARD COPY AND ELECTRONIC FILE FORMAT INCLUDING THE FOLLOWING ITEMS:
   - OPERATING AND MAINTENANCE INSTRUCTIONS.
   - AS-BUILT DOCUMENTS.
   - WARRANTY INFORMATION.

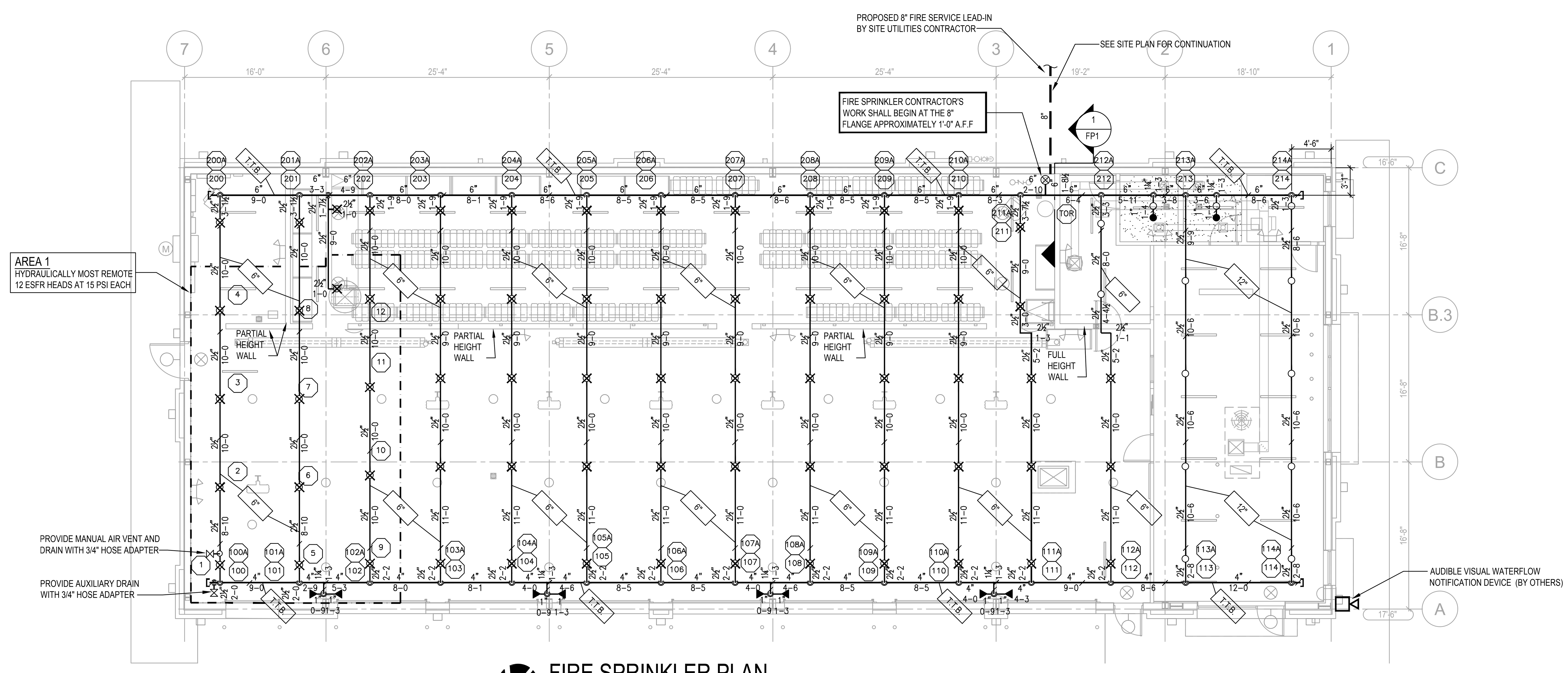
SYMBOL KEY

- NEW PIPING
- CENTER LINE OF SPRINKLER: ALIGN WITH LIGHTS AND/OR OTHER SPRINKLERS: COORDINATE WITH OTHER TRADES.
- 0'-0" RECOMMENDED CENTER LINE ELEVATION OF PIPE TO BE HELD TIGHT TO JOIST AND/OR BELOW METAL DECK (T.T.B. = TIGHT TO BEAM)
- RISE FROM LEFT TO RIGHT AND DROP FROM RIGHT TO LEFT
- CAPPED PIPE
- XX HYDRAULIC REFERENCE POINT
- GLOBE VALVE
- CHECK VALVE
- STORZ FIRE DEPARTMENT CONNECTION
- PIPE HANGER

SPRINKLER LEGEND

SYMBOL	SPRINKLER TYPE	TEMP.	K	FINISH	RESP.	QTY.
●	CHROME PENDENT WITH 2 PIECE ESCUTCHEON	ORD	5.6	CHROME	QR	2
○	UPRIGHT	INT	5.6	BRASS	QR	13
⊗	ESFR K25.2 PENDENT	INT	25.2	BRASS	ESFR	65
◀	BRASS HORIZONTAL SIDEWALL WITH GUARD	INT	5.6	BRASS	QR	8

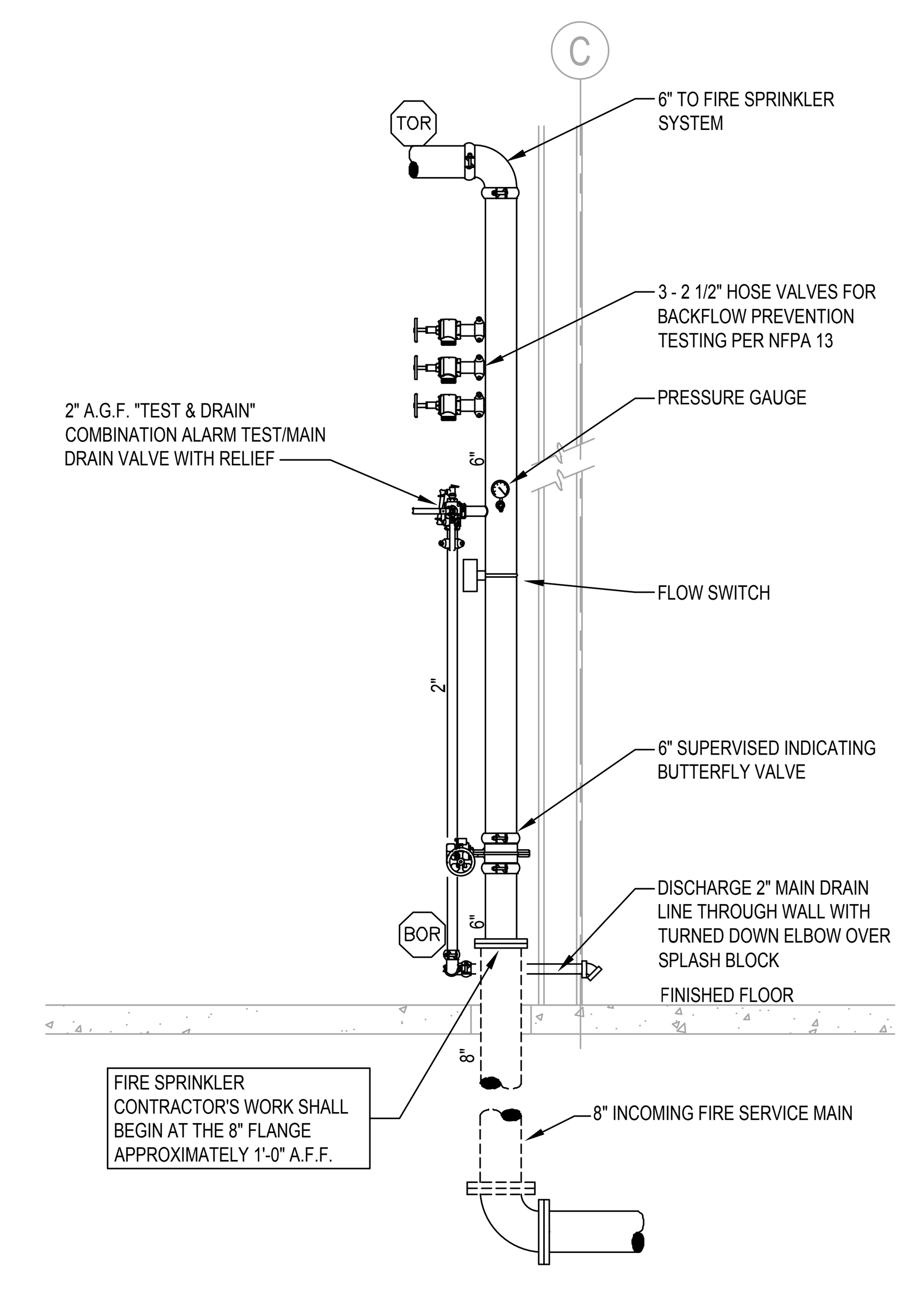
ESFR SPRINKLER SYSTEM SHALL COMPLY WITH ALL OBSTRUCTION REQUIREMENTS WITHIN NFPA 13. COORDINATION WITH ALL TRADES WILL BE REQUIRED TO COMPLY



FIRE SPRINKLER PLAN

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

FIN. FLOOR ELEV. = 100'-0"



1 FP1 FIRE SPRINKLER RISER ELEVATION

NOT TO SCALE

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314-991-2633
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JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

STATE OF MISSOURI
WILLIAM B. SMITH
NUMBER PE-2008019735
PROFESSIONAL ENGINEER
04-15-2020

FIRE PROTECTION ENGINEER OF RECORD:
WILLIAM B. SMITH, PE
LICENSE NO. PE-2008019735
CODE CONSULTANTS, INC.
2043 WOODLAND PKWY, SUITE 300
ST. LOUIS, MO 63146-4235
PHONE: 314-991-2633
CORPORATE CERTIFICATE OF AUTHORITY NO. 000419

ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
FIRE SPRINKLER PLAN

SHEET NUMBER:
FP1

GENERAL NOTES

1. PROVIDE ALL NECESSARY OFFSETS, RAISES OR DROPS IN PIPING AND AUXILIARY DRAINS REQUIRED BY BUILDING CONDITIONS WHETHER OR NOT SHOWN ON THE DRAWINGS.
2. EXAMINE THE JOB CONDITIONS AND VERIFY ALL MEASUREMENTS, DISTANCES, ELEVATIONS, CLEARANCES, PIPE SIZES, ETC.
3. ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL, AND ELECTRICAL BACKGROUND INFORMATION IS SHOWN FOR COORDINATION PURPOSES ONLY. REFER TO THE PROPER DRAWINGS FOR EXACT LOCATIONS, SIZES, AND QUANTITIES OF OTHER TRADES' WORK.
4. THE ENGINEERING DRAWINGS HAVE BEEN PREPARED USING AUTOCAD. THE DRAWINGS ARE 100% CAD. THE HYDRAULIC CALCULATIONS HAVE BEEN PREPARED USING HYDRACAD. THESE DOCUMENTS WILL BE MADE AVAILABLE TO THE SUCCESSFUL FIRE SPRINKLER CONTRACTOR IN EITHER ELECTRONIC FORM OR HARD COPY.
5. SUPPLY ONLY ONE (1) SPRINKLER FROM A SINGLE BRANCH LINE OUTLET. PROVIDE NEW BRANCH LINES AS REQUIRED.
6. SPRINKLERS NEAR A HEAT SOURCE (UNIT HEATERS, DIFFUSERS, STEAM MAINS, SKYLIGHTS, ETC.) SHALL HAVE TEMPERATURE RATINGS IN ACCORDANCE WITH NFPA 13.
7. IT IS UNDERSTOOD, UNLESS SPECIFICALLY INDICATED OTHERWISE, THAT THE PIPE SIZES AS SHOWN ON THE BID DOCUMENTS WILL BE USED.

PIPING/FITTING NOTES

1. ALL PIPING AND FITTINGS SHALL BE NEW UNLESS NOTED OTHERWISE ON THE DRAWINGS.
2. MAINS SHALL BE SCHEDULE 10 ASTM A795, A53, OR A135 PER NFPA 13.
3. BRANCH LINES SHALL BE SCH 10 EXCEPT WHERE THREADED FITTINGS ARE USED. PIPE FOR THREADED FITTING SHALL BE SCH 40 ASTM A795, A53, OR A135 PER NFPA 13.
4. ALL PIPING SHALL HAVE A CORROSION RESISTANCE RATIO (CRR) OF 1.0 OR GREATER.
5. GROOVED FITTINGS AND COUPLINGS SHALL BE OF THE SAME MANUFACTURER.
6. THREADED FITTINGS SHALL BE CAST IRON OR MALLEABLE IRON.
7. ALL PIPING AND FITTINGS SHALL BE U.L. LISTED AND/ OR F.M. APPROVED.
8. HEX BUSHINGS SHALL NOT BE USED.

HANGER NOTES

1. COORDINATE ALL HANGER TYPES AND LOCATIONS WITH THE STRUCTURAL ENGINEER OF RECORD.
2. COORDINATE ALL HANGER TYPES AND LOCATIONS WITH THE METAL BUILDING MANUFACTURER.
3. PIPES LARGER THAN 4 IN. RUNNING PARALLEL TO BAR JOISTS SHALL BE HUNG FROM TRAPEZE HANGERS SUPPORTED NEARLY EQUALLY BY TWO JOISTS.
4. ONLY ONE PIPE SHALL BE SUPPORTED FROM A SINGLE TRAPEZE HANGER UNLESS OTHERWISE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD.

DESIGN CRITERIA

OFFICE AREAS, BREAK ROOM, TOILETS (LIGHT HAZARD WET PIPE FIRE SPRINKLER SYSTEM):

DENSITY - 0.10 GPM/SQ FT

OPERATING AREA - 1,500 SQ FT

OFFICE AREAS AND BREAK ROOM: STANDARD COVERAGE SPACING
TEMP. CLASSIFICATION / NOMINAL K-FACTOR / RESPONSE TYPE - INT / 5.6 / QR

TOILET: STANDARD COVERAGE SPACING
TEMP. CLASSIFICATION / NOMINAL K-FACTOR / RESPONSE TYPE - ORD / 5.6 / QR

HOSE STREAM ALLOWANCE - 100 GPM

DURATION - 0.5 HOUR

CUSTOMER SHOWROOM (ORDINARY GROUP II, WET PIPE FIRE SPRINKLER SYSTEM):

DENSITY - 0.20 GPM/SQ FT

OPERATING AREA - 1,500 SQ FT

TEMP. CLASSIFICATION / NOMINAL K-FACTOR / RESPONSE TYPE - INT / 5.6 / QR

HOSE STREAM ALLOWANCE - 250 GPM

DURATION - 1.0 HOUR

MECHANICAL BAYS, INVENTORY AND USED INVENTORY (15 PSI) ESFR WET PIPE FIRE SPRINKLER SYSTEM:

MINIMUM END HEAD PRESSURE - 15 PSI

MINIMUM NUMBER OF SPRINKLERS CALCULATED - TWELVE (12) HYDRAULICALLY MOST REMOTE SPRINKLERS, FOUR (4) PER BRANCH LINE.

TEMP. CLASS / NOMINAL K-FACTOR / SPRINKLER TYPE - INT / 25.2 / ESFR

HOSE STREAM ALLOWANCE - 250 GPM

DURATION - 1.0 HOUR

NOTE: THIS DESIGN CRITERIA WILL PROTECT TIRE STORAGE ON TREAD UP TO 15FT IN AN 20FT BUILDING.

SPRINKLER SPACING SHALL BE AS SHOWN ON THE ENGINEERING DRAWINGS.

HARD CEILINGS - LOCATE SPRINKLERS IN ACCORDANCE WITH THE ENGINEERING DRAWINGS. SPRINKLERS SHALL BE IN LINE WITH LIGHT FIXTURES AND OTHER SPRINKLERS WHERE INDICATED ON THE DRAWINGS. COORDINATE CLOSELY WITH THE ELECTRICAL CONTRACTOR.

UNFINISHED AREAS - LOCATE SPRINKLERS AS SHOWN ON THE ENGINEERING DRAWINGS.

WATER SUPPLY:

FIRE PROTECTION WATER SUPPLY HAS BEEN OBTAINED FROM A HYDRANT FLOW TEST PERFORMED ON 11/07/2019 BY LEE'S SUMMIT WATER UTILITY. THE WATER SUPPLY SHALL BE CONSIDERED EFFECTIVE AT THE BASE OF THE TEST HYDRANT. THE APPROXIMATE WATER SUPPLY ELEVATION IS 1,012 FT AMSL OR 4 FT BELOW FINISH FLOOR. NO SUBSTITUTIONS OF WATER SUPPLY DATA OR ITS EFFECTIVE POINT WILL BE ALLOWED.

ACTUAL STATIC: 78 PSI
ACTUAL RESIDUAL: 50 PSI
ACTUAL FLOW: 1,775 GPM

THE ABOVE WATER SUPPLY COORDINATES DO NOT INCLUDE THE REQUIRED 10% OF THE STATIC PRESSURE SAFETY FACTOR THAT SHALL BE ENFORCED. THE FOLLOWING WATER SUPPLY COORDINATES HAVE BEEN ADJUSTED -8 PSI FOR THE REQUIRED SAFETY FACTOR.

DESIGN STATIC: 70 PSI
DESIGN RESIDUAL: 42 PSI
DESIGN FLOW: 1,775 GPM

PROVIDE FIRE DEPARTMENT CONNECTION AS REQUIRED.

REFERENCED STANDARDS

- INTERNATIONAL BUILDING CODE — 2018 EDITION
- INTERNATIONAL FIRE CODE — 2018 EDITION
- NFPA 13 - AUTOMATIC SPRINKLER SYSTEMS — 2016 EDITION

TESTING/FLUSHING NOTES

1. ALL SYSTEMS SHALL BE TESTED PER NFPA 13.
2. UNDERGROUND SHALL BE FLUSHED IN ACCORDANCE WITH NFPA PRIOR TO CONNECTING TO THE OVERHEAD SYSTEM.
3. TESTING SHALL BE COORDINATED WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND COMPLY WITH ALL LOCAL REQUIREMENTS.

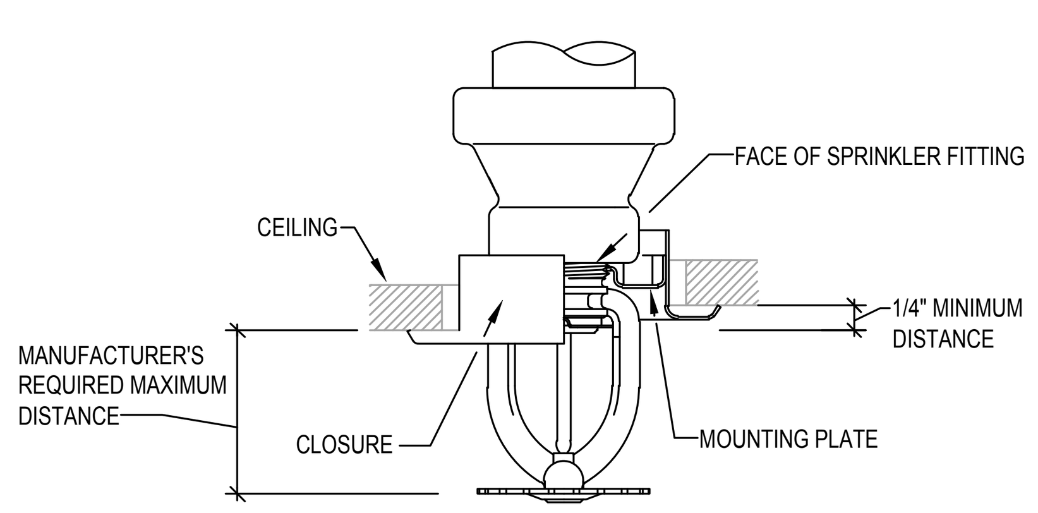
INSTALLATION NOTES

1. PROVIDE SPRINKLER PROTECTION BELOW DUCTS IN EXPOSED STRUCTURE AREAS PER NFPA-13.
2. ALL LIGHTING AND CONDUIT RUNS SHALL BE LOCATED SUCH THAT THE LEADING EDGE OF ANY OBSTRUCTION IS A MINIMUM OF 1'-0" (MEASURED HORIZONTALLY) FROM THE CENTERLINE OF ALL ESFR SPRINKLERS. COORDINATE EXACT LOCATIONS OF SPRINKLERS WITH OTHER DISCIPLINES PRIOR TO INSTALLATION. NO VARIATION FROM THIS MINIMUM CLEARANCE WILL BE PERMITTED.

MANUAL AIR RELEASE NOTE

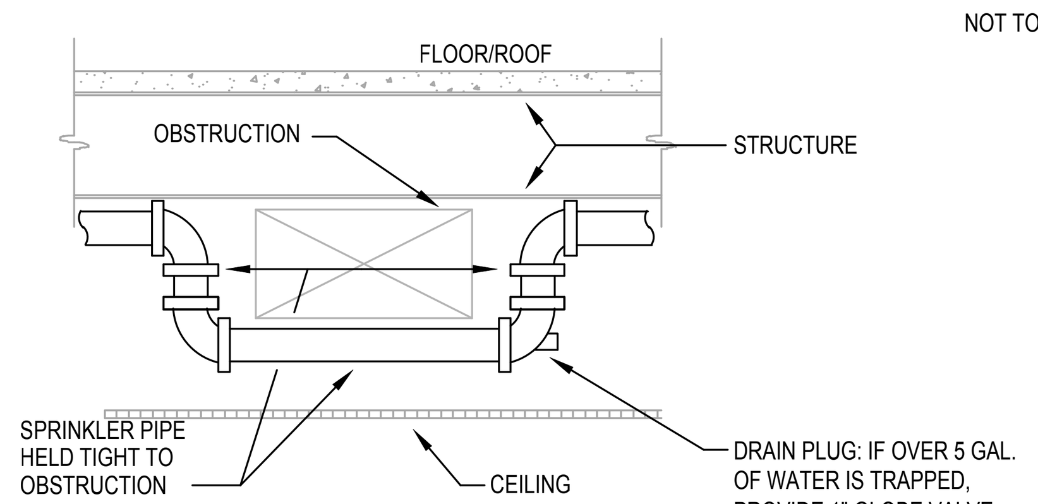
CONTRACTOR SHALL VENT AIR MANUALLY OUT OF PIPE.

CONTRACTOR SHALL PROVIDE NECESSARY EQUIPMENT AND MATERIALS TO DISCHARGE WATER TO EXTERIOR OR SUITABLE DRAIN LOCATION.



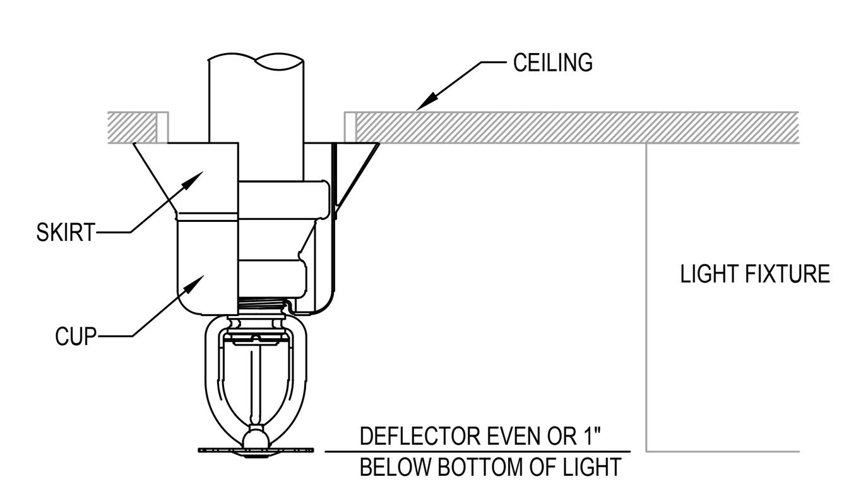
VERTICAL TOLERANCE FOR RECESSED SPRINKLERS

NOT TO SCALE



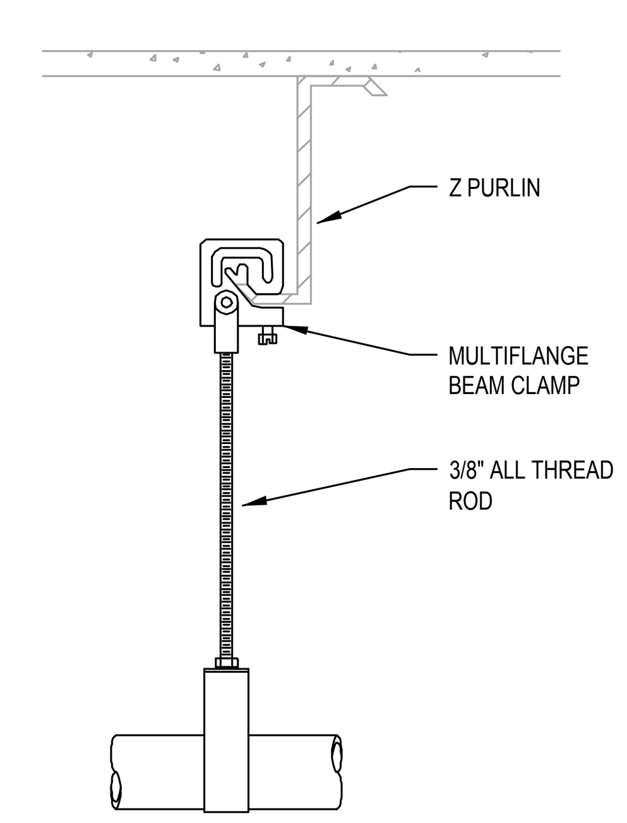
TYPICAL OFFSET AT OBSTRUCTION

NOT TO SCALE



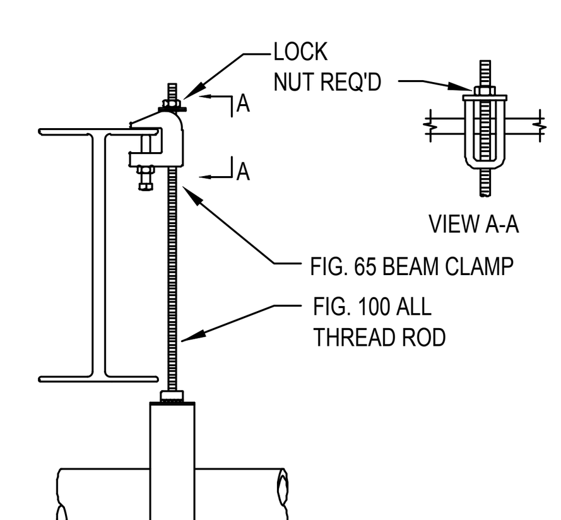
2 PIECE TELESCOPING ESCUTCHEON DETAIL

NOT TO SCALE



Z PURLIN CLAMP AND ROD

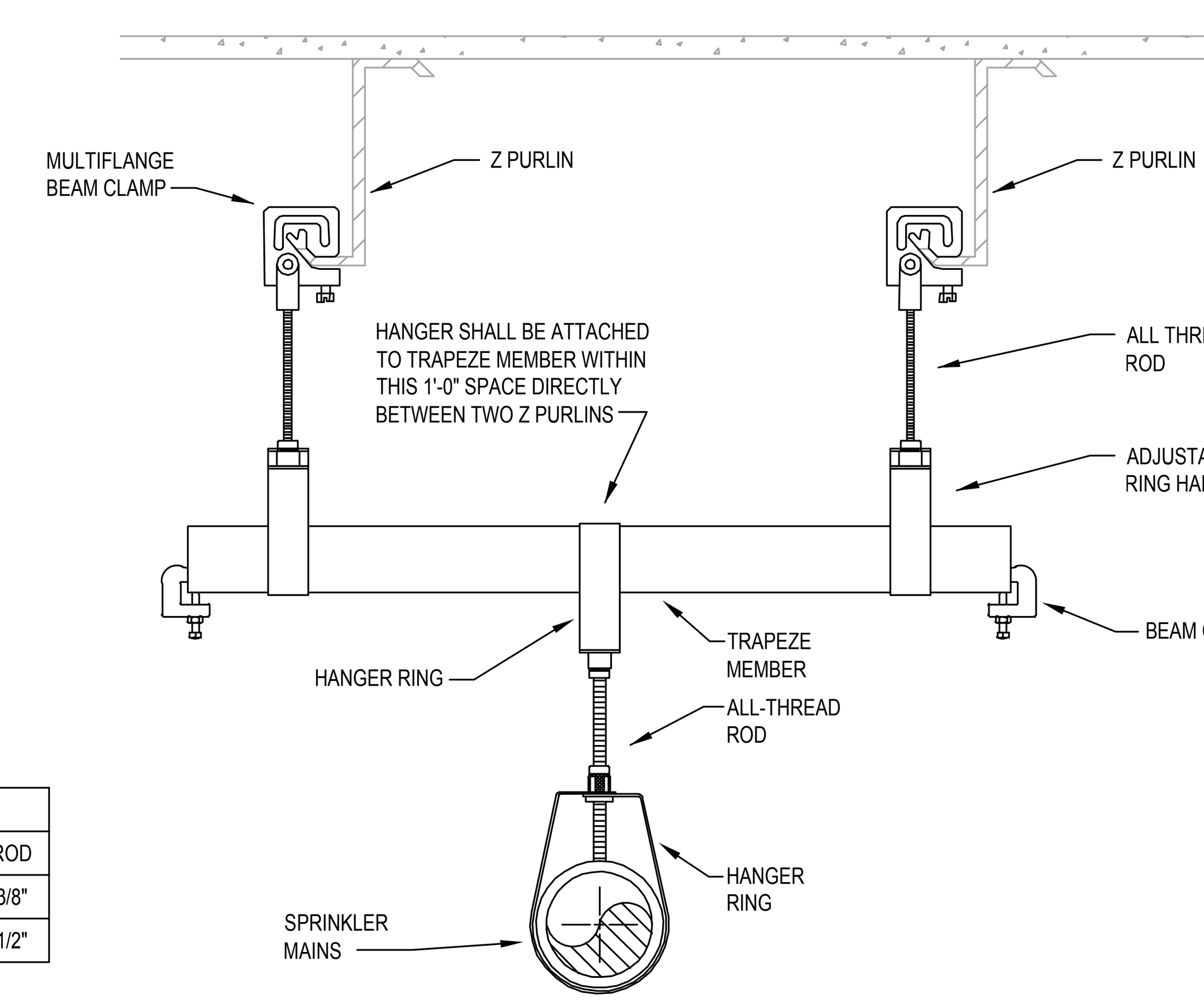
NOT TO SCALE



STANDARD HANGER	
PIPE	ROD
1" THROUGH 4"	3/8"
6" AND 8"	1/2"

TOP BEAM CLAMP, ROD, AND RING

NOT TO SCALE



TRAPEZE HANGER

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STATE OF MISSOURI
WILLIAM B. SMITH
NUMBER PE-2008019735
PROFESSIONAL ENGINEER
04-15-2020

FIRE PROTECTION ENGINEER OF RECORD:
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1	04/16/20	ADD #1

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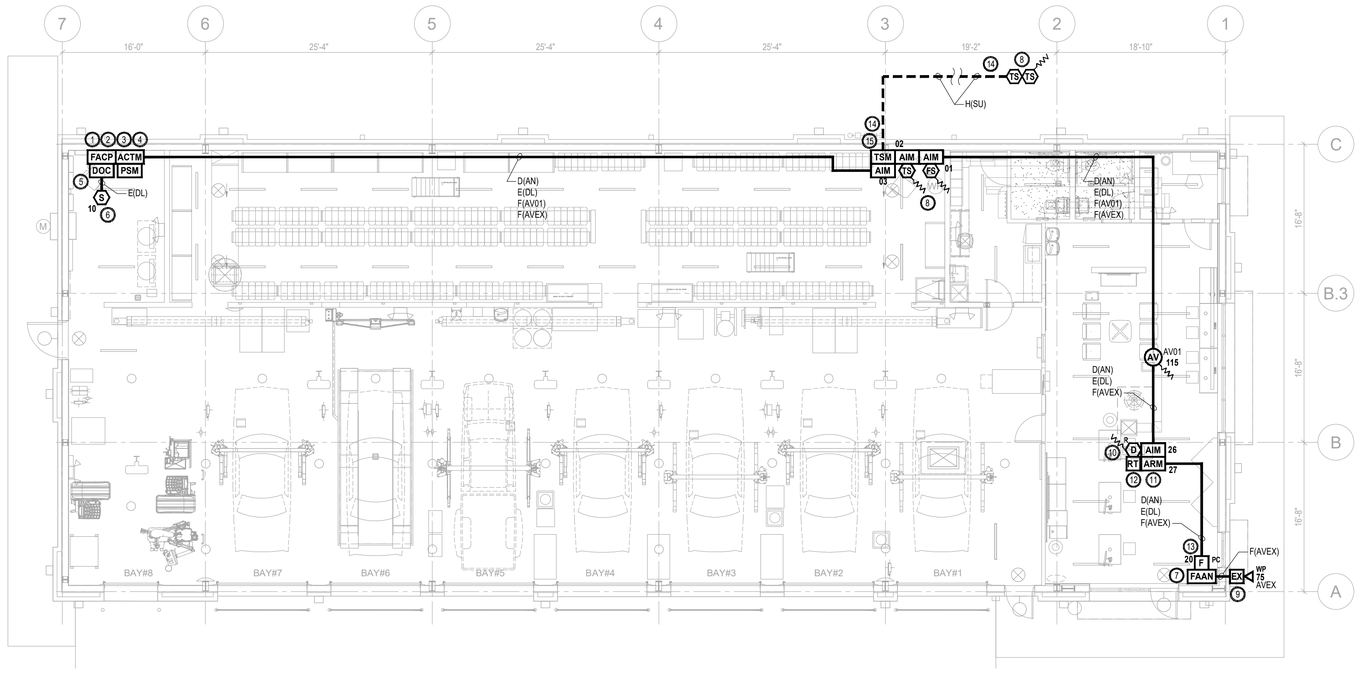
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
FIRE SPRINKLER NOTES AND DETAILS

SHEET NUMBER:
FP2



FIRE ALARM PLAN

SCALE 1/8"=1'-0"

2 1 0 4 8

FIRE ALARM MATRIX

	ACTUATES ALARM CONDITION AT FIRE ALARM CONTROL PANEL	ANNUNCIATES ALARM CONDITION AT REMOTE FIRE ALARM ANNUNCIATOR	TRANSMITS GENERAL ALARM SIGNAL TO APPROVED REMOTE SUPERVISING STATION	ACTUATES SUPERVISORY CONDITION AT FIRE ALARM CONTROL PANEL	ANNUNCIATES SUPERVISORY CONDITION AT REMOTE FIRE ALARM ANNUNCIATOR	TRANSMITS GENERAL SUPERVISORY SIGNAL TO APPROVED REMOTE SUPERVISING STATION	ACTUATES TROUBLE CONDITION AT FIRE ALARM CONTROL PANEL	ANNUNCIATES TROUBLE CONDITION AT REMOTE FIRE ALARM ANNUNCIATOR	TRANSMITS GENERAL TROUBLE SIGNAL TO APPROVED REMOTE SUPERVISING STATION	ACTIVATES INTERIOR AUDIBLE/VISUAL NOTIFICATION APPLIANCES	ACTIVATES EXTERIOR NOTIFICATION APPLIANCE	SHUTS DOWN HVAC UNIT
FIRE SPRINKLER SYSTEMS												
- WATERFLOW SWITCHES	●	●	●							●	●	
- CONTROL VALVE TAMPER SWITCHES				●	●	●						
MANUAL PULL STATION												
- ADJACENT TO THE FAAN	●	●	●							●		
SMOKE DETECTION DEVICES												
- ABOVE FACP	●	●	●							●		
- AIR HANDLING UNIT - RETURN SIDE				●	●	●						●
LOSS OF PRIMARY POWER AT THE FACP							●	●	●			
ABNORMAL CIRCUIT (OPEN, GROUND FAULT, SHORT) OR DEVICE							●	●	●			

SCOPE OF WORK

1. A DEDICATED FUNCTION FIRE ALARM SYSTEM SHALL BE PROVIDED THROUGHOUT THE BRIDGESTONE.
2. THE FIRE ALARM SYSTEM SHALL REPORT ALL ALARM, SUPERVISORY, AND TROUBLE SIGNAL TO A REMOTE SUPERVISING STATION.
3. THE FIRE ALARM SYSTEM SHALL CONSIST OF THE FOLLOWING:
   - ONE (1) INTERIOR AUDIBLE/VISUAL WITHIN THE SHOWROOM
   - ONE (1) EXTERIOR AUDIBLE/VISUAL APPLIANCE ABOVE THE FIRE DEPARTMENT CONNECTION
   - ONE (1) MANUAL PULL STATION WITH PROTECTIVE COVER ADJACENT TO THE FAAN
   - ONE (1) SMOKE DETECTOR ABOVE THE FACP
   - DUCT DETECTORS IN THE RETURN SIDE OF THE RTU
   - REMOTE TEST STATIONS FOR THE DUCT DETECTOR
   - SHUTDOWN THE AFFECTED RTU
   - FIRE ALARM ANNUNCIATOR ADJACENT TO THE FRONT ENTRANCE
   - POWER-LIMITED FIRE ALARM CABLING
   - MONITORING OF THE FIRE SPRINKLER CONTROL VALVES AND WATERFLOW SWITCHES
   - MONITORING OF THE EXTERIOR CONTROL VALVES TAMPER SWITCHES

PROJECT INFORMATION

PROJECT NAME:	BRIDGESTONE LEE'S SUMMIT, MISSOURI
LOCATION:	3561 SOUTHWEST MARKET STREET (1) LEE'S SUMMIT, MO 64082
CONSTRUCTION TYPE:	V-B
SQUARE FOOTAGE:	6,262 SQ. FT. 1-STORY
FIRE PROTECTION:	SPRINKLERED
BUILDING OCCUPANCY:	MIXED USE - MERCANTILE (SHOWROOM) S-1 (INVENTORY AND SERVICE AREA)
OCCUPANT LOAD:	42 PERSONS
SYSTEM TYPE:	DEDICATED FUNCTION FIRE ALARM SYSTEM

APPLICABLE CODES

ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REFERENCED DESIGN STANDARDS.

2018 INTERNATIONAL BUILDING CODE

2018 INTERNATIONAL FIRE CODE

2018 INTERNATIONAL MECHANICAL CODE

2017 NATIONAL ELECTRICAL CODE

2016 EDITION NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE

CONFLICTS BETWEEN THE REFERENCE NFPA STANDARDS, FEDERAL OR STATE CODES, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF FIRE PROTECTION ENGINEER (CCI) FOR RESOLUTION.

FIRE ALARM SYMBOL KEY

		QTY.
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (FIRE-LITE ES-50X) (IN RED ENCLOSURE)	1
FAAN	FIRE ALARM LCD ANNUNCIATOR (FIRE-LITE ANN-80)	1
DOC	DOCUMENTATION CABINET (SPACE AGE ELECTRONIC FAD ACE-11)	1
AIM	ADDRESSABLE INPUT MODULE (FIRE-LITE MMF-300)	4
ARM	ADDRESSABLE RELAY MODULE (FIRE-LITE CRF-300)	1
TSM	TRANSIENT SUPPRESSION MODULE (DITEK DTK-1LVLP-X)	1
ACTM	120 VAC TRANSIENT SUPPRESSION MODULE (DITEK DTK-120HW)	1
PSM	PHONE LINE SUPPRESSION MODULE (ELK-955 OR EQUAL)	1
F PC	ADDRESSABLE DUAL ACTION MANUAL PULL STATION WITH PROTECTIVE COVER AND INTEGRAL SOUNDER (FIRELITE BG-12LX) (STI-1100 STOPPER II WITH SOUNDER)	1
S	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR (FIRE-LITE SD365)	1
D R	DUCT-TYPE PHOTOELECTRIC SMOKE DETECTOR (FACTORY PROVIDED AND POWERED BY RTU) (R = RETURN SIDE)	1
RT	REMOTE TEST STATION / ANNUNCIATOR (SYSTEM SENSOR RTS151KEY)	1
FS	FLOW SWITCH (BY OTHERS)	1
TS	TAMPER SWITCH (BY OTHERS)	4
AV XX	CEILING MOUNTED RED AUDIBLE/VISUAL APPLIANCE (XX = CANDELA RATING) (SYSTEM SENSOR PC2RL)	1
EX WP XX	WALL MOUNTED RED EXTERIOR AUDIBLE/VISUAL APPLIANCE (XX = CANDELA RATING) (WP = WEATHERPROOF) (SYSTEM SENSOR P2RK)	1
———	FIRE ALARM CONDUCTORS (RED IN COLOR)	
- - -	FIRE ALARM CONDUCTORS LISTED FOR WET LOCATION IN UNDERGROUND CONDUIT (1 INCH MINIMUM)	
~WW~	END OF LINE RESISTOR	

FIRE ALARM SHEET INDEX

FIRE ALARM WIRING LEGEND

CONDUCTOR TYPE:

D = 18/4 TP
E = 18/2 TP
F = 14/2 TP
G = AS REQ'D BY MANF.
H = 18/2 WET LOCATION
J = 14/2 WET LOCATION

CIRCUIT DESIGNATION:

AN = ANNUNCIATOR KEYPAD CIRCUIT
AV = AUDIBLE/VISUAL NOTIFICATION CIRCUIT
DL = INITIATION DATA CIRCUIT
PW = LOW VOLTAGE POWER CIRCUIT
RC = RELAY CONTROL CIRCUIT
RT = REMOTE TEST STATION POWER
SU = SUPERVISORY CIRCUIT
ZN = INITIATION ZONE CIRCUIT

F(AV01)
- F — CONDUCTOR TYPE
- AV — CIRCUIT DESIGNATION
- 01 — CIRCUIT NUMBER

SHOULD MANUFACTURER OF FIRE ALARM EQUIPMENT REQUIRE A DIFFERENT TYPE OR SIZE OF CABLE THAN HEREIN SPECIFIED, THE LARGER OR MORE STRINGENT TYPE OF CABLE SHALL BE USED.

CCI
CODE CONSULTANTS, INC.
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Firestone COMPLETE AUTO CARE

NEW FCAC STORE
2020 ER
3561 SW MARKET ST
JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

STATE OF MISSOURI
JACOB P. HEMKE
NUMBER PE-2004000793
PROFESSIONAL ENGINEER
2020-04-15

FIRE PROTECTION ENGINEER OF RECORD:
JACOB P. HEMKE, PE
LICENSE NO. PE-2004000793
CODE CONSULTANTS, INC.
2043 WOODLAND PKWY, SUITE 300
ST. LOUIS, MO 63146-4235
PHONE: 314-991-2633
CORPORATE CERTIFICATE OF AUTHORITY NO. 000419

ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
FIRE ALARM PLAN AND MATRIX

SHEET NUMBER:
FA1

FACP BATTERY CALCULATIONS (FIRE-LITE ES-50X)

MODEL NUMBER	DESCRIPTION	QUANTITY	STANDBY POWER: CURRENT PER DEVICE (mA)	STANDBY POWER: TOTAL CURRENT (mA)	IN ALARM: CURRENT PER DEVICE (mA)	IN ALARM: TOTAL CURRENT (mA)	STANDBY BATTERIES (24-VOLT)	CURRENT (mA)
FIRE-LITE ES-50X	FIRE ALARM CONTROL PANEL	1	141	141	257	257	STANDBY CURRENT	158.50
FIRE-LITE ANN-80	ANNUNCIATOR	1	15	15	40	40	HOURS	24
FIRE-LITE BG-12LX	MANUAL PULL STATION	1	0.30	0.30	SEE NOTE 1	SEE NOTE 1	STANDBY mA	3,804
FIRE-LITE SD355	SMOKE DETECTION	1	0.30	0.30	SEE NOTE 1	SEE NOTE 1	ALARM CURRENT	497.33
FIRE-LITE MMF-300	MONITOR MODULE	4	0.40	1.60	SEE NOTE 1	SEE NOTE 1	HOURS	0.083
FIRE-LITE CRF-300	CONTROL/RELAY MODULE	1	0.30	0.30	SEE NOTE 1	SEE NOTE 1	ALARM mA	41
							TOTAL mA	3,845
							TOTAL AH	3.8
AS INDICATED	MAX DRAIN ALL DEVICES	1	0	0	200	200	CONTINGENCY	20%
							BATTERY TOTAL	4.5
SYSTEM SENSOR	CIRCUIT AVEX	1	0	0	0.176	0.176		
SYSTEM SENSOR	CIRCUIT AV01	1	0	0	0.158	0.158		
TOTAL				158.50		497.33	BATTERY PROVIDED	7

NOTES:

1. ALARM CURRENT FOR ADDRESSABLE DEVICES IS CALCULATED BASED ON THE MAXIMUM CURRENT REQUIRED FOR ALL DEVICES.
2. BATTERIES IN EXCESS OF 18 AH CANNOT BE INSTALLED IN THE FIRE-LITE ES-50X FACP ENCLOSURE AND MUST BE INSTALLED IN A BATTERY BOX LISTED FOR THAT PURPOSE WITH A PROPERLY SIZED CHARGER

FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP CALCULATIONS

SIGNAL CIRCUIT DESCRIPTION	APS/CIRCUIT LOCATION	ACTUAL ALARM CURRENT (mA)	MAXIMUM DISTANCE TO LAST APPLIANCE: 12 AWG CABLING (FEET)	MAXIMUM DISTANCE TO LAST APPLIANCE: 14 AWG CABLING (FEET)	CALCULATED VOLTAGE DROP USING 14 AWG CABLING (BASED ON 20.4 VDC SOURCE): APPROX CIRCUIT LENGTH (FEET)	VOLTAGE AT LAST APPLIANCE (VOLTS)	VOLTAGE DROP (VOLTS)
FACP	MAIN ELECTRICAL ROOM						
AVEX	EXTERIOR APPLIANCE	0.176	6,477	4,072	130	20.18	0.22
AV01	SALES FLOOR	0.158	7,215	4,536	200	20.21	0.19

NOTES:

1. NOTIFICATION APPLIANCE CIRCUITS (NAC) DESIGNED FOR A MAXIMUM 1.6 AMPS, MAXIMUM 4.4 VDC DROP, AND MINIMUM OPERATING VOLTAGE OF 16 VDC.
2. FIELD VERIFY ALL VOLTAGE DROP AND POWER REQUIREMENTS.
3. NOTIFICATION APPLIANCE CIRCUITS BASED UPON THE ABOVE CURRENT AND VOLTAGE CRITERIA USING SYSTEM SENSOR NOTIFICATION APPLIANCE CRITERIA.

ZONING

ZONE NUMBER	ACTUATED DEVICES	ALPHANUMERIC LABEL OF ZONE
Z01	FACP / FAAN / DACT	ALARM CONDITION AT FACP, FAAN, AND OFF-SITE MONITORING STATION
Z02	FACP / FAAN / DACT	SUPERVISORY CONDITION AT FACP, FAAN, AND OFF-SITE MONITORING STATION
Z03	FACP / FAAN / DACT	TROUBLE CONDITION AT FACP, FAAN, AND OFF-SITE MONITORING STATION
Z04		
Z05		
Z06	FACP	ACTIVATES INTERIOR AUDIBLE/VISUAL NOTIFICATION APPLIANCES
Z07		
Z08	FACP	ACTIVATES EXTERIOR NOTIFICATION APPLIANCE
Z09		
Z10	27	SHUTS DOWN HVAC UNITS
THRU		
Z20		

ADDRESSABLE DEVICES

ADDRESS	TYPE I.D.	ACTUATED ZONES	ALPHANUMERIC LABEL OF DEVICE
01	MONITOR	Z01, Z06	WATERFLOW SWITCH
02	MONITOR	Z02	TAMPER SWITCH
03	MONITOR	Z02	EXTERIOR CONTROL VALVE TAMPER SWITCHES
04			
05			
06			
07			
08			
09			
10	SMOKE	Z01, Z06	UTILITY AREA - ABOVE FACP
11			
12			
13			
14			
15			
16			
17			
18			
19			
20	PULL	Z01, Z06	ADJACENT TO FAAN
21			
22			
23			
24			
25			
26	MONITOR	Z02, Z10	RTU 1 RETURN DUCT SMOKE DETECTOR
27	RELAY		RTU 1 SHUTDOWN
28			
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FIRE ALARM INSTALLATION NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH NFPA STANDARDS AND ALL LOCAL ADOPTED CODES.
2. FIRE ALARM CABLING SHALL BE ACCEPTABLE TO THE FIRE ALARM EQUIPMENT MANUFACTURER FOR THE INTENDED PURPOSE. SHOULD MANUFACTURER OF FIRE ALARM EQUIPMENT REQUIRE DIFFERENT TYPE OR SIZE OF CABLE THAN HEREIN SPECIFIED, THE LARGER OR MORE STRINGENT TYPE OF CABLE SHALL BE USED.
3. ALL FIRE ALARM CABLING SHALL BE FPL, FPLR OR FPLP AS REQUIRED BY THE ELECTRICAL CODE.
4. PROVIDE ALL REQUIRED CONDUIT, BACKBOXES, AND FITTINGS FOR THE FIRE ALARM SYSTEM CABLING.
5. FIRE ALARM CABLING SHALL BE RED IN COLOR.
6. FIRE ALARM CABLING SHALL NOT BE PAINTED.
7. CABLE ROUTING SHOWN ON DRAWINGS IS FOR INTENT. EXACT ROUTING SHALL BE COORDINATED WITH OTHER TRADES IN THE FIELD. SEE DRAWING NOTES AND DETAILS FOR ACCEPTABLE INSTALLATION METHODS.
8. ALL CABLING NOT IN RUNWAY SHALL BE NEATLY BUNDLED, WRAPPED TIGHT, AND PROPERLY SECURED. ANY CABLING NOT INSTALLED IN A NEAT AND PROFESSIONAL MANNER SHALL BE PULLED OUT AND RE-RUN BY INSTALLER AT NO ADDITIONAL COST TO OWNER.
9. CONTRACTOR RUNNING CABLING MUST MARK BOTH ENDS OF CABLING, PROVIDE A WIRE LEGEND FOR ALL LOCATIONS, AND PROVIDE A CONTINUITY TEST LOG FOR EACH CABLE.
10. EXPOSED CABLING SHALL BE RUN PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. EXPOSED CABLING SHALL NOT BE RUN IN A "SPAN" FASHION BETWEEN BAR JOISTS OR BEAMS (I.E.: CABLING SHALL BE ROUTED ALONG PATH OF JOISTS AND BEAMS). ALL CABLING SHALL BE SECURED TO THE STRUCTURAL CEILING BETWEEN JOISTS OR BEAMS.
11. ALL CABLING SHALL BE SUPPORTED FROM BUILDING STRUCTURE AND NOT FROM GRID, TILES, OR SUPPORT WIRES. ALL CABLING NOT IN RACEWAY SHALL BE SUPPORTED BY BUILDING STRUCTURE AT NO MORE THAN FIVE (5) FOOT INTERVALS.
12. ALL FIRE ALARM CABLING BELOW THE ROOF STRUCTURE, IN ELECTRICAL AND MECHANICAL ROOMS (SUBJECT TO PHYSICAL DAMAGE), CONCEALED ABOVE CEILINGS, OR IN PARTITIONS (SUBJECT TO PHYSICAL DAMAGE) SHALL BE INSTALLED IN METALLIC CONDUIT.
13. ALL POWER LIMITED FIRE ALARM CABLING ABOVE THE STRUCTURE, ABOVE LAY-IN CEILINGS, OR CONCEALED ABOVE CEILINGS (NOT SUBJECT TO PHYSICAL DAMAGE) ARE NOT REQUIRED TO BE INSTALLED IN CONDUIT.
14. ALL NON-POWER LIMITED FIRE ALARM CABLING FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN CONDUIT.
15. ALL CONDUIT SHALL BE TERMINATED ABOVE THE WALL AT THE ROOF STRUCTURE LEVEL WITH SOME FORM OF GROMMET OR BOX CONNECTOR.
16. ALL CONDUIT LOCATED IN DRYWALL SHALL BE TERMINATED NO LESS THAN SIX (6) INCHES ABOVE THE CEILING TILE/ROOF STRUCTURE.
17. FOR DRYWALL APPLICATIONS, ALL CONDUIT AND BACKBOXES SHALL BE RECESSED INSIDE THE WALL.
18. EXPOSED CABLING OR CONDUIT IS NOT ALLOWED IN THE SHOWROOM.
19. ALL FIRE ALARM CABLING IN FINISHED AREAS SHALL BE CONCEALED.
20. COORDINATE DRILLING OF ANY HOLES (I.E. COLUMN PENETRATIONS) WITH THE OWNER'S REPRESENTATIVE AND ALL OTHER TRADES PRIOR TO INSTALLATION.
21. ALL FIRE ALARM DEVICES SHALL BE INSTALLED IN OR ON A PROPER BACKBOX. NO DEVICES SHALL BE INSTALLED WITHOUT A BACKBOX.
22. ALL CABLING, CONDUIT, AND BACKBOXES SHALL BE PROPERLY SUPPORTED AND SEISMICALLY BRACED, AS REQUIRED BY ALL APPLICABLE CODES AND THE LOCAL JURISDICTION.
23. CONDUIT AND CABLING SHALL ENTER INTO THE FACP ONLY AS APPROVED BY THE EQUIPMENT MANUFACTURER.
24. CONDUIT FILL SHALL NOT EXCEED 40%.
25. ALL FIRE ALARM JUNCTION BOXES SHALL BE RED IN COLOR.

FIRESTOP NOTES

1. ALL THROUGH-PENETRATIONS OF FIRE-RATED WALLS AND FLOORS SHALL BE FIRE-STOPPED.
2. FIRE-RATED GYPSUM BOARD WALLS CONSTRUCTED AS DESCRIBED IN THE INDIVIDUAL U300, U400, OR V400 SERIES DESIGNS IN THE U.L. FIRE RESISTANCE DIRECTORY (GENERALLY DOUBLE THICKNESS WALLBOARD) SHALL BE FIRE-STOPPED WITH U.L. SYSTEMS.
3. ALL REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOORS OR WALLS, AND ALL U.L. CLASSIFIED CONCRETE BLOCK WALLS SHALL BE FIRE-STOPPED WITH U.L. SYSTEMS.

FIREPROOFING NOTES (WHERE REQUIRED)

1. INSTALL ALL HANGERS, CLAMPS, CONDUIT, AND BACK BOXES FOR THE FIRE ALARM SYSTEM PRIOR TO THE APPLICATION OF FIREPROOFING ON STRUCTURAL MEMBERS.
2. INSTALL ALL HANGERS, CLAMPS, AND BACK BOXES FOR THE FIRE ALARM SYSTEM ON THE EDGE OF ANY JOIST REQUIRING FIREPROOFING. BACK BOXES SHALL BE FASTENED TO THE FLANGE OF THE JOIST UTILIZING BEAM CLAMPS, AND SHALL NOT BE ATTACHED DIRECTLY TO THE JOIST.
3. ANY DAMAGE TO FIREPROOFING ON THE BUILDING STRUCTURE AS A RESULT OF THE FIRE ALARM SYSTEM INSTALLATION SHALL BE REPAIRED BY A QUALIFIED FIREPROOFING CONTRACTOR. ALL DAMAGE AND REPAIR OF FIREPROOFING SHALL BE REPORTED TO AND COORDINATED THROUGH THE OWNER'S REPRESENTATIVE. THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIREPROOFING REPAIRS AT NO ADDITIONAL COST TO THE OWNER.
4. VERIFY THE LOCATIONS OF ALL FIREPROOFING, PRIOR TO THE INSTALLATION OF ANY FIRE ALARM CONDUIT AND BACKBOXES.

FIRE ALARM GENERAL NOTES

1. THE FIRE ALARM SYSTEM SHALL OPERATE AS A STANDALONE LOW VOLTAGE SYSTEM AND SHALL BE AN INTELLIGENT ADDRESSABLE SUPERVISED SYSTEM. CIRCUITS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   - INITIATING DEVICE CIRCUITS - CLASS B
   - NOTIFICATION APPLIANCE CIRCUITS - CLASS B
   - SIGNALING LINE CIRCUITS - CLASS B
   - CIRCUITS FOR RELAY COIL OPERATION SHALL BE 24 VDC MAXIMUM WITH A SEPARATE OR INTEGRAL FIELD COLLAPSING DIODE.
2. THE FIRE ALARM CABINETS AND DOCUMENTATION CABINET SHALL HAVE A HINGED DOOR KEYED IN COMMON WITH ALL OTHER KEYED DEVICES THROUGHOUT THE SYSTEM.
3. COORDINATE INSTALLATION OF A GROUND ROD OR ACCEPTABLE BUILDING GROUND FOR PROPER GROUNDING OF THE FACP WITH THE ELECTRICAL CONTRACTOR.
4. UPON LOSS OF BUILDING POWER, THE ENTIRE SYSTEM SHALL TRANSFER TO SECONDARY POWER WITHIN TEN (10) SECONDS, AND WITHOUT LOSS OF SIGNALS. THE SYSTEM SHALL OPERATE UNDER SECONDARY POWER IN NORMAL OR TROUBLE CONDITIONS FOR TWENTY-FOUR (24) HOURS AND HAVE SUFFICIENT POWER TO SUPPORT COMPLETE ALARM CONDITION OPERATION FOR A SUBSEQUENT FIVE (5) MINUTES AT MAXIMUM CONNECTED LOAD.
5. PROVIDE MONITORING CONNECTIONS TO SPRINKLER WATERFLOW SWITCHES AND TAMPER SWITCHES (BY OTHERS). PROVIDE ALL CABLING TO SWITCHES, FINAL WIRING CONNECTIONS AT SWITCHES, AND SUPERVISION OF ALL WIRING CONNECTIONS. COORDINATE ALL CONNECTIONS WITH THE SPRINKLER CONTRACTOR.
6. ALL SIGNALING LINE CIRCUITS, INITIATING DEVICE CIRCUITS, AND NOTIFICATION APPLIANCE CIRCUITS SHALL BE SUPERVISED IN ACCORDANCE WITH NFPA 72.
7. PROVIDE END OF LINE RESISTORS FOR ALL INITIATING DEVICE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS PER MANUFACTURER SPECIFICATIONS.
8. PROVIDE A COMPUTER GENERATED PRINTED LABEL FOR EACH INITIATING DEVICE INDICATING THE SPECIFIC ADDRESS FOR THAT DEVICE. THE LABEL SHALL INCLUDE THE APPLIANCE AND DEVICE NUMBER. THE LABEL SHALL BE LOCATED ON THE BASE OF ALL DETECTORS.
9. PROVIDE A COMPUTER GENERATED PRINTED LABEL FOR EACH NOTIFICATION APPLIANCE INDICATING THE SPECIFIC CIRCUIT NUMBER FOR THAT APPLIANCE. THE LABEL SHALL INCLUDE END OF LINE RESISTOR LOCATION, CIRCUIT NUMBER AND APPLIANCE NUMBER. THE LABEL SHALL BE LOCATED ON THE BASE OF ALL NOTIFICATION APPLIANCES.
10. NOTIFICATION APPLIANCE CIRCUITS (NAC) HAVE BEEN DESIGNED FOR A MAXIMUM 1.6 AMPS, MAXIMUM 4.4 VDC DROP, AND MINIMUM OPERATING VOLTAGE OF 16 VDC. SEE FIRE ALARM NAC VOLTAGE DROP CALCULATIONS ON THIS SHEET.
11. ALL AUDIBLE APPLIANCES SHALL BE SET TO THE HIGH DBA SETTING AND SHALL SOUND A THREE-PULSE TEMPORAL PATTERN EVACUATION SIGNAL.
12. PROVIDE SYNCHRONIZATION OF ALL AUDIBLE AND VISUAL NOTIFICATION APPLIANCE CIRCUITS THROUGHOUT. PROVIDE ALL REQUIRED SYNCHRONIZATION MODULES. PROVIDE MULTI-SYNC MODE SLAVE CONNECTIONS TO ALL AUXILIARY POWER SUPPLIES.
13. THE AUDIBLE/VISUAL AND VISUAL NOTIFICATION APPLIANCES SHALL BE RED IN COLOR, AND LISTED FOR THE INTENDED APPLICATION.
14. NOTIFICATION APPLIANCE POLARITY SHALL BE OBSERVED.
15. WHERE POSSIBLE, PROVIDE FLUSH MOUNTING OF NOTIFICATION APPLIANCES. WHERE SURFACE-MOUNTED NOTIFICATION APPLIANCES ARE NECESSARY, PROVIDE DECORATIVE BACKBOX SKIRT COVERING THE APPLIANCE BACKBOX.
16. MANUALLY ACTIVATING THE "ALARM SILENCE" AT THE FACP SHALL DE-ENERGIZE BOTH THE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES. AN ADDITIONAL ALARM REPORTED TO THE FACP SUBSEQUENT TO ACTIVATING THE "ALARM SILENCE" SHALL RE-ENERGIZE THE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES THROUGHOUT THE BRIDGESTONE SPACE.
17. THE CEILING MOUNTED DEVICES AND APPLIANCES SHALL BE INSTALLED ALIGNED AESTHETICALLY WITH THE CEILING LIGHTING, SPRINKLERS, AND OTHER FIXTURES. COORDINATE INSTALLATION OF ALL CEILING MOUNTED FIRE ALARM DEVICES AND NOTIFICATION APPLIANCES WITH THE ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO INSTALLATION.
18. DEVICES AND APPLIANCE LOCATIONS AS SHOWN ON THE FIRE ALARM PLANS ARE NOT DIMENSIONED FOR EXACT INSTALLATION. COORDINATE EXACT PLACEMENT OF ALL DEVICES AND APPLIANCES WITH THE ARCHITECTURAL PLANS, APPLICABLE TRADES, AND OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
19. ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL BACKGROUND INFORMATION IS SHOWN FOR COORDINATION PURPOSES ONLY. REFER TO THE PROPER DRAWINGS FOR EXACT LOCATIONS, SIZES AND QUANTITIES OF OTHER TRADES' WORK.
20. SMOKE DETECTOR HEADS SHALL NOT BE INSTALLED UNTIL AFTER THE CONSTRUCTION CLEAN-UP OF ALL TRADES IS COMPLETE AND FINAL.
21. VERIFY ALL EQUIPMENT QUANTITIES, LOCATIONS, AND REQUIREMENTS. IF DISCREPANCIES ARE FOUND, CONTRACTOR SHALL IMMEDIATELY BRING THEM TO THE ATTENTION OF THE FIRE PROTECTION ENGINEER (CCI) FOR RESOLUTION.
22. CONTRACTOR SHALL EXECUTE ALL WORK NECESSARY FOR A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM PER APPLICABLE NATIONAL AND LOCAL CODES, AND AS REQUIRED BY THE AHJ AND BY THE CLIENT/OWNER OF THE FACILITY IN ACCORDANCE WITH THEIR NATIONAL CONTRACTOR WITH STANLEY ALARM SYSTEM.
23. BRIDGESTONE (BSRO) UTILIZES STANLEY SECURITY SOLUTIONS FOR THE PURPOSE OF MONITORING THE FIRE ALARM SYSTEM. THE CONTRACTOR SHALL CONTACT AL MAIER AT (617) 642-0817 OR AL.MAIER@SBDINC.COM WITH STANLEY SECURITY SOLUTIONS FOR THE SOLE PURPOSE OF ESTABLISHING MONITORING OF THE FIRE ALARM SYSTEM.

FIRE ALARM KEYED NOTES

(1) COORDINATE CONNECTIONS TO DEDICATED 120 VAC POWER CIRCUITS WITH THE ELECTRICAL CONTRACTOR. THE DEDICATED CIRCUIT DISCONNECT SHALL BE RED IN COLOR, LABELED "FIRE ALARM CIRCUIT", AND HAVE A LOCKABLE TAB. ALL FIRE ALARM CIRCUIT BREAKERS SHALL BE CLEARLY MARKED AND MECHANICALLY SECURED TO PREVENT ANY UNAUTHORIZED TAMPERING. IDENTIFY THE LOCATION OF THE CIRCUIT DISCONNECT AT THE FACP. COORDINATE EXACT MOUNTING LOCATION OF CONTROL PANEL WITH THE OWNER'S REPRESENTATIVE AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.

(2) PROVIDE TWO (2) MEANS OF SIGNAL TRANSMISSION TO THE OFF-SITE MONITORING FACILITY. PROVIDE A DEDICATED PHONE LINE FOR THE PRIMARY MEANS OF TRANSMISSION. THE SECONDARY MEANS SHALL UTILIZE A VOICE OVER INTERNET PROTOCOL / SESSION INITIATION PROTOCOL (VoIP/SIP) CONNECTION TO OWNERS NETWORK. PROVIDE THE SERVICE PHONE NUMBER STICKER ON THE SURFACE OF THE FACP AND THE ASSOCIATED PHONE NUMBER USING DIRECTLY ON THE RJ-31X BOXES. COORDINATE ALL PROGRAMMING, SIGNALS TRANSMISSION AND CONNECTIONS WITH THE OFF-SITE MONITORING COMPANY.

(3) PROVIDE TRANSIENT SURGE SUPPRESSION MODULE (DTK-120HW OR EQUAL) AT ELECTRICAL PANEL. THE SURGE SUPPRESSION MODULE SHALL BE CONNECTED TO THE DEDICATED FIRE ALARM CIRCUIT PER MANUFACTURERS SPECIFICATION. COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION.

(4) PROVIDE A PHONE SUPPRESSION MODULE (ELK-955 OR EQUAL) AT EACH PHONE LINE. THE PHONE SUPPRESSION MODULE SHALL BE CONNECTED TO THE PRIMARY AND SECONDARY PHONE LINE PER MANUFACTURERS SPECIFICATION. COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION.

(5) PROVIDE A DOCUMENTATION CABINET (RED ENCLOSURE) ADJACENT TO THE FIRE ALARM CONTROL PANEL TO HOUSE ALL SYSTEM DOCUMENTS IN ACCORDANCE WITH NFPA 72. SYSTEM DOCUMENTS SHALL INCLUDE (AT A MINIMUM) RECORD DRAWINGS, EQUIPMENT DATA SHEETS, SOFTWARE AND FIRMWARE CONTROL DOCUMENTATION. THE DOCUMENTATION CABINET SHALL BE PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS", AND SHALL BE ACCESSIBLE BY AUTHORIZED PERSONNEL ONLY AND PROTECTED FROM PUBLIC ACCESS.

(6) MOUNT SMOKE DETECTOR ON THE BOTTOM OF THE DECK (NOT ON THE BOTTOM OF STRUCTURAL MEMBERS) AND LOCATED MORE THAN THREE (3) FEET FROM ANY MECHANICAL DIFFUSERS, AS INDICATED IN NFPA 72. THE SMOKE DETECTOR AND FIRE ALARM CABLING SHALL BE INSTALLED AND SUPPORTED A MINIMUM 1-1/2 INCHES FROM THE LOWEST SURFACE OF THE ROOF DECKING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.

(7) PROVIDE A FIRE ALARM ANNUNCIATOR (FAAN) ADJACENT TO THE FRONT ENTRANCE. THE FAAN SHALL BE FLUSH MOUNTED. COORDINATE EXACT MOUNTING LOCATION OF THE FIRE ALARM ANNUNCIATOR KEYPAD WITH THE OWNER'S REPRESENTATIVE AND AHJ PRIOR TO INSTALLATION.

(8) PROVIDE ELECTRONIC MONITORING OF ALL SPRINKLER WATERFLOW AND TAMPER SWITCHES (BY OTHERS). MONITOR ANY ADDITIONAL WATERFLOW SWITCHES WITH A SEPARATED ADDRESSABLE INPUT MODULE. COORDINATE EXACT QUANTITIES, LOCATION AND INTERFACE CONNECTIONS WITH THE SPRINKLER CONTRACTOR.

(9) PROVIDE AN EXTERIOR NOTIFICATION APPLIANCE AT TEN (10) FEET ABOVE GRADE AND LOCATED ABOVE THE FIRE DEPARTMENT CONNECTION. COORDINATE EXACT MOUNTING LOCATION WITH THE OWNER'S REPRESENTATIVE AND AHJ PRIOR TO INSTALLATION.

(10) PROVIDE MONITORING OF THE DUCT SMOKE DETECTOR (FACTORY PROVIDED, INSTALLED BY MECHANICAL CONTRACTOR, AND POWERED BY THE RTU). PROVIDE WIRING CONNECTIONS TO THE ALARM AND TROUBLE CONTACTS ON THE DUCT DETECTORS TO ALLOW AN ALARM CONDITION TO TAKE PRIORITY OVER A TROUBLE CONDITION. COORDINATE ALL CABLING / CONDUIT ROUTING AND WIRING CONNECTION WITH THE MECHANICAL AND ELECTRICAL CONTRACTORS PRIOR TO INSTALLATION.

(11) PROVIDE A SEPARATE ADDRESSABLE RELAY MODULE (ARM) FOR SHUTDOWN OF ASSOCIATED AHU. LOCATED ARM AT AN ACCESSIBLE LOCATION WITHIN THREE (3) FEET OF THE ASSOCIATED AHJ MOTOR CONTROLLER OR CONTROL CIRCUIT. PROVIDE ANY REQUIRED POWER CONNECTIONS AND SUPERVISION FOR DUCT DETECTOR AND ARM. COORDINATE ALL CABLING / CONDUIT ROUTING AND WIRING CONNECTION WITH THE MECHANICAL AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.

(12) PROVIDE A REMOTE TEST STATION / ANNUNCIATOR FOR EACH DUCT SMOKE DETECTOR. PROVIDE ALL REQUIRED CABLING CONNECTIONS AND CONDUIT FROM DETECTORS TO REMOTE TEST STATION / ANNUNCIATORS. MOUNT ALL REMOTE TEST STATION / ANNUNCIATORS ON AN ADJACENT COLUMN OR WALL AND AT AN ACCESSIBLE LOCATION THAT DOES NOT CONFLICT WITH STORE FIXTURES. COORDINATED EXACT MOUNTING LOCATIONS WITH THE OWNER'S REPRESENTATIVE AND LOCAL AHJ PRIOR TO INSTALLATION.

(13) PROVIDE A MANUAL PULL STATION WITH A PROTECTIVE COVER (INTEGRAL SOUNDER) ADJACENT THE FAAN AND IN ACCORDANCE WITH NFPA 72. THE INTEGRAL SOUNDER SHALL BE POWERED BY A 9V BATTERY.

(14) COORDINATE INSTALLATION OF A MINIMUM ONE (1) INCH UNDERGROUND CONDUIT, WITH PULL STRING, FOR FIRE ALARM CABLING CONNECTIONS TO ANY EXTERIOR BACKFLOW PREVENTER OR EXTERIOR POST INDICATOR VALVE (PIV) ASSOCIATED WITH THE BRIDGESTONE SPACE. PROVIDE MONITORING OF ALL TAMPER SWITCHES (BY OTHERS) ON THE ASSOCIATED BACKFLOW PREVENTER OR PIV. COORDINATE ANY REQUIRED UNDERGROUND CONDUIT AND INTERFACE CONNECTIONS WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, FIRE SPRINKLER CONTRACTOR, AND SITE CIVIL CONTRACTOR.

(15) PROVIDE TRANSIENT SUPPRESSION ON ALL FIRE ALARM CIRCUITS LOCATED IN UNDERGROUND CONDUIT. PROVIDE ONE (1) TRANSIENT SUPPRESSION MODULE FOR EACH FIRE ALARM CIRCUIT. FIRE ALARM CABLING IN UNDERGROUND OR EXTERIOR CONDUIT SHALL BE LISTED FOR WET LOCATIONS.

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NEW FCAC STORE
2020 ER
3561 SW MARKET ST (1)
JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

STATE OF MISSOURI
JACOB P. HEMKE
NUMBER PE-2004000793
PROFESSIONAL ENGINEER
2020-04-15

FIRE PROTECTION ENGINEER OF RECORD:
JACOB P. HEMKE, PE
LICENSE NO. PE-2004000793
CODE CONSULTANTS, INC.
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ST. LOUIS, MO 63146-4235
PHONE: 314-991-2633
CORPORATE CERTIFICATE OF AUTHORITY NO. 000419

ISSUE BLOCK

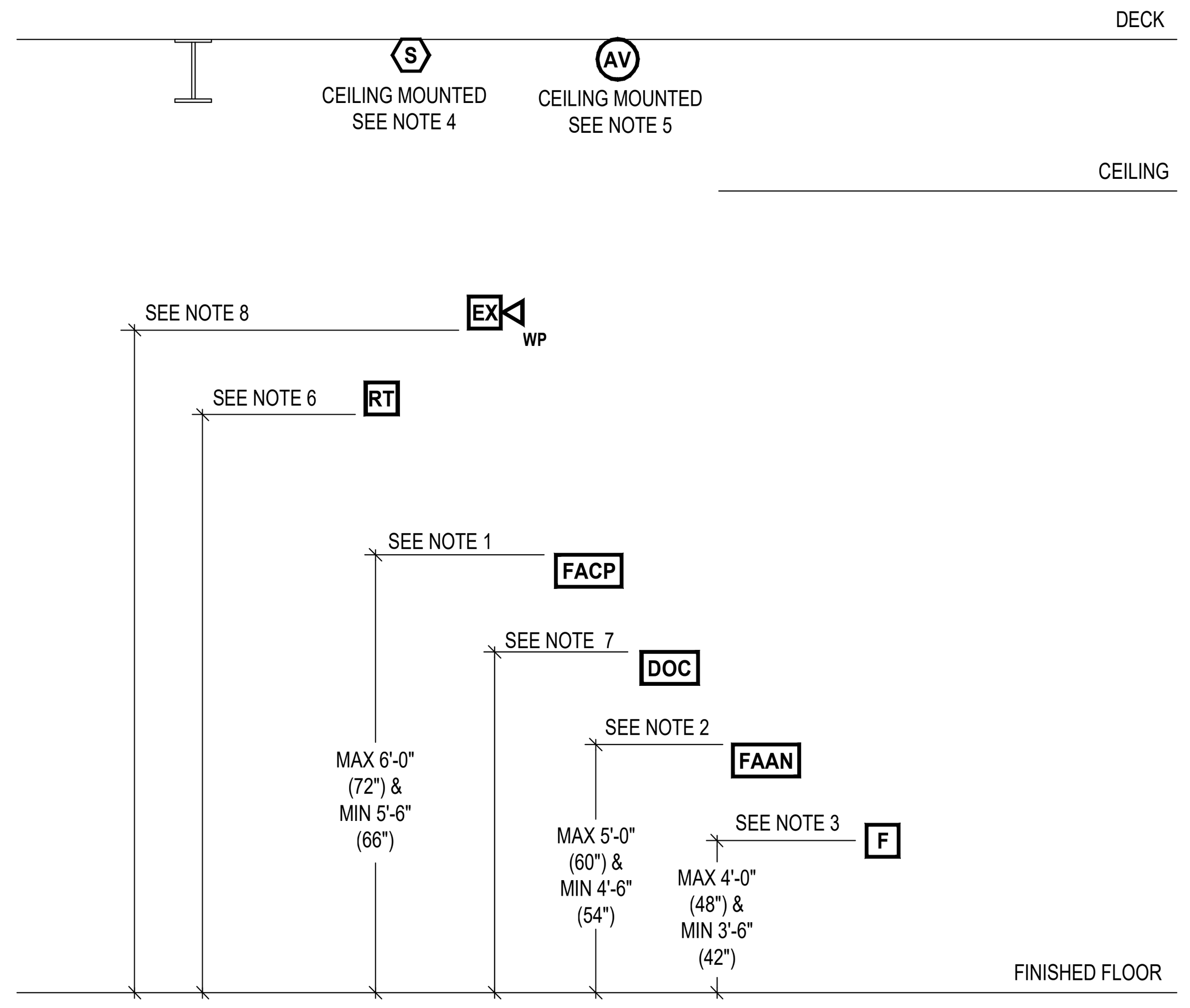
1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9

AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
FIRE ALARM NOTES, PROGRAMMING AND CALCULATIONS

SHEET NUMBER:
FA2

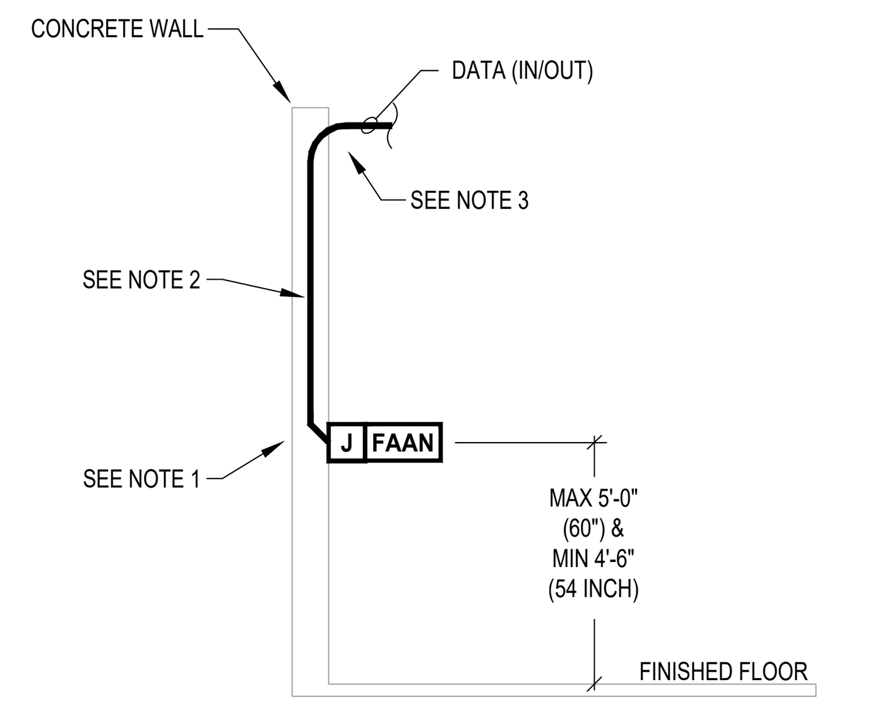


NOTES:

1. COORDINATE EXACT MOUNTING HEIGHT OF CONTROL PANELS WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION.
2. COORDINATE EXACT MOUNTING HEIGHT OF ANNUNCIATOR AT THE FRONT ENTRANCE WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION.
3. COORDINATE EXACT MOUNTING HEIGHT OF MANUAL PULL STATION WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION. MEASURED TO THE OPERABLE PART OF THE PULL STATION.
4. WHERE REQUIRED - LOCATE CEILING MOUNTED SMOKE DETECTORS ON THE BOTTOM OF DECK (NOT ON BOTTOM OF STRUCTURAL MEMBERS), AND AS INDICATED IN NFPA 72. THE SMOKE AND/OR HEAT DETECTORS AND FIRE ALARM CABLING SHALL BE INSTALLED AND SUPPORTED A MINIMUM 1-1/2 INCHES FROM THE LOWEST SURFACE OF THE ROOF DECKING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.
5. WHERE REQUIRED -THE CEILING MOUNTED NOTIFICATION APPLIANCES SHALL BE INSTALLED ON THE BOTTOM OF JOIST / DECK IN ACCORDANCE WITH NFPA 72. THE CEILING MOUNTED NOTIFICATION APPLIANCES AND FIRE ALARM CABLING SHALL BE INSTALLED AND SUPPORTED A MINIMUM 1-1/2 INCHES FROM THE LOWEST SURFACE OF THE ROOF DECKING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.
6. MOUNT THE REMOTE TEST STATION / ANNUNCIATORS ON AN ADJACENT COLUMN OR WALL AND AT AN ACCESSIBLE LOCATION THAT DOES NOT CONFLICT WITH STORE FIXTURES. COORDINATE EXACT MOUNTING LOCATION AND HEIGHT OF THE REMOTE TEST STATIONS / ANNUNCIATOR WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION.
7. THE DOCUMENTATION CABINET SHALL BE INSTALLED WITHIN SIX (6) INCHES FROM THE BOTTOM OF THE FIRE ALARM CONTROL PANEL CABINET. COORDINATE EXACT MOUNTING LOCATION AND HEIGHT OF THE DOCUMENTATION CABINET WITH THE OWNER'S REPRESENTATIVE AND LOCAL AHJ PRIOR TO INSTALLATION.
8. COORDINATE EXACT MOUNTING LOCATION AND HEIGHT OF THE EXTERIOR NOTIFICATION APPLIANCE WITH THE WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION.

1 / FA3 TYPICAL FIRE ALARM MOUNTING HEIGHT DETAIL

NOT TO SCALE

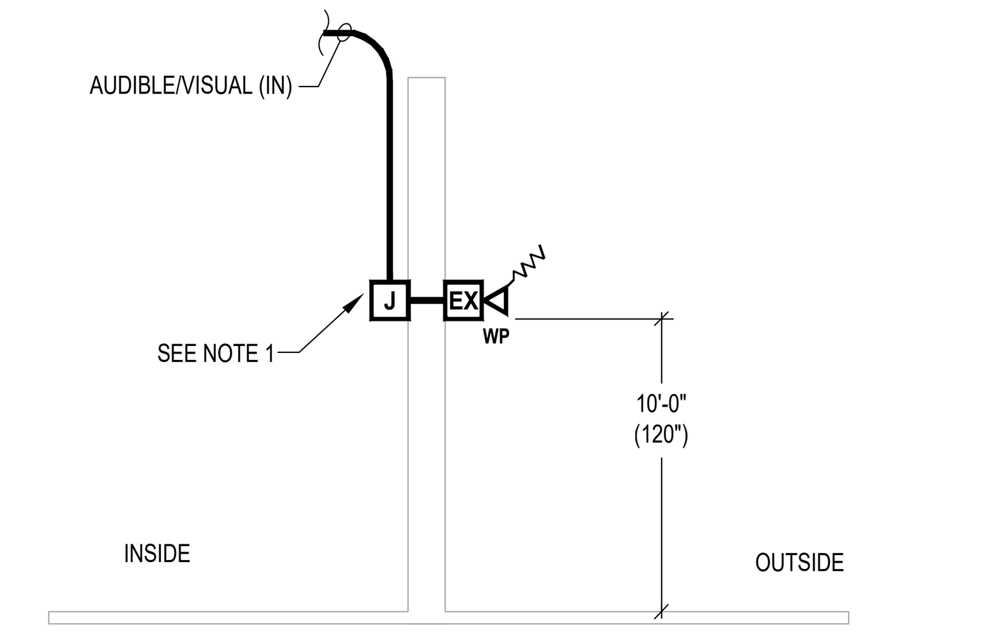


NOTES:

1. PROVIDE AN APPROVED BACKBOX PER THE MANUFACTURER SPECIFICATIONS BETWEEN 54 INCHES AND 60 INCHES ABOVE FINISHED FLOOR.
2. PROVIDE FIRE ALARM CABLING WITHIN 1/2 INCH CONDUIT INSIDE WALL (EXPOSED CONDUIT NOT ACCEPTABLE).
3. PROVIDE FIRE ALARM CABLING STUB-UP INTO CEILING JOIST AREA 6 INCHES ABOVE CEILING OR BOTTOM OF JOISTS AND TURN OUT WITH INSULATED BUSHING.

2 / FA3 FIRE ALARM ANNUNCIATOR DETAIL

NOT TO SCALE

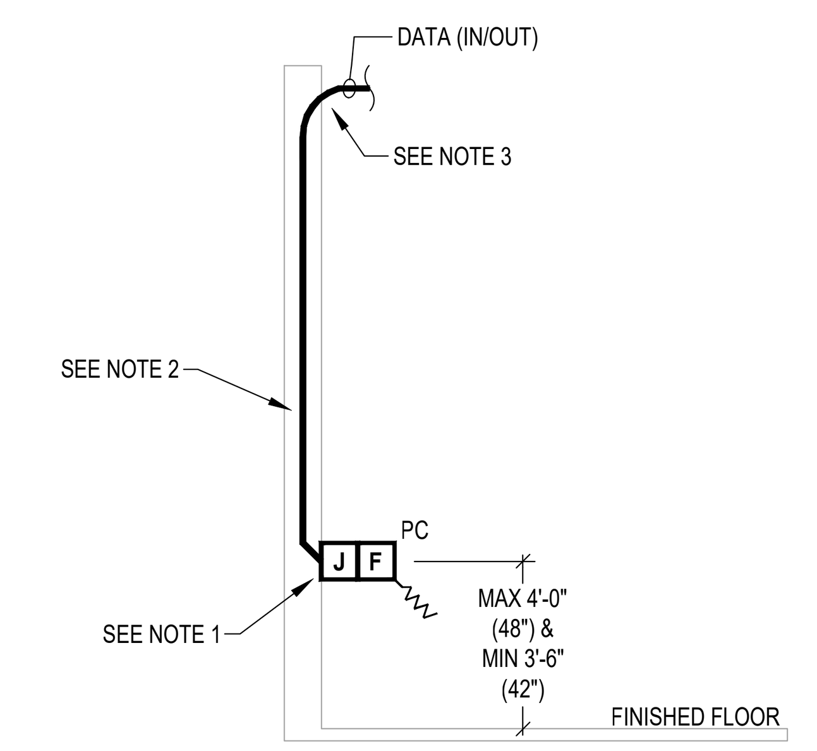


NOTES:

1. PROVIDE A BACK BOX PER THE MANUFACTURER SPECIFICATIONS ON THE INSIDE WALL AT 10 FEET ABOVE FINISHED FLOOR. STUB A CONDUIT THROUGH EXTERIOR WALL TO NOTIFICATION APPLIANCE SURFACE MOUNTED BACKBOX.

3 / FA3 WEATHERPROOF EXTERIOR NOTIFICATION DETAIL

NOT TO SCALE

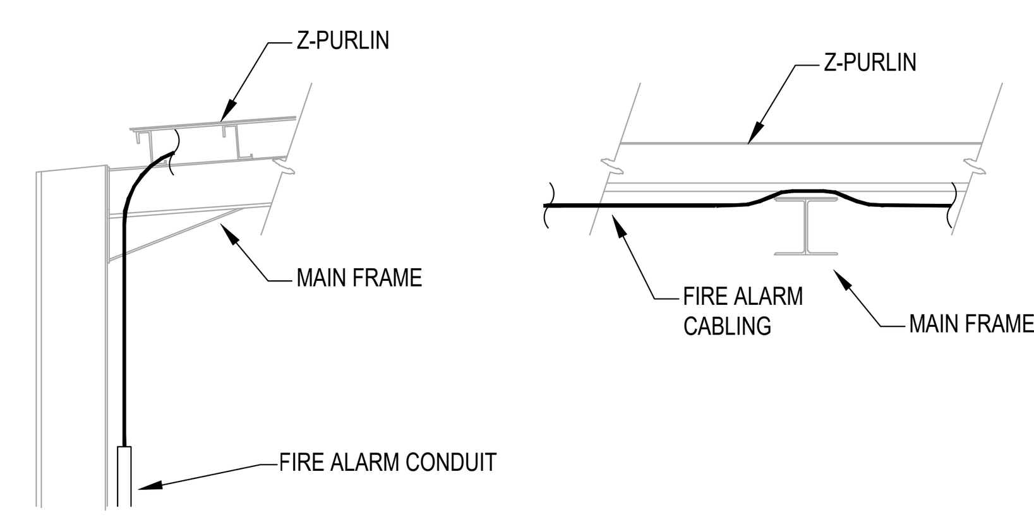


NOTES:

1. PROVIDE AN APPROVED BACKBOX PER THE MANUFACTURER SPECIFICATIONS BETWEEN 42 INCHES AND 48 INCHES ABOVE FINISHED FLOOR.
2. PROVIDE FIRE ALARM CABLING WITHIN 1/2 INCH CONDUIT INSIDE WALL (EXPOSED CONDUIT NOT ACCEPTABLE).
3. PROVIDE FIRE ALARM CONDUIT STUB-UP INTO CEILING JOIST AREA 6 INCHES ABOVE CEILING OR BOTTOM OD JOISTS AND TURN OUT WITH INSULATED BUSHING.

4 / FA3 MANUAL PULL STATION DETAIL

NOT TO SCALE

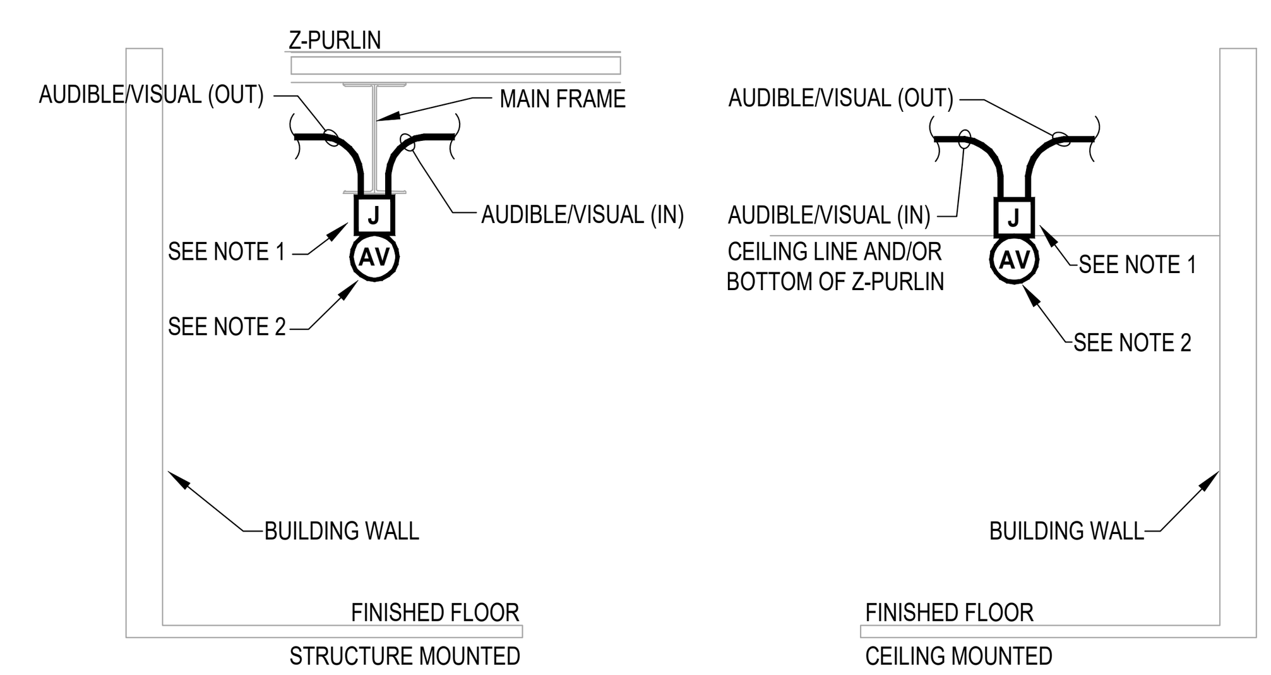


NOTES:

1. ALL OPEN FIRE ALARM CABLING SHALL BE CONCEALED FROM PUBLIC VIEW.
2. ROUTE ALL OPEN CABLE OVER SOLID MAIN FRAME STRUCTURE.

5 / FA3 OPEN FIRE ALARM CABLING DETAIL

NOT TO SCALE

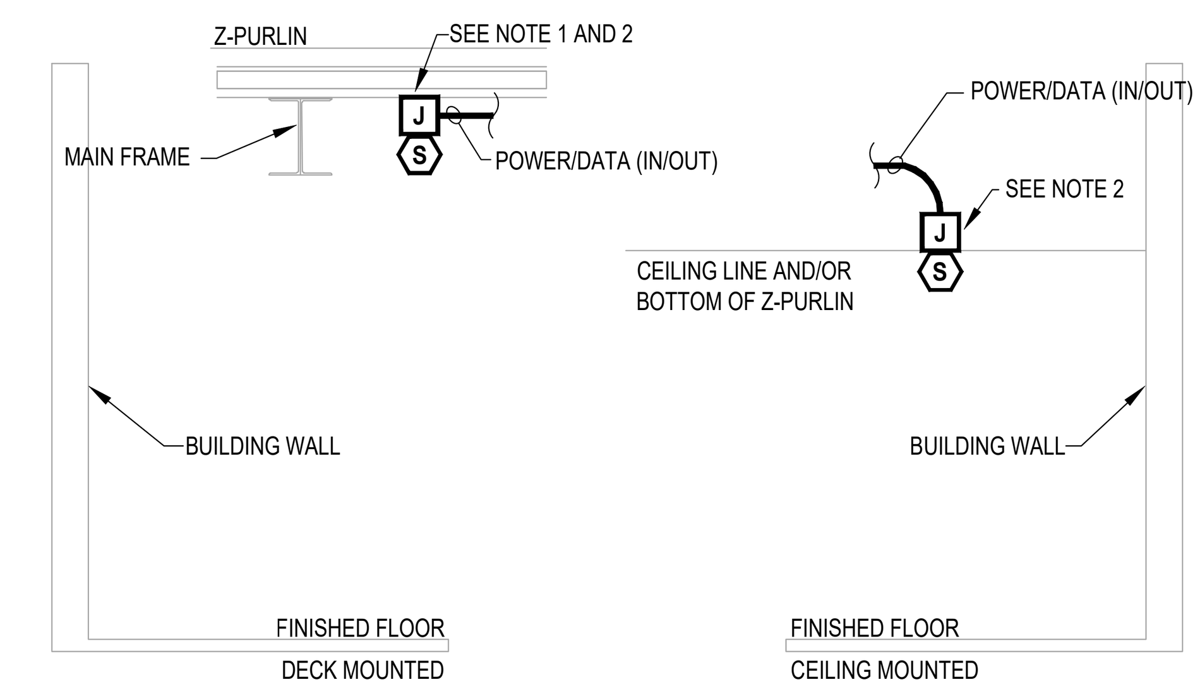


NOTES:

1. PROVIDE AN APPROVED BACK BOX PER THE MANUFACTURER SPECIFICATIONS ON BOTTOM OF Z-PURLIN, AWAY FROM OBSTRUCTIONS, AND AS INDICATED ON FLOOR PLANS.
2. THE CEILING MOUNTED NOTIFICATION APPLIANCES SHALL BE INSTALLED ALIGNED AESTHETICALLY WITH THE CEILING LIGHTING, AND OTHER FIXTURES. COORDINATE INSTALLATION OF ALL CEILING MOUNTED FIRE ALARM NOTIFICATION APPLIANCES WITH THE ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO INSTALLATION.

6 / FA3 CEILING MOUNTED NOTIFICATION APPLIANCE DETAIL

NOT TO SCALE

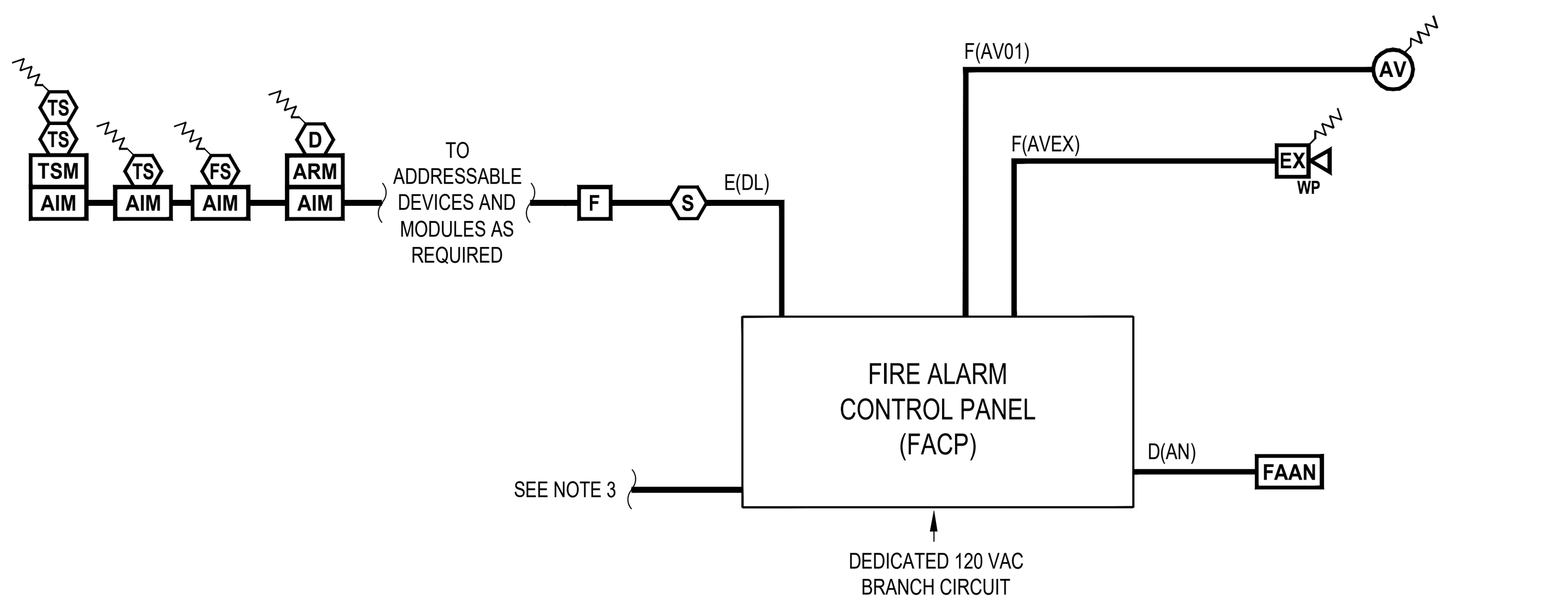


NOTES:

1. PROVIDE AN APPROVED BACKBOX PER THE MANUFACTURER SPECIFICATIONS ON BOTTOM OF DECK, AWAY FROM OBSTRUCTIONS, AND AS INDICATED ON FLOOR PLANS.
2. THE SMOKE DETECTOR AND FIRE ALARM CABLING INSTALLED AND SUPPORTED A MINIMUM 1-1/2 INCHES FORM THE LOWEST SURFACE OF THE ROOF DECKING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.

7 / FA3 SMOKE DETECTOR DETAIL

NOT TO SCALE

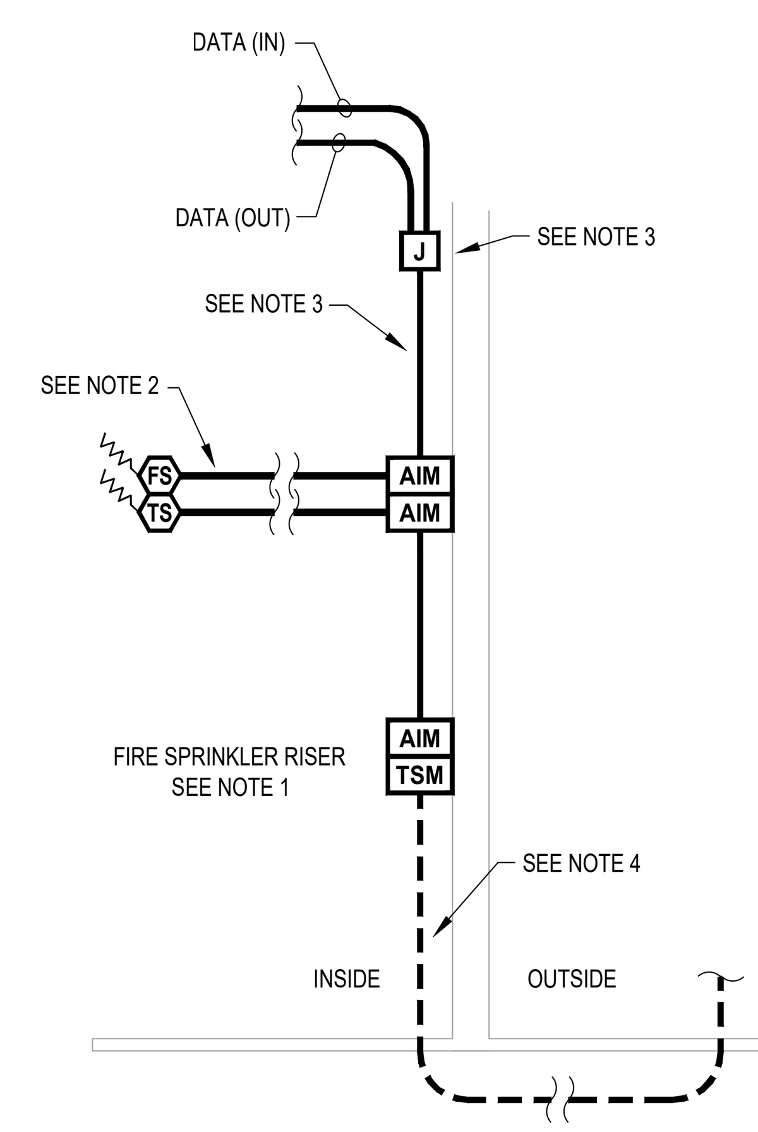


NOTES:

1. PROVIDE DEDICATED 120 VAC CIRCUITS, AND BATTERY BACKUP IN THE FACP.
2. PROVIDE SYNCHRONIZATION OF ALL REQUIRED VISUAL NOTIFICATION APPLIANCES AND CIRCUITS THROUGHOUT THE STORE.
3. PROVIDE TWO (2) MEANS OF SIGNAL TRANSMISSION TO THE OFF-SITE MONITORING FACILITY. PROVIDE A DEDICATED PHONE LINE FOR THE PRIMARY MEANS OF TRANSMISSION. THE SECONDARY MEANS SHALL UTILIZE A VoIP/ SIP CONNECTION TO OWNER'S NETWORK.
4. PROVIDE ALL REQUIRED CIRCUITS, MODULES, AND CONNECTIONS TO CONTROL AUDIBLE AND VISUAL NOTIFICATION APPLIANCES.
5. PROVIDE SUPERVISION OF ALL 120 VAC POWER AND ALL NOTIFICATION APPLIANCE CIRCUITS.

8 / FA3 TYPICAL FIRE ALARM SYSTEM RISER DIAGRAM

NOT TO SCALE

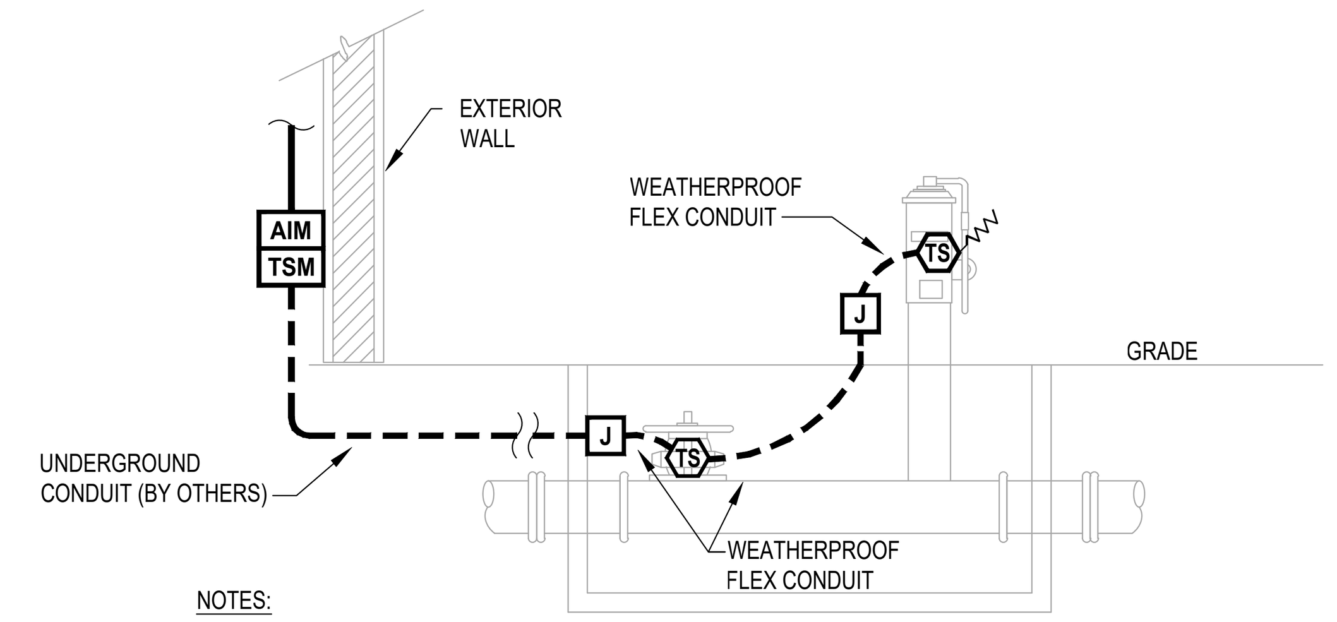


NOTES:

1. COORDINATE EXACT LOCATION AND QUANTITIES OF CONTROL VALVES AND WATERFLOW SWITCHES WITH THE FIRE SPRINKLER CONTRACTOR PRIOR TO INSTALLATION. PROVIDE ADDITIONAL ADDRESSABLE INPUT MODULES AS NEEDED TO ELECTRONICALLY MONITOR ALL SPRINKLER WATERFLOW AND TAMPER SWITCHES.
2. PROVIDE 1/2 INCH FLEXIBLE METALLIC CONDUIT FROM EACH WATERFLOW SWITCH AND GROUP OF TAMPER SWITCHES.
3. STUB A 1/2 INCH CONDUIT TO A JUNCTION BOX WITH BLANK COVER.
4. PROVIDE MONITORING CONNECTIONS TO ALL EXTERIOR SPRINKLER CONTROL VALVE SWITCHES (SWITCHES PROVIDED BY OTHERS). COORDINATE LOCATION OF ANY EXTERIOR UNDERGROUND CONDUIT TO ALL EXTERIOR SPRINKLER CONTROL VALVE SWITCHES WITH ELECTRICAL CONTRACTOR (CONDUIT PROVIDED BY OTHERS). PROVIDE ALL CABLING TO SWITCHES, FINAL WIRING CONNECTIONS AT SWITCHES, AND SUPERVISION OF ALL WIRING CONNECTIONS. TRANSIENT SUPPRESSION SHALL BE PROVIDED ON ALL FIRE ALARM CIRCUITS LOCATED IN UNDERGROUND OR EXTERIOR CONDUIT. COORDINATE ALL CONNECTIONS WITH THE SPRINKLER CONTRACTOR.

9 / FA3 TYPICAL SPRINKLER DETAIL

NOT TO SCALE



NOTES:

1. COORDINATE INSTALLATION OF A MINIMUM ONE (1) INCH UNDERGROUND CONDUIT, WITH PULL STRING, FOR FIRE ALARM CABLING CONNECTIONS TO THE EXTERIOR BACKFLOW PREVENTER. SEE ELECTRICAL DRAWINGS FOR DETAILS ON UNDERGROUND CONDUIT.
2. PROVIDE MONITORING OF ALL TAMPER SWITCHES (BY OTHERS) ON THE EXTERIOR BACKFLOW PREVENTER. COORDINATE WIRING CONNECTIONS WITH THE GENERAL CONTRACTOR AND SITE CIVIL CONTRACTOR.
3. PROVIDE TRANSIENT SUPPRESSION ON ALL FIRE ALARM CIRCUITS LOCATED IN UNDERGROUND CONDUIT. PROVIDE ONE (1) TRANSIENT SUPPRESSION MODULE FOR EACH FIRE ALARM CIRCUIT.
4. FIRE ALARM CABLING IN UNDERGROUND CONDUIT SHALL BE LISTED FOR WET LOCATIONS.
5. THE EXTERIOR JUNCTION BOXES SHALL BE TAMPER-RESISTANT SCREWS OR OTHER APPROVED MECHANICAL MEANS FOR PREVENTING ACCESS TO JUNCTION BOXES AND DEVICE COVERS INSTALLED OUTSIDE OF THE BUILDING IN ACCORDANCE WITH NFPA 72.

10 / FA3 EXTERIOR BACKFLOW MONITORING DETAIL

NOT TO SCALE

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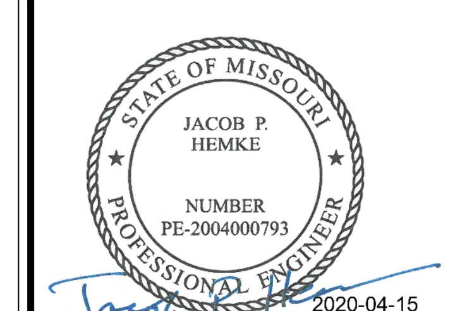

FIRE PROTECTION
ENGINEER OF RECORD:
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CORPORATE CERTIFICATE OF AUTHORITY
NO. 000419

ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9

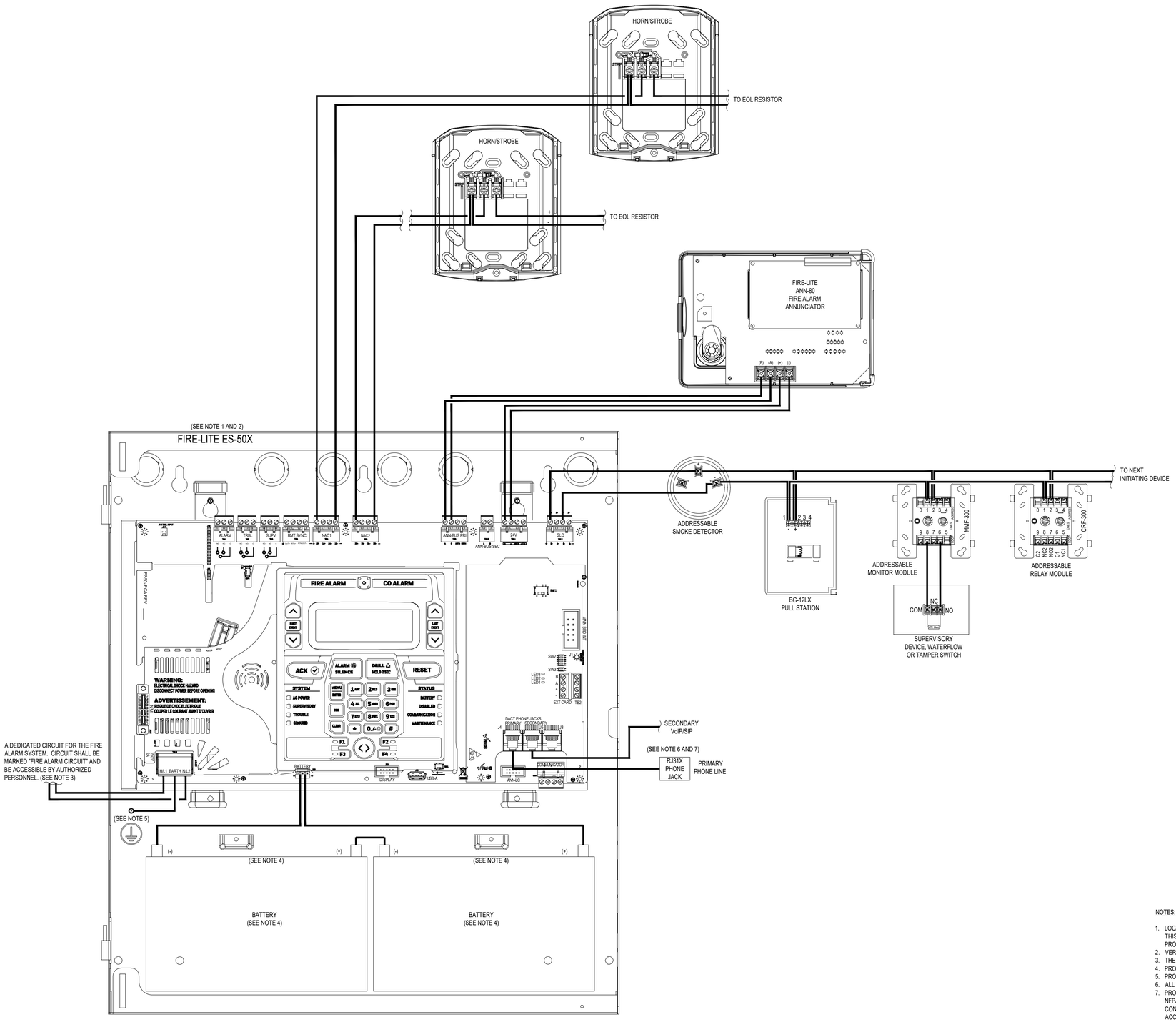
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
FIRE ALARM DETAILS

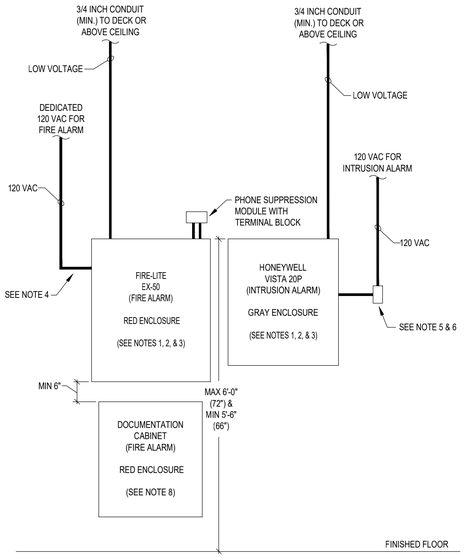
SHEET NUMBER:
FA3

FIRE ALARM CONTROL PANEL LAYOUT NOTES

1. THE FIRE ALARM CONTROL PANEL SHALL BE LOCATED IN A RED FIRE ENCLOSURE CABINET.
2. PROVIDE THE SERVICE PHONE NUMBER STICKER ON THE SURFACE OF THE FACP.
3. COORDINATE CONNECTIONS TO DEDICATED 120 VAC POWER CIRCUITS WITH THE ELECTRICAL CONTRACTOR. THE DEDICATED CIRCUIT DISCONNECT SHALL BE RED IN COLOR, LABELED "FIRE ALARM CIRCUIT", AND HAVE A LOCKABLE TAB. ALL FIRE ALARM CIRCUIT BREAKERS SHALL BE CLEARLY MARKED AND MECHANICALLY SECURED TO PREVENT ANY UNAUTHORIZED TAMPERING. IDENTIFY THE LOCATION OF THE CIRCUIT DISCONNECT AT THE FACP. COORDINATE EXACT MOUNTING LOCATION OF CONTROL PANEL WITH THE OWNER'S REPRESENTATIVE AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
4. PROVIDE TWO (2) 12V BATTERIES WIRED IN SERIES FOR THE FIRE ALARM CONTROL PANEL (FACP). SEE CALCULATIONS ON SHEET FA2 FOR AMP-HOUR REQUIREMENTS. THE BATTERY SHALL BE INSTALLED IN THE FACP ENCLOSURE.
5. COORDINATE INSTALLATION OF A GROUND ROD OR ACCEPTABLE BUILDING GROUND FOR PROPER GROUNDING OF THE FACP WITH THE ELECTRICAL CONTRACTOR.
6. PROVIDE TWO (2) MEANS OF SIGNAL TRANSMISSION TO THE OFF-SITE MONITORING FACILITY. PROVIDE A DEDICATED PHONE LINE FOR THE PRIMARY MEANS OF TRANSMISSION. THE SECONDARY MEANS SHALL UTILIZE A VOICE OVER INTERNET PROTOCOL / SESSION INITIATION PROTOCOL (VoIP/SIP) CONNECTION TO OWNERS NETWORK. PROVIDE THE SERVICE PHONE NUMBER STICKER ON THE SURFACE OF THE FACP AND THE ASSOCIATED PHONE NUMBER USING DIRECTLY ON THE RJ-31X BOXES. COORDINATE ALL PROGRAMMING, SIGNALS TRANSMISSION AND CONNECTIONS WITH THE OFF-SITE MONITORING COMPANY.
7. PROVIDE THE ASSOCIATED PHONE NUMBER USING PRINTED LABEL DIRECTLY ON THE RJ-31X BOXES.



1 FA4 FIRE ALARM CONTROL PANEL LAYOUT
NOT TO SCALE



NOTES:

1. LOCATE THE FIRE ALARM CONTROL PANEL, INTRUSION ALARM CONTROL PANEL AND DOCUMENTATION IN THE CONFIGURATION SHOWN ABOVE. IF THIS LAYOUT CAN NOT BE FOLLOWED, CONTRACTOR SHALL IMMEDIATELY BRING TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND FIRE PROTECTION ENGINEER (CCI) FOR RESOLUTION.
2. VERIFY THE CONTROL PANEL LAYOUT WITH THE OWNER'S REPRESENTATIVE AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
3. THE CONTROL PANELS SHALL BE LOCATED ON A BACKBOARD. THE BACKBOARD IS PROVIDED AND INSTALLED BY OTHERS.
4. PROVIDE HARDWIRED CONNECTIONS TO THE FIRE ALARM CONTROL PANEL UTILIZING THE DEDICATED 120 VAC FIRE ALARM CIRCUIT.
5. PROPERLY SECURE AND SCREW THE TRANSFORMER INTO DUPLEX RECEPTACLES TO PREVENT UNAUTHORIZED PERSONNEL FROM UNPLUGGING.
6. ALL CABLING INDICATED IN THIS DETAIL SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
7. PROVIDE A DOCUMENTATION CABINET ADJACENT TO THE FIRE ALARM CONTROL PANEL TO HOUSE ALL SYSTEM DOCUMENTS IN ACCORDANCE WITH NFPA 72. SYSTEM DOCUMENTS SHALL INCLUDE (AT A MINIMUM) RECORD DRAWINGS, EQUIPMENT DATA SHEETS, SOFTWARE AND FIRMWARE CONTROL DOCUMENTATION. THE DOCUMENTATION CABINET SHALL BE PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS", AND SHALL BE ACCESSIBLE BY AUTHORIZED PERSONNEL ONLY AND PROTECTED FROM PUBLIC ACCESS.

2 FA4 TYPICAL CONTROL PANEL LAYOUT
NOT TO SCALE

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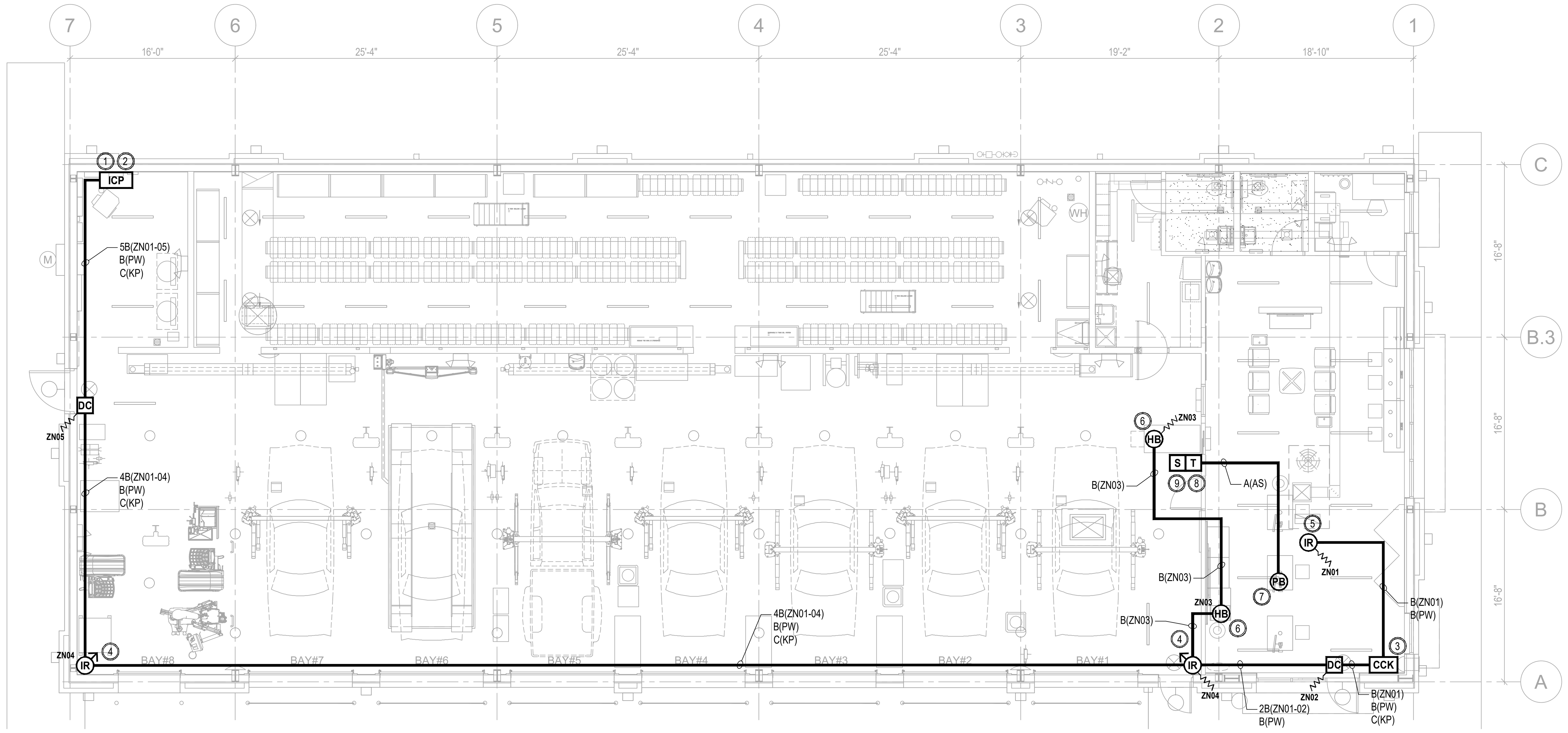
ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.:	160085
6 DIGIT NO.:	906983
4 DIGIT NO.:	78C9
AOR PROJECT NUMBER:	1955B71
TO PERMIT: DATE:	03/26/2020
TO BID: DATE:	##-##-##

SHEET TITLE:
FIRE ALARM CONTROL PANEL LAYOUT

SHEET NUMBER:
FA4



INTRUSION ALARM PLAN

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

INTRUSION ALARM SYMBOL KEY		QTY.
ICP	INTRUSION ALARM CONTROL PANEL (HONEYWELL VISTA 20P) (IN GRAY ENCLOSURE)	1
CCK	COMMAND CENTER KEYPAD (HONEYWELL 6150)	1
T	PLUG-IN TRANSFORMER (MB-MGT121AR)	1
IR	CEILING MOUNTED MOTION DETECTOR - 360° (HONEYWELL DT7360)	1
IR→	PASSIVE INFRARED LONG RANGE MOTION DETECTOR (HONEYWELL IS25100TC)	2
DC	DOOR CONTACT (HONEYWELL MPS80WGX)	2
PB	ASSISTANCE SYSTEM PUSH BUTTON (AC-TS18)	1
HB	HOLD-UP BUTTON SWITCH MOUNTED UNDER DESK (HONEYWELL 270R) (IN PLASTIC CASE)	2
S	INTERIOR SIREN (0E-2TONESIRN)	1
—	INTRUSION ALARM PLENUM RATED CONDUCTORS (GRAY IN COLOR)	
J	JUNCTION BOX	
-^^-	END OF LINE RESISTOR	

INTRUSION ALARM SHEET INDEX

SHEET #	DESCRIPTION
BA1	INTRUSION ALARM PLAN AND MATRIX
BA2	INTRUSION ALARM NOTES AND CALCULATIONS
BA3	INTRUSION ALARM CONTROL PANEL LAYOUT AND DETAILS

INTRUSION ALARM WIRING LEGEND

CONDUCTOR TYPE:

A = 16/2
B = 18/2
C = 16/4

CIRCUIT DESIGNATION:

AS = SOUNDER CIRCUIT
DL = DATA LOOP CIRCUIT
KP = KEYPAD / ANNUNCIATOR CIRCUIT
PW = MOTION DETECTOR POWER
RC = RELAY CIRCUIT
ZN = ZONE CIRCUIT

CONDUCTOR TYPE
CIRCUIT DESIGNATION
B(PW)

ON-BOARD ZONE LISTING

PANEL POPITS	ALPHANUMERIC LABEL
ZONE 01	SHOW ROOM MOTION DETECTOR
ZONE 02	SHOW ROOM DOOR CONTACT
ZONE 03	HOLD UP BUTTONS
ZONE 04	SERVICE BAY MOTION DETECTORS
ZONE 05	UTILITY ROOM DOOR CONTACT
ZONE 06	
ZONE 07	
ZONE 08	

INTRUSION ALARM MATRIX

	ACTUATES ALARM CONDITION AT INTRUSION ALARM CONTROL PANEL	ANNUNCIATES ALARM CONDITION AT COMMAND CENTER KEYPAD	TRANSMITS ALARM SIGNAL TO AN APPROVED REMOTE MONITORING STATION	ACTUATES TROUBLE CONDITION AT INTRUSION ALARM CONTROL PANEL	ANNUNCIATES TROUBLE CONDITION AT COMMAND CENTER KEYPADS	TRANSMITS TROUBLE SIGNAL TO AN APPROVED REMOTE MONITORING STATION		TRANSMITS CLOSING SIGNAL TO APPROVED OFF-SITE SUPERVISING STATION	TRANSMITS OPENING SIGNAL TO APPROVED OFF-SITE SUPERVISING STATION		INITIATES EXIT/ENTRY DELAY TIMER		ACTIVATE ASSISTANCE SYSTEM SIREN
DOOR CONTACTS													
- SHOWROOM DOOR	●	●	●								●		
- SERVICE BAY DOOR	●	●	●										
MOTION DETECTORS													
- SHOWROOM	●	●	●								●		
- SERVICE BAY AREA	●	●	●										
HOLD-UP BUTTON	●	●	●										
ARM SYSTEM THROUGH COMMAND CENTER KEYPADS								●			●		
DISARM SYSTEM THROUGH COMMAND CENTER KEYPADS									●		●		
LOSS OF PRIMARY POWER AT THE CONTROL PANEL				●	●	●							
ABNORMAL CIRCUIT OR DEVICE				●	●	●							
ASSISTANCE SYSTEM PUSH BUTTON													●

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SHEET TITLE:
INTRUSION ALARM PLAN AND MATRIX

SHEET NUMBER:
BA1

INTRUSION ALARM BATTERY CALCULATIONS (VISTA-20P)

			STANDBY POWER		IN ALARM			
MODEL NUMBER	DESCRIPTION	QUANTITY	CURRENT PER DEVICE (mA)	TOTAL CURRENT (mA)	CURRENT PER DEVICE (mA)	TOTAL CURRENT (mA)	STANDBY BATTERIES (12-VOLT)	CURRENT (mA)
VISTA-20P	INTRUSION ALARM CONTROL PANEL	1	190	190	265	265	STANDBY CURRENT	271
HW-6150	KEYPAD	1	40	40	70	70	HOURS	4
DT7360	CEILING MOUNTED MOTION DETECTOR	1	5	5	20	20	STANDBY mA	1,084
ISC25100TC	WALL MOUNTED MOTION DETECTOR	2	18	36	26	52	ALARM CURRENT	407
							HOURS	0.25
							ALARM mA	102
							TOTAL mA	1,186
							TOTAL AH	1.2
							CONTINGENCY	20%
							BATTERY TOTAL	1.4
TOTAL				271		407	BATTERY PROVIDED	7

NOTES:

1. PROVIDE ONE (1) 12 VOLT 7 AH BATTERY.
2. MOUNT THE BATTERY WITHIN THE INTRUSION ALARM CONTROL PANEL ENCLOSURE AND PERMANETNLY MARKED WITH THE MONTH AND YEAR FROM THE MANUFACTURER.

INTRUSION ALARM GENERAL NOTES

1. UPON LOSS OF BUILDING POWER, THE ENTIRE SYSTEM SHALL TRANSFER TO SECONDARY POWER AND WITHOUT LOSS OF SIGNALS. THE SYSTEM SHALL OPERATE UNDER SECONDARY POWER IN NORMAL OR TROUBLE CONDITIONS FOR FOUR (4) HOURS AND HAVE SUFFICIENT POWER TO SUPPORT COMPLETE ALARM CONDITION OPERATION FOR A SUBSEQUENT FIFTEEN (15) MINUTES AT MAXIMUM CONNECTED LOAD.
2. COORDINATE INSTALLATION OF A GROUND ROD OR ACCEPTABLE BUILDING GROUND FOR PROPER GROUNDING OF THE ICP WITH THE ELECTRICAL CONTRACTOR.
3. COORDINATE INSTALLATION OF ALL WALL MOUNTED MOTION DETECTORS AND SIRENS WITH THE ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO INSTALLATION.
4. ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL BACKGROUND INFORMATION IS SHOWN FOR COORDINATION PURPOSES ONLY. REFER TO THE PROPER DRAWINGS FOR EXACT LOCATIONS, SIZES AND QUANTITIES OF OTHER TRADES' WORK.
5. VERIFY ALL EQUIPMENT QUANTITIES, LOCATIONS, AND REQUIREMENTS. IF DISCREPANCIES ARE FOUND, CONTRACTOR SHALL IMMEDIATELY BRING THEM TO THE ATTENTION OF THE FIRE PROTECTION ENGINEER (CCI) FOR RESOLUTION.
6. ENSURE THAT OPENING / CLOSING REPORTING METHODS ARE ENABLED FOR ALL USER CODES OF THE INTRUSION ALARM SYSTEM.
7. CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE (1) HOUR TRAINING FOR ALL FUNCTIONS OF THE INTRUSION ALARM SYSTEM TO OWNER'S REPRESENTATIVE.

FIRESTOP NOTES

1. ALL THROUGH-PENETRATIONS OF FIRE-RATED WALLS AND FLOORS SHALL BE FIRE-STOPPED.
2. FIRE-RATED GYPSUM BOARD WALLS CONSTRUCTED AS DESCRIBED IN THE INDIVIDUAL U300, U400, OR V400 SERIES DESIGNS IN THE U.L. FIRE RESISTANCE DIRECTORY (GENERALLY DOUBLE THICKNESS WALLBOARD) SHALL BE FIRE-STOPPED WITH U.L. SYSTEMS.
3. ALL REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOORS OR WALLS, AND ALL U.L. CLASSIFIED CONCRETE BLOCK WALLS SHALL BE FIRE-STOPPED WITH U.L. SYSTEMS.

FIREPROOFING NOTES (WHERE REQUIRED)

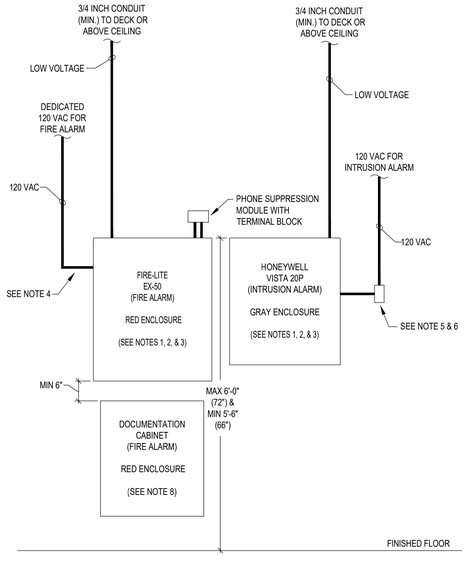
1. INSTALL ALL HANGERS, CLAMPS, CONDUIT, AND BACK BOXES FOR THE FIRE ALARM SYSTEM PRIOR TO THE APPLICATION OF FIREPROOFING ON STRUCTURAL MEMBERS.
2. INSTALL ALL HANGERS, CLAMPS, AND BACK BOXES FOR THE FIRE ALARM SYSTEM ON THE EDGE OF ANY JOIST REQUIRING FIREPROOFING. BACK BOXES SHALL BE FASTENED TO THE FLANGE OF THE JOIST UTILIZING BEAM CLAMPS, AND SHALL NOT BE ATTACHED DIRECTLY TO THE JOIST.
3. ANY DAMAGE TO FIREPROOFING ON THE BUILDING STRUCTURE AS A RESULT OF THE FIRE ALARM SYSTEM INSTALLATION SHALL BE REPAIRED BY A QUALIFIED FIREPROOFING CONTRACTOR. ALL DAMAGE AND REPAIR OF FIREPROOFING SHALL BE REPORTED TO AND COORDINATED THROUGH THE OWNER'S REPRESENTATIVE. THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIREPROOFING REPAIRS AT NO ADDITIONAL COST TO THE OWNER.
4. VERIFY THE LOCATIONS OF ALL FIREPROOFING, PRIOR TO THE INSTALLATION OF ANY FIRE ALARM CONDUIT AND BACKBOXES.

INTRUSION ALARM INSTALLATION NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH OWNER'S DESIGN CRITERIA AND LOCAL ADOPTED CODES.
2. INTRUSION ALARM CABLING SHALL BE ACCEPTABLE TO THE INTRUSION ALARM EQUIPMENT MANUFACTURER FOR THE INTENDED PURPOSE. SHOULD MANUFACTURER OF INTRUSION ALARM EQUIPMENT REQUIRE DIFFERENT TYPE OR SIZE OF CABLE THAN HEREIN SPECIFIED, THE LARGER OR MORE STRINGENT TYPE OF CABLE SHALL BE USED.
3. ALL INTRUSION ALARM CABLING SHALL BE CM, CMR OR CMP AS REQUIRED BY THE ELECTRICAL CODE. SEE WIRING LEGEND FOR CABLE TYPES AND SIZES.
4. INTRUSION ALARM CABLING SHALL BE GRAY IN COLOR.
5. PROVIDE ALL CONDUIT, BACKBOXES, AND FITTINGS FOR THE INTRUSION ALARM SYSTEM CABLING AS REQUIRED BY ALL APPLICABLE CODES AND THE LOCAL JURISDICTION.
6. INTRUSION ALARM CABLING SHALL NOT BE PAINTED.
7. EXACT CABLE ROUTING SHALL BE COORDINATED WITH OTHER TRADES IN THE FIELD. SEE DRAWING NOTES AND DETAILS FOR ACCEPTABLE INSTALLATION METHODS.
8. T-TAPPING THE WIRING IS NOT PERMITTED. CIRCUITS SHALL WIRED IN CLASS B CONFIGURATION. PROVIDE CLASS A WIRING ONLY IF REQUIRED BY LOCAL ADOPTED CODES.
9. ALL CABLE RUNS SHALL BE NEATLY BUNDLED, WRAPPED TIGHT AND PROPERLY SECURED. ANY CABLING NOT INSTALLED IN A NEAT AND PROFESSIONAL MANNER SHALL BE PULLED OUT AND RE-RUN BY INSTALLER AT NO ADDITIONAL COST TO OWNER.
10. CONTRACTOR RUNNING CABLING MUST MARK BOTH ENDS OF CABLING, PROVIDE A WIRE LEGEND FOR ALL LOCATIONS, AND PROVIDE A CONTINUITY TEST LOG FOR EACH CABLE.
11. EXPOSED CABLING SHALL BE RUN PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. EXPOSED CABLING SHALL NOT BE RUN IN A "SPAN" FASHION BETWEEN BAR JOISTS OR BEAMS (I.E.: CABLING SHALL BE ROUTED ALONG PATH OF JOISTS AND BEAMS). ALL CABLING SHALL BE SECURED TO THE STRUCTURAL CEILING BETWEEN JOISTS OR BEAMS.
12. ALL CABLING SHALL BE SUPPORTED FROM BUILDING STRUCTURE AND NOT FROM GRID, TILES, OR SUPPORT WIRES. EXPOSED CABLING SHALL BE SUPPORTED BY BUILDING STRUCTURE AT NO MORE THAN FIVE (5) FOOT INTERVALS.
13. ALL WIRING BELOW THE STRUCTURE, CONCEALED IN CEILINGS OR PARTITIONS, SUBJECT TO PHYSICAL DAMAGE, NON-POWER LIMITED OR WHERE REQUIRED BY APPLICABLE CODES SHALL BE INSTALLED IN METALLIC CONDUIT.
14. CONDUIT FILL SHALL NOT EXCEED 40%.
15. ALL CONDUIT SHALL BE TERMINATED AT THE BAR JOIST LEVEL WITH SOME FORM OF GROMMET OR BOX CONNECTOR.
16. ALL CONDUIT LOCATED IN DRYWALL SHALL BE TERMINATED NO LESS THAN SIX (6) INCHES ABOVE THE CEILING TILE.
17. FOR DRYWALL APPLICATIONS, ALL CONDUIT AND BACKBOXES SHALL BE RECESSED INSIDE THE WALL.
18. COORDINATE DRILLING OF ANY HOLES (I.E. COLUMN PENETRATIONS) WITH THE OWNER'S REPRESENTATIVE AND ALL OTHER TRADES PRIOR TO INSTALLATION.
19. ALL INTRUSION ALARM DETECTORS AND CONTACTS SHALL BE INSTALLED IN OR ON A PROPER BACKBOX. NO MOTION DETECTORS OR CONTACTS SHALL BE INSTALLED WITHOUT A BACKBOX.
20. ALL CABLING, CONDUIT, AND BACKBOXES SHALL BE PROPERLY SUPPORTED AND SEISMICALLY BRACED, AS REQUIRED BY ALL APPLICABLE CODES AND THE LOCAL JURISDICTION.
21. CONDUIT AND CABLING SHALL ENTER INTO THE ICP ONLY AS APPROVED BY THE EQUIPMENT MANUFACTURER.

INTRUSION ALARM KEYED NOTES

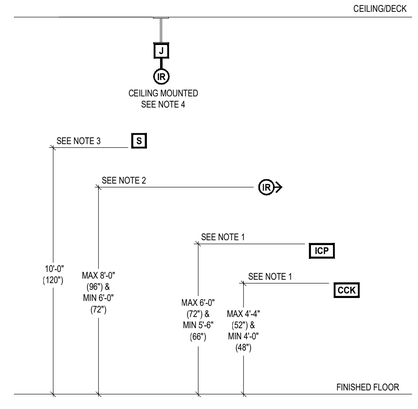
1. PROVIDE A 1361 (16.5VAC/25VA) TRANSFORMER CONNECTED TO A DEDICATED 120VAC DUPLEX OUTLET FOR THE INTRUSION ALARM CONTROL PANEL (ICP). LABEL THE CIRCUITS "INTRUSION ALARM CIRCUIT". THE LOCATION OF THE CIRCUIT DISCONNECT SHALL BE IDENTIFIED AT THE ICP. PROVIDE THE SERVICE PHONE NUMBER STICKER ON THE SURFACE OF THE ICP. ALL CIRCUIT BREAKERS SHALL BE CLEARLY MARKED AND MECHANICALLY SECURED TO PREVENT ANY UNAUTHORIZED TAMPERING.
2. PROVIDE TWO (2) MEANS OF SIGNAL TRANSMISSION TO THE OFF-SITE MONITORING FACILITY. PROVIDE A DEDICATED PHONE LINE FOR THE PRIMARY MEANS OF TRANSMISSION. THE SECONDARY MEANS SHALL UTILIZE A VOICE OVER INTERNET PROTOCOL / SESSION INITIATION PROTOCOL (VoIP/SIP) CONNECTION TO OWNERS NETWORK. PROVIDE THE SERVICE PHONE NUMBER STICKER ON THE SURFACE OF THE ICP AND THE ASSOCIATED PHONE NUMBER USING DIRECTLY ON THE RJ-31X BOXES. COORDINATE ALL PROGRAMMING, SIGNALS TRANSMISSION AND CONNECTIONS WITH THE OFF-SITE MONITORING COMPANY.
3. PROVIDE A COMMAND CENTER KEYPAD (CCK) ADJACENT TO THE FRONT ENTRANCE DOOR DIRECTLY BELOW THE FIRE ALARM ANNUNCIATOR. COORDINATE EXACT MOUNTING LOCATION OF THE CCK WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
4. THE WALL MOUNTED MOTION DETECTOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS WHERE SHOWN ON DRAWING. COORDINATE EXACT MOUNTING LOCATION OF THE FLUSH MOUNTED MOTION DETECTOR WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. APPLY MASKING OR SENSITIVITY ADJUSTMENTS AS NECESSARY TO ENSURE THAT THE MOTION COVERAGE AREA DOES NOT EXCEED THE BUILDING (REDUCING THE POSSIBILITY OF FALSE ALARMS).
5. THE CEILING MOUNTED 360 DEGREE MOTION DETECTOR SHALL BE PENDANT MOUNTED FROM THE BOTTOM OF STRUCTURE (MAXIMUM OF 18'-0" AFF) IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, WHERE SHOWN ON DRAWING. COORDINATE EXACT MOUNTING LOCATION OF THE CEILING MOUNTED 360 DEGREE MOTION DETECTOR WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. APPLY MASKING OR SENSITIVITY ADJUSTMENTS AS NECESSARY TO ENSURE THAT THE MOTION COVERAGE AREA DOES NOT EXCEED THE PROTECTED SPACE (REDUCING THE POSSIBILITY OF FALSE ALARMS).
6. PROVIDE A HOLD-UP BUTTON SWITCH UNDER SERVICE DESK IN THE SERVICE BAY AREA AND SHOWROOM AREA. COORDINATE EXACT MOUNTING LOCATION OF THE HOLD-UP BUTTON SWITCH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. PROVIDE A PUSH BUTTON SWITCH IN SHOWROOM AREA TO ACTIVATE THE SIREN IN THE SERVICE AREA TO SUMMON FOR ASSISTANCE. LOCATE THE PUSH BUTTON ON THE POWER POLE OF THE MIDDLE SHOWROOM POD. COORDINATE EXACT MOUNTING LOCATION OF THE PUSH BUTTON SWITCH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
8. PROVIDE A TRANSFORMER TO ACTIVATE THE SERVICE DESK SIREN AS SHOWN ON THE FLOOR PLANS. THE TRANSFORMER SHALL BE INSTALLED AND PLUGGED INTO THE RECEPTACLE BELOW SERVICE DESK IN SERVICE BAY AREA. RECEPTACLE AT THE SERVICE DESK. THE TRANSFORMER SHALL BE SECURED TO PREVENT ANY UNAUTHORIZED TAMPERING.
9. PROVIDE A WALL MOUNTED SIREN ADJACENT TO THE SHOWROOM DOOR FROM THE SERVICE AREA. THE SIREN SHALL BE SURFACE MOUNTED. COORDINATE EXACT MOUNTING LOCATION OF THE PUSH BUTTON SWITCH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.



NOTES:

1. LOCATE THE FIRE ALARM CONTROL PANEL, INTRUSION ALARM CONTROL PANEL AND DOCUMENTATION IN THE CONFIGURATION SHOWN ABOVE. IF THIS LAYOUT CAN NOT BE FOLLOWED, CONTRACTOR SHALL IMMEDIATELY BRING TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND FIRE PROTECTION ENGINEER (CCI) FOR RESOLUTION.
2. VERIFY THE CONTROL PANEL LAYOUT WITH THE OWNER'S REPRESENTATIVE AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION.
3. THE CONTROL PANELS SHALL BE LOCATED ON A BACKBOARD. THE BACKBOARD IS PROVIDED AND INSTALLED BY OTHERS.
4. PROVIDE HARDWIRED CONNECTIONS TO THE FIRE ALARM CONTROL PANEL UTILIZING THE DEDICATED 120 VAC FIRE ALARM CIRCUIT.
5. PROVIDE A D8004 ENCLOSURE FOR THE DUPLEX RECEPTACLE. COORDINATE INSTALLATION OF DUPLEX RECEPTACLES WITH THE ELECTRICAL CONTRACTOR CONNECTED TO A 120 VAC CIRCUIT FOR THE SYSTEM. REFER TO THE D8004 TRANSFORMER ENCLOSURE INSTALLATION INSTRUCTIONS FOR FURTHER DETAIL.
6. PROPERLY SECURE AND SCREW THE TRANSFORMER INTO DUPLEX RECEPTACLES TO PREVENT UNAUTHORIZED PERSONNEL FROM UNPLUGGING.
7. ALL CABLING INDICATED IN THIS DETAIL SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
8. PROVIDE A DOCUMENTATION CABINET ADJACENT TO THE FIRE ALARM CONTROL PANEL TO HOUSE ALL SYSTEM DOCUMENTS IN ACCORDANCE WITH NFPA 72. SYSTEM DOCUMENTS SHALL INCLUDE (AT A MINIMUM) RECORD DRAWINGS, EQUIPMENT DATA SHEETS, SOFTWARE AND FIRMWARE CONTROL DOCUMENTATION. THE DOCUMENTATION CABINET SHALL BE PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS", AND SHALL BE ACCESSIBLE BY AUTHORIZED PERSONNEL ONLY AND PROTECTED FROM PUBLIC ACCESS.

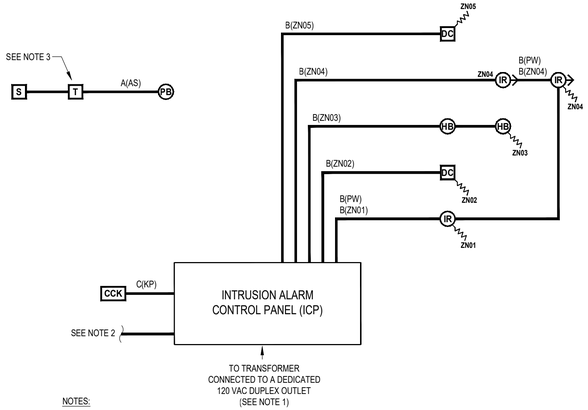
1 / BA2 TYPICAL CONTROL PANEL LAYOUT
NOT TO SCALE



NOTES:

1. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION OF THE INTRUSION ALARM CONTROL PANEL AND COMMAND CENTER KEYPAD WITH THE OWNER'S REPRESENTATIVE ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION.
2. COORDINATE EXACT MOUNTING HEIGHT (WHERE POSSIBLE INSTALL AT 7'-6" ABOVE FINISHED FLOOR) AND LOCATION OF THE WALL MOUNTED INFRARED MOTION DETECTORS WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. MOTION DETECTOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. COORDINATE EXACT LOCATION OF THE WALL MOUNTED SIREN, SOUNDER AND VISUAL WITH BLUE LENS WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. PROVIDE AN APPROVED BACKBOX AS REQUIRED PER THE MANUFACTURER SPECIFICATIONS.
4. COORDINATE EXACT LOCATION OF THE CEILING MOUNTED INFRARED MOTION DETECTORS WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. MOTION DETECTOR SHALL BE PENDANT MOUNTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

2 / BA2 TYPICAL INTRUSION ALARM MOUNTING HEIGHT DETAIL
NOT TO SCALE



NOTES:

1. PROVIDE DEDICATED 120 VAC CIRCUITS, AND BATTERY BACKUP IN THE ICP AND PS.
2. PROVIDE TWO (2) MEANS OF SIGNAL TRANSMISSION TO THE OFF-SITE MONITORING FACILITY. PROVIDE A DEDICATED PHONE LINE FOR THE PRIMARY MEANS OF TRANSMISSION. THE SECONDARY MEANS SHALL UTILIZE A VoIP/ SIP CONNECTION TO OWNER'S NETWORK.
3. THE TRANSFORMER SHALL BE INSTALLED AND PLUGGED INTO THE RECEPTACLE BELOW SERVICE DESK IN SERVICE BAY AREA

3 / BA2 TYPICAL INTRUSION ALARM SYSTEM RISER DIAGRAM
NOT TO SCALE

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Firestone COMPLETE AUTO CARE

1 NEW FCAC STORE
2020 ER
3561 SW MARKET ST
JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

STATE OF MISSOURI
JACOB P. HEMKE
NUMBER PE-2004000793
PROFESSIONAL ENGINEER
2020-04-15

FIRE PROTECTION ENGINEER OF RECORD:
JACOB P. HEMKE, PE
LICENSE NO. PE-2004000793
CODE CONSULTANTS, INC.
2043 WOODLAND PKWY, SUITE 300
ST. LOUIS, MO 63146-4235
PHONE: 314-991-2633
CORPORATE CERTIFICATE OF AUTHORITY NO. 000419

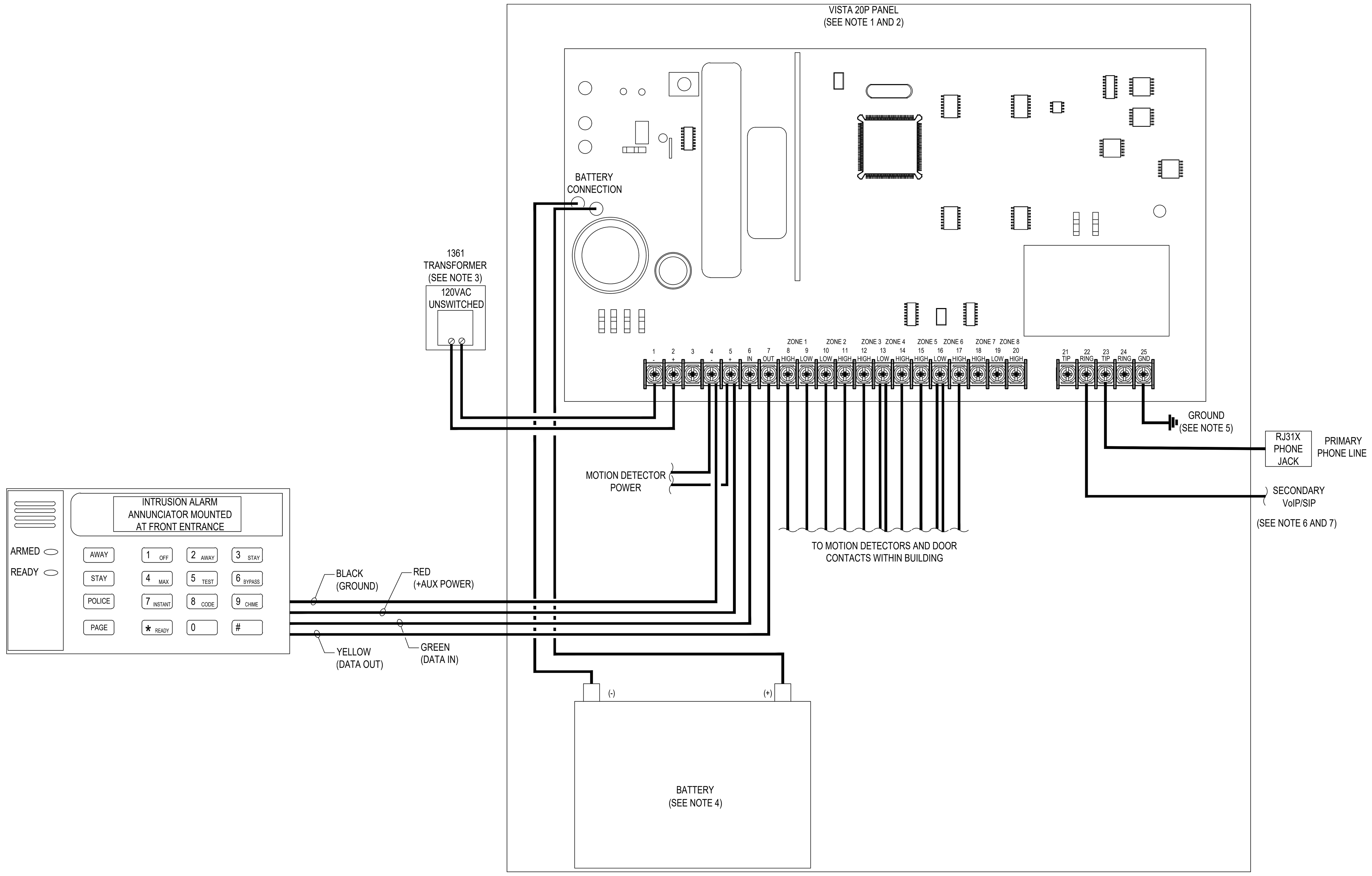
ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
INTRUSION ALARM NOTES AND CALCULATIONS

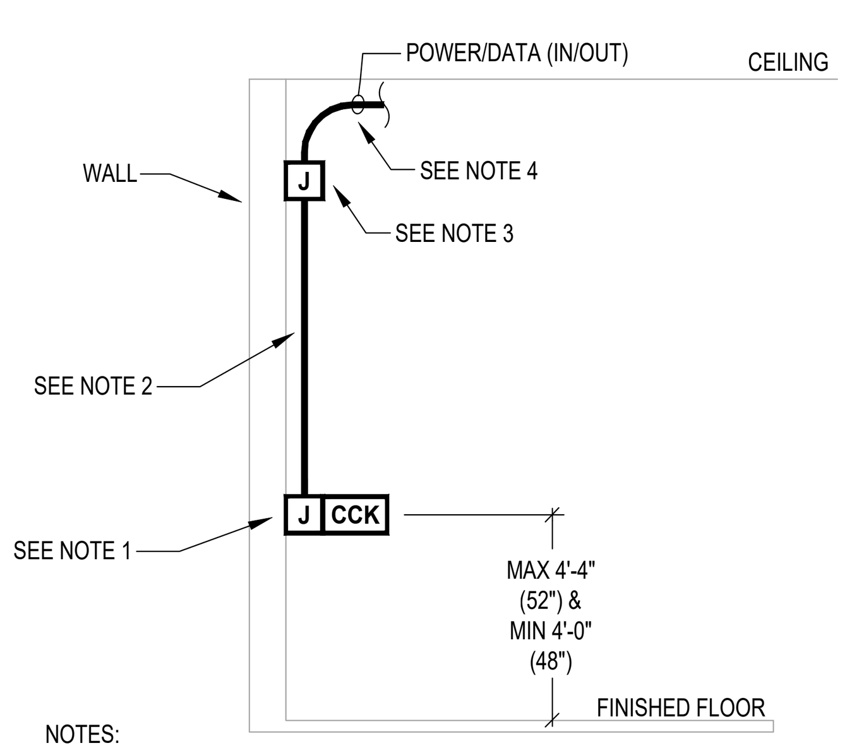
SHEET NUMBER:
BA2



1/BA3 **INTRUSION ALARM CONTROL PANEL LAYOUT**
NOT TO SCALE

INTRUSION ALARM CONTROL PANEL LAYOUT NOTES

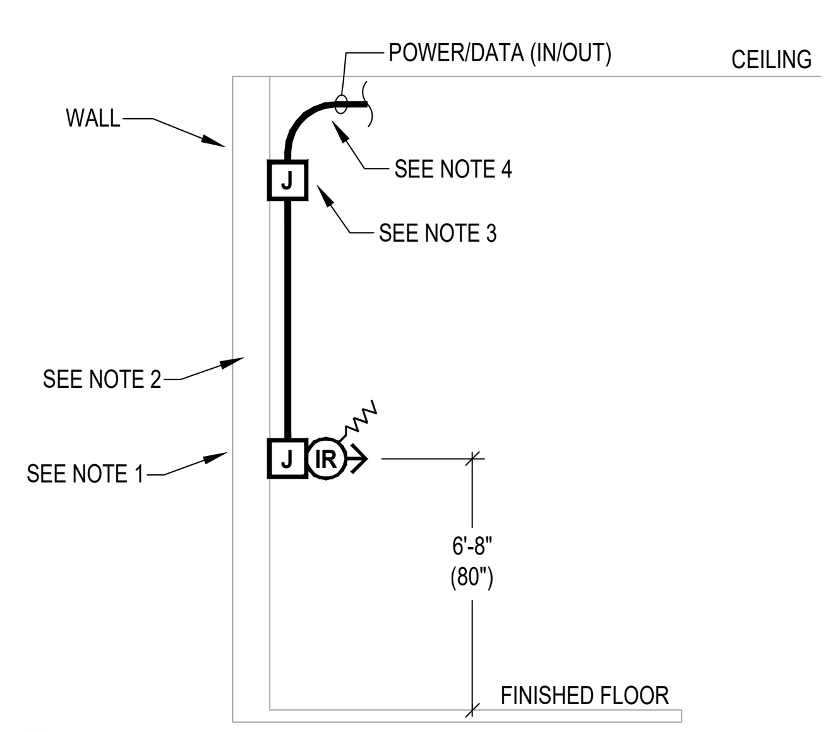
1. THE INTRUSION ALARM CONTROL PANEL SHALL BE LOCATED IN A GRAY ENCLOSURE CABINET.
2. PROVIDE THE SERVICE PHONE NUMBER STICKER ON THE SURFACE OF THE ICP.
3. PROVIDE 1361 TRANSFORMER CONNECTED TO A 120 VAC DUPLEX OUTLET FOR THE INTRUSION ALARM CONTROL PANEL (ICP). LABEL THE CIRCUIT BREAKER "INTRUSION ALARM CIRCUIT". THE LOCATION OF THE CIRCUIT DISCONNECT SHALL BE IDENTIFIED AT THE ICP. ALL CIRCUIT BREAKERS SHALL BE CLEARLY MARKED AND MECHANICALLY SECURED TO PREVENT ANY UNAUTHORIZED TAMPERING.
4. PROVIDE ONE (1) 12V BATTERY FOR THE INTRUSION ALARM CONTROL PANEL (ICP). SEE CALCULATIONS ON SHEET BA2 FOR AMP-HOUR REQUIREMENTS THE BATTERY SHALL BE INSTALLED WITHIN THE ICP CABINET.
5. COORDINATE INSTALLATION OF A GROUND ROD OR ACCEPTABLE BUILDING GROUND FOR PROPER GROUNDING OF THE ICP AND PS WITH THE ELECTRICAL CONTRACTOR.
6. PROVIDE TWO (2) MEANS OF SIGNAL TRANSMISSION TO THE OFF-SITE MONITORING FACILITY. PROVIDE A DEDICATED PHONE LINE FOR THE PRIMARY MEANS OF TRANSMISSION. THE SECONDARY MEANS SHALL UTILIZE A VOICE OVER INTERNET PROTOCOL / SESSION INITIATION PROTOCOL (VoIP/SIP) CONNECTION TO OWNERS NETWORK. PROVIDE THE SERVICE PHONE NUMBER STICKER ON THE SURFACE OF THE ICP AND THE ASSOCIATED PHONE NUMBER USING DIRECTLY ON THE RJ-31X BOXES. COORDINATE ALL PROGRAMMING, SIGNALS TRANSMISSION AND CONNECTIONS WITH THE OFF-SITE MONITORING COMPANY.
7. PROVIDE THE ASSOCIATED PHONE NUMBER USING PRINTED LABEL DIRECTLY ON THE RJ-31X BOXES.



NOTES:

1. PROVIDE AN APPROVED BACKBOX PER THE MANUFACTURER SPECIFICATIONS BETWEEN 48 INCHES AND 52 INCHES ABOVE FINISHED FLOOR.
2. PROVIDE INTRUSION ALARM CABLING WITHIN 1/2 INCH CONDUIT INSIDE WALL (EXPOSED CONDUIT NOT ACCEPTABLE).
3. INTRUSION ALARM CABLING AND CONDUIT SHALL BE STUB-UP TO THE CEILING JOIST AREA 6 INCHES TO THE BOTTOM OF JOISTS AND TURN OUT WITH INSULATED BUSHING.
4. PROVIDE EXPOSED CABLING PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE.
5. COORDINATE EXACT MOUNTING LOCATION OF THE CCK WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

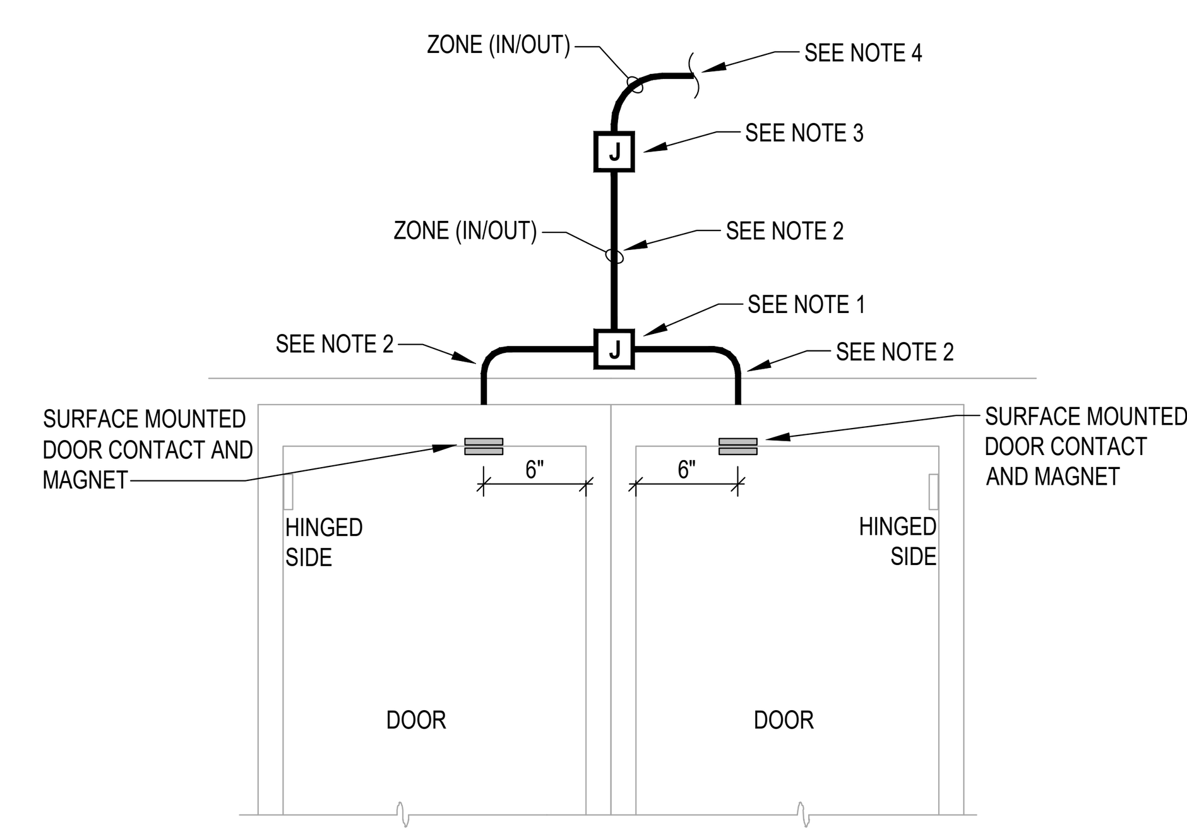
2/BA3 **COMMAND CENTER KEYPAD DETAIL**
NOT TO SCALE



NOTES:

1. PROVIDE AN APPROVED BACKBOX PER THE MANUFACTURER SPECIFICATIONS (RECOMMENDED TO BE INSTALLED AT 80 INCHES ABOVE FINISHED FLOOR).
2. PROVIDE FIRE ALARM CABLING WITHIN 1/2 INCH CONDUIT INSIDE WALL (EXPOSED CONDUIT NOT ACCEPTABLE).
3. INTRUSION ALARM CABLING AND CONDUIT SHALL BE STUB-UP TO THE CEILING JOIST AREA 6 INCHES TO THE BOTTOM OF JOISTS AND TURN OUT WITH INSULATED BUSHING.
4. PROVIDE EXPOSED CABLING PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE.
5. COORDINATE EXACT MOUNTING LOCATION OF THE MOTION DETECTORS WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

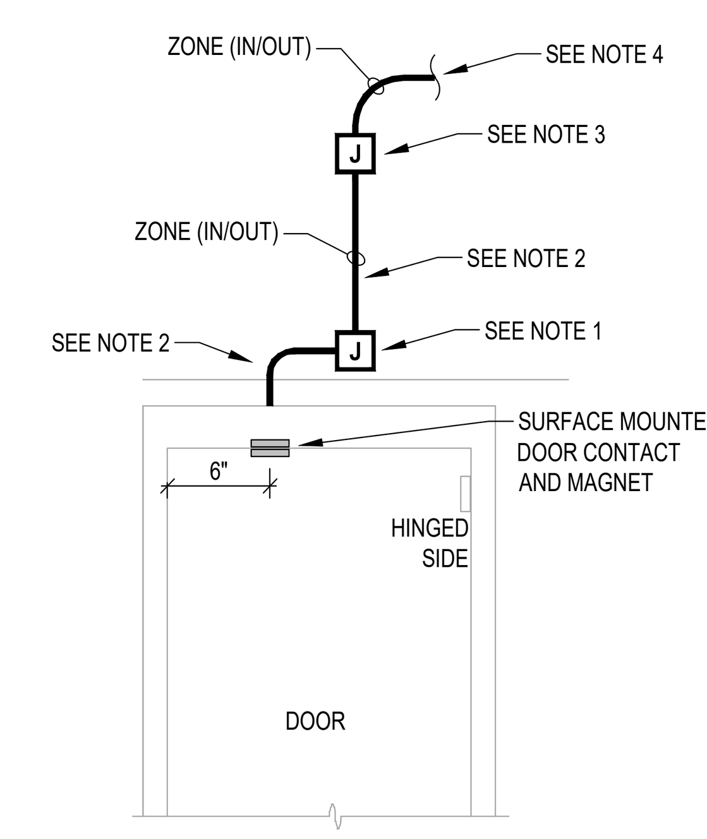
3/BA3 **PIR MOTION DETECTOR DETAIL**
NOT TO SCALE



NOTES:

1. INSTALL A RECESSED 4 INCH SQUARE BOX ABOVE CENTERED 4 INCHES ABOVE THE DOOR OPENING. PROVIDE A SURFACED MOUNTED COVER PLATE FOR JUNCTION BOX
2. PROVIDE INTRUSION ALARM CABLING WITHIN 1/2 INCH CONDUIT INSIDE WALL (EXPOSED CONDUIT NOT ACCEPTABLE).
3. INTRUSION ALARM CABLING AND CONDUIT SHALL BE STUB-UP TO THE CEILING JOIST AREA 6 INCHES TO THE BOTTOM OF JOISTS AND TURN OUT WITH INSULATED BUSHING.
4. PROVIDE EXPOSED CABLING PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE.
5. COORDINATE EXACT MOUNTING LOCATION OF THE DOOR CONTACTS WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

4/BA3 **DOUBLE DOOR CONTACT DETAIL**
NOT TO SCALE



NOTES:

1. INSTALL A RECESSED 4 INCH SQUARE BOX ABOVE CENTERED 4 INCHES ABOVE THE DOOR OPENING. PROVIDE A SURFACED MOUNTED COVER PLATE FOR JUNCTION BOX
2. PROVIDE INTRUSION ALARM CABLING WITHIN 1/2 INCH CONDUIT INSIDE WALL (EXPOSED CONDUIT NOT ACCEPTABLE).
3. INTRUSION ALARM CABLING AND CONDUIT SHALL BE STUB-UP TO THE CEILING JOIST AREA 6 INCHES TO THE BOTTOM OF JOISTS AND TURN OUT WITH INSULATED BUSHING.
4. PROVIDE EXPOSED CABLING PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE.
5. COORDINATE EXACT MOUNTING LOCATION OF THE DOOR CONTACTS WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

5/BA3 **SINGLE DOOR CONTACT DETAIL**
NOT TO SCALE

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PHONE: 314-991-2633
CORPORATE CERTIFICATE OF AUTHORITY NO. 000419

ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.:	160085
6 DIGIT NO.:	906983
4 DIGIT NO.:	78C9

AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
INTRUSION ALARM CONTROL PANEL LAYOUT AND DETAILS

SHEET NUMBER:
BA3

MECHANICAL SYMBOLS LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY DUCTWORK		MANUAL VOLUME DAMPER
	RETURN DUCTWORK	F.D.	FIRE DAMPER
	EXHAUST DUCTWORK	M	MOTOR OPERATED DAMPER M.O.D.
	SUPPLY DIFFUSER	F.A.I.	FRESH AIR INTAKE
	RETURN GRILLE		TURNING VANES IN ELBOW
	EXHAUST GRILLE	SD	SMOKE DETECTOR
T	THERMOSTAT	--- ---	DIFFUSER TYPE, DIFFUSER AIR QUANTITY
UP	RISE IN DUCTWORK		
DN	DROP IN DUCTWORK	--- ---	EQUIPMENT TYPE, EQUIPMENT TAG

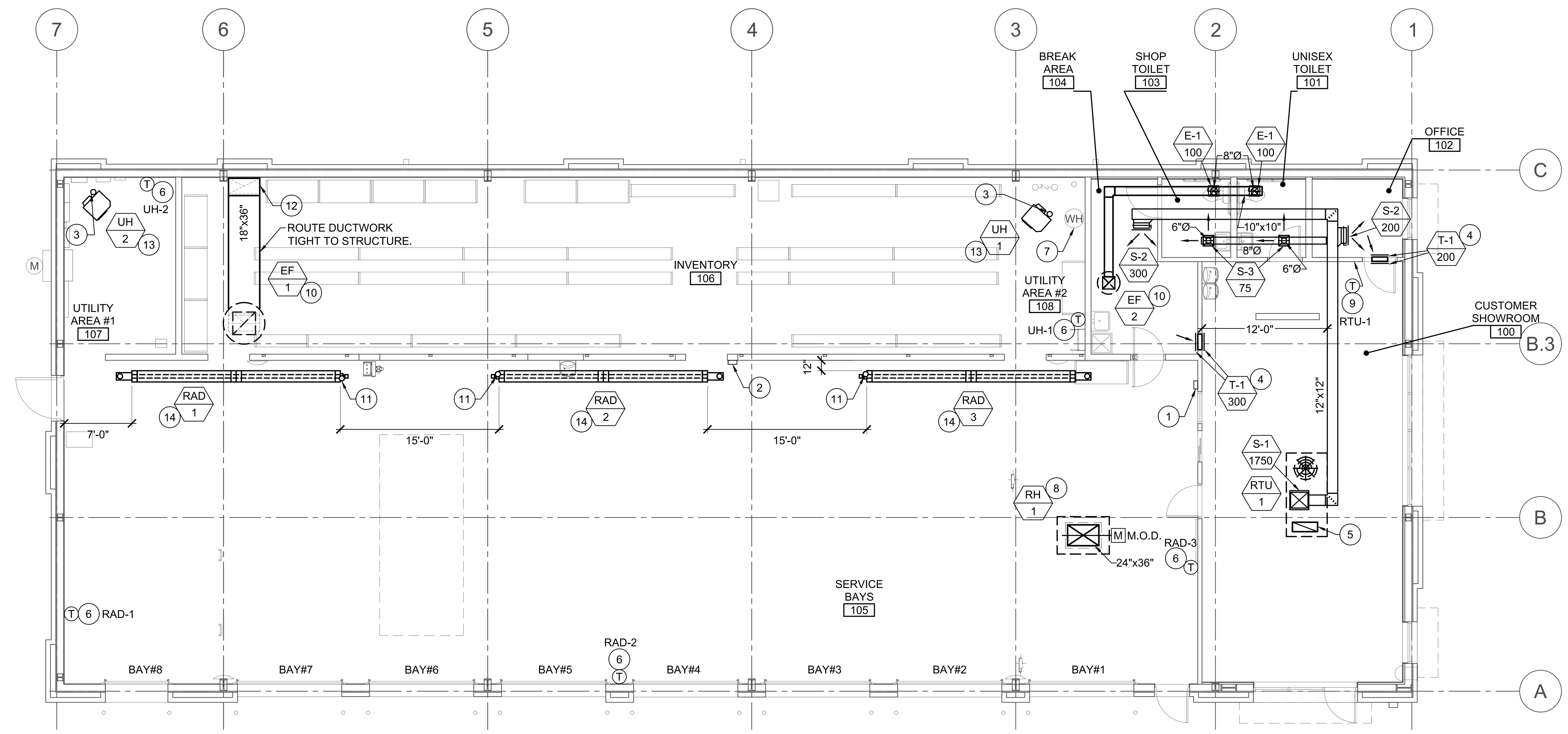
MECHANICAL GENERAL NOTES

1. PROVIDE TOXALERT, INC. VENTILATION CONTROL SYSTEM. COMPLETE WITH (1) CONTROL UNIT, MODEL (GVU-1) AND (1) CO SENSOR, MODEL (GVU-CO), (RANGE 0 TO 250 PPM). PROVIDE OPTIONAL AUDIBLE ALARM WITH SILENCE SWITCH FOR SECOND STAGE ALARM LEVELS; MANUAL OVERRIDE "PURGE" SWITCH OPTION; AND LABELED LED INDICATORS ON FACE OF CONTROLLER (POWER ON, FAN ON AND POWER TO SENSOR). REMOTE SENSOR SHALL BE TEMPERATURE AND HUMIDITY COMPENSATED AND COMPLETE WITH LED'S INDICATING: NORMAL OPERATION, HIGH CO AND MALFUNCTION.
2. VERIFY DIMENSIONS OF UNIT HEATER AND RADIANT HEATER LOCATIONS WITH MANUFACTURER BEFORE INSTALLATION AND COORDINATE WITH LIFT INSTALLER.
3. NO GOOSE NECK OR DOWNTURNS ON LOUVERS OR VENT COVERS TO BE USED.
4. COORDINATE ALL VENT AND EXHAUST FAN PENETRATIONS THRU THE ROOF, WALLS AND FLOORS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
5. REFER TO FIXTURE PLAN SHEET FOR FINAL LOCATIONS AND QUANTITIES OF ALL OPERATIONS EQUIPMENT.
6. ALL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED STEEL SHEET METAL AND SHALL BE FABRICATED ACCORDING TO THE LATEST EDITION OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARD OF METAL AND FLEXIBLE DUCTWORK. UNDER NO CIRCUMSTANCE SHALL DUCT BOARD BE ALLOWED.
7. ALL DUCTWORK DIMENSIONS SHOWN ON PLANS ARE CLEAR DIMENSIONS. WHERE INTERNAL DUCT LINER IS REQUIRED BY SPECIFICATIONS, CONTRACTOR SHALL ADJUST DUCTWORK SIZES ACCORDINGLY.
8. ALL INSULATION, JOINING MATERIALS, SEALER, ETC. SHALL HAVE A U.L. FLAME SPREAD CLASSIFICATION OF NO MORE THAN 25 AND A SMOKE DEVELOPMENT RATING NOT MORE THAN 50.
9. ALL EXPOSED DUCTWORK SHALL BE INTERNALLY LINED. REFER TO SPECIFICATIONS FOR DUCT LINER SPECIFIC REQUIREMENTS.
10. SERVICE BAYS SHALL HAVE BSRO PROVIDED CRUSHPROOF TUBING CO. EXHAUST SOURCE CAPTURE SYSTEM. SYSTEM SHALL BE OUT-THE-DOOR WITH ALL REQUIRED FITTINGS AND ADAPTORS.

(#) KEYED PLAN NOTES - THIS SHEET

1. TOXALERT CONTROLLER. SEE MECHANICAL GENERAL NOTES FOR FURTHER INFORMATION.
2. TOXALERT REMOTE CO SENSOR. MOUNT AT 6'-0" A.F.F. SET SENSOR AT 50 ppm. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
3. PROVIDE WITH UNIT HEATER MANUFACTURER'S CONCENTRIC VENT KIT UP THRU ROOF. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND CONCENTRIC FLUE DETAIL ON SHEET M2 FOR FURTHER INFORMATION.
4. MOUNT TRANSFER GRILLE AT 12'-0" AFF MINIMUM.
5. ROUTE FULL SIZE RETURN AIR DUCT 6" BELOW DECK, END OPEN AND COVER WITH 1/2"x1/2" GALVANIZED HARDWARE CLOTH.
6. THERMOSTAT SUPPLIED BY MANUFACTURER WITH EACH PIECE OF EQUIPMENT. THERMOSTAT TO BE INSTALLED ON AN INSULATED SUBBASE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND MOUNTED SO THAT THE HIGHEST OPERABLE CONTROL IS NOT MORE THAT 48" AFF. COORDINATE MOUNTING LOCATION SO THERMOSTAT IS NOT LOCATED BEHIND SERVICE EQUIPMENT.
7. ROUTE WATER HEATER FLUE AND INTAKE TIGHT TO WALL. TERMINATE THROUGH ROOF WITH CONCENTRIC VENT KIT. INSTALL PER MANUFACTURER'S INSTRUCTIONS AND PROVIDE REQUIRED CLEARANCES FROM WALL AND ROOF.
8. PROVIDE ROOF MOUNTED INTAKE HOOD AS SCHEDULED AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
9. THE CONTRACTOR SHALL FURNISH HONEYWELL T7351 THERMOSTAT (OR EQUAL) WITH INSULATED SUBBASE. THERMOSTAT TO BE 7 DAY PROGRAMMABLE WITH 4 SETBACK PERIODS PER DAY. THERMOSTAT TO BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. MOUNT THERMOSTAT SO THAT THE HIGHEST OPERABLE CONTROL IS NOT MORE THAT 48" AFF. PROVIDE WITH LOCKABLE COVER.
10. PROVIDE ROOF MOUNTED EXHAUST FAN AS SCHEDULED AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. TRANSITION EXHAUST DUCT AS REQUIRED TO MAKE CONNECTION TO EXHAUST FAN.
11. ROUTE 4"Ø FLUE SEPARATELY THRU ROOF FOR EACH RADIANT HEATER. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND DETAIL ON SHEET M2 FOR FURTHER INFORMATION. COORDINATE PENETRATIONS WITH ARCHITECTURAL ROOF PLAN.
12. DROP 36"x18" EXHAUST DUCT DOWN IN LOCATION SHOWN. MOUNT DUCTWORK TO WALL PER SMACNA REQUIREMENTS AND TRANSITION AS REQUIRED TO FAN. TERMINATE AT 3" A.F.F. REFER TO DETAIL ON SHEET M2 FOR FURTHER INFORMATION.
13. SUSPEND GAS FIRED UNIT HEATER FROM ROOF STRUCTURE PER MANUFACTUER'S RECOMMENDATIONS. MOUNT AT 13'-0" AFF. REFER TO DETAIL ON SHEET M2 FOR ADDITIONAL INFORMATION.
14. SUSPEND GAS FIRED RADIANT HEATER FROM ROOF STRUCTURE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. MOUNT AT 13'-4" AFF. REFER TO DETAIL ON SHEET M2 AND SERVICE BAY SECTION ON ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.

NOTE:
CONTRACTOR SHALL REFER TO SHEET A3 - ROOF PLAN FOR ACCEPTABLE APPROXIMATE LOCATIONS OF ROOF PENETRATIONS.



1 / M1 MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

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STATE OF MISSOURI
RANDALL A. NELSON
NUMBER PE-2007003990
PROFESSIONAL ENGINEER
04/15/2020

ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.:	160085
6 DIGIT NO.:	906983
4 DIGIT NO.:	78C9
AOR PROJECT NUMBER:	1955B71
TO PERMIT:	DATE: 03/26/2020
TO BID:	DATE: ##-##-##

SHEET TITLE:
MECHANICAL PLAN AND NOTES

SHEET NUMBER:
M1

Apr 15, 2020 - 12:17pm - USER IanCollins
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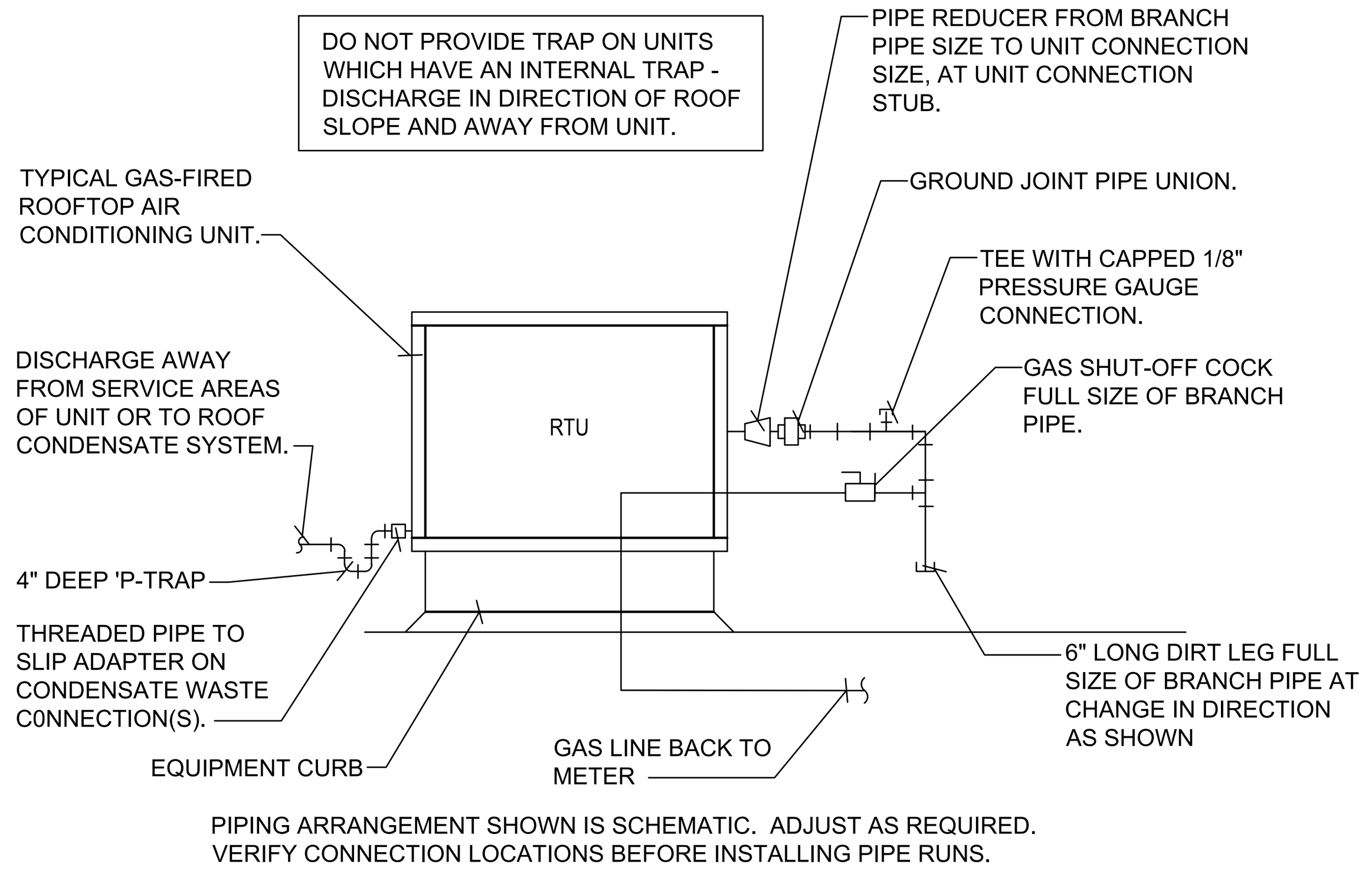
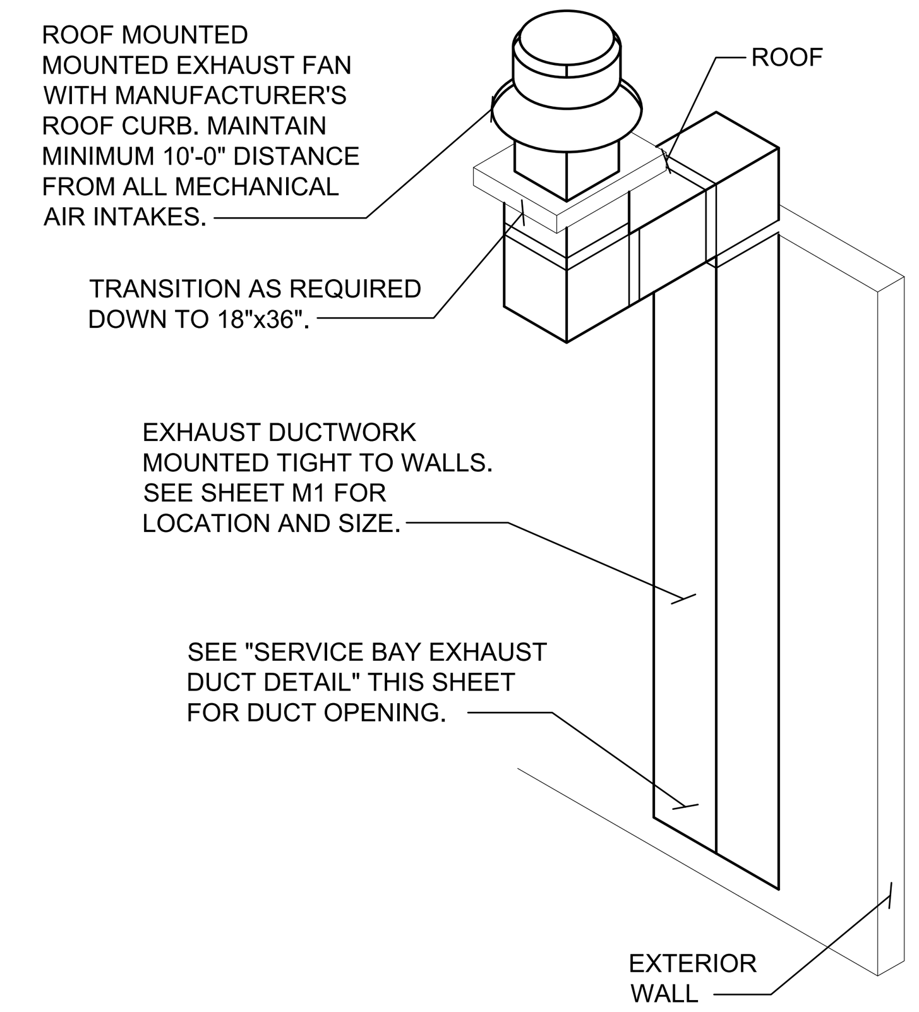
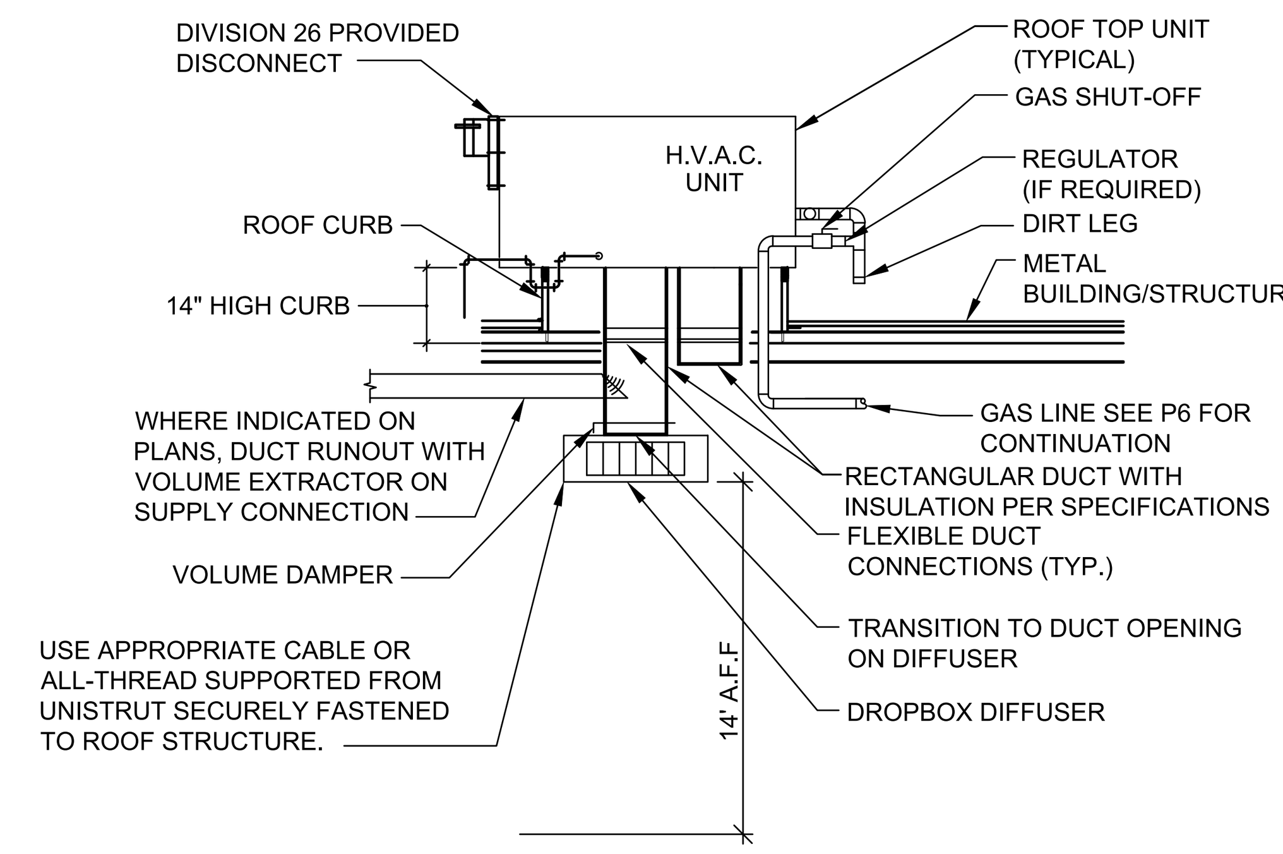


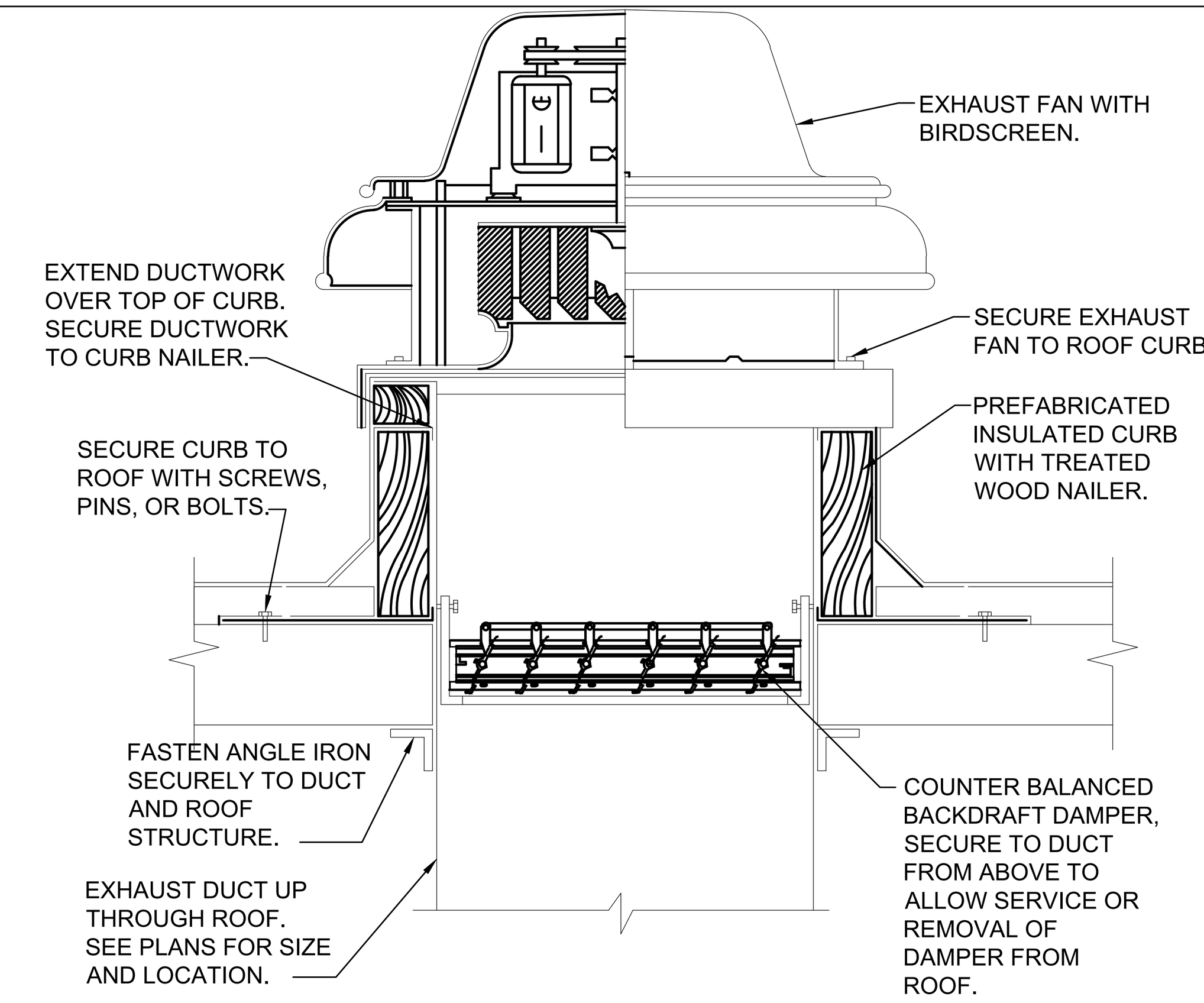
1 / M2 ROOFTOP UNIT PIPING DETAIL
N.T.S.



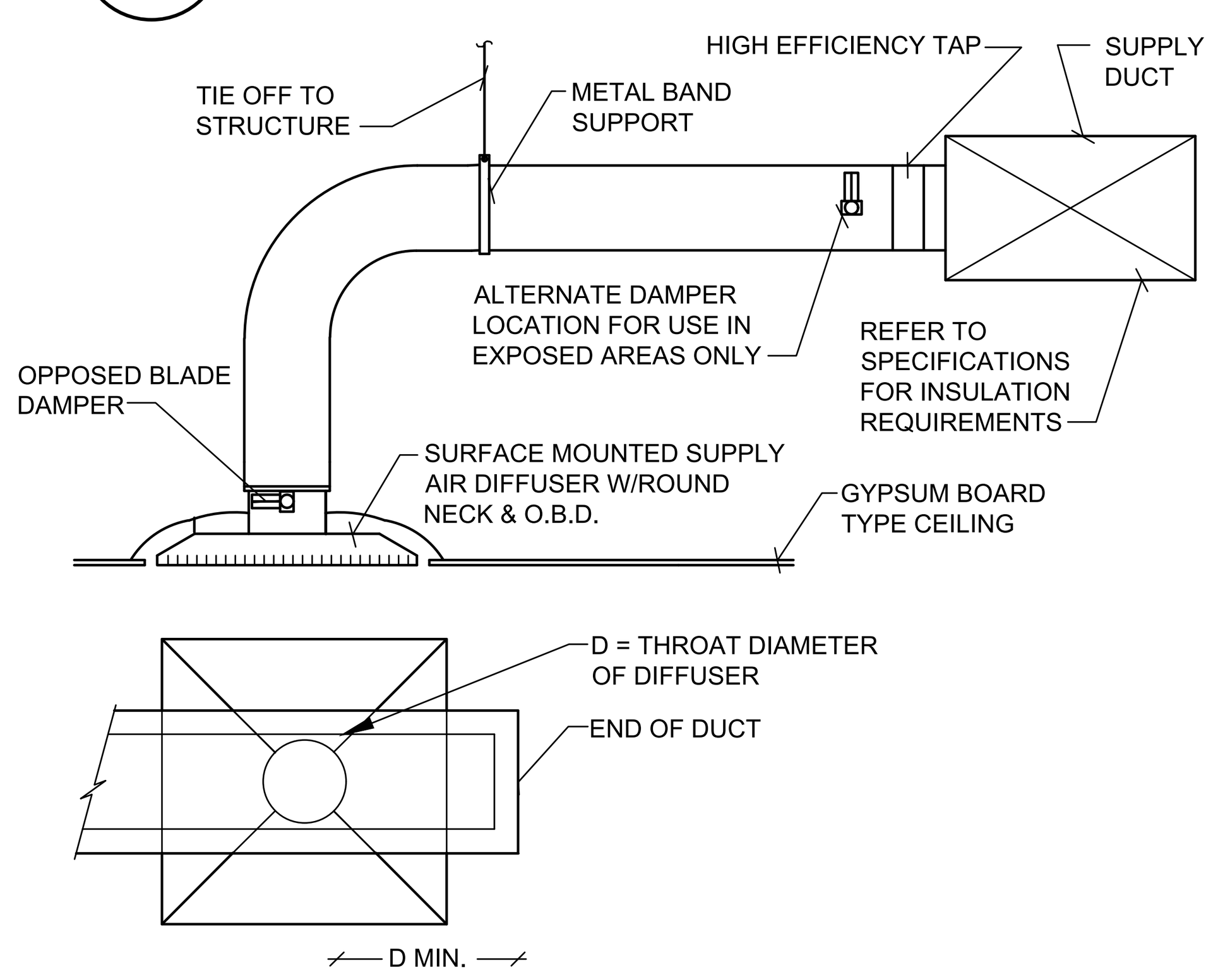
2 / M2 SERVICE BAY EXHAUST FAN
N.T.S.



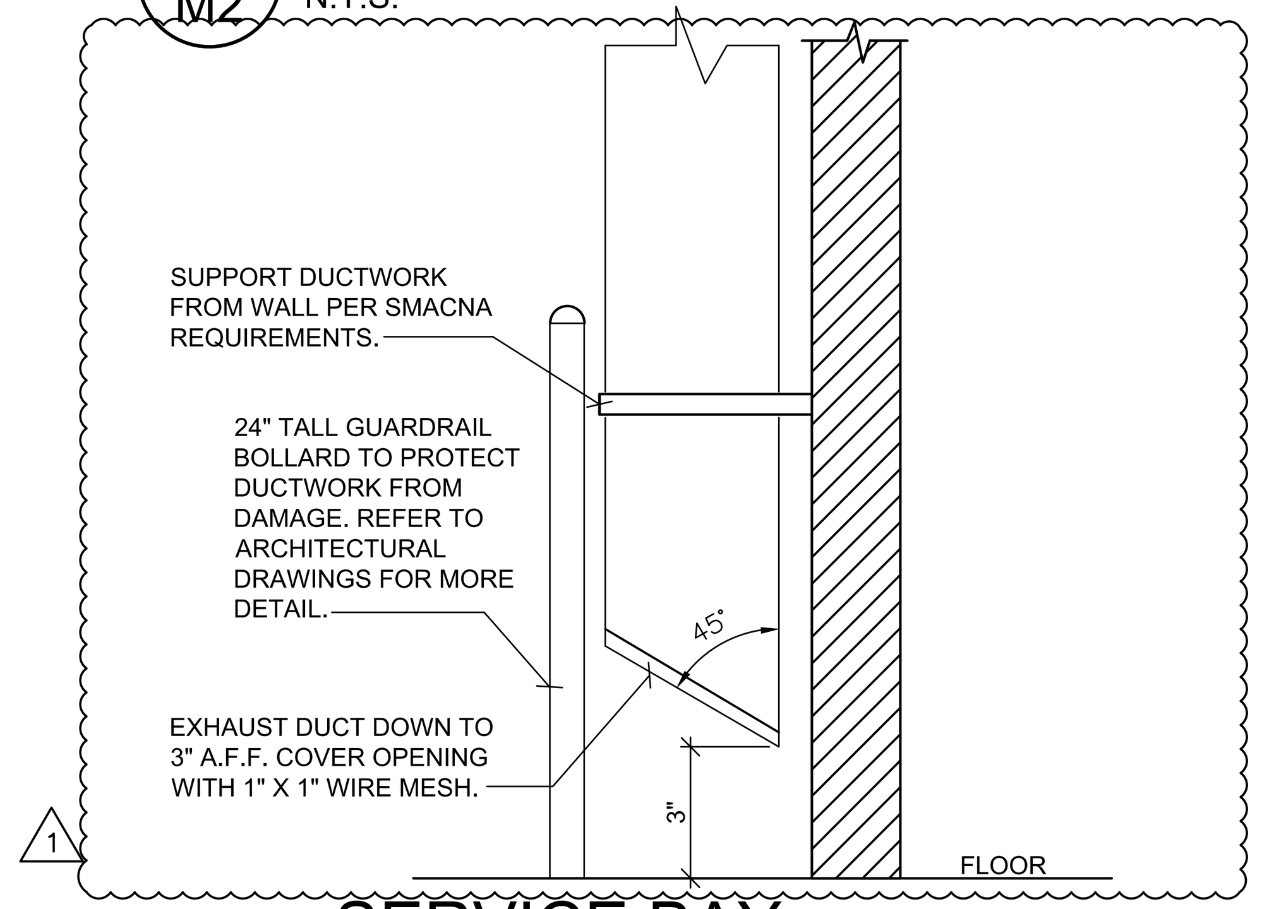
3 / M2 RTU PACKAGE HVAC DETAIL
N.T.S.



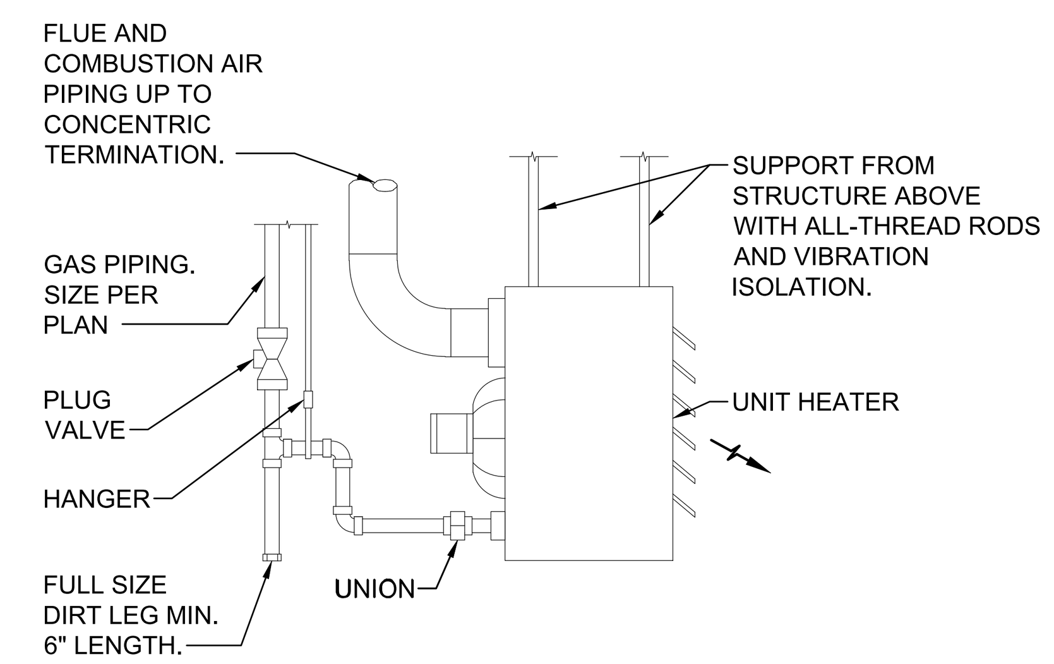
4 / M2 ROOF MOUNTED EXHAUST FAN DETAIL
N.T.S.



5 / M2 SUPPLY AIR DIFFUSER DETAIL
N.T.S.



6 / M2 SERVICE BAY EXHAUST DUCT DETAIL
N.T.S.



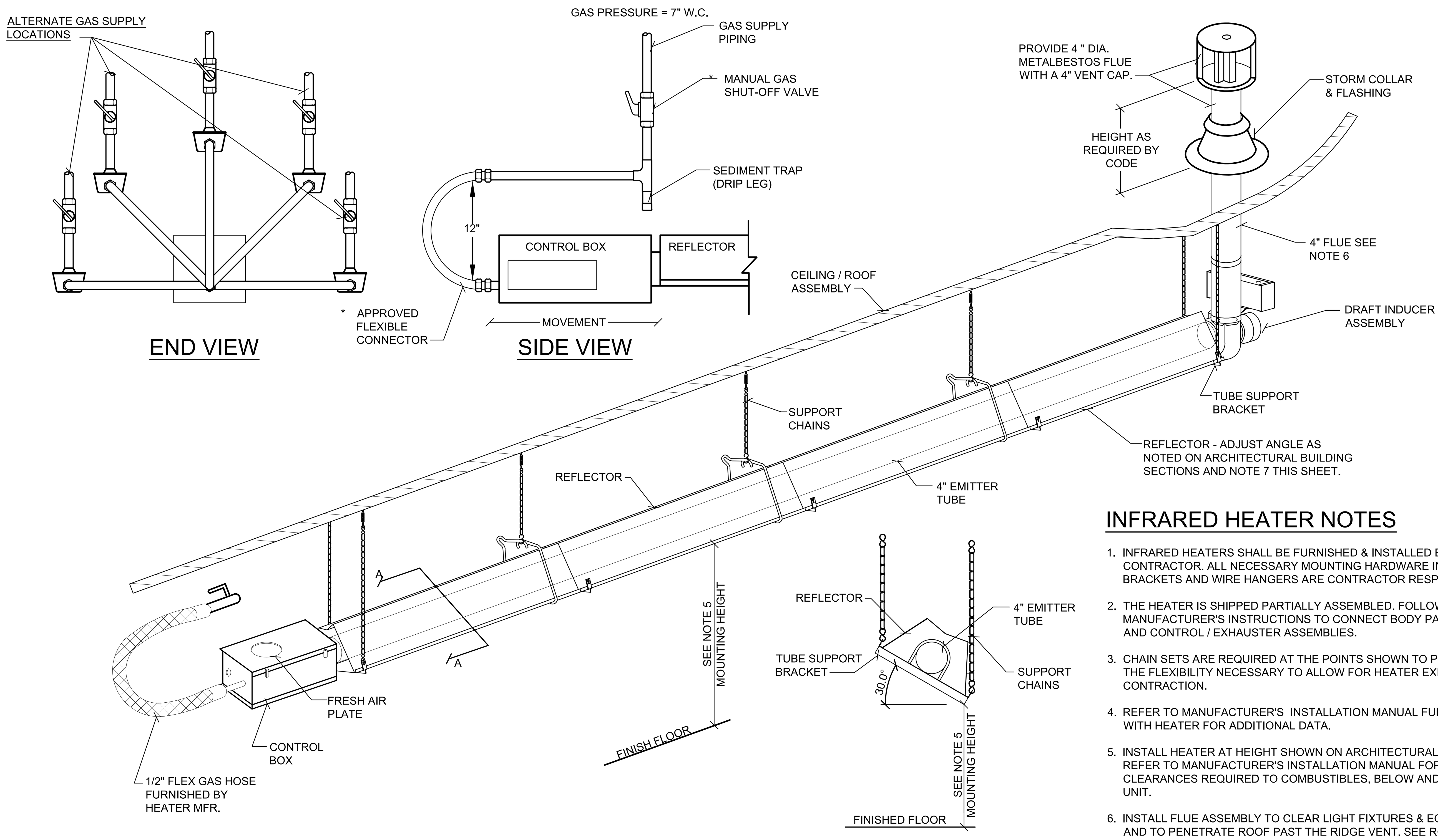
NOTE: MOUNT BOTTOM OF UNIT, PIPING AND ACCESSORIES AT 13-0" AFF.

SHOWN FOR REFERENCE ONLY. REFER TO MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION DETAILS.

7 / M2 GAS FIRED UNIT HEATER DETAIL
N.T.S.

GENERAL DETAIL NOTES

1. SUSPEND UNIT HEATERS FROM UNISTRUT CHANNELS MOUNTED TO STRUCTURE WITH VIBRATION ISOLATORS EQUIPPED HANGER RODS OR AN APPROVED EQUAL METHOD.
2. ALL EQUIPMENT FURNISHED BY CONTRACTOR SHALL HAVE MAGNETIC STARTERS OF SIZE AND CAPACITIES AS REQ'D. FOR PROPER EQUIPMENT OPERATION. FURNISH WEATHERPROOF BOXES (NEMA 3R) FOR EXTERIOR USE.
3. EXTEND ALL METALBESTOS FLUES OF DIAMETERS SHOWN THROUGH ROOF TO HEIGHT REQUIRED BY CODE WITH ALUMINUM ROUND TOP. PROVIDE VENTILATING THIMBLE THROUGH ROOF FOR CLEARANCE AROUND STACK AND SUPPORT SECURELY. PROVIDE WEATHER TIGHT RAIN COLLAR AND FLASHING AT PENETRATION.
4. ALL THERMOSTATS TO BE FURNISHED BY HVAC CONTRACTOR TO ELECTRICAL CONTRACTOR FOR INSTALLATION.
5. FURNISH AND INSTALL UL RATED FIRE DAMPERS W/FUSIBLE LINKS AND ACCESS PANELS IN DUCT WORK AT PENETRATIONS OF FIRE RATE ASSEMBLIES AS REQUIRED BY CODE.
6. WIRING SCHEMATICS OF ALL HVAC EQUIPMENT SHALL BE FURNISHED BY HVAC CONTRACTOR TO ELECTRICAL CONTRACTOR.
7. ADJUST ALL FANS TO PROPER RPM TO ASSURE CFM REQUIRED AND BALANCE ALL GRILLES AND DIFFUSERS TO CFM SHOWN ON DRAWINGS. (±5%)
8. WHERE DRAWINGS AND SPECIFICATIONS EXCEED GOVERNING CODE REQUIREMENTS, DESIGN SHALL GOVERN, INSTALL NO WORK CONTRARY TO OR BELOW MINIMUM LEGAL STANDARDS, WHETHER DRAWINGS AND SPECIFICATIONS, FULLY COMPLY OR NOT.
9. ROUTE ALL PIPING TIGHT TO CEILING AND WALLS, PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE WHERE POSSIBLE.
10. ALL SHUT OFF VALVES TO BE ACCESSIBLE TO ASSOCIATES WITHOUT THE USE OF A LADDER OR STEP-STOOL.



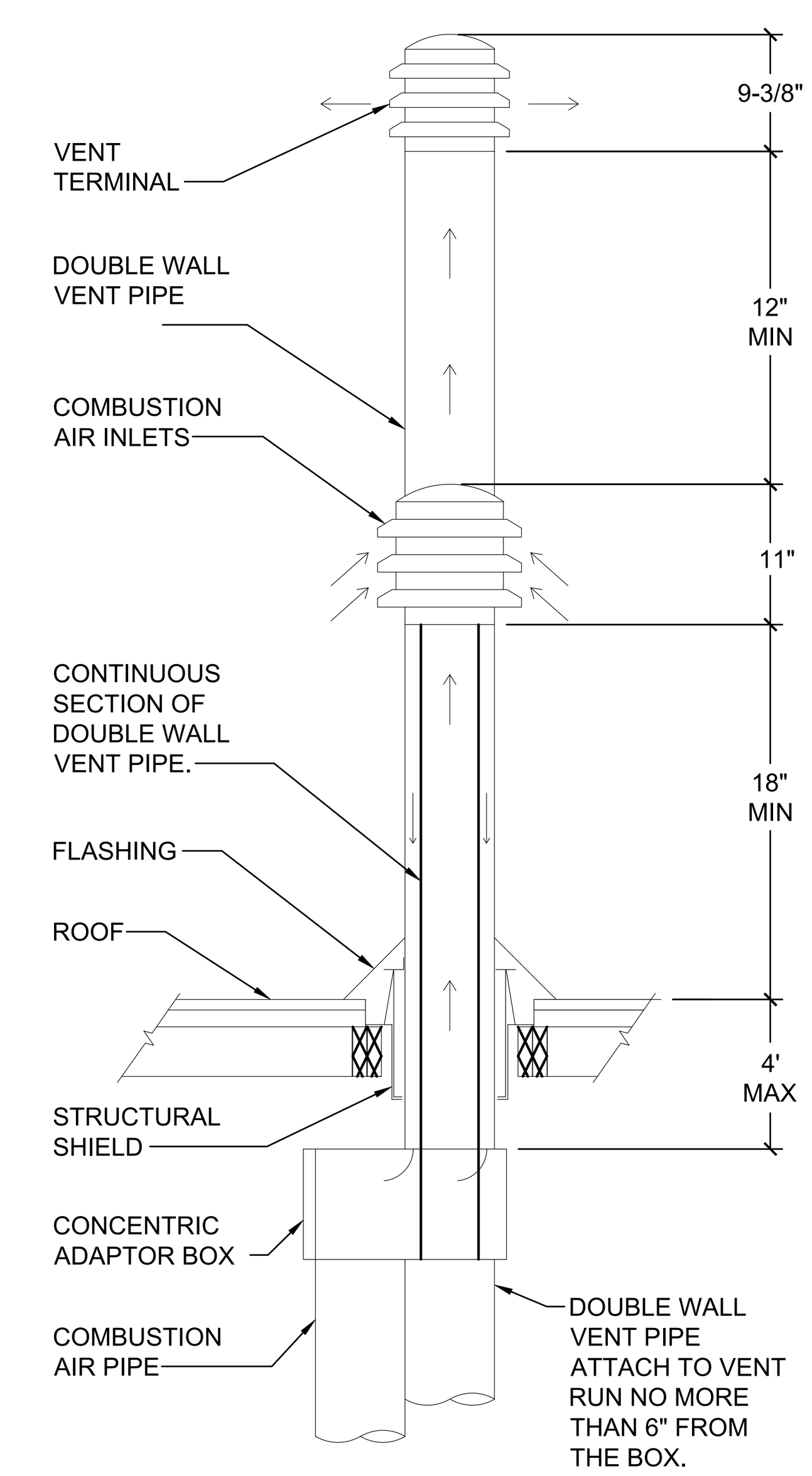
INFRARED HEATER NOTES

1. INFRARED HEATERS SHALL BE FURNISHED & INSTALLED BY CONTRACTOR. ALL NECESSARY MOUNTING HARDWARE INCLUDING BRACKETS AND WIRE HANGERS ARE CONTRACTOR RESPONSIBILITY.
2. THE HEATER IS SHIPPED PARTIALLY ASSEMBLED. FOLLOW MANUFACTURER'S INSTRUCTIONS TO CONNECT BODY PACKAGES AND CONTROL / EXHAUSTER ASSEMBLIES.
3. CHAIN SETS ARE REQUIRED AT THE POINTS SHOWN TO PROVIDE THE FLEXIBILITY NECESSARY TO ALLOW FOR HEATER EXPANSION & CONTRACTION.
4. REFER TO MANUFACTURER'S INSTALLATION MANUAL FURNISHED WITH HEATER FOR ADDITIONAL DATA.
5. INSTALL HEATER AT HEIGHT SHOWN ON ARCHITECTURAL SHEET A5. REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR ALL CLEARANCES REQUIRED TO COMBUSTIBLES, BELOW AND ABOVE UNIT.
6. INSTALL FLUE ASSEMBLY TO CLEAR LIGHT FIXTURES & EQUIPMENT AND TO PENETRATE ROOF PAST THE RIDGE VENT. SEE ROOF PLAN.
7. CONTRACTOR SHALL ROTATE RADIANT HEATER TO A 30° DEG ANGLE PER MANUFACTURER'S INSTRUCTIONS.

8 / M2 GAS FIRED INFRA-RED STRAIGHT TUBE HEATER DETAIL
N.T.S.

SPACE-RAY INFRARED GAS HEATERS

DETAIL BY MANUFACTURER FOR REFERENCE ONLY.



NOTES:
1. ALL MINIMUM METAL GAUGES TO MEET CODE REQUIREMENTS.
2. SUPPORT VERTICALLY AND HORIZONTALLY AS NECESSARY.

9 / M2 CONCENTRIC FLUE DETAIL
N.T.S.

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SHEET TITLE:
MECHANICAL DETAILS

SHEET NUMBER:
M2

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VENTILATION SCHEDULE PER 2018 INTERNATIONAL MECHANICAL CODE

ROOM No.	ROOM NAME	CATEGORY	FLOOR AREA SQ. FT.	ORDINANCE REQUIREMENT: NUMBER OF OCCUPANTS AND/OR FIXTURES	ORDINANCE REQUIREMENT: AREA OUTDOOR AIRFLOW RATE	ORDINANCE REQUIREMENT: PEOPLE OUTDOOR AIRFLOW RATE	ORDINANCE REQUIREMENT: REQUIRED VENTILATION OR EXHAUST (CFM)	ACTUAL VENT.: SUPPLY CFM	ACTUAL VENT.: OUTSIDE AIR CFM	ACTUAL VENT.: EXHAUST CFM	EXHAUST FAN NUMBER	SUPPLY UNIT NUMBER	REMARKS
100	CUSTOMER SHOWROOM	RETAIL	777	12	0.12 CFM PER SQUARE FEET	7.5 CFM PER PERSON	184	1750	300	---	---	RTU-1	
101	UNISEX TOILET	TOILET ROOMS	50	1 FIXTURE	70 CFM PER FIXTURE	---	70	75	---	100	EF-2	RTU-1	EF-2 CONTROLLED BY TOILET ROOM LIGHTS
102	OFFICE	OFFICE	63	1	0.06 CFM PER SQUARE FEET	5 CFM PER PERSON	9	200	20	---	---	RTU-1	
103	SHOP TOILET	TOILET ROOMS	50	1 FIXTURE	70 CFM PER FIXTURE	---	70	75	---	100	EF-2	RTU-1	EF-2 CONTROLLED BY TOILET ROOM LIGHTS
104	BREAK AREA	DINING ROOM	143	4	0.18 CFM PER SQUARE FEET	7.5 CFM PER PERSON	56	300	80	---	---	RTU-1	
105	SERVICE BAYS	AUTOMOTIVE SERVICE STATION	3375	----	1.5 CFM PER SQUARE FEET	---	5063	---	5200	5200	EF-1	---	EF-1 CONTROLLED BY CO SENSOR
106	INVENTORY	UNOCCUPIED	1470	----	---	---	--	---	--	--	--	---	UNOCCUPIED - NO REQUIREMENT
107	UTILITY AREA #1	UNOCCUPIED	182	----	---	---	--	---	---	---	---	---	UNOCCUPIED - NO REQUIREMENT
108	UTILITY AREA #2	UNOCCUPIED	30	----	---	---	--	---	---	---	---	---	UNOCCUPIED - NO REQUIREMENT
	TOTAL		---				5452	2400	5600	5400			

AIR DISTRIBUTION DEVICE SCHEDULE

MARK	TYPE	MANUFACTURER	MODEL #	FACE	STYLE	BORDER TYPE	FINISH
S-1	SUPPLY	AES	ADB-1	6x12	DROP BOX	DUCT MOUNT	PAINT PER ARCHITECTURAL PLANS
S-2	SUPPLY	TITUS	300RL	20x8	LOUVERED	DUCT MOUNT	PAINT PER ARCHITECTURAL PLANS
S-3	SUPPLY	TITUS	TMS	12x12	LOUVERED	SURFACE MOUNT (TYPE 1)	PAINT PER ARCHITECTURAL PLANS
T-1	TRANSFER	TITUS	350RL	20x8	LOUVERED	SURFACE MOUNT (TYPE 1)	PAINT PER ARCHITECTURAL PLANS
E-1	EXHAUST	TITUS	350	12x12	LOUVERED	SURFACE MOUNT (TYPE 1)	PAINT PER ARCHITECTURAL PLANS

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
* KRUEGER * TUTTLE & BAILEY
* MESTEK * CARNES

NOTES:
- ROUND CONNECTION TO MATCH ROUND DUCT DIMENSION AS SHOWN ON FLOOR PLAN.
- SUPPLY AND RETURN AIR DIFFUSERS SHALL BE SELECTED AT A MAX NOISE CRITERIA OF 30.

GAS FIRED UNIT HEATER SCHEDULE

TAG	AREA SERVING	MFR.	MODEL	MBH INPUT	MBH OUTPUT	AFUE	CFM	WEIGHT	MOTOR: FLA	MOTOR: MOCP	MOTOR: PHASE	MOTOR: VOLTS
UH-1	INVENTORY	REZNOR	UDAS30	30	26.4	82	456	55	1.9	15	1	115
UH-2	UTILITY AREA	REZNOR	UDAS30	30	26.4	82	456	55	1.9	15	1	115

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
* STERLING * LENNOX
* MODINE

NOTES:
1. UNIT SHALL BE COMPLETE WITH CONTROL TRANSFORMER RELAY PACKAGE, 24V REVERSE ACTING THERMOSTAT WITH NIGHT SETBACK.
2. PROVIDE SHUTOFF COCK AT EACH BURNER.
3. UNIT TO HAVE VERTICAL VENT TERMINAL AND CONCENTRIC ADAPTER.
4. VIBRATION ISOLATION HANGER RODS OR APPROVED EQUAL.

GAS FIRED STRAIGHT TUBE RADIANT HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	INPUT MBH	GAS CONNECTION	ELECTRICAL DATA: VOLTS	ELECTRICAL DATA: PHASE	ELECTRICAL DATA: START DRAW	ELECTRICAL DATA: RUN DRAW	TUBE TYPE	TUBE LENGTH
RAD-1,2,3	SPACE RAY	ETS75	75	1/2" Ø	120	1Ø	3.0 AMP	2.6 AMP	STRAIGHT	20 FT

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
* DETROIT RADIANT PRODUCTS / RE-VERBER-RAY
* ROBERTS / GORDON, INC.

NOTES:
1. HEATERS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. EACH HEATER SHALL BE CONTROLLED BY A MANUFACTURER SUPPLIED NIGHT SETBACK DIGITAL THERMOSTATS, MOUNTED 4'-0" ABOVE THE FINISHED FLOOR. SEE MECHANICAL PLAN FOR LOCATIONS.
3. HEATERS SHALL BE "PULL (NEGATIVE PRESSURE OR VACUUM) THROUGH" SYSTEMS WITH CAST IRON BURNERS AND CALORIZED EMITTER TUBES (ALC OPTION). THE EMITTER TUBES SHALL BE CALORIZED FOR LONGEVITY, CORROSION RESISTANCE AND HIGH RADIANT EFFICIENCY. **HOT ROLLED EMITTER TUBES ARE NOT ALLOWED**.
4. HEATERS SHALL OPERATE UNDER A NEGATIVE PRESSURE AT ALL TIMES TO PRECLUDE THE ESCAPE OF COMBUSTION GASSES INSIDE OF THE BUILDING.
5. UNIT TO BE SHUT OFF WHEN TOX ALERT IS ACTIVATED. (BY C.O. SENSOR.)
6. HEATERS SHALL BE FURNISHED WITH END REFLECTORS (2 - PAIRS).

GAS FIRED ROOFTOP UNIT SCHEDULE

TAG	MFR.	MODEL	NOMINAL TON	ENTERING AIR CONDITIONS	ARI EER	SUPPLY CFM	RETURN CFM	O.A. CFM	TOTAL S.P.	FAN MOTOR HP	GAS MBH: INPUT	GAS MBH: OUTPUT	ELECTRICAL DATA: VOLTS	ELECTRICAL DATA: PHASE	ELECTRICAL DATA: FLA	ELECTRICAL DATA: MOCP	WT.
RTU-1	LENNOX	KGA072	6	78.5°F DB 62.2°F WB @ 105°F AMBIENT	11.2	2400	2000	400	0.8	2	108	86	208	3Ø	29.5	50	1100

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
* CARRIER * YORK
* TRANE

NOTES:
1. MECHANICAL UNIT SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. PROVIDE UNIT WITH UNPOWERED GFCI CONVIENCE OUTLET.
3. PROVIDE NEW FILTERS IN UNIT AFTER ALL DUCTWORK HAS BEEN COMPLETED AND PRIOR TO TEST AND BALANCING OF UNIT.
4. PROVIDE WITH DIFFERENTIAL ENTHALPY TYPE ECONOMIZER WITH BAROMETRIC RELIEF DAMPER.
5. PROVIDE UNIT WITH 14" HIGH ROOF CURB WITH SECURITY BARS.
6. PROVIDE UNIT WITH FACTORY INSTALLED HINGED ACCESS PANELS.
7. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.
8. PROVIDE WITH FACTORY MOUNTED SUPPLY AND RETURN AIR SMOKE DETECTORS.
9. PROVIDE UNIT WITH WATER SENSING SWITCH IN CONDENSATE PAN. HIGHER THAN PRIMARY DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM. UNIT SHALL SHUT DOWN UPON ALARM FROM SWITCH.

EXHAUST FAN SCHEDULE

TAG	DESCRIPTION	MFR.	MODEL	CFM	ESP	MOTOR: HP / WATTS	MOTOR: PHASE	MOTOR: VOLTS	NOTES
EF-1	SERVICE AREA EXHAUST FAN	COOK	ACE-210C9B	5200	1.0	2.0	3	208	1,2,4,5,6
EF-2	TOILET EXHAUST FAN	COOK	ACE-60C3B	200	.5	0.25	1	115	1,3,5,6

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
* GREENHECK * PENN

NOTES:
1. PROVIDE WITH 14" ROOF CURB, BACKDRAFT DAMPER AND BIRD SCREEN.
2. ALL THREE PHASE EXHAUST FANS ARE TO BE COMPLETE WITH COMBINATION MAGNETIC MOTOR STARTER. PROVIDED BY ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
3. INTERLOCKED WITH TOILET ROOM LIGHTING. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
4. ACTIVATED BY TOXALERT C.O. SENSOR, MOUNT FAN AS HIGH AS POSSIBLE.
5. ALL DISCONNECTS PROVIDED BY ELECTRICAL CONTRACTOR.
6. ALL SWITCHES, INTERLOCKS, RELAYS, TRANSFORMERS, TIMECLOCKS, ETC., SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. SEE ELECTRICAL PLANS.

ROOF HOOD SCHEDULE

TAG	DESCRIPTION	MFR.	MODEL	CFM	NECK SIZE (IN)	DAMPER: HP	DAMPER: PHASE	DAMPER: VOLTS	DAMPER: MODEL	NOTES
RH-1	TOX ALERT INTAKE ROOF HOOD	COOK	24x36GI	5200	24 x 36	FRAC.	1	115	---	1,2,3,4,5

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
* GREENHECK

NOTES:
1. PROVIDE WITH BIRD / INSECT SCREEN.
2. PROVIDE WITH 120 VOLT MOTORIZED DAMPER INTERLOCKED WITH EF-1.
3. ALL MOTORIZED DAMPERS SHALL BE WIRED TO BE OPEN WHEN CORRESPONDING EQUIPMENT IS ENERGIZED.
4. ALL DAMPERS SHALL DEFAULT TO SPRING SHUT WHEN POWER LOSS OCCURS OR WHEN NOT IN USE.
5. PROVIDE WITH MANUFACTURER'S 14" ROOF CURB.

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PLUMBING SYMBOLS LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
— — CW — —	COLD WATER LINE	AFF	ABOVE FINISHED FLOOR
—— A ——	COMPRESSED AIR LINE	AHJ	AUTHORITY HAVING JURISDICTION
—— G ——	GAS LINE	CONT	CONTRACTOR
— — HW — —	HOT WATER LINE	EWC	ELECTRIC WATER COOLER
— — HWR — —	HOT WATER RECIRCULATION LINE	FDC	FIRE DEPARTMENT CONNECTION
- - - - CON - - - -	MECHANICAL EQUIPMENT CONDENSATE LINE	GCO	GROUND CLEAN OUT
—— O ——	OIL LINE	L	LAVATORY
- - - - - - - -	PLUMBING VENT LINE	MS	MOP SINK
— — OW — —	UNDERGROUND OIL WASTE LINE	NTS	NOT TO SCALE
—— SAN ——	UNDERGROUND SANITARY DRAIN LINE	TP	TRAP PRIMER
FCO	FCO-FLOOR CLEAN OUT	UNO	UNLESS NOTED OTHERWISE
FD	FD-FLOOR DRAIN	UR	URINAL
HB	HOSE BIBB	VIF	VERIFY IN FIELD
WCO	WALL CLEAN OUT	VTR	VENT THROUGH ROOF
	SHUT-OFF VALVE	WC	WATER CLOSET
	HAMMER ARRESTOR		

CIVIL ENGINEERING DESIGN COORDINATION NOTICE

NOTICE TO ALL PARTIES HAVING AN INTEREST IN THIS CONSTRUCTION PROJECT

1.) CIVIL ENGINEERING FOR THIS PROJECT IS BEING PERFORMED BY OTHERS.

2.) CONTRACTORS RELYING ON DOCUMENTS NOT COORDINATED WITH THE CIVIL ENGINEERING WORK SHALL DO SO AT THEIR OWN RISK.

3.) COORDINATION WITH THE CIVIL ENGINEERING DOCUMENTS HAS BEEN COMPLETED ONLY AS SHOWN BELOW.

CIVIL ENGINEERING CONSULTANT IS: GRESHAM SIMTH
222 SECOND AVE S, STE 1400, NASHVILLE, TN 37201

CIVIL SHT. DWG. NO.	CIVIL SHEET DWG. TITLE	REV. NO.	REV. DATE	REV. NO.	REV. DATE	REV. NO.	REV. DATE
C500	UTILITY PLAN						

COORDINATION CHECKED BY	INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
DISCIPLINE:						

NOTE:
CONTRACTOR SHALL REFER TO SHEET A3 - ROOF PLAN FOR ACCEPTABLE APPROXIMATE LOCATIONS OF ROOF PENETRATIONS.

NOTE:
ROUTE ALL WATER AND GAS PIPING TIGHT TO CEILING AND WALLS WHERE POSSIBLE. NO PIPING SHALL BE ROUTED IN UNCONDITIONED SPACES. ALL EXPOSED PIPING SHALL BE INSULATED AND LABELED.

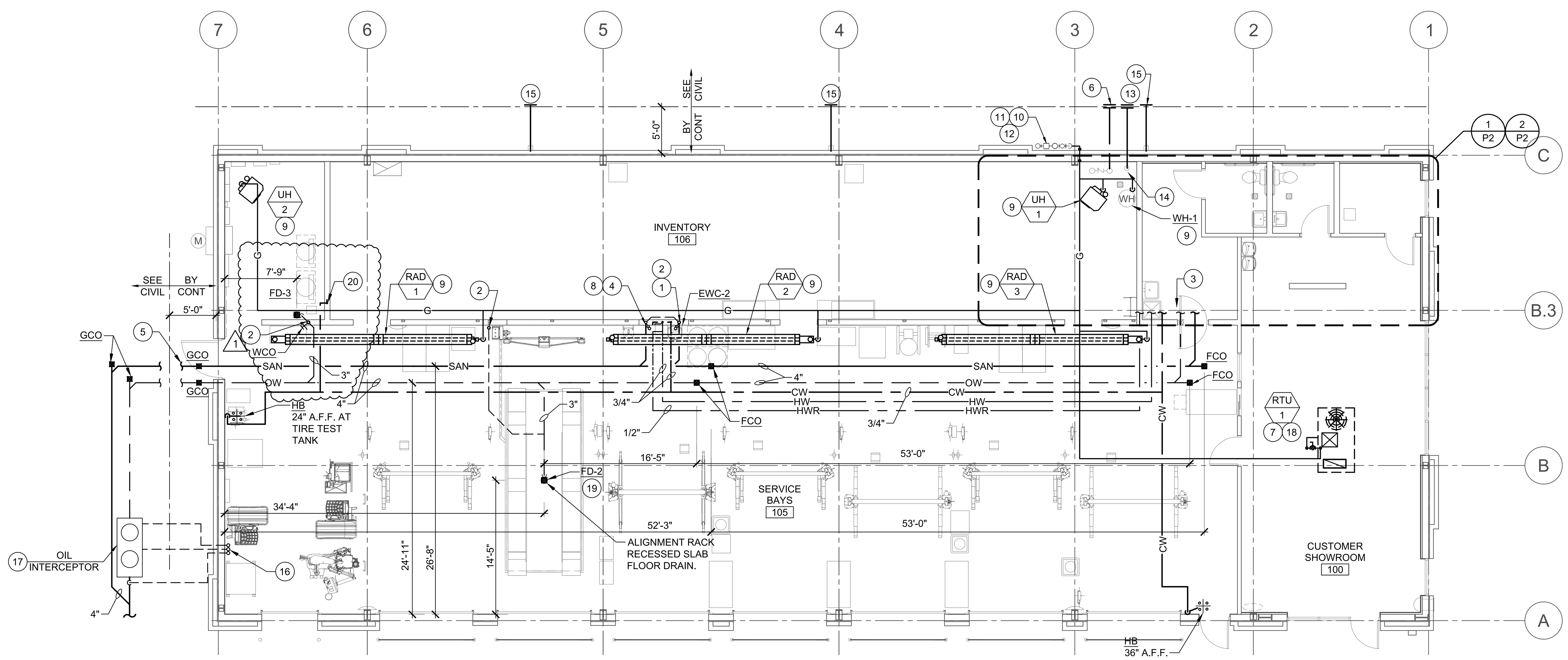
NOTE:
SANITARY AND DOMESTIC WATER PIPE ROUTING ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL COORDINATE EXACT ROUTING WITH FIELD CONDITIONS. REFER TO PIPING DIAGRAMS ON SHEET P6.

SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE	MINIMUM SLOPE
2-1/2" OR LESS	1/4 / ft OR 2%
3" TO 6"	1/8 / ft OR 1%

NOTE:
SCHEDULE BASED ON 2018 INTERNATIONAL PLUMBING CODE, SECTION 704 - TABLE 704.1.

PLUMBING INVERTS:
STARTING POINT: 0' - FINISHED FLOOR
ENDING POINT: 5'-0" OUTSIDE BUILDING
SANITARY: 44"
OIL WASTE: 48"



1 P1 **PLUMBING PLAN**
SCALE: 1/8" = 1'-0"

KEYED PLAN NOTES - THIS SHEET

1. ROUTE COLD & HOT WATER PIPING IN SERVICE BAY WALL. ROUTE PIPING AS REQUIRED TO EWC AND EYEWASH BELOW. ALL PIPING SHALL BE INSULATED. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. 2" VENT UP TO 3" VENT THRU ROOF.
3. SEE ENLARGED PLANS SHEET P2 FOR CONTINUATION.
4. EYEWASH PROVIDED BY BSRO AND INSTALLED BY CONTRACTOR. PROVIDE 1/2" INSULATED WATER LINE TO FIXTURE. MOUNT EYEWASH AT 41" A.F.F. TO THE CENTERLINE OF THE SPOUT. REFER TO FIXTURE PLAN FOR LOCATION. REFERENCE DETAIL ON SHEET P5.
5. SANITARY LINE. EXTEND 5'-0" OUT FROM BUILDING. SEE CIVIL PLANS FOR CONTINUATION.
6. DOMESTIC WATER SERVICE TO MAIN. EXTEND 5'-0" OUT FROM BUILDING. SEE CIVIL PLANS FOR CONTINUATION.
7. VERIFY LOCAL REQUIREMENTS FOR CONDENSATE DISPOSAL. ROUTE FULL SIZE OF RTU CONNECTION TO NEAREST ROOF DOWNSPOUT WITH 1/8" PER FOOT SLOPE AND TERMINATE WITH AIR GAP PER CODE. IF CITY REQUIRES CONDENSATE DISPOSAL TO SANITARY, ROUTE FULL SIZE CONDENSATE LINE TO MOP SINK. ROUTE PIPE AT AN 1/8" PER FOOT SLOPE HORIZONTALLY AND TIGHT TO WALL VERTICALLY. PROVIDE CODE REQUIRED AIR GAP.
8. EYEWASH DRAIN PIPE SHALL BE CONNECTED FULL SIZE OF FIXTURE BACK IN WALL AND DOWN BELOW SLAB. REFERENCE DETAIL ON SHEET P5.
9. GAS PIPE DROP TO GAS FIRED EQUIPMENT. PROVIDE GAS COCK, DIRT LEG, FLEXIBLE CONNECTOR (WHERE APPROVED). ALL GAS PIPING AND ACCESSORIES SHALL NOT EXTEND BELOW THE BOTTOM OF THE UNIT.
10. GAS METER BY UTILITY. CONTRACTOR SHALL VERIFY THAT NEW GAS SERVICE IS REGULATED FOR 7 IN. W.C. AND THE GAS METER WILL HANDLE THE REQUIRED CAPACITY. ANY DISCREPANCIES IN THIS INFORMATION SHOULD BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND/OR PROJECT ENGINEER.
11. ROUTE GAS PIPE TIGHT TO WALL AND AS REQUIRED TO GAS METER. COORDINATE LOCATION OF ROUGH IN AND OR INSTALLATION OF GAS PIPE. GAS PIPING IS SIZED BASED ON 7 IN. W.C PRESSURE AND A 0.5 W.C. PRESSURE DROP PER THE 2108 INTERNATIONAL FUEL GAS CODE, TABLE 402.4(2).
12. CONTRACTOR SHALL PROVIDE GAS PRESSURE REGULATOR ON CUSTOMER SIDE OF METER TO SUPPLY BUILDING EQUIPMENT WITH 7" W.C. PRESSURE. REFER TO PRESSURE REGULATOR SCHEDULE ON SHEET P6 FOR SIZING REQUIREMENTS. REFER TO REGULATOR MANUFACTURER'S INSTALLATION INSTRUCTION.
13. FIRE RISER INLET. REFER TO SPECIFICATIONS, FIRE PROTECTION AND CIVIL DRAWINGS FOR MORE INFORMATION.
14. FIRE RISER FLOOR AREA. REFER TO SPECIFICATIONS AND FIRE PROTECTION DRAWINGS FOR MORE INFORMATION.
15. DOWNSPOUT (DS) TO EXTEND TO SPLASH BLOCKS. REFER TO ARCHITECTURAL DRAWINGS FOR DOWNSPOUT SIZE.
16. 2" UNDERGROUND VENTS UP ON INTERIOR FACE OF WALL. EXTEND UP 6" ABOVE FIXTURE RIM LEVEL. PROVIDE WCO ON EACH VENT LINE ONCE VENT LINES ARE ABOVE GROUND. COMBINE VENTS INTO (1) 3" VENT AND ROUTE UP IN WALL TO ROOF. PROVIDE 3" VENT THROUGH ROOF.
17. PROVIDE STRIEM MODEL OS-100 OIL/SAND SEPARATOR. MINIMUM BASIN SIZE: 250 GALLON STATIC LIQUID HOLDING CAPACITY. BASINS SHALL BE CONSTRUCTED OF POLYETHYPROPYLENE WITH BOLTED AND GASKETED TRAFFIC RATED CAST IRON COVERS. ALTERNATIVE BID: PRE-CAST CONCRETE TWO COMPARTMENT 350 GALLON STATIC HOLDING CAPACITY WITH BOLTED AND GASKETED TRAFFIC RATED CAST IRON COVERS. EXTEND 2" VENT LINE FROM EACH COMPARTMENT OR PER MANUFACTURER'S INSTRUCTIONS. INSURE THAT ALL UNDERGROUND PIPING AND OIL INTERCEPTOR PRESERVES THE ADJACENT BUILDING'S FOOTING. MAINTAIN A 6' MINIMUM DISTANCE FROM ADJACENT BUILDING'S FOOTING TO PRESERVE STRUCTURAL INTEGRITY. OIL INTERCEPTOR AND OIL INTERCEPTOR INSTALLATION SHALL COMPLY WITH INTERNATIONAL PLUMBING CODE AND ALL LOCAL AMENDMENTS.
18. ROUTE 1" GAS PIPE UP THROUGH BOTTOM CONNECTION POINT ON RTU. PROVIDE EXTERIOR GAS SHUT-OFF, DIRT LEG AND, UNION FITTING PRIOR TO CONNECTION TO UNIT. COORDINATE WITH RESPECTED TRADES AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
19. PROVIDE TRAP SEAL PROTECTION FOR FD-2 IN ALIGNMENT PIT. OBTAIN WRITTEN APPROVAL FROM AHJ FOR USE OF SURE SEAL #SS3000 INLINE FLOOR DRAIN TRAP SEALER. IF SURE SEAL TRAP GUARD NOT ALLOWED PROVIDE TRAP PRIMER.
20. ROUTE 1/2" COPPER LINE AS NEEDED UNDER SLAB FROM TRAP PRIMER DISTRIBUTION UNIT, LOCATED IN ACCESS PANEL MOUNTED ON WALL OPEN TO UTILITY AREA, TO APPROPRIATE FLOOR DRAIN. REFER TO PLUMBING ISOMETRIC ON SHEET P6 AND DETAIL ON SHEET P5 FOR MORE INFORMATION.

PLUMBING GENERAL NOTES

1. SANITARY AND DOMESTIC WATER PIPE ROUTING ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL COORDINATE EXACT ROUTING OF PIPING WITH FIELD CONDITIONS.
2. PROVIDE SHUTOFF VALVES IN EACH BRANCH USING BALL VALVES FOR WATER SUPPLY.
3. ROUTE ALL PIPING TIGHT TO CEILING AND WALLS WHERE POSSIBLE. ALL PIPING SHALL BE ABOVE GROUND ONCE ENTERING BUILDING. NO PIPING SHALL BE ROUTED IN UNCONDITIONED SPACES. ALL PIPING SHALL BE INSULATED.
4. MAKE FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED BY OTHERS PER MANUFACTURER INSTALLATION INSTRUCTIONS.
5. ALL EQUIPMENT, MATERIAL AND LABOR NECESSARY FOR COMPLETION OF PLUMBING SYSTEMS SHOWN ON DRAWINGS OR REFERRED TO IN SPECIFICATIONS TO BE FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR UNLESS NOTED OTHERWISE.
6. WHERE DRAWINGS OR SPECIFICATIONS EXCEED GOVERNING CODE REQUIREMENTS, DRAWINGS SHALL GOVERN. INSTALL NO WORK CONTRARY TO OR BELOW MINIMUM LEGAL STANDARDS, WHETHER DRAWINGS AND SPECIFICATION FULLY COMPLY OR NOT.
7. VERIFY FINAL LOCATIONS OF WATER SUPPLIES WITH FIXTURE PLAN AND CIVIL DRAWINGS
8. VERIFY THAT ALL PLUMBING PIPING DOES NOT AFFECT ALIGNMENT RACK PADS. VERIFY LOCATION OF ALL PLUMBING PIPING WITH ALIGNMENT RACK MANUFACTURER PRIOR TO INSTALLATION. COORDINATE ALL PLUMBING PIPING AND ALIGNMENT RACK INSTALLATION WITH ALL DISCIPLINES PRIOR TO INSTALLATION.
9. REFERENCE FIXTURE PLAN SHEET F1 FOR EQUIPMENT QUANTITIES AND LOCATIONS.

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STATE OF MISSOURI
RANDALL A. NELSON
NUMBER PE-2007003990
PROFESSIONAL ENGINEER
04/15/2020

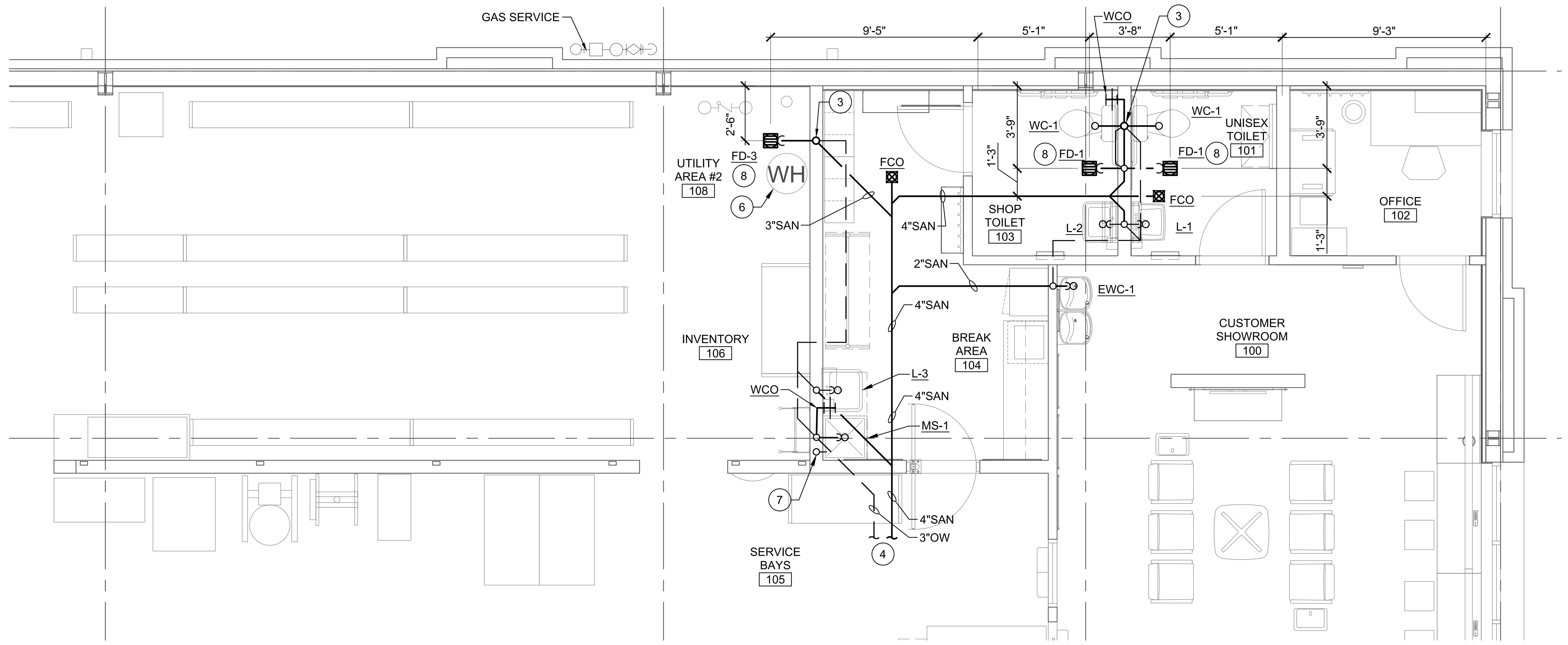
ISSUE BLOCK

1	04/16/20	ADD #1

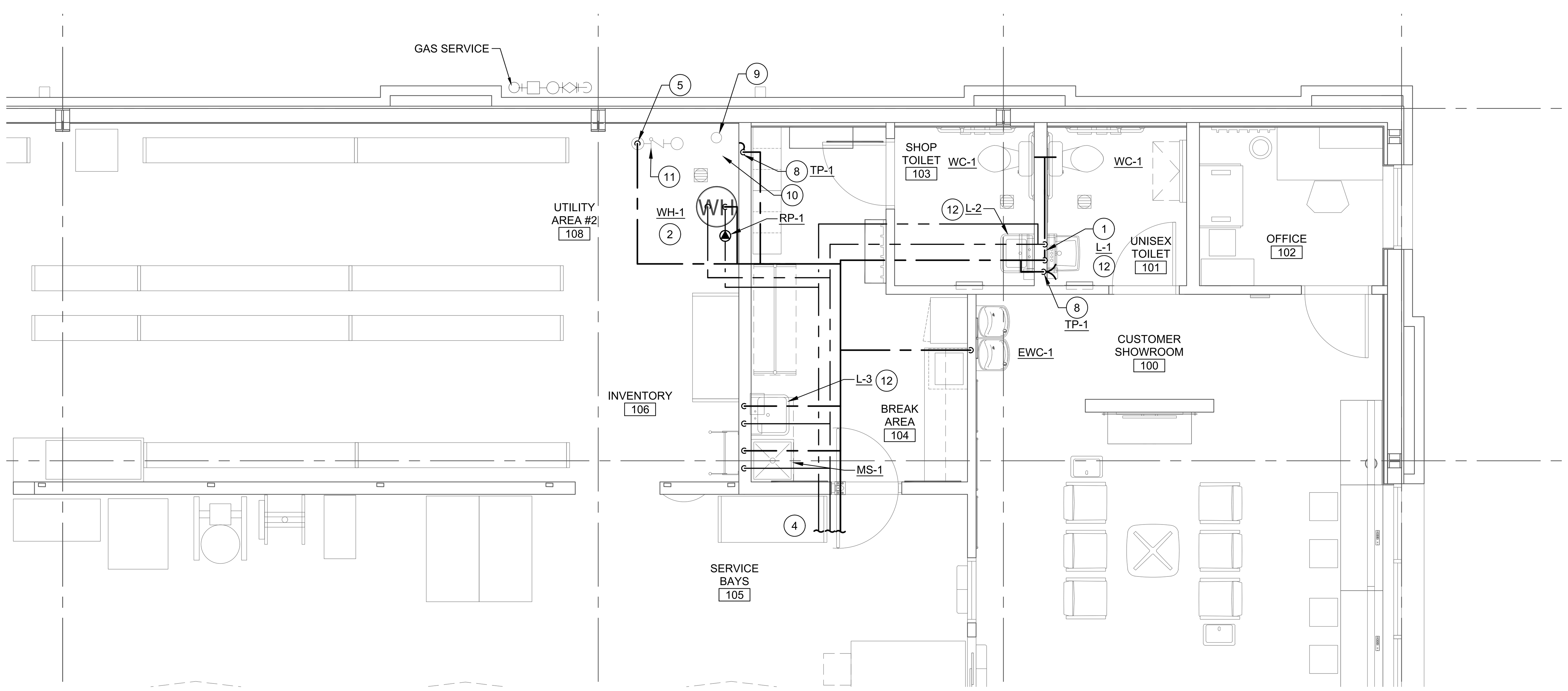
PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
PLUMBING PLAN AND NOTES

SHEET NUMBER:
P1



1
P2
RESTROOM ENLARGED SANITARY PLAN
SCALE: 1/4" = 1'-0"



2
P2
RESTROOM ENLARGED WATER PLAN
SCALE: 1/4" = 1'-0"

(#) KEYED PLAN NOTES (THIS SHEET ONLY)

1. ROUTE DOMESTIC WATER DOWN WITH-IN WALL TO FIXTURES.
2. WATER HEATER LOCATED ON 18" STAND IN INVENTORY ROOM.
3. 3" VENT UP IN WALL TO 4" VENT THRU ROOF.
4. SEE PLUMBING PLAN ON SHEET P1 FOR CONTINUATION
5. DOMESTIC WATER SERVICE. EXTEND OUT 5'-0" FROM BUILDING. REFER TO CIVIL DRAWINGS FOR COORDINATION.
6. DRAIN PAN DRAIN LINE AND T&P DRAIN LINE FROM WATER HEATER WH-1. ROUTE DOWN TO FLOOR DRAIN, TERMINATE OVER FLOOR DRAIN WITH CODE REQUIRED AIR GAP.
7. VERIFY LOCAL REQUIREMENTS FOR CONDENSATE DISPOSAL. ROUTE FULL SIZE OF RTU CONNECTION TO NEAREST ROOF DOWNSPOUT WITH 1/8" PER FOOT SLOPE AND TERMINATE WITH AIR GAP PER CODE. IF CITY REQUIRES CONDENSATE DISPOSAL TO SANITARY, ROUTE FULL SIZE CONDENSATE LINE TO MOP SINK. ROUTE PIPE AT AN 1/8" PER FOOT SLOPE HORIZONTALLY AND TIGHT TO WALL VERTICALLY. PROVIDE CODE REQUIRED AIR GAP.
8. ROUTE 1/2" COPPER LINE AS NEEDED UNDER SLAB FROM TRAP PRIMER DISTRIBUTION UNIT, LOCATED IN ACCESS PANEL IN WALL OPEN TO UTILITY AREA AND RESTROOM, TO APPROPRIATE FLOOR DRAINS. REFER TO PLUMBING ISOMETRIC ON SHEET P6 AND DETAIL ON SHEET P5 FOR MORE INFORMATION. (1)
9. FIRE RISER INLET. REFER TO SPECIFICATIONS, FIRE PROTECTION DRAWINGS AND CIVIL DRAWINGS FOR MORE INFORMATION.
10. FIRE RISER FLOOR AREA. REFER TO SPECIFICATIONS AND FIRE PROTECTION DRAWINGS FOR MORE INFORMATION.
11. AMES MODEL LF4000B REDUCED PRESSURE BACKFLOW PREVENTOR. SEE DETAIL ON SHEET P5 FOR ADDITIONAL INFORMATION.
12. PROVIDE MIXING VALVE TMV-1 SET AT 110° F. INSTALL MIXING VALVE UNDER SINK.

SLOPE OF HORIZONTAL DRAINAGE PIPE	
SIZE	MINIMUM SLOPE
2-1/2" OR LESS	1/4 / ft OR 2%
3" TO 6"	1/8 / ft OR 1%

NOTE:
SCHEDULE BASED ON 2018 INTERNATIONAL PLUMBING CODE, SECTION 704 - TABLE 704.1.

NOTE:
ROUTE ALL WATER PIPING TIGHT TO CEILING AND WALLS WHERE POSSIBLE. NO PIPING SHALL BE ROUTED IN UNCONDITIONED SPACES. ALL PIPING SHALL BE INSULATED AND LABELED.

NOTE:
SANITARY AND DOMESTIC WATER PIPE ROUTING ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL COORDINATE EXACT ROUTING WITH FIELD CONDITIONS. REFER TO PIPING DIAGRAMS ON SHEET P6 FOR PIPE SIZES.

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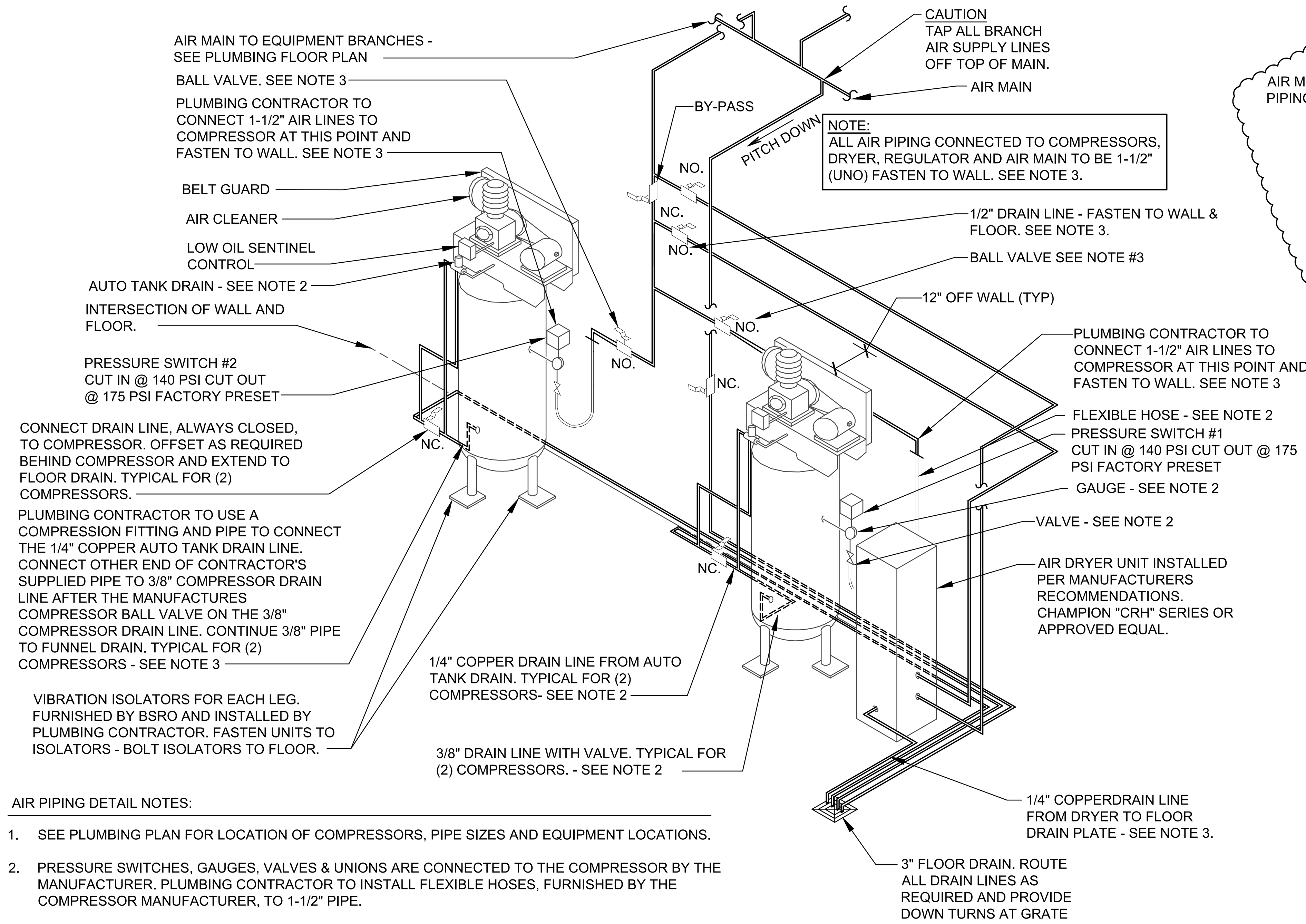
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
ENLARGED RESTROOM PLUMBING PLANS
SHEET NUMBER:
P2

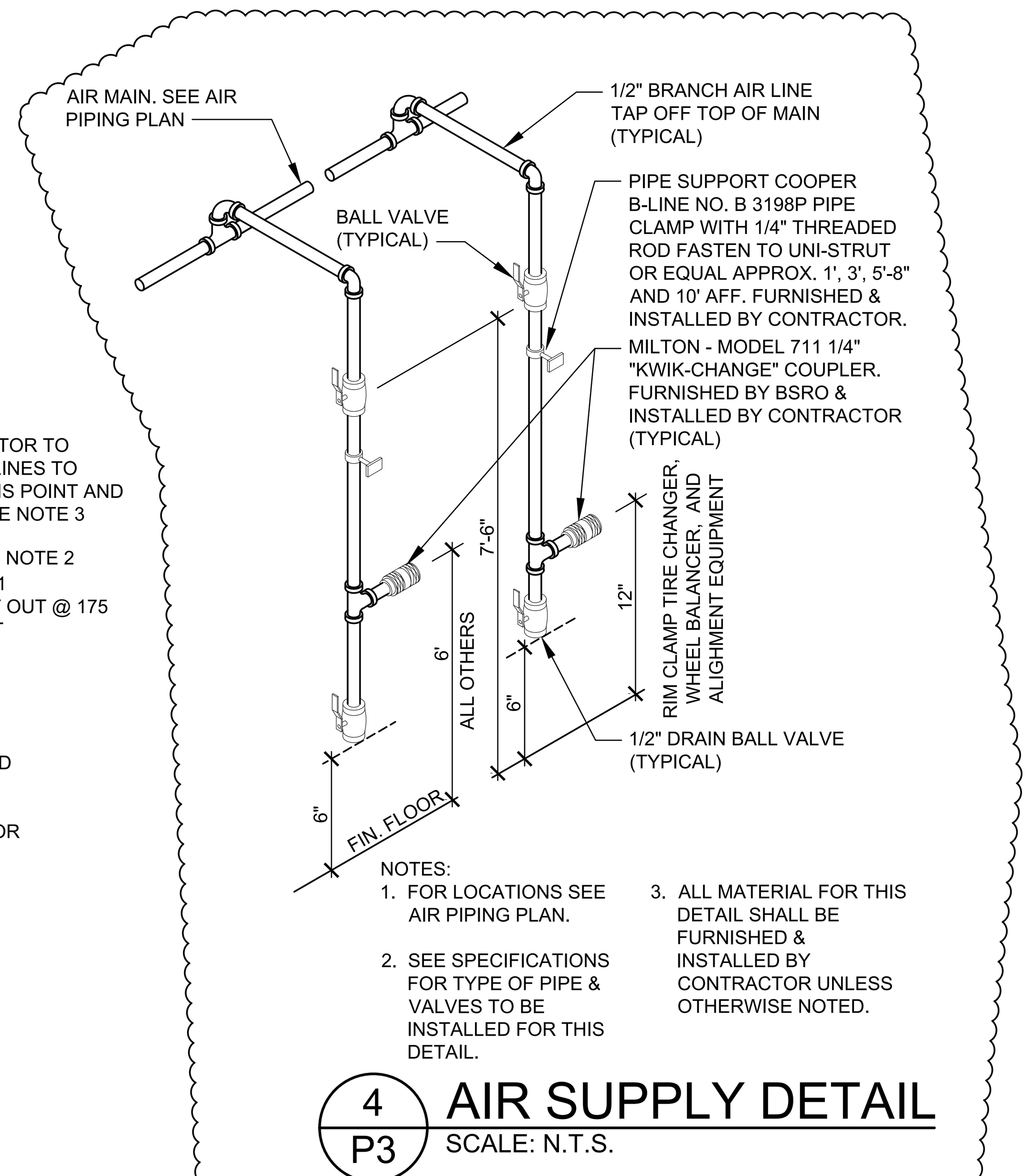


AIR PIPING DETAIL NOTES:

1. SEE PLUMBING PLAN FOR LOCATION OF COMPRESSORS, PIPE SIZES AND EQUIPMENT LOCATIONS.
2. PRESSURE SWITCHES, GAUGES, VALVES & UNIONS ARE CONNECTED TO THE COMPRESSOR BY THE MANUFACTURER. PLUMBING CONTRACTOR TO INSTALL FLEXIBLE HOSES, FURNISHED BY THE COMPRESSOR MANUFACTURER, TO 1-1/2" PIPE.
3. SEE SPECIFICATIONS FOR TYPE OF PIPE, VALVES, UNIONS & CHECK VALVES FURNISHED & INSTALLED BY PLUMBING CONTRACTOR
4. TYPICAL DETAIL - PIPING CONNECTIONS AT COMPRESSORS MAY VARY ACCORDING TO MANUFACTURER. COMPRESSORS ARE TO BE FURNISHED BY BSRO AND INSTALLED BY CONTRACTOR.
5. COMPRESSORS TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
6. DRYER TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
7. ALL PIPING IS LOCATED / INSTALLED BETWEEN COMPRESSORS AND WALL. MOUNT TIGHT TO WALL.
8. ALL VALVES SHALL BE NORMALLY OPEN (NO.) UNLESS NOTED OTHERWISE.

3 / P3 AIR PIPING DETAIL - TWO VERTICAL COMPRESSORS

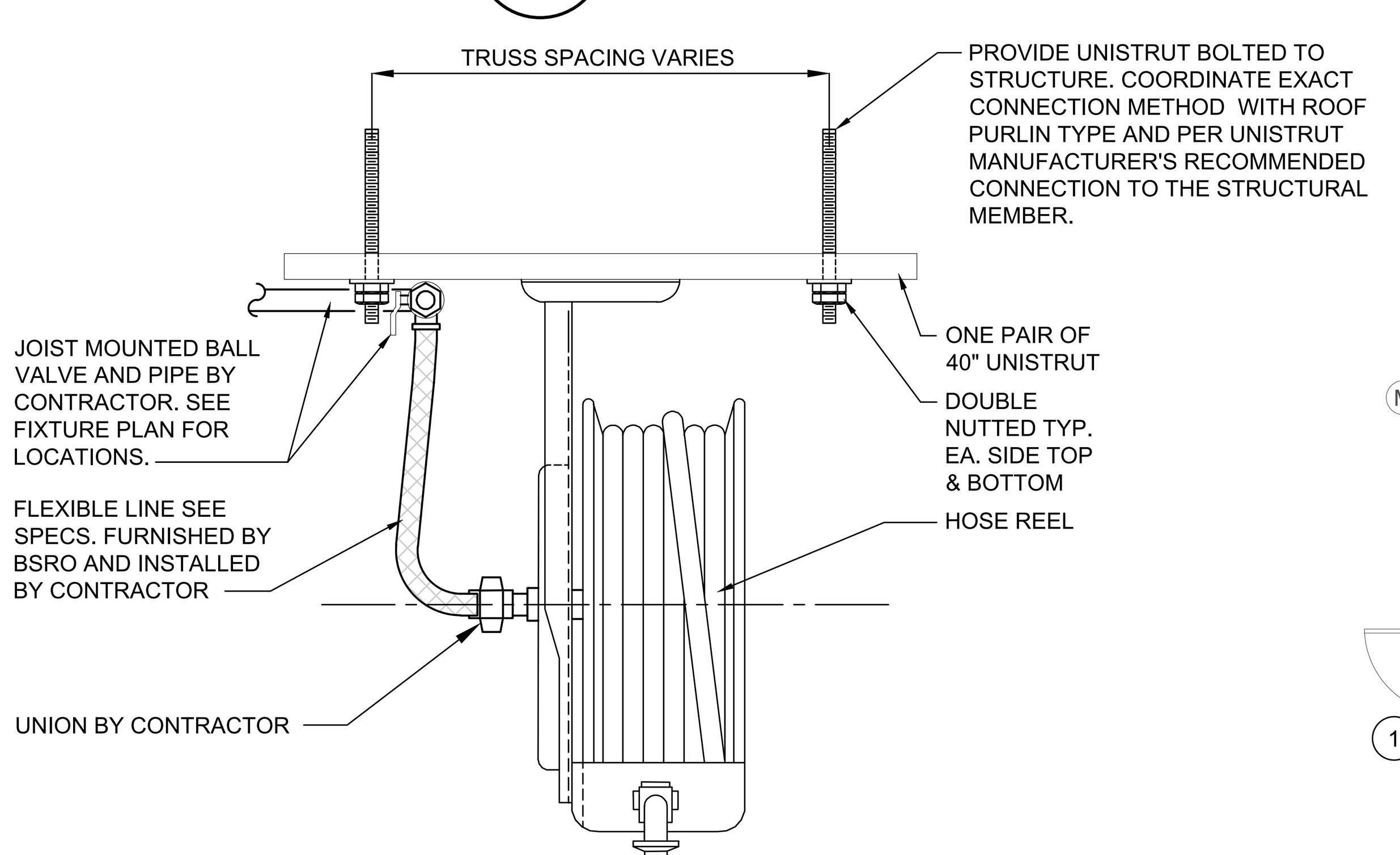
SCALE: N.T.S.



NOTES:
1. FOR LOCATIONS SEE AIR PIPING PLAN.
2. SEE SPECIFICATIONS FOR TYPE OF PIPE & VALVES TO BE INSTALLED FOR THIS DETAIL.
3. ALL MATERIAL FOR THIS DETAIL SHALL BE FURNISHED & INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.

4 / P3 AIR SUPPLY DETAIL

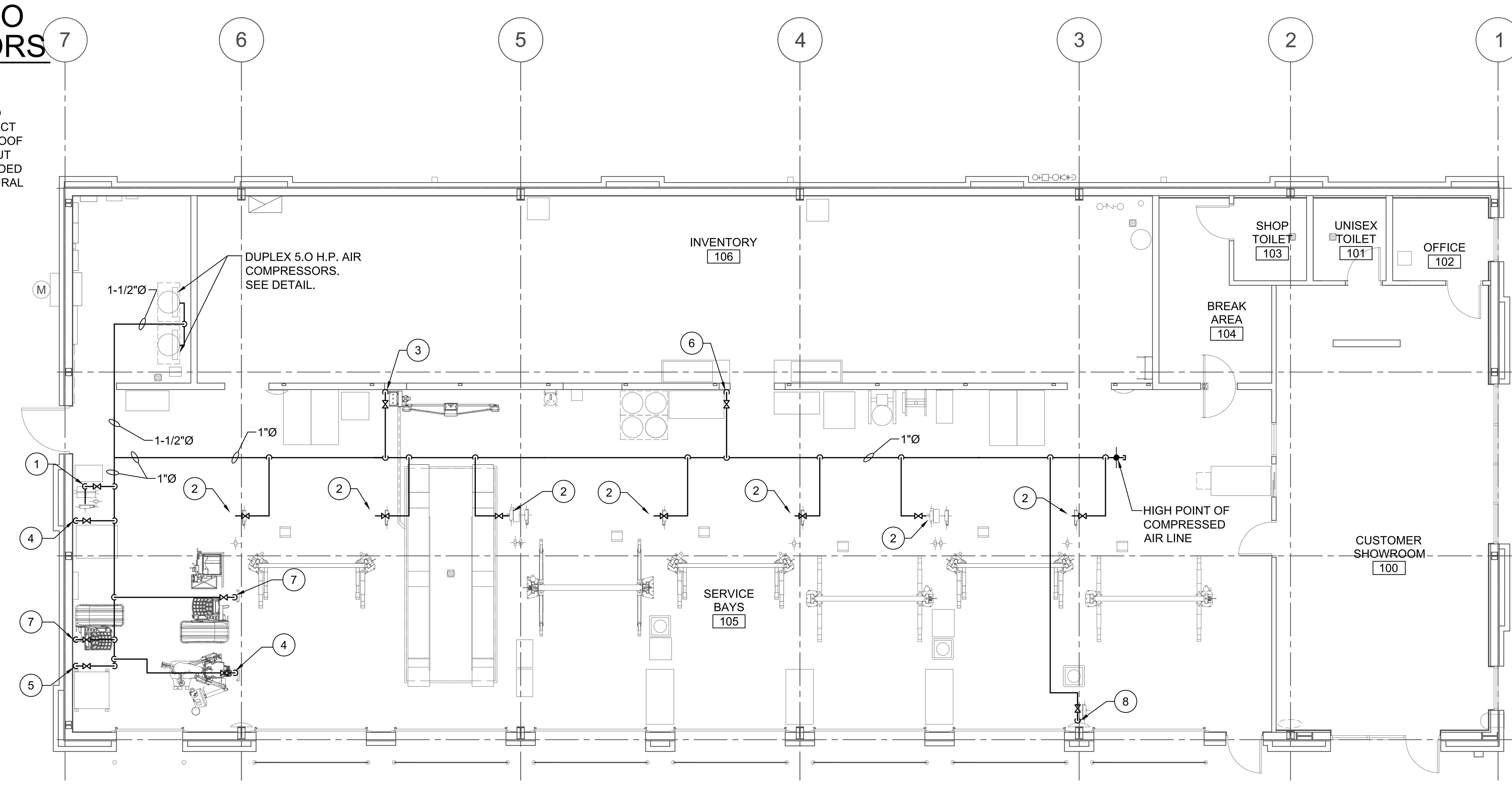
SCALE: N.T.S.



NOTES:
1. ALL REELS ARE FURNISHED BY BSRO AND INSTALLED BY CONTRACTOR
2. ALL REEL SUPPORTS ARE FURNISHED AND INSTALLED BY CONTRACTOR.
3. 2 PIECE 40" LONG UNISTRUT TO BE MOUNTED ON THE BOTTOM OF THE STRUCTURAL MEMBER AND SECURED WITH ALL-THREAD AND BOLTS. UNISTRUT SHALL BE CENTERED WITH PILASTER BETWEEN OVERHEAD DOORS. REFER TO SHEET A2 FOR LOCATIONS.
4. FOUR PIECES OF ALL-THREAD EXTENDED BEYOND THE BOTTOM OF THE STRUCTURAL MEMBER FOR ATTACHMENT OF TWO 40" LONG PIECES OF UNISTRUT. EACH END OF THE ALL-THREAD TO BE DOUBLE NUTTED TYPICAL.
5. UNISTRUT TO BE INSTALLED WITH THE OPEN PORTION OF THE CHANNEL FACING THE SERVICE BAY FLOOR.
6. WHERE AIR REEL OCCURS AT A MAIN BEAM LINE, MOUNT UNI-STRUT TO BOTTOM OF MAIN ROOF BEAM. SUPPORT UNISTRUT AT EACH END WITH ALL THREAD BACK UP TO A UNISTRUT MOUNTED AT THE BOTTOM OF THE ROOF PURLIN. PROVIDE ALL SECONDARY UNISTRUT AS NECESSARY TO ATTACHED UNISTRUT AS SHOWN.

2 / P3 PRE-ENGINEERED BUILDING AIR HOSE REEL DETAIL

SCALE: N.T.S.



1 / P3 AIR PIPING PLAN

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

NOTE:
VERIFY FINAL LOCATION OF AIR PIPING WITH ARCHITECTURAL DRAWINGS AND SHEET F1. COORDINATE EXACT AIR DROP LOCATIONS WITH ARCHITECT PRIOR TO FINAL INSTALLATION.

KEYED PLAN NOTES

1. FLAT REPAIR STATION 1/2" PIPE TO OVERHEAD AIR HOSE REEL. SEE DETAIL ON THIS SHEET FOR MOUNTING. COORDINATE EXACT LOCATION WITH FIXTURE PLAN.
2. 1/2" PIPE TO OVERHEAD AIR HOSE REEL. SEE DETAIL ON THIS SHEET FOR MOUNTING. COORDINATE EXACT LOCATION WITH FIXTURE PLAN.
3. 1/2" PIPE DOWN TO ALIGNMENT RACK. MAKE FINAL HARD PIPE CONNECTION TO ALIGNMENT CONTROLLER BOX. COORDINATE EXACT LOCATION WITH FIXTURE PLAN. REFER TO AIR SUPPLY DETAIL THIS SHEET FOR MOUNTING HEIGHT.
4. 1/2" PIPE DROP FOR RIM CLAMP TIRE CHANGER. COORDINATE EXACT LOCATION WITH FIXTURE PLAN. REFER TO AIR SUPPLY DETAIL ON THIS SHEET FOR MOUNTING HEIGHT.
5. 1/2" PIPE DROP FOR TANK MOUNTED AIR POWERED OIL PUMP. REFER TO AIR SUPPLY DETAIL THIS SHEET FOR MOUNTING HEIGHT. COORDINATE LOCATION OF AIR DROP WITH FIXTURE PLAN AND USED OIL STORAGE SYSTEM DETAIL ON SHEET P4.
6. 1/2" PIPE DOWN TO WORKBENCH. COORDINATE EXACT LOCATION WITH FIXTURE PLAN. REFER TO AIR SUPPLY DETAIL ON THIS SHEET FOR MOUNTING HEIGHT.
7. 1/2" PIPE DOWN TO ELECTRONIC WHEEL BALANCER. COORDINATE EXACT LOCATION WITH FIXTURE PLAN. REFER TO AIR SUPPLY DETAIL ON THIS SHEET FOR MOUNTING HEIGHT. COORDINATE WITH BSRO FOR FUTURE LOCATION OF AIR POWERED WHEEL BALANCER AND ELECTRONIC WHEEL BALANCER.
8. 1/2" PIPE TO OVERHEAD AIR HOSE REEL. SEE DETAIL ON THIS SHEET FOR MOUNTING. COORDINATE EXACT LOCATION WITH FIXTURE PLAN.

AIR PIPING NOTES

1. PROVIDE SHUTOFF VALVES IN EACH BRANCH USING BALL VALVES. REFER TO AIR SUPPLY DETAIL ON THIS SHEET FOR MOUNTING HEIGHT.
2. INSTALL/ROUTE ALL PIPING TIGHT TO UNDERSIDE OF SERVICE BAY ROOF STRUCTURE.
3. MAKE FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED BY OTHERS PER MANUFACTURER'S INSTRUCTIONS.
4. PITCH PIPING BACK TO AIR COMPRESSOR. TAP ALL BRANCH PIPING TAKE-OFFS FROM TOP OF MAIN.
5. RUN 1/2" PIPING FROM SUPPLY MANIFOLD TO TIRE CHANGERS AND CONNECT PER MANUFACTURER'S INSTRUCTIONS. SEE MANUFACTURER'S DRAWINGS FOR DETAIL OF SUPPLY MANIFOLD.
6. ALL EQUIPMENT, MATERIAL AND LABOR NECESSARY FOR COMPLETION OF COMPRESSED AIR SYSTEM SHOWN ON DRAWINGS OR REFERRED TO IN SPECIFICATIONS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE.
7. WHERE DRAWINGS OR SPECIFICATIONS EXCEED GOVERNING CODE REQUIREMENTS, DESIGN SHALL GOVERN. INSTALL NO WORK CONTRARY TO OR BELOW MINIMUM LEGAL STANDARDS, WHETHER DRAWINGS AND SPECIFICATIONS FULLY COMPLY OR NOT.
8. CAUTION: ALL AIR LINES SHALL BE PROPERLY CLEANED AND BLOWN OUT PRIOR TO CONNECTING TO ANY OF THE EQUIPMENT SHOWN ON THIS SHEET.
9. PROVIDE TIRE BALANCING UNIT AIR SUPPLY.

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TO PERMIT:	DATE: 03/26/2020
TO BID:	DATE: ##-##-##

SHEET TITLE:
AIR PIPING PLAN AND NOTES

SHEET NUMBER:
P3

USED OIL STORAGE SYSTEM INSTALLATION

BILL OF MATERIAL - OWNER FURNISHED ITEMS

ITEM#	DESCRIPTION
1	JOHN DOW DOUBLE WALL WASTE OIL TANK COMPLETE WITH AIR OPERATED "ARO" DIAPHRAGM PUMP, AUTOMATIC AIR SHUTOFF, LIQUID LEVEL GAUGE, 2" CAMLOCK COUPLER, 10' X 3/4" INLET HOSE WITH QUICK DISCONNECT COUPLER, QUICK DISCONNECT ADAPTER KIT, AND AIR FILTER REGULATOR. SIZE 40" L X 37-1/2" W X 69" H. WEIGHT : 1100 LBS. NOTE: TANK ASSEMBLY IS U.L. LISTED (MEETS UL-142 SPECIFICATIONS)
2	1/4"Ø FLEX HOSE 3'-0" LONG (175 P.S.I.) AND 1/4" QUICK COUPLER("JOHNDOW" NO. 421-QUICK).
3	JOHN DOW NO. 61431-2 (3/4" ADAPTER) WITH 3/4" NIPPLE AND 3/4" ELBOW. (1) REQUIRED FOR EACH ITEM #4 FURNISHED.
4	PORTABLE USED OIL RECEIVER (STORE EQUIPMENT ITEM) QUANTITY TO BE DETERMINED. SEE BUILDING STORE PLANNING LAYOUT - SHEET F1.

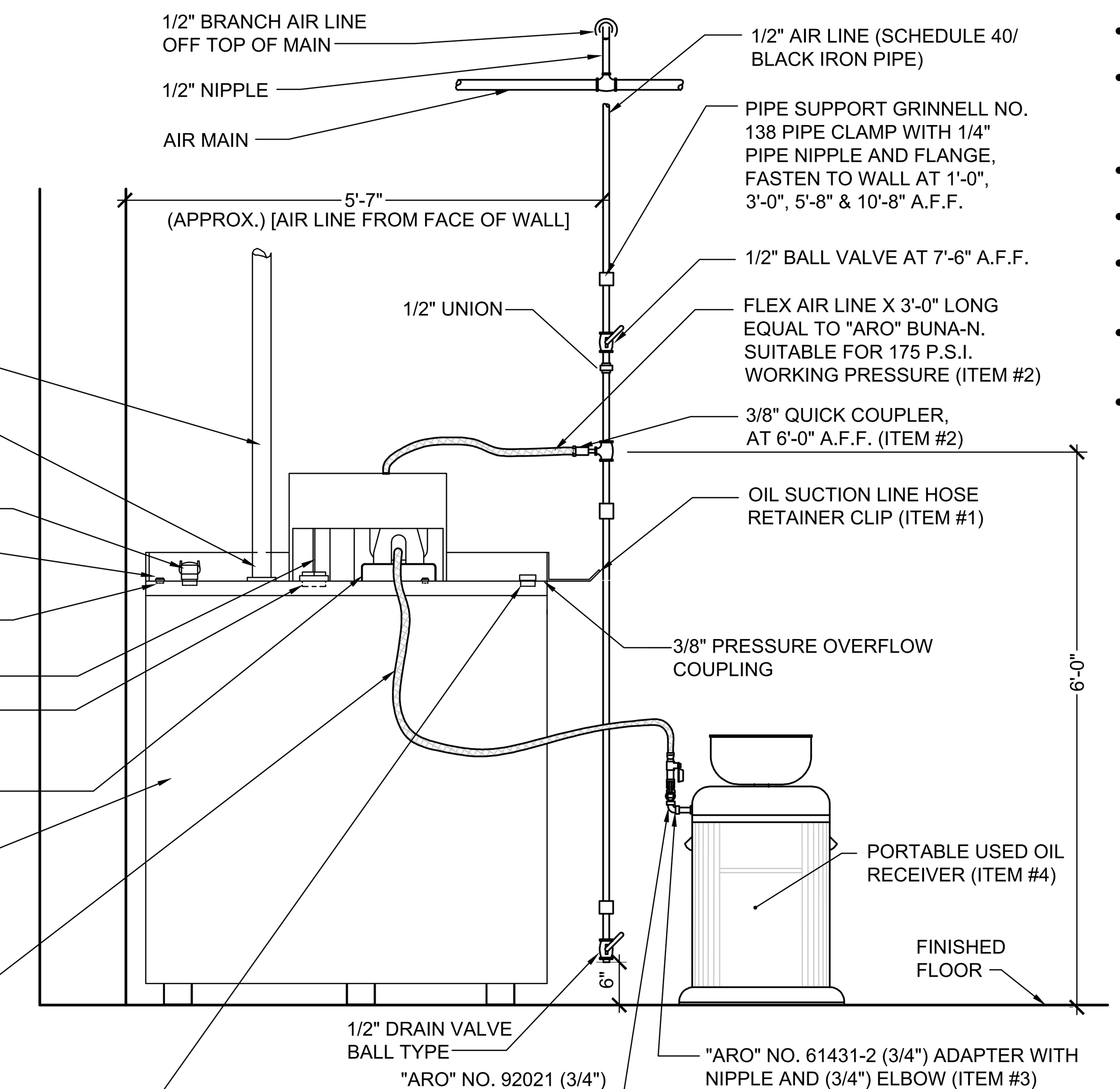
GENERAL NOTES:

- UNLESS OTHERWISE NOTED, ALL OTHER MATERIAL FOR THIS DETAIL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
- SEE SPECIFICATIONS FOR TYPE OF PIPE & FITTINGS TO BE FURNISHED & INSTALLED.
- PROVIDE EARTH GROUND TO AIR OPERATED OIL PUMP PER MANUFACTURER'S SPECIFICATION AND/OR PER N.E.C. CODE REQUIREMENTS.

INSTALLATION NOTES:

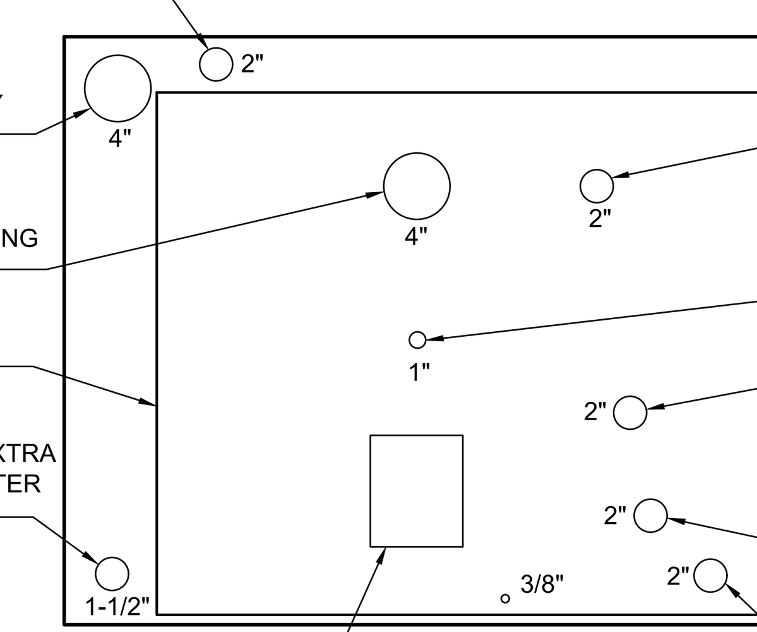
- CONTACT LOCAL FIRE MARSHAL AND OBTAIN INSTALLATION PERMISSION AND/OR PERMITS
- DETERMINE INSTALLATION LOCATION BY EITHER, REVIEWING BUILDING STORE PLANNING LAYOUT (SHEET F1), FOR NEW STORES, OR BY STORE MANAGER SELECTION AT EXISTING STORES
- UNCRATE PRE-ASSEMBLED TANK (ITEM #1) AND MOVE INTO POSITION.
- INSTALL AIR LINE FROM MAIN AND INSTALL FLEX HOSE (ITEM #2) CONNECTION TO TANK.
- CONNECT VENT LINE TO TANK AND RUN VENT TO EXTERIOR THROUGH WALL. INSTALL WALL FLASHING AND WEATHER CAP AS NOTED.
- CONNECT QUICK DISCONNECTS (ITEM #3) TO EACH PORTABLE USED OIL COLLECTION RECEIVER AT THE STORE.
- VENT PIPING MATERIAL TO BE GALVANIZED STEEL, BLACK IRON, OR CAST IRON.

NOTE:
DO NOT COMBINE VENT SERVING USED OIL TANK WITH OTHER PLUMBING VENTS IN BLDG.



1 / P4 USED OIL STORAGE SYSTEM ELEVATION VIEW

SCALE: N.T.S.



2 / P4 USED OIL STORAGE SYSTEM - PORT LAYOUT

SCALE: N.T.S.

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1	04/16/20	ADD #1

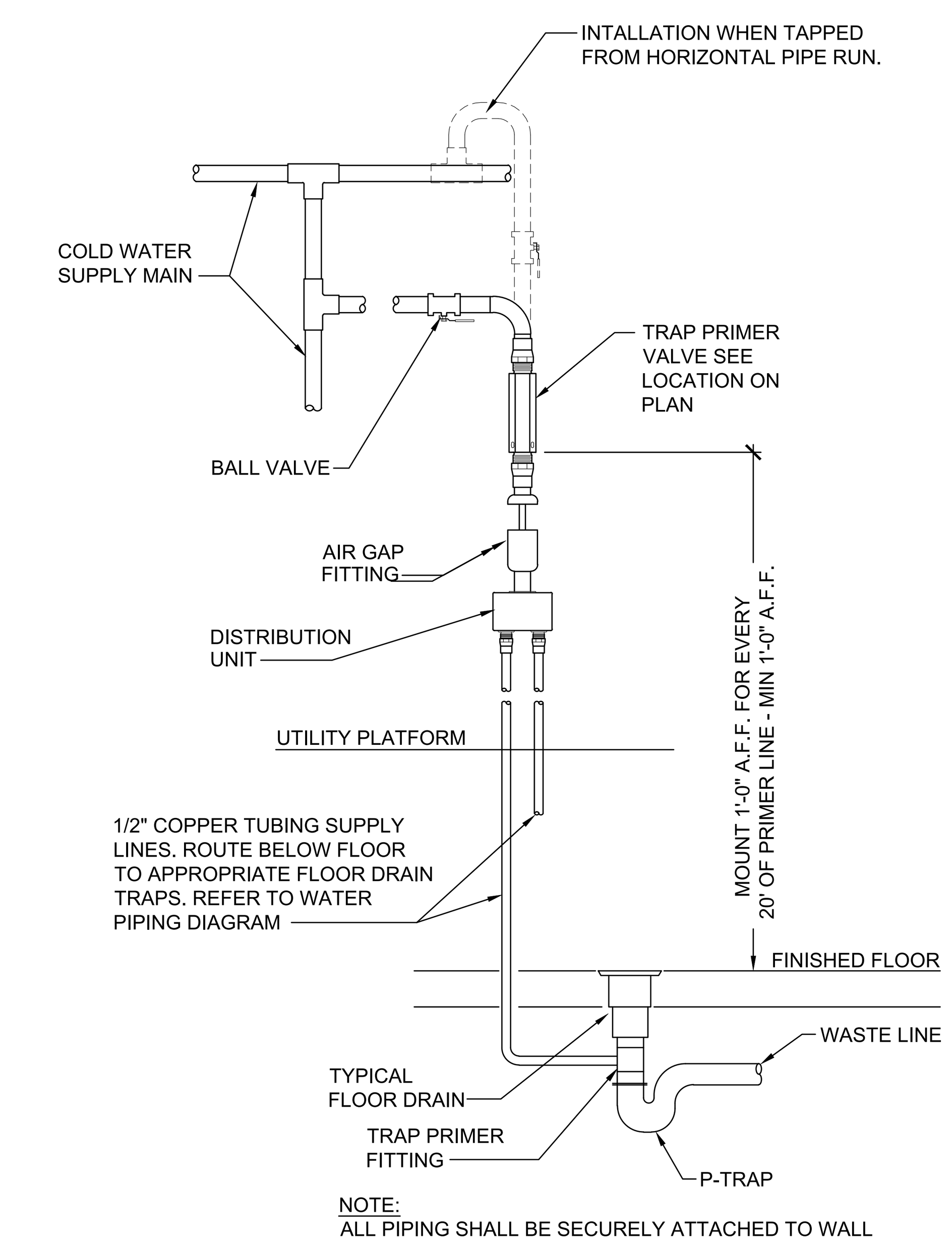
PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9

AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
OIL PIPING DETAILS

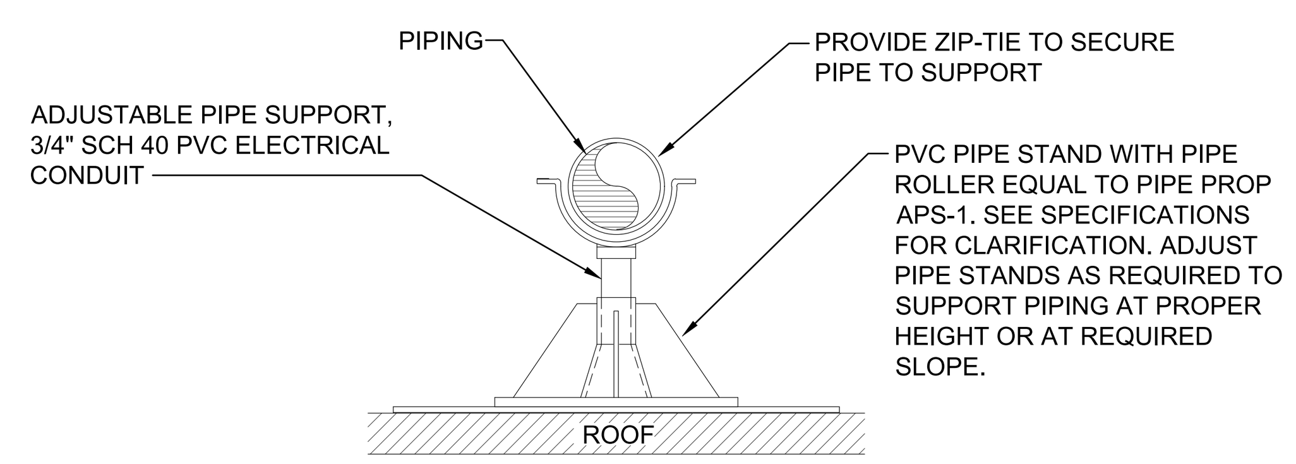
SHEET NUMBER:
P4

Apr 15, 2020 – 12:18pm – USER IanCollins
G:\bridgestone-firestone (engineering)\2020075 bsro – lee's summit, mo\Sheets\P4 OIL PIPING PLAN.dwg



NOTE:
ALL PIPING SHALL BE SECURELY ATTACHED TO WALL

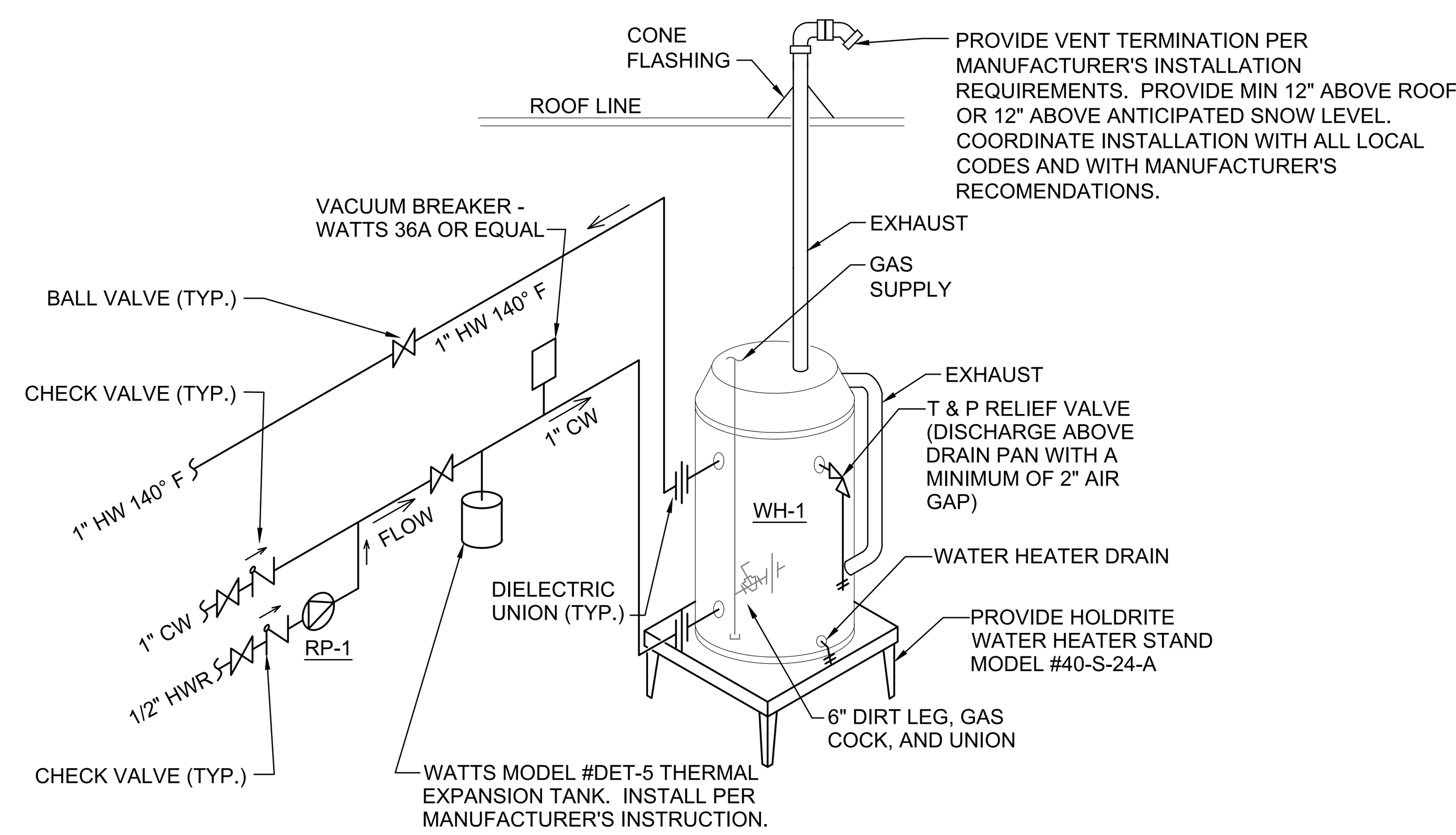
1 P5 TRAP PRIMER DETAIL (TP-1)
SCALE: N.T.S.



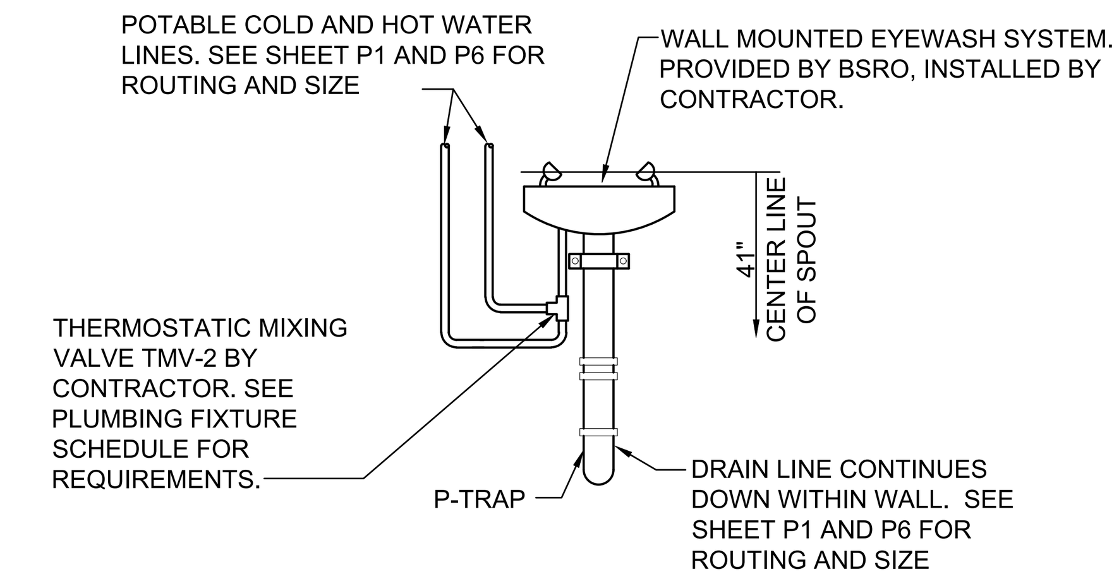
MAXIMUM SPACING FOR PIPE SUPPORTS	
HORIZONTAL PIPING:	SUPPORT SPACING (FEET)
3/4" TO 1-1/4"	2

2 P5 ROOF MOUNTED PIPING SUPPORT DETAIL
SCALE: N.T.S.

NOTES:
1. ROUTE 3/4" DRAIN LINE FROM WATER HEATER TO FLOOR DRAIN.



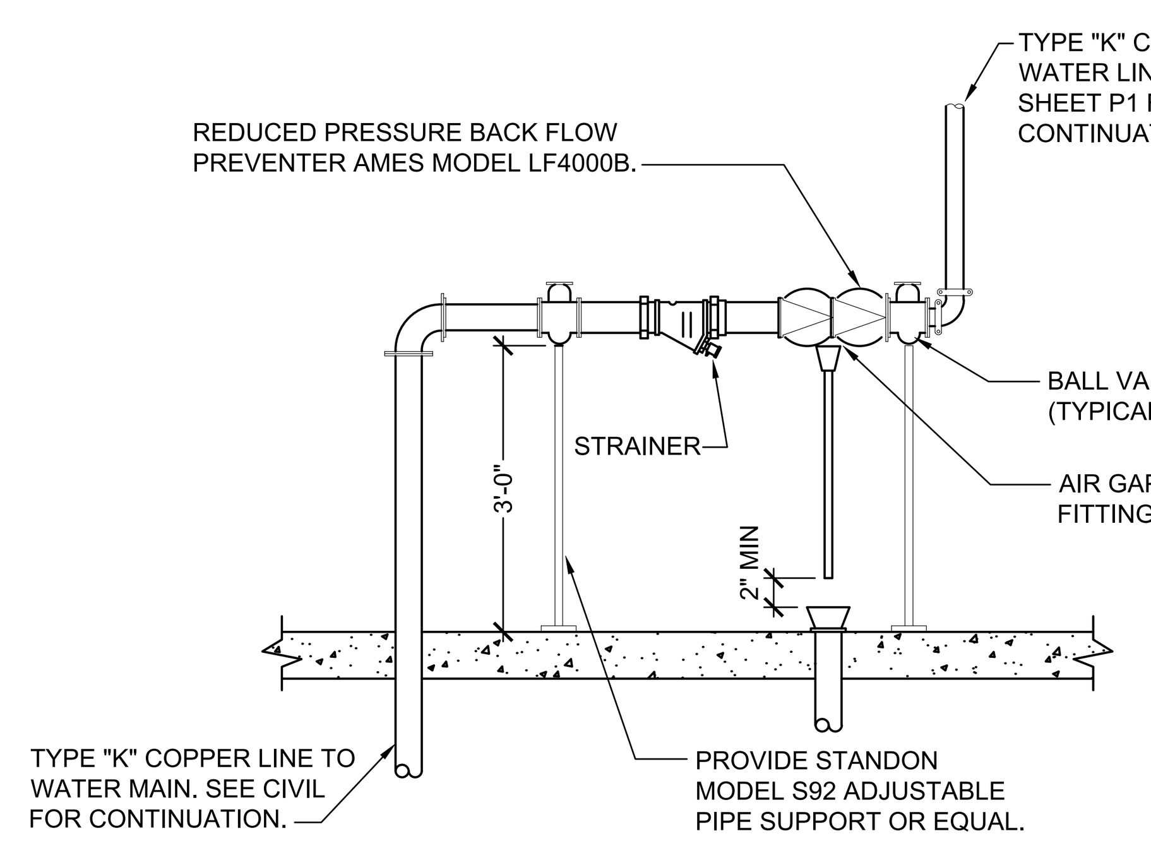
3 P5 GAS FIRED WATER HEATER DETAIL
SCALE: N.T.S.



NOTE:
DETAIL IS FOR REFERENCE. REFER TO FLOOR PLAN AND ISOMETRIC FOR PIPE LOCATIONS AND SIZES.

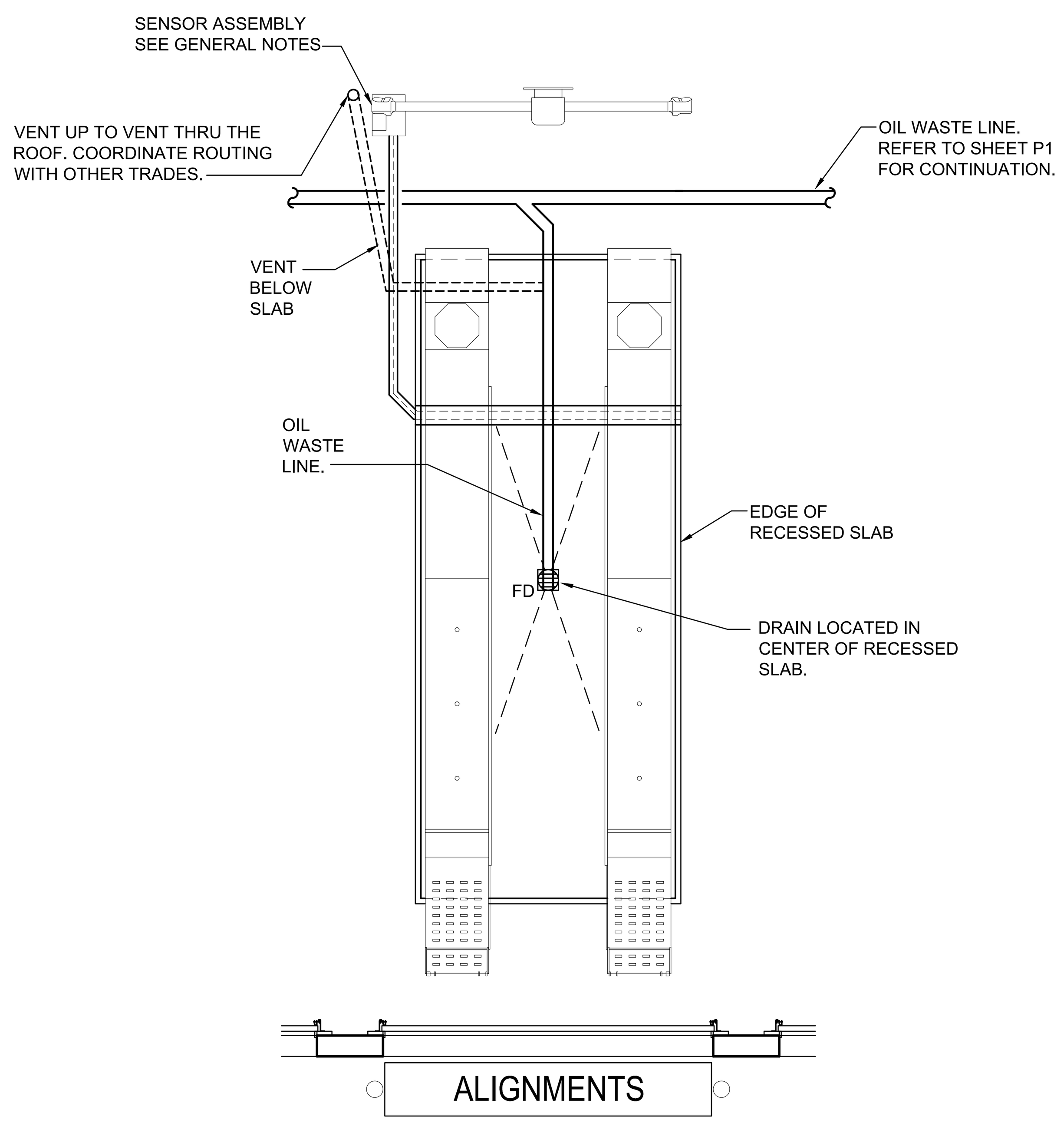
4 P5 EYEWASH PIPING DETAIL
SCALE: N.T.S.

NOTE:
DETAILS SHOWN HERE ARE DIAGRAMMATICAL ONLY AND ARE NOT INTENDED TO SHOW EVERY FITTING AND/OR OFFSET. SEE MANUFACTURER'S SPECIFIC INSTALLATION INSTRUCTIONS AND DETAILS. INSTALLATION CONTRACTOR IS TO BE CERTIFIED AND AUTHORIZED BY THE MANUFACTURER.

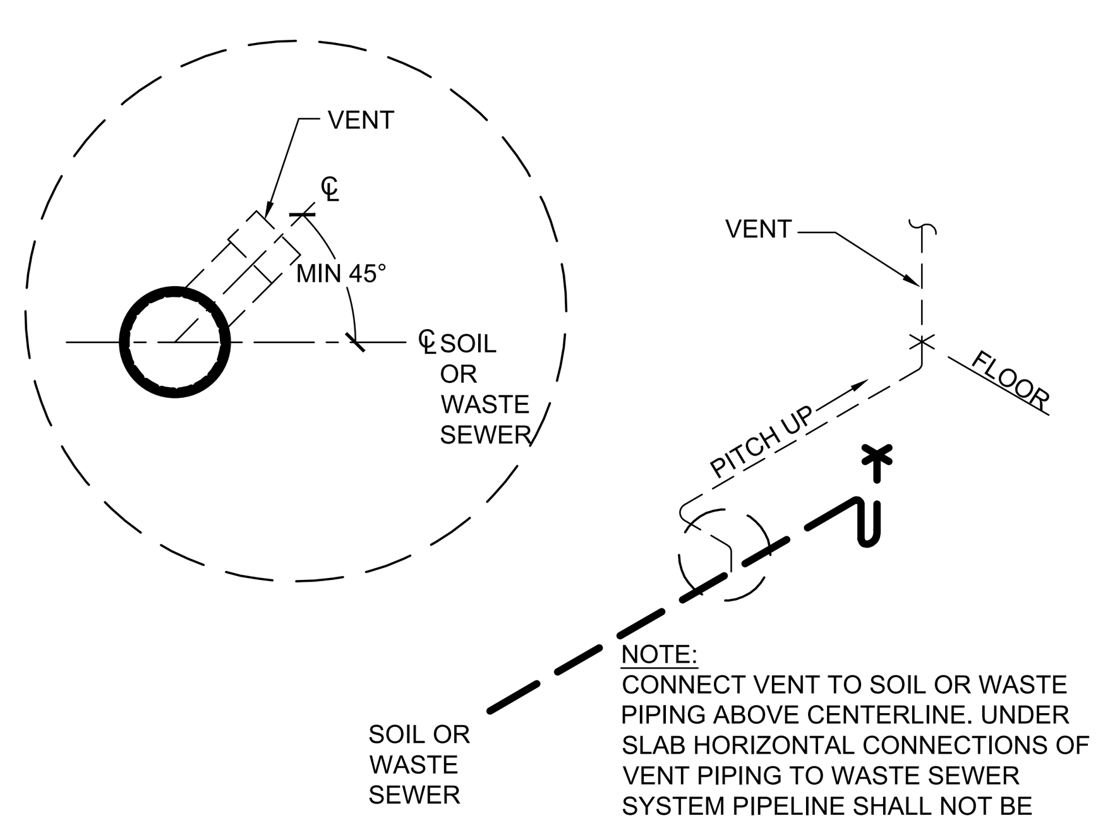


NOTE:
PROVIDE ADEQUATE CLEARANCES AS REQUIRED BY LOCAL CODE FOR DOMESTIC SERVICE.

5 P5 WATER SERVICE DIAGRAM
SCALE: N.T.S.

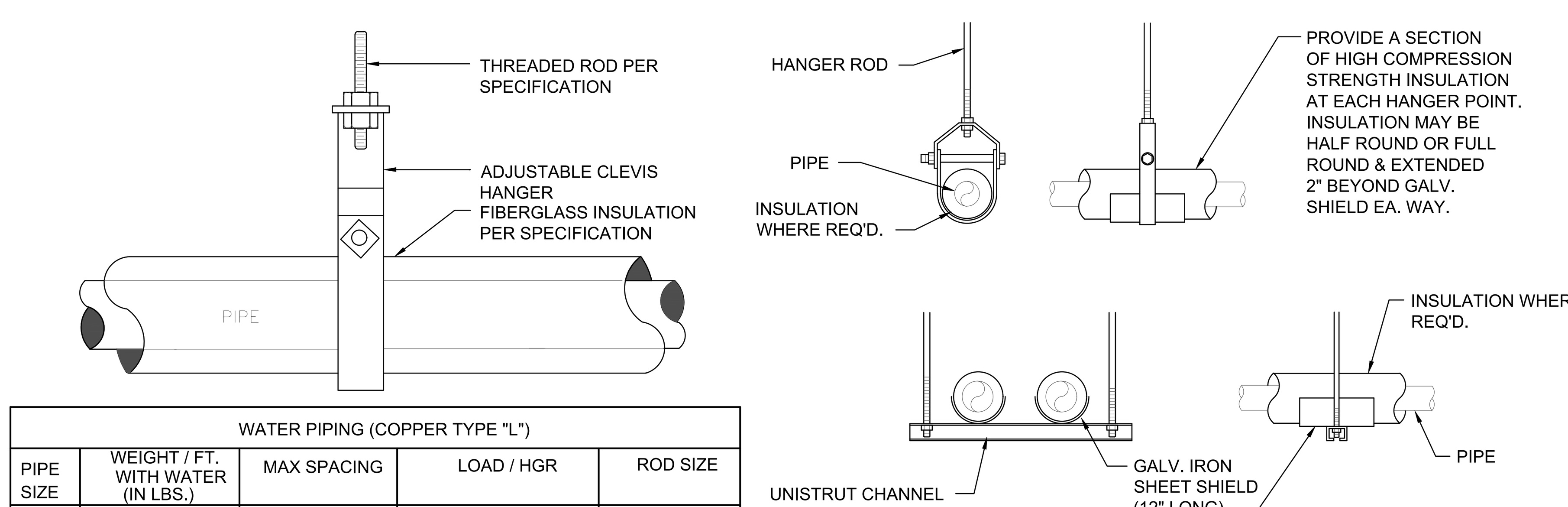


6 P5 ALIGNMENT RACK PIPING DETAIL
SCALE: N.T.S.



NOTE:
CONNECT VENT TO SOIL OR WASTE PIPING ABOVE CENTERLINE. UNDER SLAB HORIZONTAL CONNECTIONS OF VENT PIPING TO WASTE SEWER SYSTEM PIPELINE SHALL NOT BE ALLOWED.

7 P5 VENT PIPING INSTALLATION
SCALE: N.T.S.



WATER PIPING (COPPER TYPE "L")				
PIPE SIZE	WEIGHT / FT. WITH WATER (IN LBS.)	MAX SPACING	LOAD / HGR	ROD SIZE
1/2"	.38	6'	2.28	3/8"
3/4"	.66	6'	3.96	3/8"
1"	1.04	6'	6.24	3/8"
1-1/4"	1.43	6'	8.58	3/8"
1-1/2"	1.92	6'	19.2	3/8"
2"	3.09	10'	30.8	3/8"
2-1/2"	4.52	10'	45.2	3/8"

NOTES
1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE.

8 P5 PIPE SUPPORT DETAIL
SCALE: N.T.S.

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Firestone COMPLETE AUTO CARE

NEW FCAC STORE
2020 ER
3561 SW MARKET ST
JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

STATE OF MISSOURI
RANDALL A. NELSON
NUMBER PE-2007003990
PROFESSIONAL ENGINEER
04/15/2020

ISSUE BLOCK

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SHEET TITLE:
PLUMBING DETAILS

SHEET NUMBER:
P5

Apr 15, 2020 – 12:18pm – USER IanCollins
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PLUMBING FIXTURE LOAD SCHEDULE

PLUMBING FIXTURE	QTY	FIXTURE UNITS DFU	TOTAL DFU	WSFU EACH	TOTAL WSFU	REMARKS
WATER CLOSET	2	4	8	5	10	TANK
LAVATORY	2	1	2	2	4	
SERVICE SINK	2	2	4	3	6	
FLOOR DRAIN	4	2	8	---	---	
HOSE BIBB	2	---	---	5	10	
WATER COOLER	2	1/2	1	0.25	0.5	
TOTALS			23		30.5	

NOTE:
CALCULATIONS SHOWN ARE BASED ON 2018 INTERNATIONAL PLUMBING CODE

4"Ø SANITARY = 160 DFU @ 1/8" PER FOOT SLOPE.
23 DFU = 4"Ø PIPE

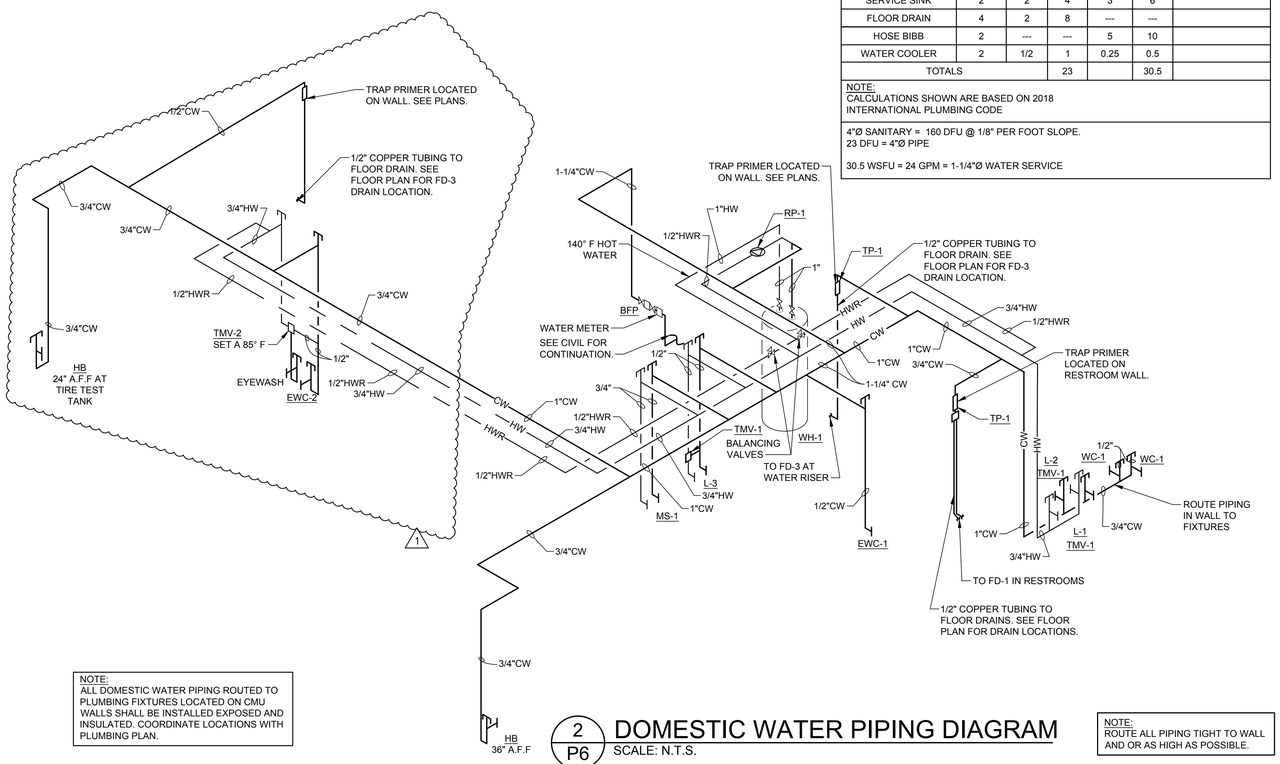
30.5 WSFU = 24 GPM = 1-1/4"Ø WATER SERVICE

PLUMBING FIXTURE AND PIPING CONNECTION SCHEDULE

TAG	DESCRIPTION	MANUFACTURER MODEL	SIZE	VALVE/ FAUCET	CONNECTIONS DRAIN	VENT	C.W.	H.W.	REMARKS
WC-1	WATER CLOSET FLOOR MTD. FLUSH TANK	AMERICAN STANDARD #2467.016	ELONGATED	INTEGRAL WITH TANK	4	2	1/2		MOUNT 18" A.F.F HANDICAP
L-1	LAVATORY HANDICAP-CENTERSET	AMERICAN STANDARD #0124.024	20"x18" VITREOUS CHINA	CHICAGO FAUCET 802-V317CP	1 1/2	1 1/2	1/2	1/2	MOUNT 34" A.F.F HANDICAP 0.5 GPM AERATOR - CHICAGO FAUCET - E2805JKCP.
L-2	LAVATORY HANDICAP-CENTERSET	ELKAY ELVWO2219CS	22"X19" STAINLESS STEEL	CHICAGO FAUCET 802-V317CP	1 1/2	1 1/2	1/2	1/2	MOUNT 34" A.F.F HANDICAP 0.5 GPM AERATOR - CHICAGO FAUCET - E2805JKCP.
L-3	SERVICE AREA FLOOR MOUNTED SINK	FIAT #FL-1	23"x22"x14" PLASTIC	A-1 FAUCET	1 1/2	1 1/2	1/2	1/2	DECK MOUNTED FAUCET PROVIDED WITH SINK
MS-1	FLOOR MOUNTED MOP SINK	FIAT #MSB-2424	24"X24"	MODEL 830-AA FAUCET W / INTEGRAL VACUUM BREAKER	2	1 1/2	3/4	3/4	889-CC 24" MOP BRACKET, 1453-BB STRAINER
FD-1	FLOOR DRAIN	J.R. SMITH #2010CA-NB	6" ROUND TOP		3	2			CAST IRON BODY W/ TRAP PRIMER CONNECTION
FD-2	FLOOR DRAIN	J.R. SMITH #2350-NB	8 1/2" ROUND WITH SEDIMENT BUCKET		3	2			CAST IRON BODY PROVIDE SURE SEAL SS3000
FD-3	FLOOR DRAIN	J.R. SMITH #3061	12 1/2"Ø WITH SEDIMENT BUCKET		3	2			CAST IRON BODY W/ TRAP PRIMER ADAPTOR #2695S
WCO	WALL CLEANOUT	J.R. SMITH #4472T	STAINLESS STEEL COVER PLATE		SEE PLANS				1
FCO	FLOOR CLEANOUT	J.R. SMITH #4020	5 3/4"Ø ROUND "TWIST TO FLOOR" ADJUSTABLE TOP		SEE PLANS				NICKEL BRONZE TOP
GCO	GRADE CLEANOUT	J.R. SMITH #4250	8 3/4"Ø ROUND CLEAN OUT FOR UNFINISHED AREA		SEE PLANS				CAST IRON TOP
HB	HOSE BIBB WITH INTEGRAL VACUUM BREAKER SPOUT	ARROWHEAD BRASS HOSE BIBB 361 WITH NIBCO 90° ELBOW 707-3-5-LF	3/4" MALE HOSE THREAD OUTLET				3/4		90° ELBOW WITH 3/4" SOLDER INLET AND 3/4" THREADED OUTLET, AND INTEGRATED VACUUM BREAKER MOUNT 36" AFF - UNO
EWC-1	BOTTLE FILLING BI-LEVEL WATER COOLER	ELKAY EZSTL8WSLK	---		1 1/2	1 1/4	3/8		38 3/8" ORIFICE HEIGHT AFF FOR HIGH FOUNTAIN; PROVIDE W/ APRON MODEL #LKAPREZL
EWC-2	WATER COOLER	ELKAY EZ8	---		1 1/4	1 1/4	3/8		32 7/8" ORIFICE HEIGHT A.F.F.
TMV-1	THERMOSTATIC MIXING VALVE	POWERS LFLM495-2	1/2"				1/2	1/2	SET FOR 110° F HOT WATER ASSE 1070 CERTIFIED
TMV-2	THERMOSTATIC MIXING VALVE	POWERS ES-150-10	1/2"				1/2	1/2	SET FOR 85° F HOT WATER ASSE 1071 CERTIFIED
TP-1	TRAP PRIMER	MIFAB MR-500	1/2"				1/2		MI-DU-500 DISTRIBUTION UNIT & MI-600 TRAP FITTING
RP-1	RECIRCULATION PUMP	GRUNDFOS UP15-10 B5/TLC	3 FT HEAD AT 3 GPM					1/2	SINGLE PHASE, 115 V 6W. PROVIDE WITH TIMER AND HONEYWELL AQUASTAT L6006C

ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
* SEE SPECIFICATIONS

NOTES & REMARKS:
1. COLOR OF FIXTURES SHALL BE WHITE, UNLESS NOTED OTHERWISE.
2. ALL SINKS AND LAVATORIES SHALL HAVE MINIMUM 17 GAUGE TRAPS, WITH CLEAN OUT PLUGS AND WALL ESCUTCHEONS, CHROME PLATED, OFFSET TRAP ON DRAIN LINE, TAILPIECE WITH STRAINER, HANDI-SHIELD VINYL COVERED PIPE INSULATION WITH HOOD OVER NEW DRAIN LINE AND HOT AND COLD WATER LINES.
3. ALL FIXTURES SHALL HAVE INDIVIDUAL WALL SUPPLY STOPS, LOOSE KEY OPERATED, WITH WALL ESCUTCHEONS, CHROME PLATED.
4. TOILET SEATS: ELONGATED WITH OPEN FRONT AND CONTAINING ANTI-MICROBIAL AGENT, BEMIS MODEL #3155CT.
5. WATER COOLERS FURNISHED WITH INTEGRAL VOLUME REGULATORS, HANGERS, WALL MOUNTING PLATE AND 5 YEAR WARRANTY. PROVIDE BOTTLE FILLER ON LOW WATER COOLER
6. LAVATORIES L-1 AND L-2 SHALL BE PROVIDED WITH A VANDAL RESISTANT 0.5 GPM AERATOR - CHICAGO FAUCET MODEL E2805JKCP.
7. ALL TOILET FLUSH CONTROLS SHALL BE PROVIDED ON THE WIDE SIDE OF THE FIXTURE. (AWAY FROM WALL)
8. PROVIDE WALL MOUNTED SERVICE FAUCET, MOP HANGER BRACKET AND STAINLESS STEEL STRAINER AT MS-1 LOCATION.
9. ALL FIXTURES SHALL BE SUBMITTED AND APPROVED BY ENGINEER.
10. PROVIDE 4" DEEP-SEAL TRAP FOR ALL FLOOR DRAINS.

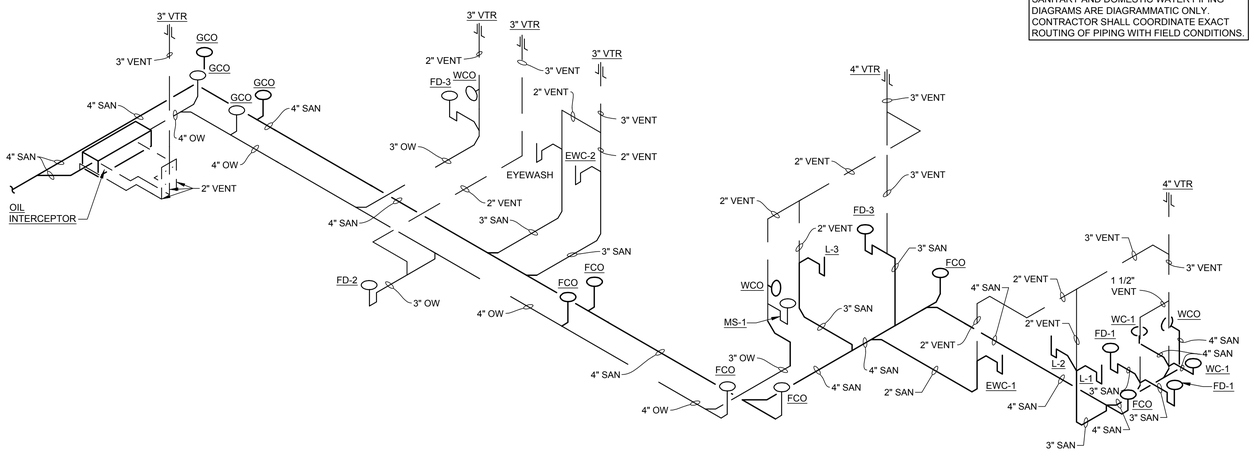


NOTE:
ALL DOMESTIC WATER PIPING ROUTED TO PLUMBING FIXTURES LOCATED ON CMU WALLS SHALL BE INSTALLED EXPOSED AND INSULATED. COORDINATE LOCATIONS WITH PLUMBING PLAN.

2 / P6 DOMESTIC WATER PIPING DIAGRAM
SCALE: N.T.S.

NOTE:
ROUTE ALL PIPING TIGHT TO WALL AND OR AS HIGH AS POSSIBLE.

NOTE:
SANITARY AND DOMESTIC WATER PIPING DIAGRAMS ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL COORDINATE EXACT ROUTING OF PIPING WITH FIELD CONDITIONS.



1 / P6 WASTE & VENT PIPING DIAGRAM
SCALE: N.T.S.

NOTE:
OBTAIN WRITTEN APPROVAL FROM AHJ FOR USE WITH A SURE SEAL #SS3000 INLINE FLOOR DRAIN TRAP SEALER FOR FD-2 IN ALIGNMENT PIT.

SLOPE OF HORIZONTAL DRAINAGE PIPE	
SIZE	MINIMUM SLOPE
2-1/2" OR LESS	1/4 / ft OR 2%
3" TO 6"	1/8 / ft OR 1%

NOTE:
SCHEDULE BASED ON 2018 INTERNATIONAL CODE, SECTION 704 - TABLE 704.1.

GAS FIRED WATER HEATER SCHEDULE

TAG	AREA SERVED	MANUFACTURER	MODEL NUMBER	STORAGE CAPACITY	RECOVERY CAPACITY	MBH INPUT	VOLTS/ PHASE
WH-1	BUILDING	A. O. SMITH	BTX-80	50 GAL	83 GPH @ 100° TEMP RISE	76	120/1

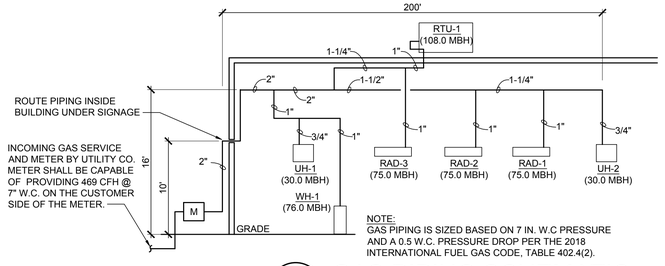
ACCEPTABLE MANUFACTURERS FOR EQUIVALENT OF SCHEDULE PRODUCT (NO OTHER SUBSTITUTIONS WILL BE ALLOWED):
* SEE SPECIFICATIONS

NOTES:
1. WATER HEATER FURNISHED AND INSTALLED BY CONTRACTOR.
2. PROVIDE THROUGH ROOF VENT TERMINATION PER MANUFACTURER'S RECOMMENDATIONS.
3. SET DISCHARGE TEMPERATURE OF WATER HEATER TO OPERATE AT 140 DEG F MAX. (FOR MOP SINK USE ONLY, SEE PLUMBING NOTES AND WATER PIPING DIAGRAM).
4. ROUTE T&P RELIEF DRAIN AND OTHER DRAIN PIPING TO FLOOR DRAIN. TERMINATE 2" ABOVE RIM LEVEL.
5. PROVIDE PRE-MANUFACTURED 18" HEIGHT STEEL WATER HEATER STAND RATED FOR A 50 GALLON WATER HEATER.

GAS PRESSURE REGULATOR SCHEDULE

MANUFACTURER	MODEL NUMBER	CFH CAPACITY	INLET PRESSURE	OUTLET PRESSURE	SPRING COLOR RANGE-ORIFICE
ACTARIS	B-31R 3/4"X3/4"	UP TO 150	2 P.S.I.G.	7 INCHES W.C.	LT.GREEN 5.5 TO 8.0 INCHES W.C.-1/8"
ACTARIS	B-31R 3/4"X1"	150 TO 400	2 P.S.I.G.	7 INCHES W.C.	LT.GREEN 5.5 TO 8.0 INCHES W.C.-1/4"
ACTARIS	B-31R 1"X1"	400 TO 800	2 P.S.I.G.	7 INCHES W.C.	LT.GREEN 5.5 TO 8.0 INCHES W.C.-3/8"

NOTES:
1. REGULATOR ARE FULL CAPACITY INTERNAL RELIEF TYPE.
2. REGULATOR TO BE INSTALLED WITH RELIEF VENT IN POSITION TO PREVENT ENTRANCE OF WATER (PROVIDE SCREENED VENT ELBOW AS REQUIRED).
3. TAG REGULATOR WITH INLET AND OUTLET SETTINGS, AFFIX WARNING 'DO NOT REMOVE'.



NOTE:
GAS PIPING IS SIZED BASED ON 7 IN. W.C PRESSURE AND A 0.5 W.C. PRESSURE DROP PER THE 2018 INTERNATIONAL FUEL GAS CODE, TABLE 402.4(2).

3 / P6 GAS PIPING SCHEMATIC
SCALE: N.T.S.

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SHEET TITLE:
PLUMBING SCHEDULES AND RISERS

SHEET NUMBER:
P6

ELECTRICAL SYMBOLS

NOT ALL SYMBOLS ARE NECESSARILY USED ON DRAWINGS. ALL MOUNTING HEIGHTS ARE TO BE FROM THE CENTER OF THE DEVICE, UNLESS NOTED OTHERWISE.

LIGHTING FIXTURES

Symbol	Description
D LP-21g	4' LINEAR LIGHT (UPPER CASE LETTER INDICATES FIXTURE TYPES, UPPER CASE LETTERING WITH HYPHEN FOLLOWED BY A NUMBER INDICATES PANEL AND CIRCUIT NUMBER, LOWER CASE LETTER INDICATES SWITCHING).
	HIGH BAY LIGHT
	PENDANT LIGHT
	REMOTE EMERGENCY HEAD
	EXTERIOR WALL PACK
	POLE MOUNTED SITE LIGHT
	4' LINEAR LIGHT WITH EMERGENCY BATTERY BACKUP
	EMERGENCY LIGHT WITH BATTERY BACK-UP
	EXIT SIGN WITH EMERGENCY BATTERY BACKUP (HATCH INDICATES ILLUMINATED FACE; DIRECTIONAL ARROWS ON SIGN AS INDICATED)

SWITCHES

Symbol	Description
$\$^n$	SINGLE-POLE SWITCH (MOUNTED AT 48" AFF) (LOWER CASE LETTER INDICATES SWITCHING)
$\$^{PL}$	SINGLE-POLE SWITCH WITH PILOT LIGHT (MOUNTED AT 48" AFF)
$\$^3$	3-WAY SWITCH (MOUNTED AT 48" AFF)
$\$^{OC}$	OCCUPANCY SENSOR SWITCH
$\$^M$	SINGLE-POLE, MOTOR-RATED SWITCH
$^M\$^2$	2-POLE, MOTOR-RATED SWITCH
$	SWITCH BANK WITH COVERPLATE

POWER AND CONTROL

Symbol	Description
T	TRANSFORMER
	PANEL
	MOTOR
	DISCONNECT SWITCH (NON-FUSED EXCEPT AS NOTED)
	COMBINATION STARTER DISCONNECT SWITCH

MISCELLANEOUS

Symbol	Description
J	JUNCTION BOX
PC	EXTERIOR PHOTOCELL
n OS	CEILING MOUNTED OCCUPANCY SENSOR (LOWER CASE LETTER INDICATES SWITCHING)
n	CORNER MOUNTED OCCUPANCY SENSOR (LOWER CASE LETTER INDICATES SWITCHING)
	PUSH BUTTON STATION (MOUNTING HEIGHT 48" AFF)
	TELEPHONE OUTLET BOX, WALL-TYPE WITH 3/4" CONDUIT STUBBED UP IN WALL AND TURNED OUT IN CEILING AREA WITH INSULATED BUSHING. (MOUNTING HEIGHT 18" AFF)
	TELEPHONE/DATA OUTLET BOX, WALL-TYPE WITH 3/4" CONDUIT STUBBED UP IN WALL AND TURNED OUT IN CEILING AREA WITH INSULATED BUSHING. (MOUNTING HEIGHT 18" AFF)
	DATA OUTLET BOX, WALL-TYPE WITH 3/4" CONDUIT STUBBED UP IN WALL AND TURNED OUT IN CEILING AREA WITH INSULATED BUSHING. (MOUNTING HEIGHT 18" AFF)
EF 1	MECHANICAL EQUIPMENT TAG (UPPER HALF INDICATES EQUIPMENT TYPE, BOTTOM HALF INDICATES EQUIPMENT NUMBER) *REFER TO MECHANICAL SCHEDULES ON SHEET M3.
XX	EQUIPMENT TAG *REFER TO EQUIPMENT SCHEDULE ON SHEET E3.

RECEPTACLES*

Symbol	Description
	SINGLE RECEPTACLE (GROUND TYPE)
	DUPLEX RECEPTACLE (GROUND TYPE)
	DUPLEX RECEPTACLE IG
	DUPLEX RECEPTACLE GFCI
	QUAD RECEPTACLE
	QUAD RECEPTACLE IG
	QUAD RECEPTACLE GFCI
	SPECIAL RECEPTACLE (AS NOTED)

* REFERENCE SHEET E3 FOR SPECIFIC ROOM MOUNTING HEIGHT REQUIREMENTS.

ELECTRICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	GFCI	GROUND FAULT INTERRUPTER	SW	SWITCH
BFC	BELOW FINISHED CEILING	IC	INTERRUPTING CAPACITY	TR	TAMPER RESISTANT
C	CONDUIT	IG	ISOLATED GROUND	TYP	TYPICAL
CB	CIRCUIT BREAKER	MTD	MOUNT OR MOUNTED	UF	UNDER FLOOR
CLG	CEILING	NC (N.C.)	NORMALLY CLOSED	UG	UNDERGROUND
EC	EMPTY CONDUIT	NF	NON FUSED	UNO (U.N.O.)	UNLESS NOTED OTHERWISE
EOL	END OF LINE	NIC	NOT IN CONTRACT	WG	WIRE GUARD
EWL	ELECTRIC WATER COOLER	NL	NIGHT LIGHT	WP	WEATHERPROOF
(G)	GROUND (EQUIPMENT)	NO (N.O.)	NORMALLY OPEN	XFMR	TRANSFORMER

LIGHT FIXTURE SCHEDULE

FIXTURE TAG	MANUFACTURER	MODEL #	LAMP	VOLTAGE	INSTALLATION	DESCRIPTION	WATTS	QUANTITY	NOTES
A	CDS LIGHTING	KIRK-P-USV	LED BULB (50W PAR20 EQUIV)	120V	SUSPEND	LED PENDANT	9	7	8
D	CREE	LS4C-40L-35K-10V	LED	120V	CEILING AND SUSPENDED	4' LINEAR LED FIXTURE	34	33	3,6,9
DE	CREE	LS4C-40L-35K-10V-EB14	LED	120V	CEILING AND SUSPENDED	4' LINEAR LED FIXTURE WITH EMERGENCY BACKUP	34	10	3,6,9
E	CREE	E-XML1W	LED	120V	SEE NOTES	EMERGENCY LIGHTING UNIT	1.8	9	1
EA	CREE	E-XHL2WW	LED	120V	SEE NOTES	EMERGENCY EXTERIOR REMOTE HEADS	2	3	2
F	CREE	KBL-A-UV-M-40K-8-UL-10V-AP-L1515A CXBA16N-WG-A	LED	120V	SUSPEND	HIGH BAY LED LIGHTING FIXTURE	142	21	3
K	FURNISHED BY OWNER	FIRESTONE REEL CORD LIGHT	INTEGRAL LED	120V	SUSPEND	FURNISHED BY OWNER	5	8	5
N	CREE	XSPW-B-WM-3ME-2L-57K-UL	LED	120V	SEE ARCH ELEVATIONS	EXTERIOR LED WALL PACK	19	19	7
X	CREE	E-XCL2RRCW	LED	120V	SEE NOTES	EXIT SIGN WITH REMOTE CAPABILITY (SEE TYPE EA)	3.4	7	4

NOTES:

1. FIXTURE MOUNTED 12" BELOW CEILING OR AT 13'-6" AFF IN ALL AREAS WITHOUT A CEILING.
2. REMOTE HEAD WALL MINIMUM OF 12" ABOVE DOOR JAMB CONNECTED TO BATTERY SIDE OF EXIT LIGHT.
3. INSTALL LIGHTS AT 13'-0" AFF IN THE SERVICE BAY, UNLESS NOTED OTHERWISE.
4. INSTALL ON WALL 6" ABOVE DOOR OR SURFACE MOUNT ON CEILING AS APPLICABLE.
5. COORDINATE EXACT FIXTURE PLACEMENT WITH ARCHITECTURAL DRAWINGS.
6. INSTALL LIGHTS AT 8'-0" AFF IN THE FOLLOWING AREAS: UTILITY AREA, SHOP TOILET AND UNISEX TOILET. INSTALL LIGHTS AT STRUCTURE LEVEL IN THE FOLLOWING AREAS: INVENTORY. INSTALL LIGHTS AT 10'-0" AFF IN THE FOLLOWING AREAS: CUSTOMER SHOW ROOM AND OFFICE
7. REFERENCE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.
8. FIXTURES ARE TO BE SUSPENDED FROM STRUCTURE AT 80" AFF TO BOTTOM WITH SINGLE STEM HANGER. REFER TO SPECS SECTION 265119 3.3H FOR MORE INFORMATION.
9. FIXTURES ARE TO BE SUSPENDED FROM STRUCTURE WITH ALL-THREADED ROD. REFER TO SPECS SECTION 265119 3.3H FOR MORE INFORMATION.

LIGHTING GENERAL NOTES

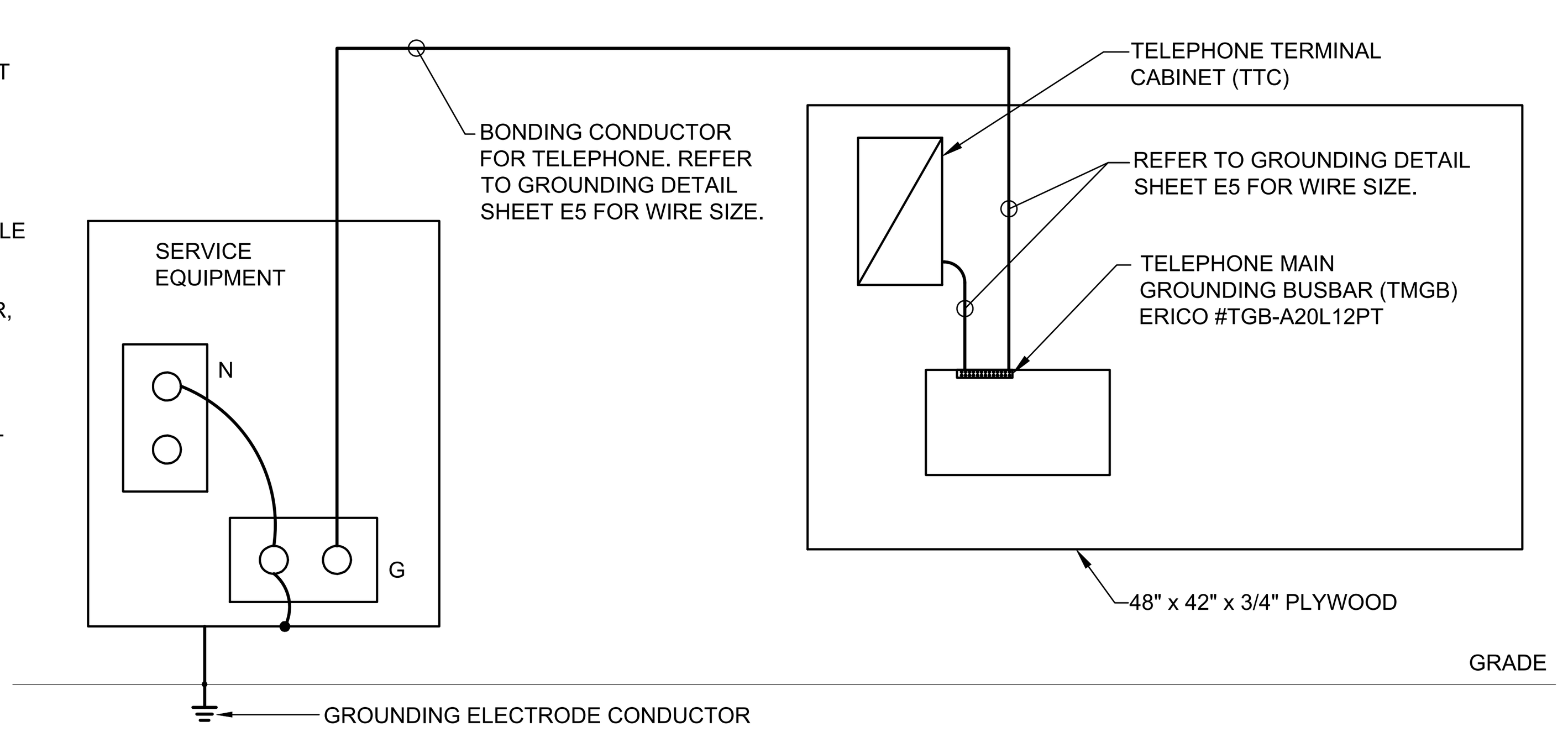
1. ALL LIGHTING FIXTURES SHALL BE RATED FOR BUILDING SYSTEM VOLTAGE. CONTRACTOR MUST VERIFY ALL LOCATIONS. CONTRACTOR SHALL FURNISH AND INSTALL EACH LIGHTING FIXTURE COMPLETE WITH PLASTER FRAMES AND ALL OTHER INSTALLATION AND HANGING HARDWARE AS REQUIRED FOR A COMPLETE AND FINISHED INSTALLATION AT EACH FIXTURE LOCATION.
2. VERIFY AND COORDINATE ALL LIGHTING FIXTURE CATALOG NUMBERS AND LOCATIONS WITH THE INTENT OF FIXTURE DESCRIPTIONS LISTED AND VERIFY FIXTURE QUANTITIES. FIXTURE QUANTITIES SHOWN ARE FOR INFORMATION ONLY. ANY DISCREPANCY SHALL BE REPORTED IN WRITING TO THE ARCHITECT PRIOR TO INSTALLATION.
3. ALL FIXTURES SHALL BE "U.L." LABELED. ALL LIGHTING FIXTURES EXPOSED TO WEATHER OR MOISTURE SHALL BEAR U.L. "WET LOCATION" LABEL, AND LIGHTING FIXTURES EXPOSED TO DAMPNESS SHALL BEAR U.L. "DAMP LOCATION" LABEL.
4. ALL EXIT SIGNS SHALL BE INSTALLED COMPLETE WITH ALL INSTALLATION AND HANGING ACCESSORIES TO PROVIDE AN UNOBSTRUCTED VIEW OF EACH SIGN FACE AS REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND LOCATION OF ALL EXIT SIGNS WITH LOCAL AUTHORITIES. MOUNT SIGNS AT MAXIMUM 8'-0". EXIT SIGNS WILL BE ADJUSTED AS NECESSARY WITHOUT ADDITIONAL COST.
5. REFER TO APPLICABLE SECTIONS OF THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR LIGHTING FIXTURES.
6. ALL EXIT SIGNS AND BATTERY EMERGENCY UNITS MUST BE APPROVED BY LOCAL CODE, AND MAINTAIN A MINIMUM OF 90 MINUTES OF CONTINUOUS ILLUMINATION, AND SHALL PROVIDE A MINIMUM OF 1 FOOT-CANDLE AT THE WALKING SURFACE LEVEL IN SPACES THAT REQUIRE TWO OR MORE MEANS OF EGRESS. THE CONTRACTOR WILL FURNISH AND INSTALL ANY ADDITIONAL EMERGENCY UNITS AS REQUESTED BY THE LOCAL AUTHORITY HAVING JURISDICTION AT THE FINAL INSPECTION ANY ADDITIONAL COST TO BE APPROVED BY THE OWNER.
7. FIELD ADJUST AIMING PATTERN OF EXTERIOR LIGHTS AT NIGHT SESSION. OWNER AND ARCHITECT TO DETERMINE TIME AND DATE.
8. ALL WALL WASH LIGHTING TO BE ON SEPARATE SWITCHES.

GENERAL ELECTRICAL NOTES

1. THESE GENERAL NOTES APPLY TO ALL WORK IN THIS PROJECT, AND THE WORD "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
2. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ADDITIONAL GENERAL NOTES WHICH WILL APPLY HERE.
3. NOTES ON DRAWINGS MAY APPLY TO ALL SIMILAR CONDITIONS WHETHER THEY ARE REPEATED OR NOT.
4. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE A.D.A.A.G. (AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES).
5. WHERE SEVERAL DEVICES ARE GANGED TOGETHER, THE COVER PLATE SHALL BE OF THE GANGED STYLE FOR THE NUMBER OF DEVICES USED.
6. CONTRACTOR MUST VISIT THE SITE TO FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS WHICH WILL BE AFFECTED DURING CONSTRUCTION PRIOR TO SUBMITTING HIS BID PROPOSAL.
7. BOXES LOCATED ON OPPOSITE SIDES OF NON-FIRE RATED WALLS SHALL BE OFFSET A MINIMUM OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE RATED WALL SHALL BE OFFSET A MINIMUM OF 24" HORIZONTALLY. "THRU-THE-WALL" BOXES SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
8. VERIFY TOTAL CONNECTED LOADS AND HORSE POWER WITH OTHER TRADE'S CONTRACTORS PRIOR TO WIRING OF ALL EQUIPMENT. MAKE ANY CHANGES TO OVERCURRENT DEVICES OR FEEDER SIZE PER LOCAL ELECTRICAL CODE.
9. COORDINATE THE LOCATION OF ALL DETECTORS WITH LIGHT FIXTURES, AND CEILING DIFFUSERS.
10. ALL TEMPERATURE CONTROL WIRING AND CONDUIT SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR. CONTRACTOR SHALL ADJUST CONDUIT ROUTING TO NOT INTERFERE WITH ANY HANGING SIGNS OR BOARDS. COORDINATE ALL CONDUIT LOCATIONS WITH THE "F1" DRAWING PRIOR TO ROUGH-IN TO ENSURE NO ENCROACHMENT OF CONDUIT OR DEVICE WITH SIGNS OR BOARDS.
11. VERIFY ALL FURNITURE, MODULAR FURNITURE AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
12. FIELD VERIFY LOCATION OF AREA SMOKE DETECTORS AND HEAT DETECTORS. DO NOT LOCATE WITHIN 36" OF AN HVAC DIFFUSER (SUPPLY OR RETURN), IN A DIRECT AIR FLOW OR WITHIN 36" OF A SPRINKLER HEAD.
13. THE COLOR OF ALL ISOLATED GROUND RECEPTACLES AND COVER PLATES SHALL MATCH THOSE OF OTHER DEVICES ON THE JOB.
14. ROUTE ALL CONDUITS CONCEALED ABOVE LAY-IN CEILINGS. ONLY IN SERVICE BAY AREA AND INVENTORY AREA CONDUIT SHOULD BE ROUTED 1-1/2" AWAY OR AS TIGHT AS POSSIBLE TO THE UNDERSIDE OF THE STRUCTURE, IN A CLEAN AND ORDERLY MANNER. ROUTE CONDUIT AND UNISTRUT TIGHT TO BOTTOM OF STRUCTURE, IN A CLEAN AND ORDERLY MANNER. ABSOLUTELY NO CONDUITS ARE TO BE ROUTED UNDER OR IN THE BUILDING SLAB. SEE ARCHITECTURAL PLANS FOR LOCATION OF ACCESS PANELS IN CEILINGS.
15. ALL ELECTRICAL WORK AND MATERIALS SHALL COMPLY WITH LATEST "N.E.C." AND ALL LOCAL CODES AND ORDINANCE. IN CASE OF CONFLICT AMONG REQUIREMENTS THE MORE RESTRICTING SHALL APPLY. ALL WORKING CLEARANCES AROUND THE PANELS SHALL CONFORM TO NEC ARTICLE 110 WHICH INCLUDES ALL TRADES. CONTRACTOR MAY USE PULL BOXES, WIREWAYS ETC. AS NECESSARY TO MANAGE CONDUIT ROUTING CLEAR OF THE WORK SPACE AS DEFINED BY THE NEC. THIS SHALL BE CONSIDERED "MEANS AND METHODS"

NOTES:

1. INCLUDE NONMETALLIC LABEL "WARNING IF THIS CONNECTOR ON CABLE IS LOOSE OR MUST BE REMOVED PLEASE CALL THE BUILDING MANAGER." AT ALL GROUND BARS.
2. RUN CONDUCTOR FROM GROUND TO TELEPHONE TERMINAL CABINET.
3. ALL CONNECTORS TO GROUND BARS SHALL BE 2 HOLE COMPRESSION TYPE.
4. GROUNDING BARS SHALL BE ELECTROLYTIC COPPER, MOUNTED ON FIBERGLASS INSULATORS, AND NEMA BOLT HOLE SIZING AND SPACING.
5. ALL BONDING CONDUCTORS SHALL BE CONTINUOUS AND ROUTED IN THE SHORTEST POSSIBLE STRAIGHT LINE PATH.
6. ROUTE GROUNDING WIRE FROM EACH "TMGB" AND "TTC" TO NEAREST VERTICAL STRUCTURAL STEEL MEMBER AND CADWELD.
7. ROUTE CONDUCTOR FROM "TMGB" AND "TTC" TO RELAY RACK IN IT CLOSET AND CADWELD TO RACK.
8. ALL TELEPHONE CLOSETS WITH MULTIPLE WIRE MANAGEMENT RACKS WILL HAVE BONDING JUMPER INSTALLED.



1 / E1 TELEPHONE GROUNDING DETAIL AND NOTES

SCALE: NONE

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STATE OF MISSOURI
RANDALL A. NELSON
NUMBER PE-2007003990
PROFESSIONAL ENGINEER
04/15/2020

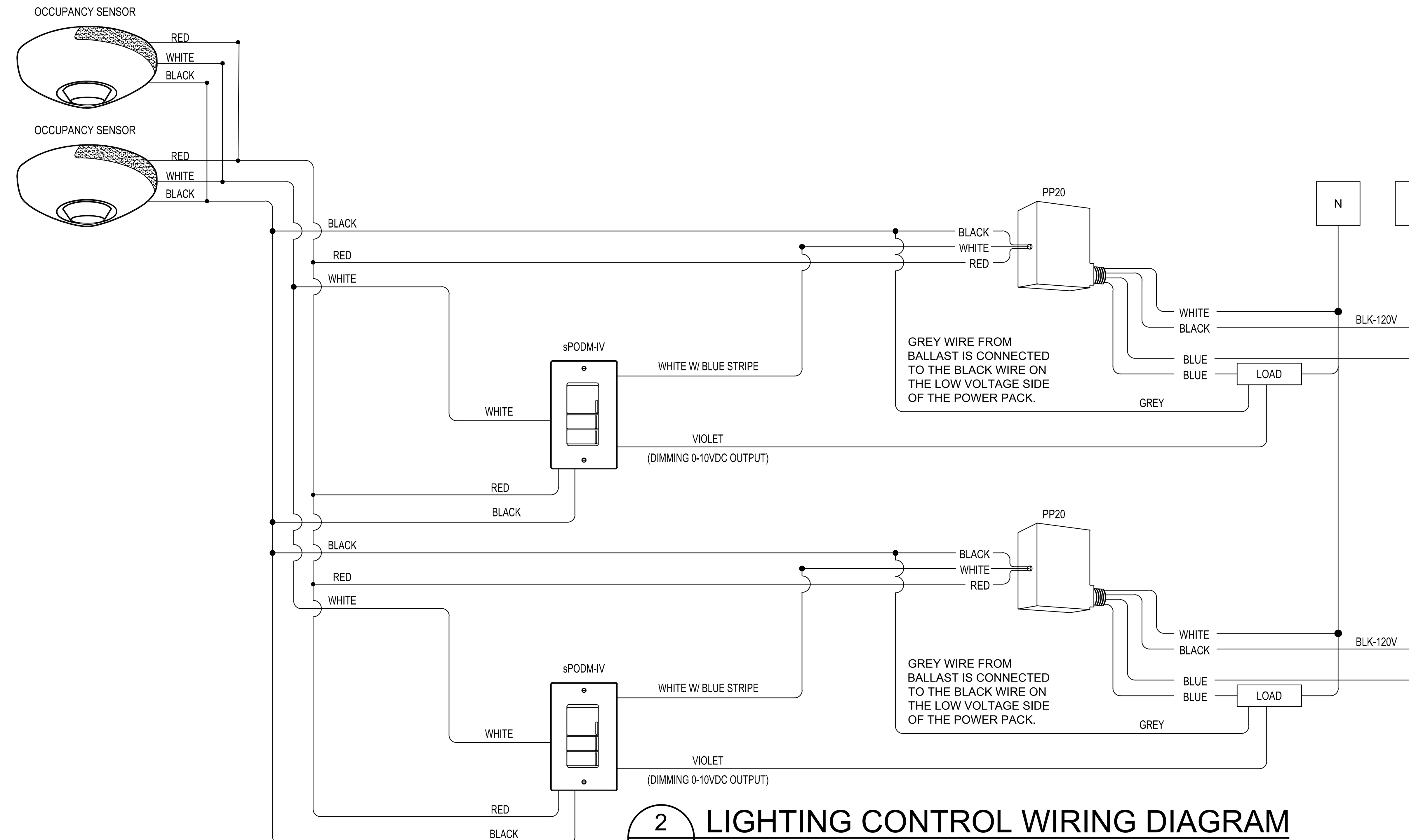
ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

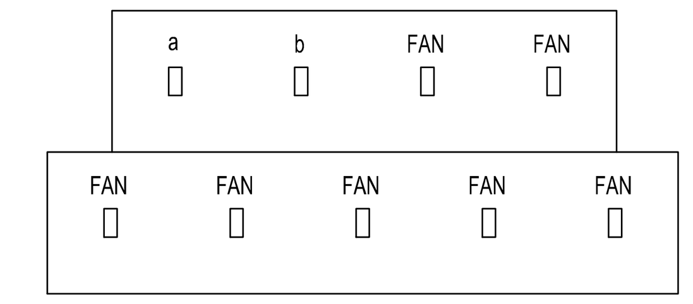
SHEET TITLE:
ELECTRICAL SYMBOLS, NOTES, AND SCHEDULES

SHEET NUMBER:
E1



2 E2 LIGHTING CONTROL WIRING DIAGRAM

SCALE: NONE



3 E2 SWITCHES DETAIL

SCALE: NONE

LIGHTING PLAN GENERAL NOTES

A. ALL BATTERY EMERGENCY LIGHTING UNITS SHALL BE WIRED AHEAD OF THE SWITCH(ES) WHICH CONTROLS THE LIGHTING WHERE UNIT IS LOCATED. THE UNIT SHALL OPERATE WHEN THE NORMAL LIGHTING FAILS.

B. SEE "ARCHITECTURAL REFLECTED CEILING PLAN" FOR ALL LIGHTING FIXTURES LOCATION DIMENSIONS.

C. SEE "FIXTURE PLAN" SHEET F1 FOR ALL EQUIPMENT LOCATIONS AND QUANTITIES.

D. ALL WIRING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE NEC AND LOCAL CODE AUTHORITIES HAVING JURISDICTION. SEE "GENERAL ELECTRICAL NOTES" ON SHEET E1.

E. FOR MOUNTING HEIGHTS OF ALL LIGHT FIXTURE TYPES SEE "LIGHT FIXTURE SCHEDULE" ON SHEET E1, UNLESS NOTED OTHERWISE.

LIGHTING PLAN KEYNOTES

1. CORD REEL LIGHT (FIXTURE TYPE "K"), MOUNTED TO ROOF STRUCTURE AT LOCATION SHOWN. COORDINATE INSTALLATION TO AVOID CONFLICT WITH OTHER EQUIPMENT. SEE "CORD REEL LIGHT DETAIL" ON SHEET E4 FOR ADDITIONAL INFORMATION AND COORDINATE WITH SHEET F1 FOR EXACT LOCATION.

2. PROVIDE TOGGLE SWITCH FOR MANUAL CONTROL OF LIGHTING FIXTURES AS INDICATED. MANUAL CONTROL IS FOR OCCUPANT SAFETY NEAR ELECTRICAL GEAR.

3. PROVIDE POWERPACK(S) (SENSOR SWITCH #PP20) AS REQUIRED FOR LIGHTING CONTROLS IN THIS AREA. REFER TO DETAIL 2 (THIS SHEET) FOR ADDITIONAL INFORMATION.

4. PROVIDE RECEPTACLE 6" ABOVE SHOW WINDOW TO MEET NEC SHOW WINDOW REQUIREMENTS.

5. PROVIDE PHOTOCELLS. SEE "CONTACTOR DIAGRAM" AND "CONTACTOR NOTES" ON SHEET E5 FOR ADDITIONAL INFORMATION. PHOTOCELL TO FACE NORTH. PROVIDE A WEATHERTIGHT CONDUIT BODY ON INSIDE FACE OF BUILDING PARAPET WITH 1" RIGID CONDUIT TO 36" ABOVE ROOFLINE FOR PHOTOCELL. WHERE PARAPET DOES NOT EXIST, PROVIDE FREESTANDING RIGID CONDUIT WITH WEATHERPROOF ROOF PENETRATION. VERIFY LOCATION AND REQUIREMENTS IN FIELD.

6. ROUTE DESIGNATED CIRCUITS VIA TIME SWITCH "TS" AND CONTACTORS, AS NOTED IN THE "CONTACTOR DIAGRAM" AND "CONTACTOR NOTES" ON SHEET E5.

7. PROVIDE ONE (1) FOUR-GANG BOX AND (1) FIVE-GANG BOX WITH TWO (2) TOGGLE SWITCHES TO CONTROL SWITCH-LEGS (a,b) AND SEVEN (7) TOGGLE SWITCHES FOR THE CONTROL OF SHOP FANS. LABEL ALL SWITCHES TO CORRESPOND WITH THE CONTROLLED SWITCH-LEG OR FAN. PROVIDE MATCHING COVER PLATE. VERIFY SWITCHING ARRANGEMENT IN FIELD. ROUTE CONDUIT UP UP INSIDE FACE OF WALL FOR RECESSED BOX. SEE SWITCHES DETAIL (THIS SHEET) FOR MORE INFO.

8. PROVIDE SWITCH (SENSOR SWITCH SPODM-IV) FOR MANUAL CONTROL OF LIGHTING FIXTURES AS INDICATED.

9. PROVIDE JUNCTION BOX ON BACK SIDE OF PARAPET FOR BUILDING MOUNTED SIGNAGE. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. DISCONNECT IS PROVIDED BY SIGNAGE VENDOR. ROUTE DESIGNATED CIRCUITS VIA TIME SWITCH "TS" AND CONTACTORS, AS NOTED IN THE "CONTACTOR DIAGRAM" AND "CONTACTOR NOTES" ON SHEET E5.

10. PROVIDE THREE (3) RECESSED SINGLE-GANG BOXES WITH (3) TOGGLE SWITCHES FOR (f,g,h): ALL WITH MATCHING COVER PLATES FOR SWITCHES LOCATED IN CUSTOMER SHOWROOM AREA. VERIFY SWITCHING ARRANGEMENT IN FIELD. ROUTE CONDUIT UP INSIDE FACE OF WALL. 1

11. INSTALL RECEPTACLE 6" ABOVE SHOW WINDOW (TO MEET NEC SHOW WINDOW REQUIREMENTS) FOR "OPEN" SIGN. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN. SEE SHEET F2 FOR ADDITIONAL INFORMATION. SECURE THE SMALL LOW VOLTAGE TRANSFORMER WHICH PLUGS INTO THE RECEPTACLE SO THAT THE TRANSFORMER CAN NOT COME OUT OF THE PLUG VIA GRAVITY.

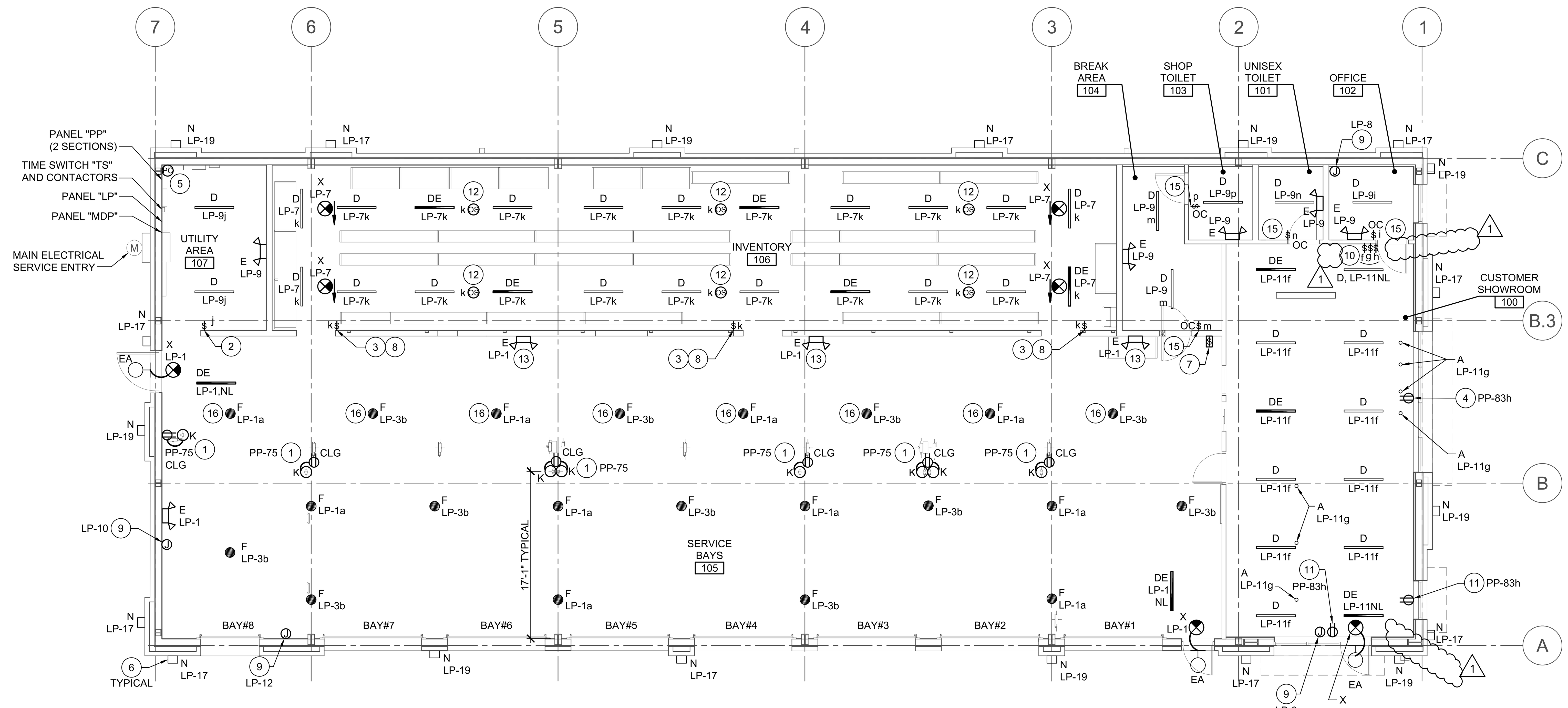
12. PROVIDE CEILING MOUNTED HIGH BAY AISLE OCCUPANCY SENSOR (SENSOR SWITCH MODEL #CM-6) TO CONTROL LIGHTING IN INVENTORY AREA. PENDANT MOUNT ON CONDUIT BETWEEN LIGHT FIXTURES AT STRUCTURE.

13. FIXTURE TO BE PENDANT MOUNTED FROM CONDUIT AT STRUCTURE. SEE LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.

14. NOT USED 1

15. PROVIDE OCCUPANCY SENSOR WITH SWITCH (SENSOR SWITCH #WSX-PDT). INSTALL ON WALL 46" AFF (TO TOP) IN ALL LOCATIONS. COORDINATE FINAL LOCATION WITH BSRO. ROOM LAYOUT MUST BE TAKEN INTO ACCOUNT BEFORE INSTALLATION.

16. THESE LIGHT FIXTURES ONLY TO BE MOUNTED AT 14'-6" AFF.



1 E2 LIGHTING PLAN

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

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ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.:	160085
6 DIGIT NO.:	906983
4 DIGIT NO.:	78C9
AOR PROJECT NUMBER:	1955B71
TO PERMIT:	DATE: 03/26/2020
TO BID:	DATE: ##-##-##

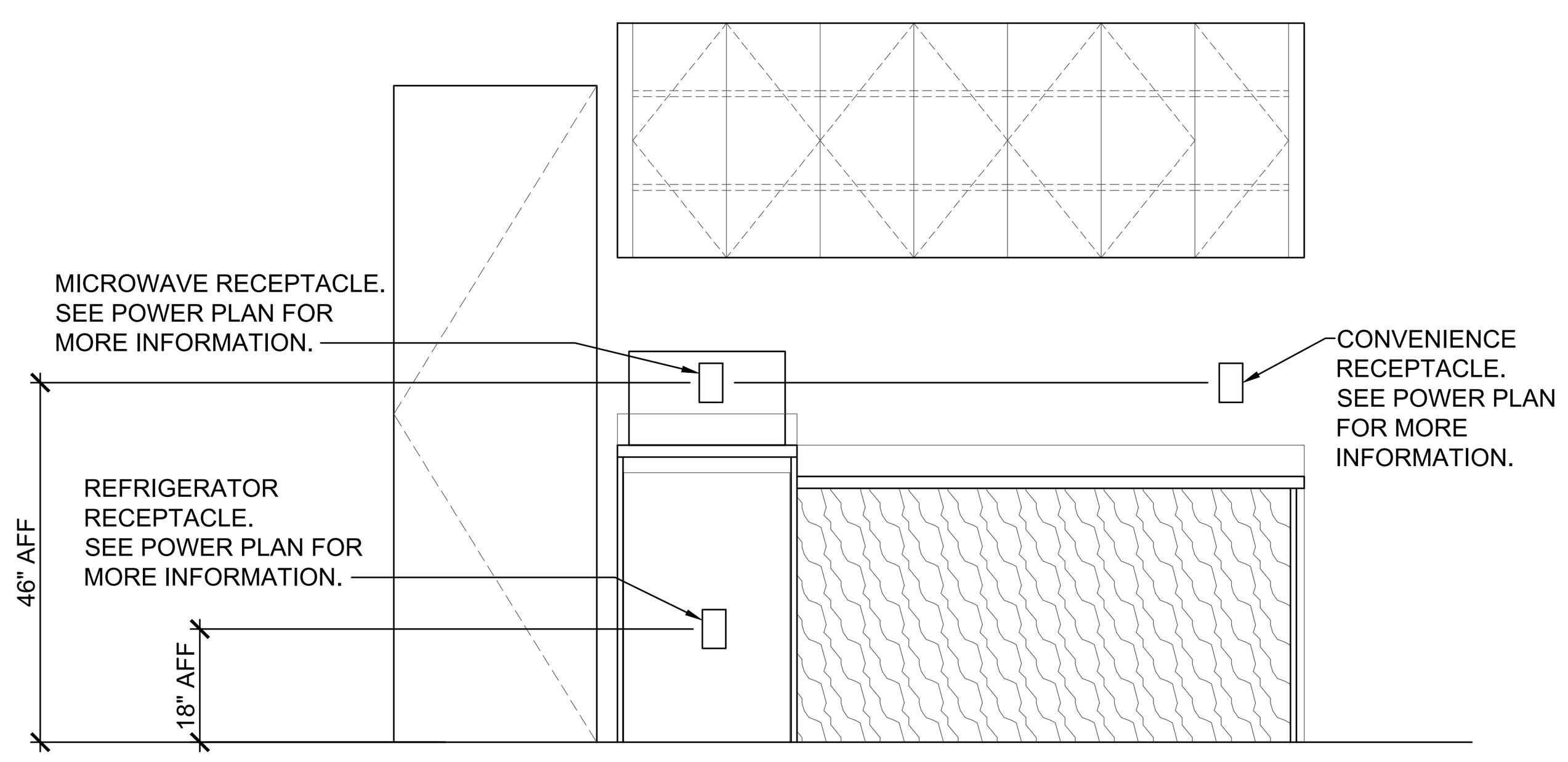
SHEET TITLE:
LIGHTING PLAN

SHEET NUMBER:
E2

ELECTRICAL SHOP EQUIPMENT SCHEDULE

ITEM #	QUANTITY	DESCRIPTION	VOLTS	PHASE	POLE	AMPS	NOTES
9	1	AIR DRYER CHAMPION #CRH35	120	1	1	20	SEE DETAIL ON SHEET E4 FOR ADDITIONAL INFORMATION
10	1	BRAKE SHOP #BL505-AB (INSTALLED BY HUNTER)	120	1	1	20	PROVIDE RECEPTACLE ON UNISTRUT LADDER. RUN CONDUIT DOWN LADDER FROM CEILING.
13A	1	ELECTRONIC WHEEL BALANCER #RFE13 (INSTALLED BY HUNTER)	208	1	2	20	PROVIDE NEMA L6-20R AT 48" AFF. RECEPTACLE SHOULD BE PLACED BEHIND CENTER CONSOLE IN ORDER TO NOT INTERFERE WITH OPENING EQUIPMENT SHROUD.
13B	1	ELECTRONIC WHEEL BALANCER #SWT33 (INSTALLED BY HUNTER)	208	1	2	20	PROVIDE NEMA L6-20R AT 48" AFF ON UNISTRUT LADDER. RUN CONDUIT DOWN LADDER FROM CEILING. RECEPTACLE SHOULD BE PLACED BEHIND CENTER CONSOLE IN ORDER TO NOT INTERFERE WITH OPENING EQUIPMENT SHROUD.
17	2	CORD REEL POWER DROP	120	1	1	20	MOUNT TO ROOF STRUCTURE AT LOCATION SHOWN. CIRCUIT WILL HAVE GFCI PROTECTION AT BREAKER. INSTALL TO AVOID CONFLICT WITH OTHER EQUIPMENT. SEE DETAIL ON SHEET E4 FOR ADDITIONAL INFORMATION.
18B	1	TIRE CHANGER #TCR1S (INSTALLED BY HUNTER)	208	1	2	30	PROVIDE NEMA L6-30R ON UNISTRUT LADDER. RUN CONDUIT DOWN LADDER FROM CEILING.
28	2	5 HP AIR COMPRESSOR CHAMPION #VR5-8	208	3	3	30	SEE ONE-LINE DIAGRAM ON SHEET E5 AND DETAIL ON SHEET E4 FOR ADDITIONAL INFORMATION. PROVIDE 30A, 3-POLE, LOCKABLE DISCONNECT WITH LOCK. MAKE ALL FINAL POWER TERMINATIONS ADJACENT TO AIR PIPE MANIFOLD ON COMPRESSOR.

NOTES:
VERIFY ALL ELECTRICAL REQUIREMENTS AND NEMA CONFIGURATIONS TO ACTUAL EQUIPMENT SUPPLIED PRIOR TO ROUGH-IN.



2 / E3 BREAK COUNTER DETAIL
SCALE: NONE

POWER PLAN GENERAL NOTES

A. ALL SWITCHES AND OTHER LIKE DEVICES TO BE 48" AFF TO TOP OF BOX, UNLESS NOTED OTHERWISE.

B. ALL DEVICES LOCATED IN SERVICE AREA SHALL BE MOUNTED AT 48" AFF TO TOP OF BOX, UNLESS NOTED OTHERWISE.

C. ALL DEVICES LOCATED IN THE FOLLOWING ROOMS: CUSTOMER SHOW ROOM, OFFICE, BREAK AREA, EMPLOYEE TOILET, AND UNISEX TOILET, SHALL BE MOUNTED AT 24" AFF TO CENTER, UNLESS NOTED OTHERWISE.

D. ALL WIRING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE NEC AND LOCAL CODE AUTHORITIES HAVING JURISDICTION.FOR ROUTING OF ALL CONDUITS, SEE "GENERAL ELECTRICAL NOTES" ON SHEET E1.

E. WIRE ALL HVAC CONTROL DEVICES, AND COORDINATE WITH OTHERS, SEE "GENERAL ELECTRICAL NOTES" ON SHEET E1 FOR ADDITIONAL INFORMATION.

DATA REQUIREMENTS

THERE ARE A TOTAL OF EIGHT (8) LINES THAT SERVICE EACH STORE FOR PHONE AND DATA. INTERNET SERVICE VIA LOCAL CABLE SERVICE WILL BE INSTALLED POST OPENING. ALL LINES TERMINATE AT "D-MARC" BOARD IN UTILITY AREA.

PROVIDE ALL POWER AND LOW VOLTAGE CONDUITS, PER CODE, AND THIS INCLUDES OPTIONAL STATE INSPECTIONS EQUIPMENT.

CLEAR ACCESS WILL BE MAINTAINED IN ORDER FOR BSRO "IT" DEPARTMENT TO INSTALL ALL NECESSARY WIRING. BSRO "IT" DEPARTMENT WILL INSTALL ALL WIRING AND EQUIPMENT UNLESS OTHERWISE NOTED.

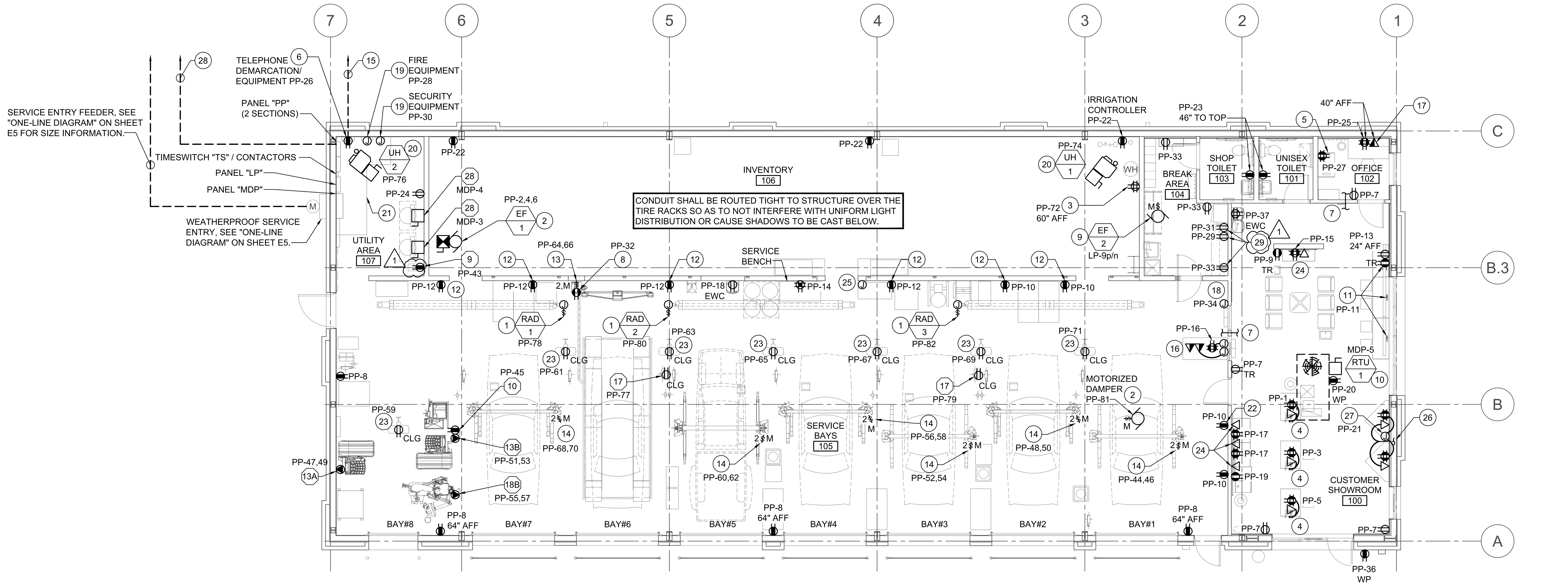
"MVS" STATION REQUIREMENTS IN SERVICE AREA:
INSTALL ONE (1) QUAD RECEPTACLE IN THE MIDDLE OF THE CABINET. THE POWER SHOULD TERMINATE IN A JUNCTION BOX MOUNTED ON THE WALL ADJACENT TO THE STATION. ASSOCIATED DATA BOXES SHOULD TERMINATE IN A JUNCTION BOX ADJACENT TO STATION. CONDUIT ASSOCIATED WITH DATA BOX SHALL BE EXTENDED TO SERVER CABINET. PROVIDE PULL STRINGS IN CONDUIT. COORDINATE WITH OTHER SERVER CONDUITS.

"POD" REQUIREMENTS IN CUSTOMER SHOWROOM:
PROVIDE ONE (1) QUAD RECEPTACLE WHICH SHOULD TERMINATE IN A JUNCTION BOX MOUNTED ON THE BACK SIDE OF THE PANEL, BELOW THE LOWEST FIXED SHELF.

SERVER CABINET POWER REQUIREMENTS:
PROVIDE ONE (1) QUAD RECEPTACLE MOUNTED AT 11'-0" AFF AND CIRCUIT AS SHOWN. REFER TO SHEET A7 FOR ADDITIONAL INFORMATION.

SERVER CABINET LEFT SIDE CONDUIT:
PROVIDE ONE (1) 2" CONDUIT FROM 13'-0" AFF ABOVE THE LEFT SIDE OF SERVER CABINET TO INVENTORY 10'-0" AFF ABOVE TELEPHONE EQUIPMENT RECEPTACLE.

UTILITY ROOM AND EXTERIOR SITE CONDUIT:
PROVIDE SUFFICIENT LENGTH OF 2" CONDUIT AND EXTEND THE ONE (1) 2" CONDUIT FROM THE EXTERIOR TO THE "D-MARC" LOCATION ON THE UTILITY ROOM BOARD. SEE NOTE 15.



1 / E3 POWER PLAN
SCALE: 1/8" = 1'-0"

POWER PLAN KEYNOTES

1. JUNCTION BOX WITH TOGGLE SWITCH DISCONNECT MOUNTED AT CEILING FOR GAS FIRED RADIANT HEAT CONTROLS. PROVIDE ALL REQUIRED DEVICES AND EQUIPMENT TO MAKE A COMPLETE WORKING SYSTEM. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.

2. INTERLOCK MOTORIZED DAMPER ON "RH-1" AND "EF-1" SUCH THAT WHEN "EF-1" IS IN RUN MODE, DAMPER IS OPEN. DAMPER AND "EF-1" TO BE CONTROLLED BY TOXALERT SYSTEM.

3. PROVIDE DOUBLE DUPLEX RECEPTACLE FOR "RP-1" AND "WH-1". COORDINATE LOCATION OF "WH-1" AND "RP-1" WITH PLUMBING CONTRACTOR.

4. TELE-POWER POLE. EXTEND POLE FROM SALES POD AND OR DESKS AS SHOWN UP TO STRUCTURE. SEE DETAIL ON SHEET E4 FOR ADDITIONAL INFORMATION. FLEX FROM POLE AND MOUNT AND WIRE DEVICES IN DESKS AS SHOWN. VERIFY REQUIREMENTS WITH MILLWORK VENDOR. COORDINATE EXACT POWER POLE DROP LOCATION PRIOR TO ROUGH-IN.

5. REFER TO "DATA REQUIREMENTS" (THIS SHEET) FOR POWER AND CONDUIT INFORMATION IN SERVER CABINET.

6. PLYWOOD BACKBOARD. SEE "TELEPHONE GROUNDING DETAIL" ON SHEET E1.

7. PROVIDE 8" LONG, 2" DIAMETER PVC CONDUIT THRU WALL AS SHOWN. MOUNT CONDUIT AT SAME HEIGHT AS BOTTOM OF STRUCTURE. RUN CONDUIT AS CLOSE AS POSSIBLE TO STRUCTURE. PROVIDE GROMMET ON BOTH ENDS OF PVC. REFER TO ARCHITECTURAL SHEETS FOR ADDITIONAL INFORMATION.

8. DEDICATED LINE ISOLATED GROUND RECEPTACLE MOUNTED AT 48" ON FULL-HEIGHT WALL FOR WHEEL ALIGNMENT COMPUTER. COORDINATE EXACT LOCATION AND CONNECTION REQUIRED WITH OWNER. REFER TO STRUCTURAL DRAWINGS FOR UNDER SLAB CONDUIT LOCATION FROM THE ALIGNMENT PIT TO THE ALIGNMENT CONTROLLER.

9. RESTROOM EXHAUST FAN. PROVIDE ALL ACCESSORIES AS REQUIRED TO CONTROL EXHAUST FAN FROM OCCUPANCY SENSORS IN RESTROOMS.

10. SEE "ONE-LINE DIAGRAM" ON SHEET E5 FOR ADDITIONAL INFORMATION. PROVIDE POWER CONNECTION TO FACTORY MOUNTED DISCONNECT AND WP/GFCI RECEPTACLE AS SHOWN ON PLAN.

11. ROUTE CORDS FOR POWER STRIPS TO RECEPTACLE SHOWN. CONCEAL ALL CORDS IN NEAT AND CLEAN MANNER.

12. MOUNT RECEPTACLE ON PLYWOOD AT 46" AFF FOR TEMPORARY POWER FOR SMALL HAND TOOL BATTERY RECHARGING.

13. PROVIDE 30 AMP, 2-POLE, NON-FUSED, LOCKABLE WITH LOCK PROVIDED, DISCONNECT SWITCH (SIEMENS MODEL #MMSKG1) FOR ALIGNMENT LIFT EQUIPMENT CONTROL UNIT AT 48" AFF, UNLESS NOT ALLOWED BY AHJ. INSTALL DISCONNECT ON WALL BESIDE ALIGNMENT EQUIPMENT CONSOLE CABINET. PROVIDE ALL POWER AND SIGNAL WIRING AND CIRCUITING. CIRCUIT AS SHOWN. VERIFY ALL REQUIREMENTS WITH VENDOR. ROUTE CONDUIT FROM STRUCTURE TO DISCONNECT DOWN THE SIDE OF THE CABINET. CABINET MUST BE IN PLACE PRIOR TO CONDUIT DROP TO ENSURE CONDUIT ROUTING DOES NOT INTERFERE WITH PROPER EQUIPMENT OPERATION.

14. PROVIDE 30 AMP, 2-POLE, NON-FUSED, LOCKABLE WITH LOCK PROVIDED, DISCONNECT SWITCH (SIEMENS MODEL #MMSKG1) FOR ROTARY LIFT EQUIPMENT CONTROL UNIT, UNLESS NOT ALLOWED BY AHJ. INSTALL DISCONNECT BELOW DECAL ON LIFT POST SO THAT CONDUIT AND DISCONNECT DO NOT OBSCURE ANY SAFETY DECALS. DO NOT USE "THROUGH BOLTS" AS THIS TYPE OF BOLT MAY INTERFERE WITH EQUIPMENT OPERATION. ANCHORS FOR DISCONNECT SHALL BE IN THE CENTER OF THE LIFT POST. PROVIDE ALL POWER, SIGNAL, AND LIFT SAFETY SWITCH WIRING AND CIRCUITING. CIRCUIT AS SHOWN. VERIFY ALL REQUIREMENTS WITH VENDOR. ROUTE CONDUIT FROM STRUCTURE TO DISCONNECT DOWN THE SIDE OF THE EQUIPMENT POST. LIFT EQUIPMENT MUST BE IN PLACE PRIOR TO CONDUIT DROP TO ENSURE CONDUIT ROUTING DOES NOT INTERFERE WITH PROPER EQUIPMENT OPERATION.

15. PROVIDE CONDUIT WITH PULL WIRE FOR TELEPHONE SERVICE. PROVIDE CONDUIT SEAL AT 18" AFF. COORDINATE ROUTING AND TERMINATION POINTS WITH SITE UTILITIES. VERIFY EXACT REQUIREMENTS WITH LOCAL PHONE COMPANY. REFER TO CIVIL PLANS FOR MORE INFORMATION.

16. REFER TO "DATA REQUIREMENTS" (THIS SHEET) FOR POWER AND CONDUIT INFORMATION IN "MVS" STATION.

17. CONDUIT ASSOCIATED WITH DATA BOX SHALL BE EXTENDED TO SERVER CABINET. PROVIDE PULL STRINGS IN CONDUIT.

18. PROVIDE 120V POWER CONNECTION FOR TOXALERT SYSTEM CONTROL PANEL.

19. PROVIDE JUNCTION BOX FOR FIRE ALARM EQUIPMENT AND OPTIONAL SECURITY CONTROL PANEL. VERIFY EXACT ELECTRICAL CONNECTION OF EQUIPMENT IN FIELD AND PROVIDE RECEPTACLE AS REQUIRED. COORDINATE EXACT REQUIREMENTS WITH OWNER.

20. PROVIDE POWER TO FACTORY MOUNTED DISCONNECT SWITCH. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.

21. MEET ALL ELECTRICAL EQUIPMENT CLEARANCES BOTH HORIZONTALLY AND VERTICALLY IN THIS SPACE.

22. PROVIDE RECEPTACLE FOR "NO LOSS DAYS" SIGN AT 11-0" AFF. VERIFY EXACT LOCATION WITH CONSTRUCTION MANAGER PRIOR TO ROUGH-IN.

23. PROVIDE WORKSTATION FAN (ULINE #H-4092). RECEPTACLE FOR WORKSTATION FAN IS SUSPENDED FROM STRUCTURE. CIRCUIT WILL HAVE GFCI PROTECTION AT BREAKER. SEE SHEET E2 FOR CONTROLS AND SHEET E4 FOR MOUNTING INFORMATION.

24. CONDUIT ASSOCIATED WITH DATA BOX SHALL BE EXTENDED TO SERVER CABINET. PROVIDE PULL STRINGS IN CONDUIT. REFER TO DETAIL ON SHEET E4 FOR INFORMATION ON MOUNTING LOCATION OF DATA BOX AND POWER BEHIND DEVICES IN THIS AREA.

25. PROVIDE JUNCTION BOX FOR TOXALERT INSTALL SENSOR AND PROVIDE WIRING BETWEEN TOXALERT PANEL AND SENSOR. COORDINATE LOCATIONS WITH MECHANICAL CONTRACTOR.

26. PROVIDE JUNCTION BOX FOR DATA CONNECTION AT MRT DISPLAY. MOUNT DATA BOX INSIDE MRT SECTION SO THAT IT IS ACCESSIBLE THROUGH THE MONITOR OPENINGS. EXTEND DATA CABLING FROM JUNCTION BOX IN WALL TO EACH DATA BOX MOUNTED INSIDE MRT CABINET. ROUTE DATA CONDUIT FROM MRT CABINET BACK TO SERVER CABINET LOCATED IN OFFICE.

27. PROVIDE JUNCTION BOX FOR POWER CONNECTION AT MRT DISPLAY. MOUNT RECEPTACLE INSIDE MRT SECTION SO THAT IT IS ACCESSIBLE THROUGH THE MONITOR OPENINGS. EXTEND MC CABLING FROM J-BOX IN WALL TO EACH RECEPTACLE MOUNTED INSIDE MRT CABINET. COORDINATE EXACT CONNECTION MILLWORK PRIOR TO ROUGH IN.

28. PROVIDE MINIMUM 1" CONDUIT WITH PULL WIRE BACK TO PANEL "PP" FOR CONNECTIONS TO EACH OF (2) EXTERIOR HOT BOXES. CONNECT TO SPARE IN PANELBOARD. VERIFY LOCATION WITH ARCHITECT.

29. REFER TO "BREAK COUNTER ELEVATION" (THIS SHEET) FOR MORE INFORMATION.

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Firestone COMPLETE AUTO CARE

NEW FCAC STORE
2020 ER
3561 SW MARKET ST
JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

STATE OF MISSOURI — RANDALL A. NELSON — NUMBER PE-2007003990 — PROFESSIONAL ENGINEER — 04/15/2020

ISSUE BLOCK

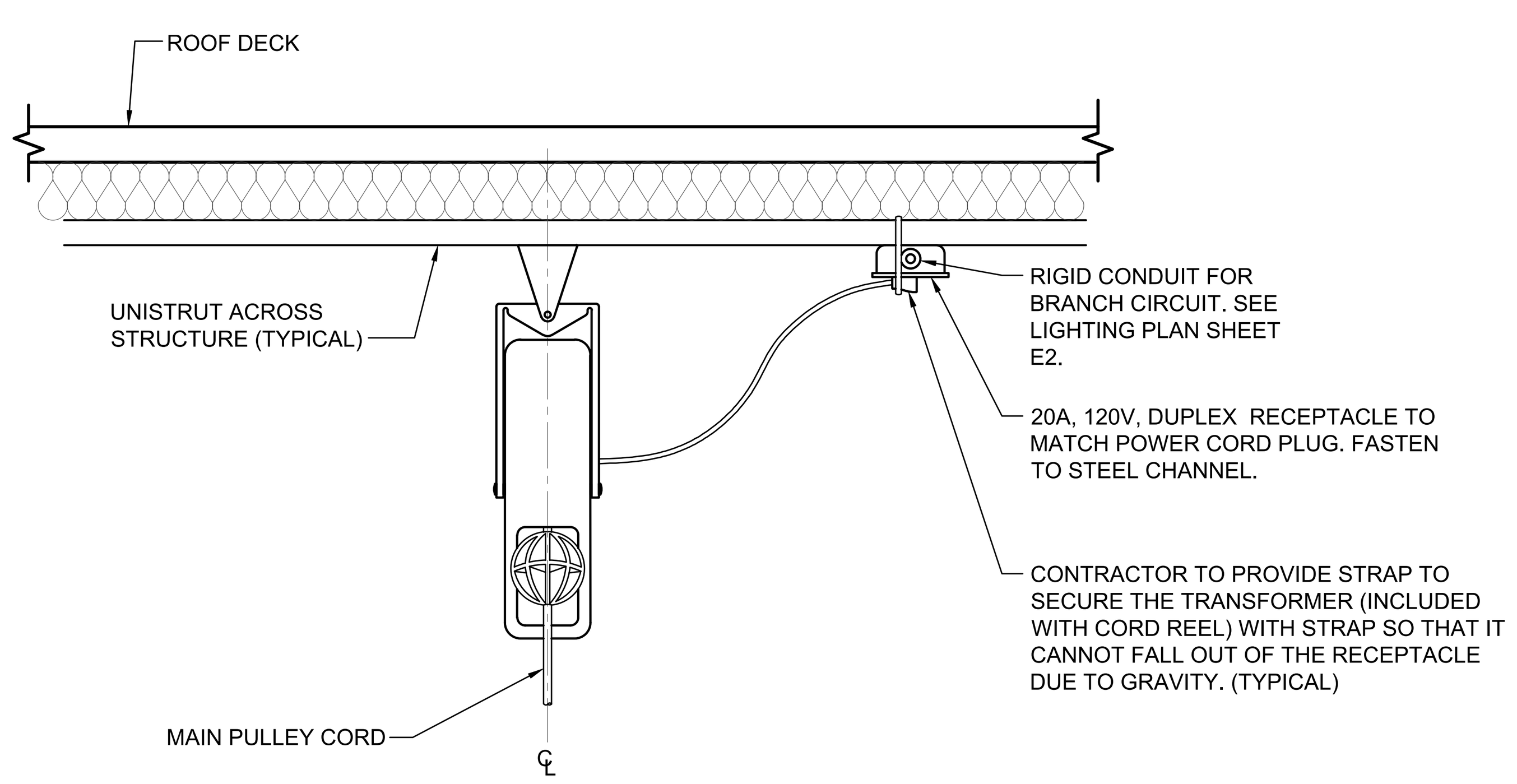
1	04/16/20	ADD #1

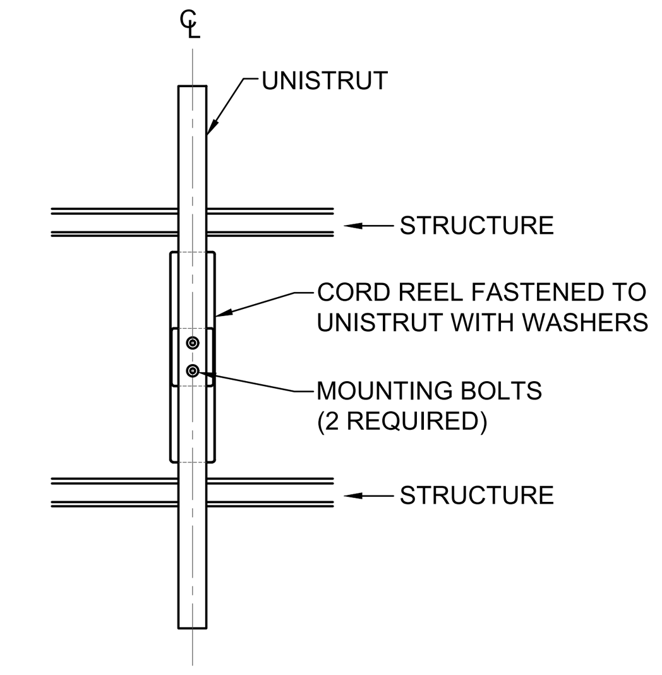
PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE: POWER PLAN

SHEET NUMBER: E3

Apr 15, 2020 - 12:17pm - USER IanCollins
G:\bridgestone-firestone (engineering)\2020075 bsro - lee's summit, mo\Sheets\E3 POWER PLAN.dwg



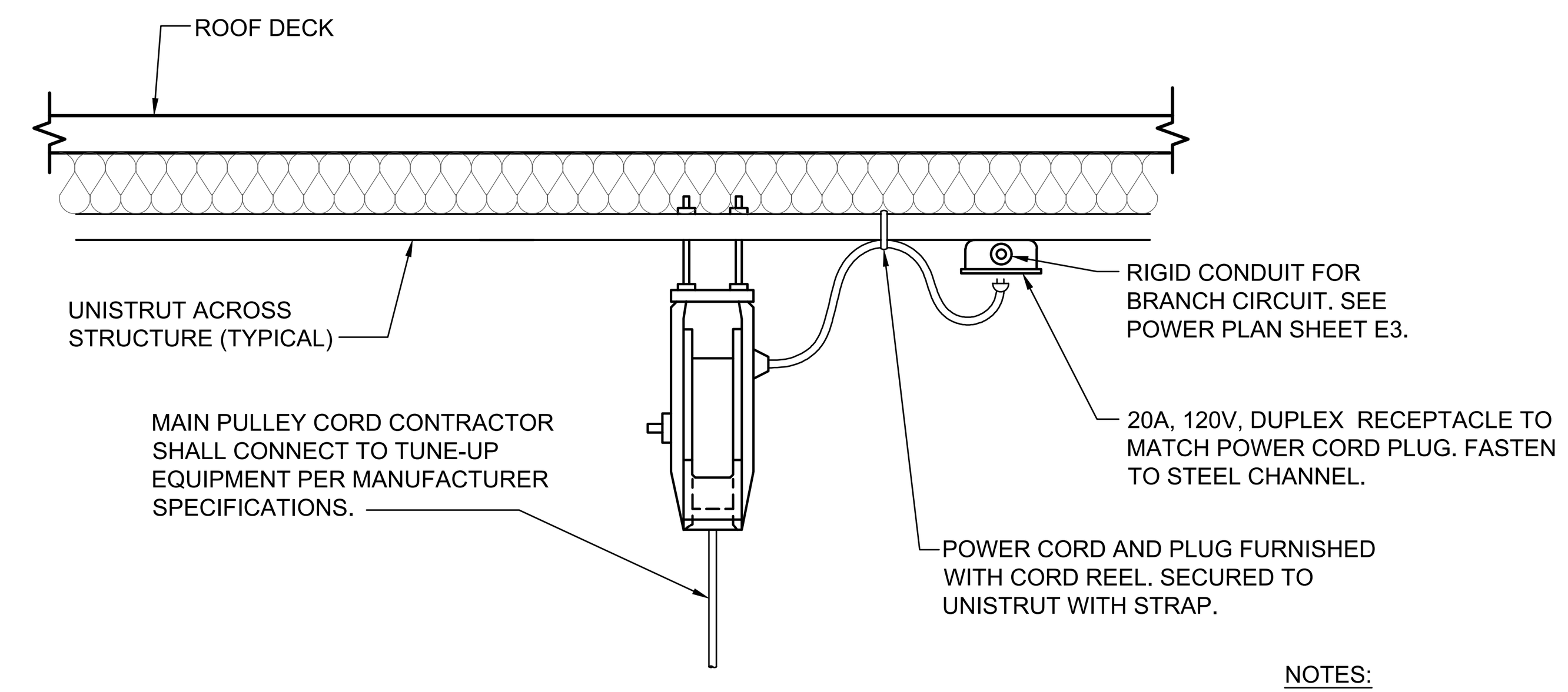


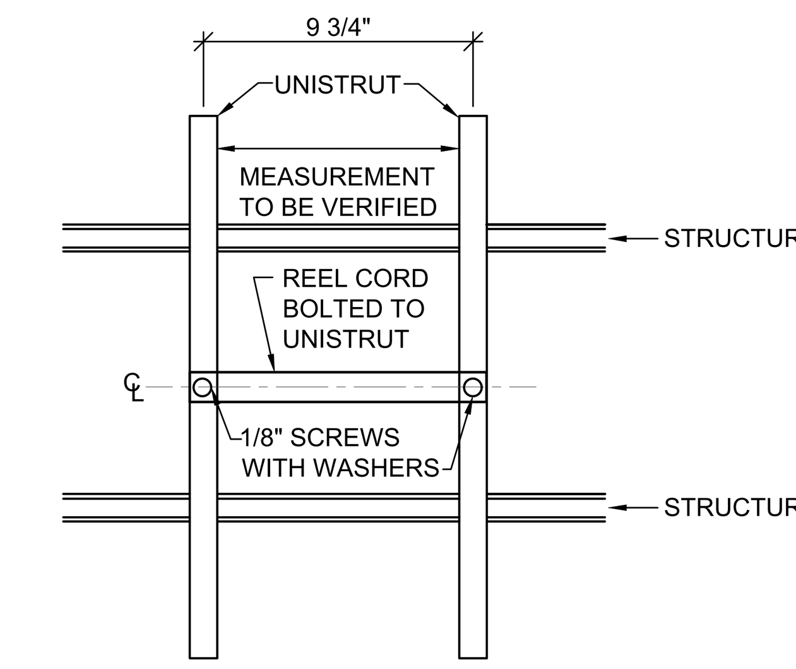
TOP VIEW

NOTES:

1. CORD REEL LIGHT TO BE FURNISHED BY BSRO AND INSTALLED BY CONTRACTOR.
2. WHEREVER OTHER CEILING CONDITIONS EXIST, CONTRACTOR SHALL ADAPT ANOTHER APPROVED METHOD OF SECURING CORD REEL LIGHT TO CEILING TRUSS.
3. LIGHT REEL SET PINS TO BE REPLACED WITH THREADED BOLTS AND HARDWARE.

1 E4 CORD REEL LIGHT DETAIL
SCALE: NONE



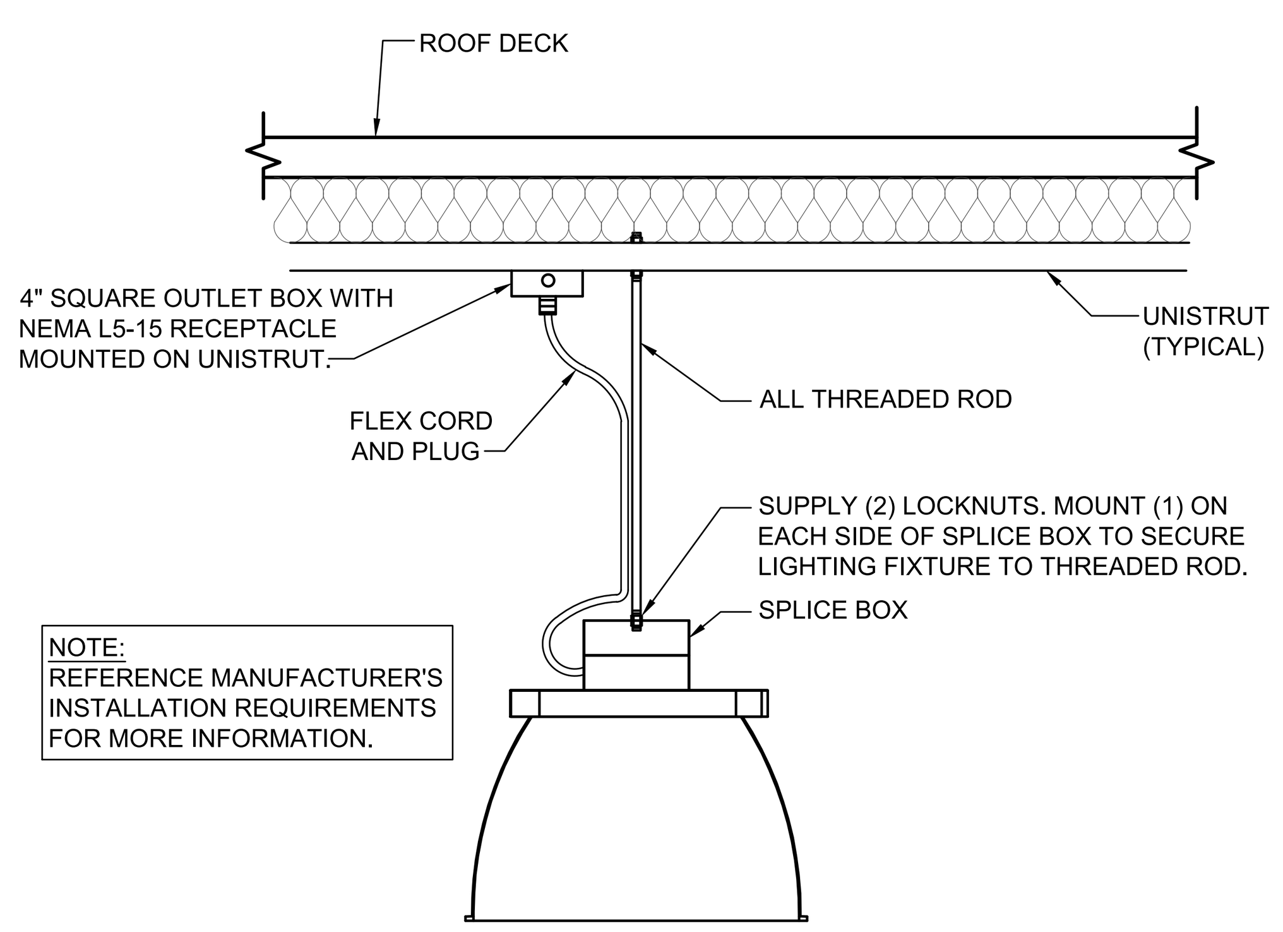


TOP VIEW

NOTES:

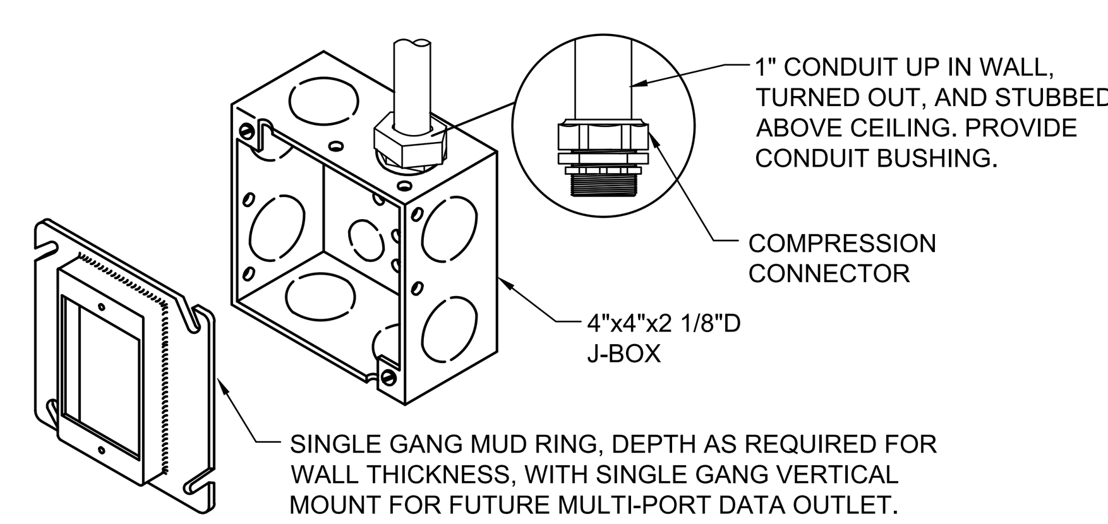
1. HEAVY DUTY CORD REEL TO BE FURNISHED BY BSRO AND INSTALLED BY CONTRACTOR.
2. ALL MATERIALS FOR THIS DETAIL SHALL BE FURNISHED & INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.

2 E4 POWER CORD REEL DETAIL
SCALE: NONE



NOTE:
REFERENCE MANUFACTURER'S INSTALLATION REQUIREMENTS FOR MORE INFORMATION.

3 E4 TYPICAL LIGHT TYPE "F" MOUNTING DETAIL
SCALE: NONE



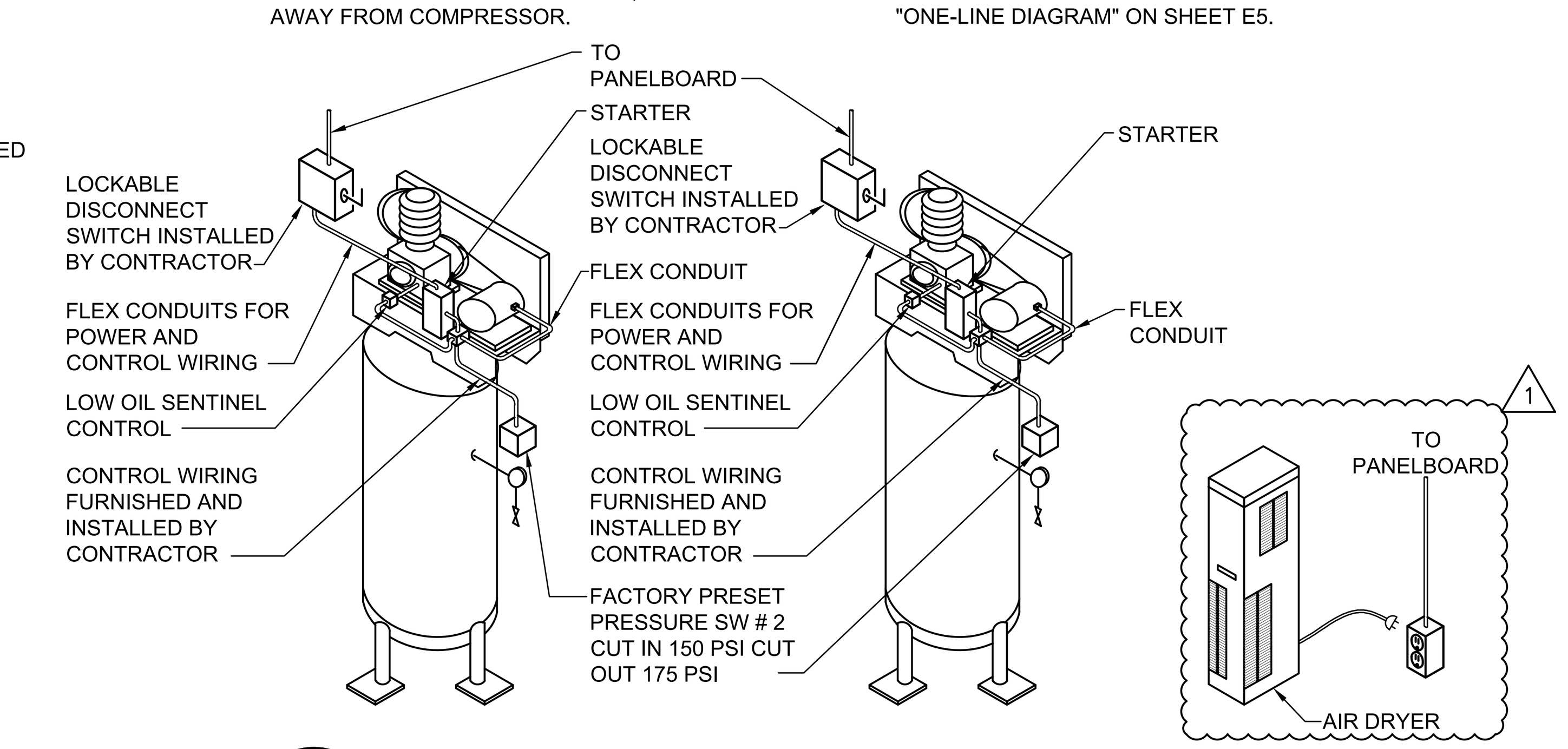
NOTE:

1. PROVIDE BLANK COVER AS REQUIRED.

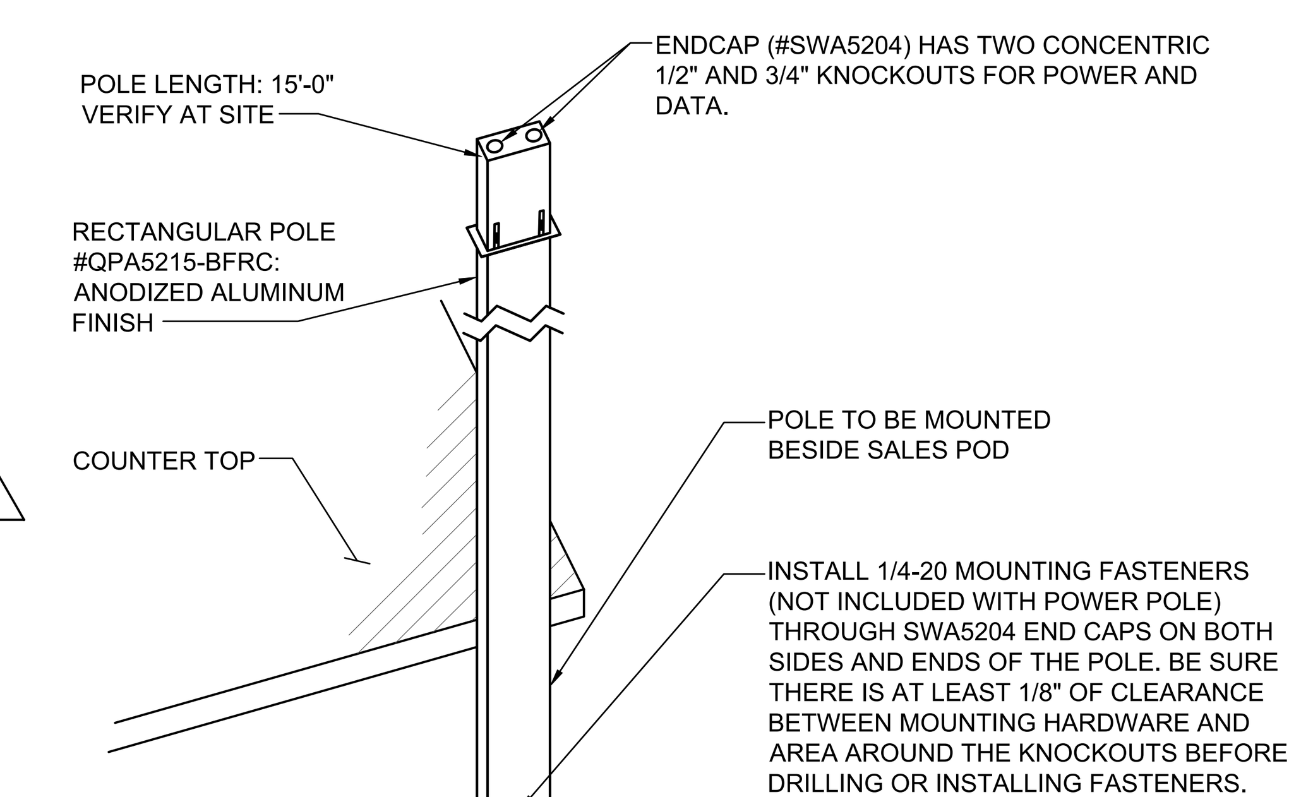
4 E4 TYPICAL MUD RING JUNCTION BOX DETAIL
SCALE: NONE

NOTES:

1. MAGNETIC STARTERS FURNISHED BY COMPRESSOR MANUFACTURER.
2. DISCONNECT SWITCHES, POWER AND CONTROL WIRING FURNISHED AND INSTALLED BY CONTRACTOR. REFER TO WIRING SCHEMATIC FURNISHED WITH COMPRESSORS, LOCATED 2'-0" AWAY FROM COMPRESSOR.
3. CONTRACTOR TO FIELD ADJUST AIR PRESSURE SWITCHES TO PRESSURES SHOWN.
4. CONNECTIONS AT COMPRESSORS MAY VARY ACCORDING TO MANUFACTURER.
5. FOR POWER WIRING REQUIREMENTS, DISCONNECT SWITCHES AND FUSE SIZES SEE "ONE-LINE DIAGRAM" ON SHEET E5.

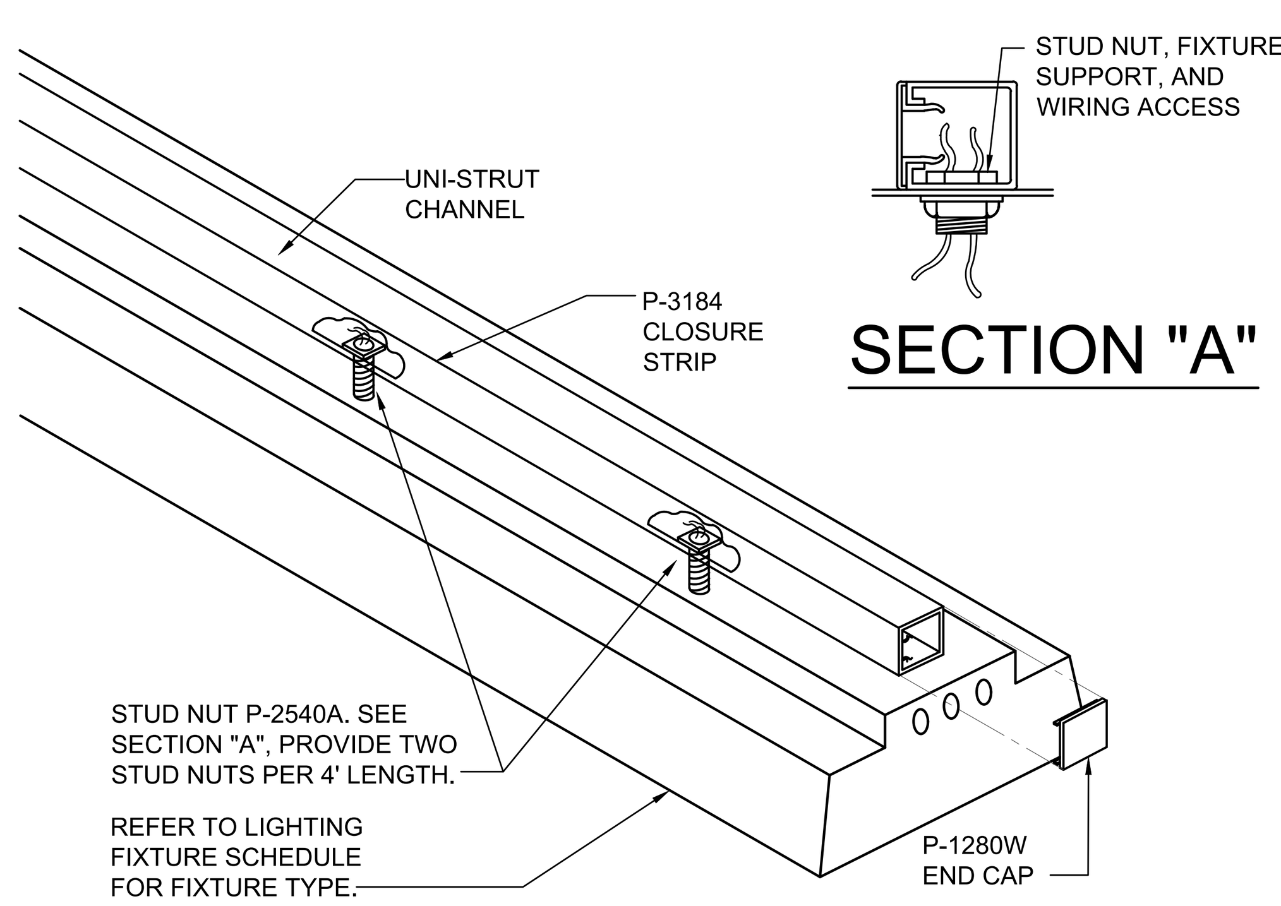


5 E4 VERTICAL AIR COMPRESSOR DETAIL
SCALE: NONE



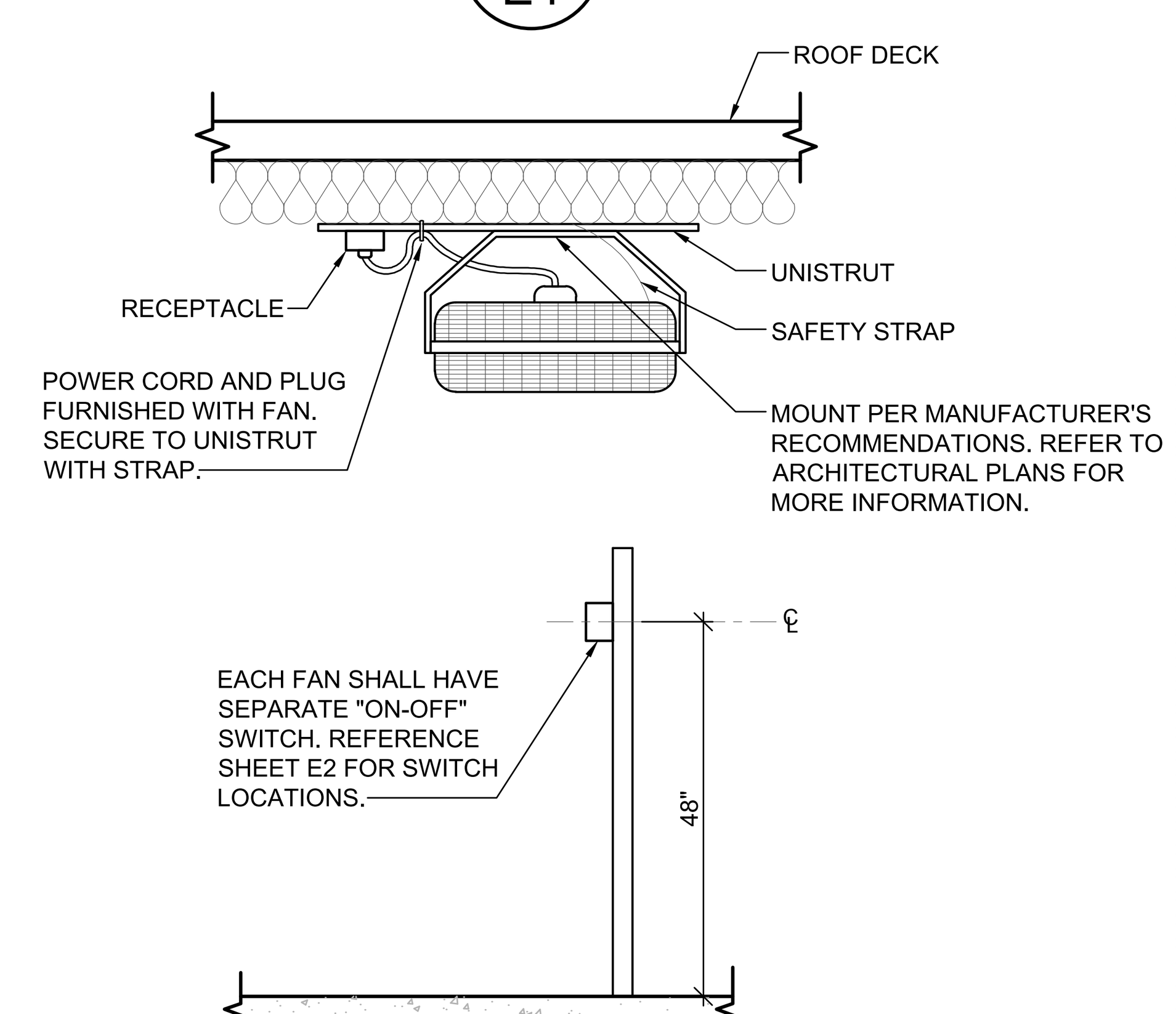
NOTE:
POWER POLE AND ACCESSORIES BY "MONO-SYSTEMS INC." FURNISHED BY OWNER PER SHEET F2, INSTALLED BY CONTRACTOR.

6 E4 DATA/POWER POLE DETAIL
SCALE: NONE

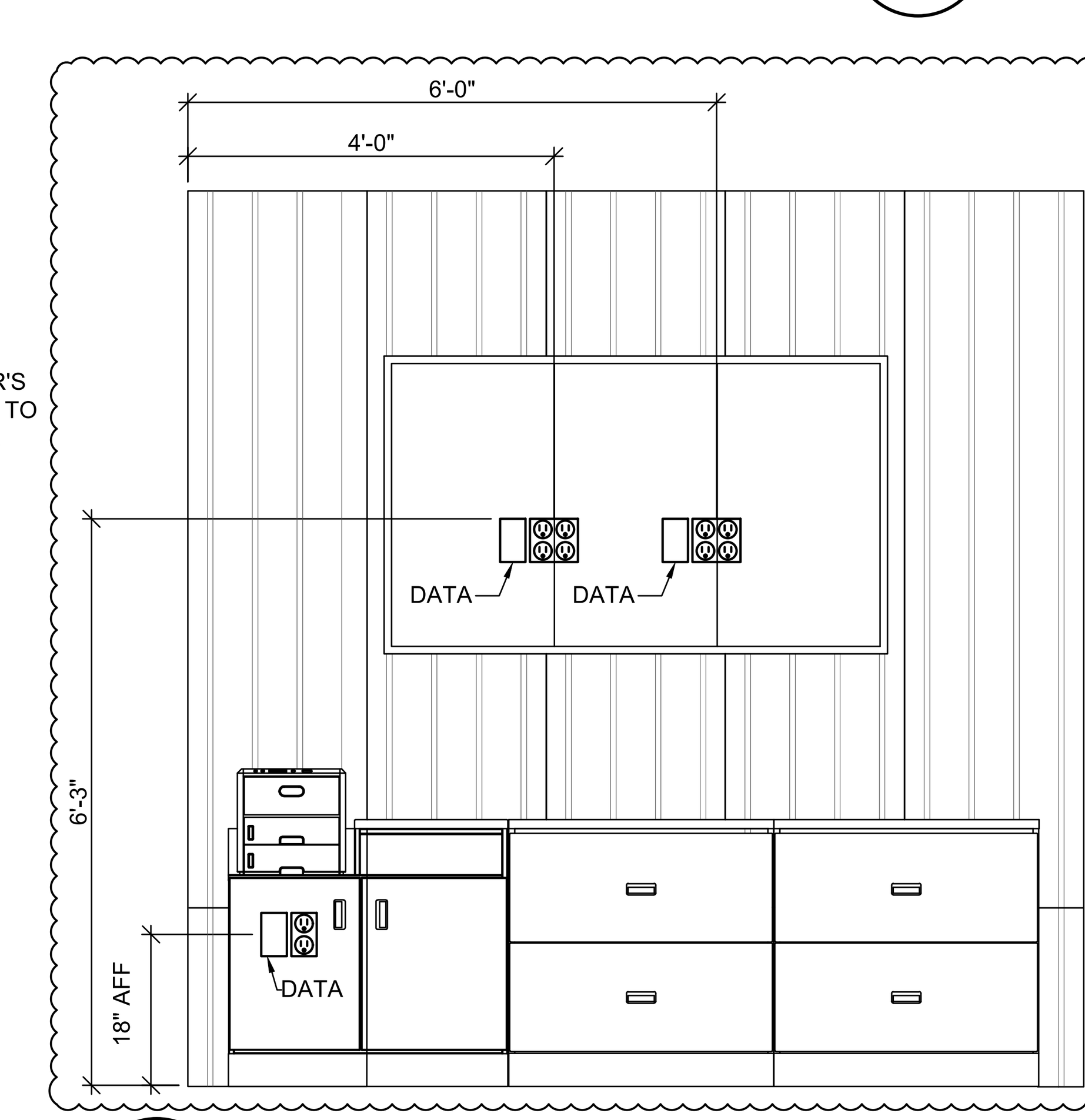


SECTION "A"

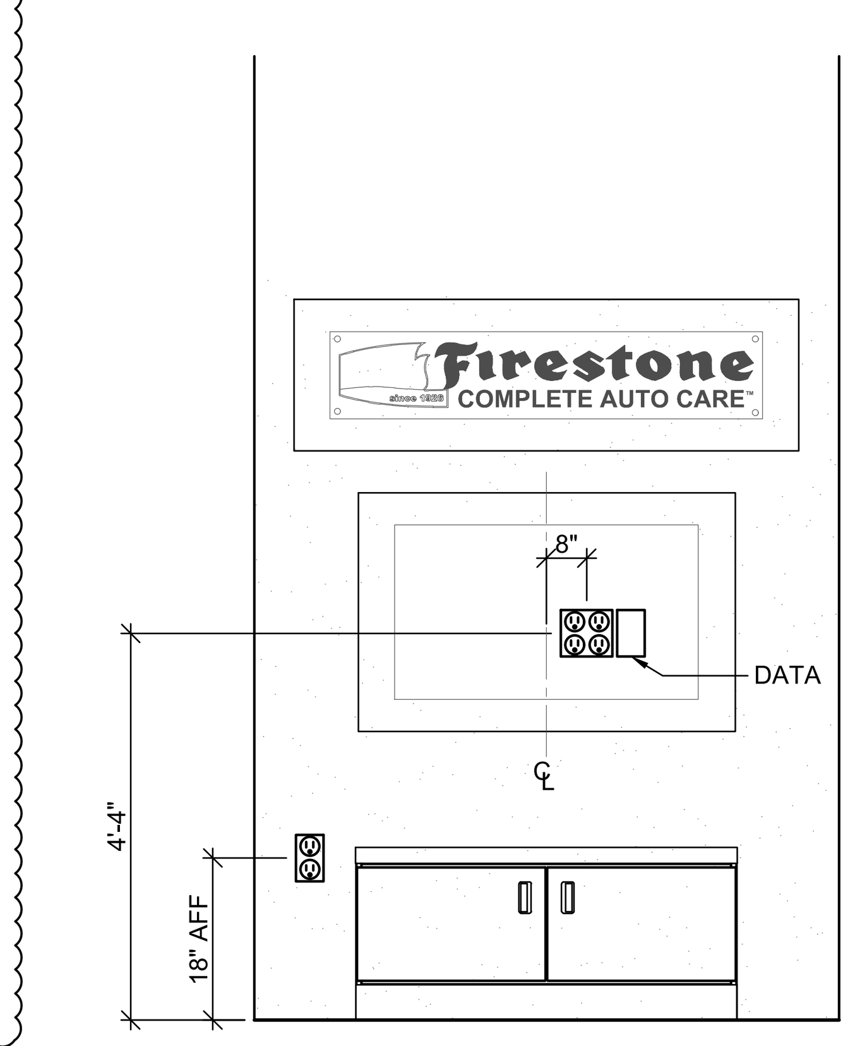
7 E4 TYPICAL LIGHT FIXTURE MOUNTING DETAIL
SCALE: NONE



8 E4 TYPICAL FAN MOUNTING DETAIL
SCALE: NONE



9 E4 DISPLAY SCREENS DETAIL
SCALE: NONE



10 E4 TV WALL DETAIL
SCALE: NONE

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STATE OF MISSOURI
RANDALL A. NELSON
NUMBER PE-2007003990
PROFESSIONAL ENGINEER
04/15/2020

ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
ELECTRICAL DETAILS

SHEET NUMBER:
E4

Apr 15, 2020 – 12:17pm – USER IanCollins
G:\bridgestone-firestone (engineering)\2020075 bsro – lee's summit, mo\Sheets\E4 ELECTRICAL DETAILS.dwg

COMMERCIAL LOAD SUMMARY

BUILDING AREA: 6,537 SQ. FT VOLTAGE: 208Y/120V, 3PH, 4W

LOAD DESCRIPTION	CONNECTED LOAD (VA)		DEMAND FACTOR		DEMAND LOAD (VA)
LIGHTING					
INTERIOR LIGHTING	4,775	x	125%	=	0
EXTERIOR LIGHTING	768	x	125%	=	960
SIGNAGE	6,000	x	125%	=	7,500
MINIMUM GENERAL LIGHTING PER NEC-220 x 125%					19,113
MINIMUM TRACK LIGHTING/SHOW WINDOW PER NEC-220 x 125%					7,500
POWER & HVAC					
EXISTING	0	x	100%	=	0
RECEPTACLES	13,260	x	100%,50%	=	11,630
MISCELLANEOUS EQUIPMENT	33,120	x	100%	=	33,120
REFRIGERATION EQUIPMENT	0	x	100%	=	0
KITCHEN	0	x	100%	=	0
HVAC - SUMMER	5,728	x	100%	=	5,728
HVAC - WINTER	0	x	100%	=	0
SUPP. ELECTRIC HEAT	400	x	100%	=	400
MOTORS	31,811	x	100%	=	31,811
LARGEST MOTOR	5,476	x	25%	=	1,369
SUB-TOTAL (VA)	101,339		SUB-TOTAL (VA)		119,132
SUB-TOTAL (AMPS)	281		SUB-TOTAL (AMPS)		331
			SERVICE SIZE (AMPS)		400
			SPARE CAPACITY (AMPS)		69

PANELBOARD MDP

BUS AMPS: 400A | LOCATION: UTILITY AREA | GROUND BUS: YES
MAIN SIZE / TYPE: MLO | NEMA RATING: NEMA 1 | ISOL. GROUND BUS: YES
VOLTS/PHASE: 208Y/120V, 3PH, 4W | AFC VALUE: 20,335A | FEED THRU LUGS: NO
MOUNTING: SURFACE | AIC RATING: 22,000 A FULLY RATED | SECTIONS: 1

CKT #	CIRCUIT DESCRIPTION	BREAKER AMPS	P	WIRE SIZE	LOAD (VA)	CONNECTED PER PHASE (VA) A	B	C	LOAD (VA)	WIRE SIZE	BREAKER P	BREAKER AMPS	CIRCUIT DESCRIPTION	CKT #
					23,087	28,139			5,052					
1	PANELBOARD "PP"	OL	3	OL	22,319		26,015		3,696	OL	3	OL	PANELBOARD "LP"	2
					20,989			25,280	4,291					
					1,825	3,651			1,825					
3	5HP AIR COMPRESSOR (HACR BREAKER)	OL	3	OL	1,825		3,651		1,825	OL	3	OL	5HP AIR COMPRESSOR (HACR BREAKER)	4
					1,825			3,651	1,825					
					2,462	2,462			0					
5	RTU-1 (HACR BREAKER)	OL	3	OL	2,462		2,462		0				SPACE ONLY	6
					2,462			2,462	0					
	PER PHASE SUB-TOTALS					34,251	32,127	31,392	LEGEND:					

TOTAL CONNECTED PANELBOARD (VA)	97,771
TOTAL CONNECTED PANELBOARD (AMPS)	271
TOTAL PANELBOARD DEMAND (VA)	106,526
TOTAL PANELBOARD DEMAND (AMPS)	296

TS - VIA TIME SWITCH | ST - SHUNT TRIP
GF - GROUND FAULT INTERRUPTER | LCK - LOCKING TAB
FA - FIRE ALARM / RED / LOCKING TAB | IG - ISOLATED GROUND
EM - EMERGENCY LTG. / LOCKING TAB | OL - REFER TO ONE-LINE DIAGRAM

PANELBOARD LP

BUS AMPS: 100A | LOCATION: UTILITY AREA | GROUND BUS: YES
MAIN SIZE / TYPE: MLO | NEMA RATING: NEMA 1 | ISOL. GROUND BUS: NO
VOLTS/PHASE: 208Y/120V, 3PH, 4W | AFC VALUE: 19,077A | FEED THRU LUGS: NO
MOUNTING: SURFACE | AIC RATING: 22,000 A FULLY RATED | SECTIONS: 1

	CKT #	CIRCUIT DESCRIPTION	BREAKER AMPS	P	WIRE SIZE	LOAD (VA)	CONNECTED PER PHASE (VA) A	B	C	LOAD (VA)	WIRE SIZE	BREAKER P	BREAKER AMPS	CIRCUIT DESCRIPTION	CKT #
EM	1	SERVICE AREA LTG / EM LTG	20	1	12	1,488	2,488			1,000	12	1	20	TIME SWITCH AND CONTACTORS	2
	3	SERVICE AREA LTG	20	1	12	1,562		1,562		0		1	20	SPARE	4
	5	SPARE	20	1		0			1,200	1,200	12	1	20	BUILDING SIGN	6
EM	7	INVENTORY LTG / UTILITY RM LTG/ EM LTG	20	1	12	748	1,948			1,200	12	1	20	BUILDING SIGN	8
EM	9	OFFICE / TOILET / BREAK / EM LTG & EF-2	20	1	12	934		2,134		1,200	12	1	20	BUILDING SIGN	10
EM,TS	11	SHOWROOM / EM LTG	20	1	12	539			1,739	1,200	12	1	20	BUILDING SIGN	12
TS	13	SITE LIGHTING	20	1	SL	430	430			0		1	20	SPARE	14
	15	SPARE	20	1		0		0		0		1	20	SPARE	16
TS	17	EXTERIOR LIGHTING	20	1	12	152			1,352	1,200	SL	1	20	MONUMENT SIGN	18
TS	19	EXTERIOR LIGHTING	20	1	12	186	186			0		1	20	SPARE	20
	21	SPARE	20	1		0		0		0		1	20	SPARE	22
	23	SPARE	20	1		0			0	0		1	20	SPARE	24
	25	SPARE	20	1		0	0			0		1	20	SPARE	26
	27	SPARE	20	1		0		0		0		1	20	SPARE	28
	29	SPARE	20	1		0			0	0		1	20	SPARE	30
		PER PHASE SUB-TOTALS					5,052	3,696	4,291	LEGEND:					

TOTAL CONNECTED PANELBOARD (VA)	13,039
TOTAL CONNECTED PANELBOARD (AMPS)	36
TOTAL PANELBOARD DEMAND (VA)	15,875
TOTAL PANELBOARD DEMAND (AMPS)	44

TS - VIA TIME SWITCH | ST - SHUNT TRIP
GF - GROUND FAULT INTERRUPTER | LCK - LOCKING TAB
FA - FIRE ALARM / RED / LOCKING TAB | IG - ISOLATED GROUND
EM - EMERGENCY LTG. / LOCKING TAB | OL - REFER TO ONE-LINE DIAGRAM
SL - REFER TO SITE LIGHTING PLAN ESL1

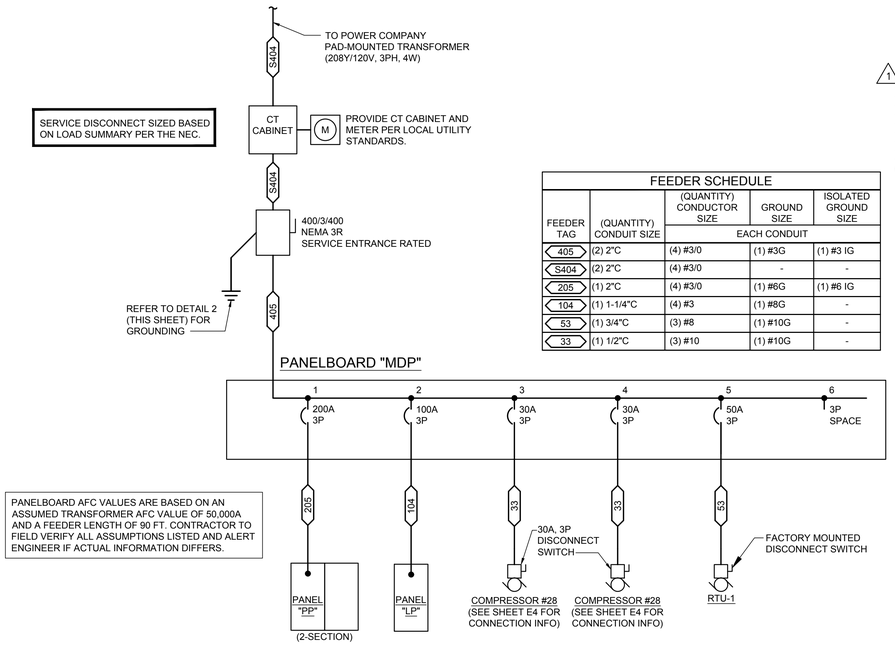
PANELBOARD PP

BUS AMPS: 200A | LOCATION: UTILITY AREA | GROUND BUS: YES
MAIN SIZE / TYPE: MLO | NEMA RATING: NEMA 1 | ISOL. GROUND BUS: YES
VOLTS/PHASE: 208Y/120V, 3PH, 4W | AFC VALUE: 17,264A | FEED THRU LUGS: YES
MOUNTING: SURFACE | AIC RATING: 22,000 A FULLY RATED | SECTIONS: 2

	CKT #	CIRCUIT DESCRIPTION	BREAKER AMPS	P	WIRE SIZE	LOAD (VA)	CONNECTED PER PHASE (VA) A	B	C	LOAD (VA)	WIRE SIZE	BREAKER P	BREAKER AMPS	CIRCUIT DESCRIPTION	CKT #
IG	1	SALES POD	20	1	12	360	1,297			937					2
IG	3	SALES POD	20	1	12	360		1,297		937	12	3	20	EF-1	4
IG	5	SALES POD	20	1	12	360			1,297	937					6
	7	CUSTOMER SHOWROOM / OFFICE RCPTS	20	1	12	720	1,440			720	12	1	20	SERVICE AREA RCPTS	8
IG	9	CUSTOMER SHOWROOM IG RCPT	20	1	12	180		900		720	12	1	20	SERVICE AREA RCPTS	10
IG	11	CHARGING STATION	20	1	12	720			1,440	720	12	1	20	SERVICE AREA RCPTS	12
	13	COFFEE BAR	20	1	12	180	540			360	12	1	20	SERVICE AREA WORK BENCH	14
IG	15	BOSS TV	20	1	12	500		860		360	12	1	20	MVS DESK IG	16
IG	17	MENU BOARDS	20	1	12	1,500			2,300	800	12	1	20	SERVICE AREA EWC	18
IG	19	SHOWROOM PRINTER	20	1	12	500	680			180	12	1	20	ROOF CONVENIENCE RCPT	20
IG	21	MRT DISPLAY	20	1	12	500		1,040		540	12	1	20	INVENTORY RCPT	22
	23	TOILET RCPTS	20	1	12	360			540	180	12	1	20	UTILTY AREA RCPT	24
IG	25	OFFICE IG RCPTS	20	1	12	360	720			360	12	1	20	TELEPHONE SERVICE	26
IG	27	SERVER CABINET IG RCPT	20	1	12	360		720		360	12	1	20	FIRE SERVICE PANEL	28
	29	MICROWAVE	20	1	12	1,200			1,560	360	12	1	20	OPTIONAL SECURITY SYSTEM	30
	31	REFRIGERATOR	20	1	12	1,000	2,200			1,200	12	1	20	ALIGNMENT COMPUTER	32
	33	BREAK RCPTS	20	1	12	540		740		200	12	1	20	TOXALERT SYSTEM	34
GF	35	SIGNAGE CONVENIENCE RCPT	20	1	SL	180			360	180	12	1	20	EXTERIOR FRONT RCPT	36
GF	37	SHOWROOM EWC	20	1	12	500	500			0		1	20	SPARE	38
GF	39	HOT BOX ON SITE	20	1	SL	200		200		0		1	20	SPARE	40
	41	SPARE	20	1		0			0	0		1	20	SPARE	42
	SECTION: 2														
	43	AIR DRYER #9	20	1	12	948	2,548			1,600	10	2	20	SMART LIFT (BAY #1)	44
	45	BRAKE SHOP #10	20	1	12	1,800		3,400		1,600					46
GF	47	ELECTRONIC WHEEL BALANCER	20	2	10	1,200			2,800	1,600	10	2	20	SMART LIFT (BAY #2)	48
	49	#13A				1,200	2,800			1,600					50
GF	51	BALANCER NON-ROAD FORCE	20	2	10	1,200		2,800		1,600	10	2	20	SMART LIFT (BAY #3)	52
	53	#13B				1,200			2,800	1,600					54
GF	55	RIM CLAMP TIRE CHANGER	30	2	8	2,760	4,360			1,600	10	2	20	SMART LIFT (BAY #4)	56
	57	#18B				2,760		4,360		1,600					58
GF	59	SHOP FAN #42	20	1	12	264			1,864	1,600	10	2	20	SMART LIFT (BAY #5)	60
GF	61	SHOP FAN #42	20	1	12	264	1,864			1,600					62
GF	63	SHOP FAN #42	20	1	12	264		2,964		2,700	8	2	30	ALIGNMENT LIFT (BAY #6)	64
GF	65	SHOP FAN #42	20	1	12	264			2,964	2,700					66
GF	67	SHOP FAN #42	20	1	12	264	1,864			1,600	10	2	20	SMART LIFT (BAY #7)	68
GF	69	SHOP FAN #42	20	1	12	264		1,864		1,600					70
GF	71	SHOP FAN #42	20	1	12	264			664	400	12	1	20	WATER HEATER / RECIRC. PUMP	72
	73	SPARE	20	1		0	414			414	12	1	15	UNIT HEATER UH-1	74
GF	75	OVERHEAD DROP LIGHTS #2	20	1	12	200		614		414	12	1	15	UNIT HEATER UH-2	76
GF	77	POWER CORD REEL #17	20	1	10	1,500			1,860	360	12	1	20	RADIANT HEATER RAD-1	78
GF	79	POWER CORD REEL #17	20	1	10	1,500	1,860			360	12	1	20	RADIANT HEATER RAD-2	80
	81	MOTORIZED DAMPER	20	1	12	200		560		360	12	1	20	RADIANT HEATER RAD-3	82
	83	SHOW WINDOW RCPTS	20	1	12	540			540	0		1	20	SPARE	84
		PER PHASE SUB-TOTALS					23,087	22,319	20,989	LEGEND:					

TOTAL CONNECTED PANELBOARD (VA)	66,394
TOTAL CONNECTED PANELBOARD (AMPS)	184
TOTAL PANELBOARD DEMAND (VA)	64,814
TOTAL PANELBOARD DEMAND (AMPS)	180

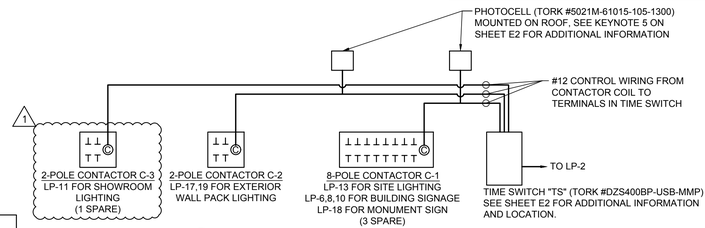
TS - VIA TIME SWITCH | ST - SHUNT TRIP
GF - GROUND FAULT INTERRUPTER | LCK - LOCKING TAB
FA - FIRE ALARM / RED / LOCKING TAB | IG - ISOLATED GROUND
EM - EMERGENCY LTG. / LOCKING TAB | OL - REFER TO ONE-LINE DIAGRAM
SL - REFER TO SITE LIGHTING PLAN ESL1



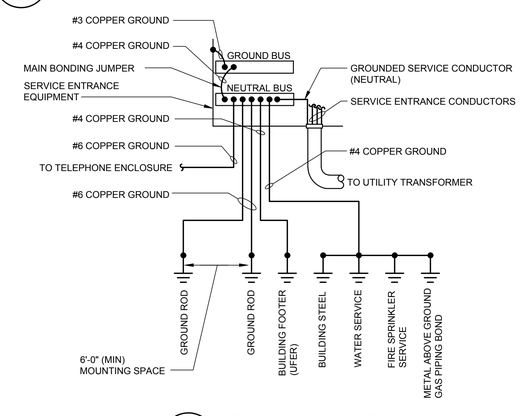
FEEDER SCHEDULE

FEEDER TAG	(QUANTITY) CONDUIT SIZE	(QUANTITY) CONDUCTOR SIZE	GROUND SIZE	ISOLATED GROUND SIZE
		EACH CONDUIT		
405	(2) 2"C	(4) #3/0	(1) #3G	(1) #3 IG
S404	(2) 2"C	(4) #3/0	-	-
205	(1) 2"C	(4) #3/0	(1) #6G	(1) #6 IG
104	(1) 1-1/4"C	(4) #3	(1) #8G	-
53	(1) 3/4"C	(3) #8	(1) #10G	-
33	(1) 1/2"C	(3) #10	(1) #10G	-

1 E5 ONE-LINE DIAGRAM
SCALE: NONE



3 E5 CONTACTOR DIAGRAMS
SCALE: NONE



2 E5 GROUNDING DETAIL
SCALE: NONE

CONTACTOR NOTES

1. ALL CONTACTORS TO BE ELECTRICALLY HELD TYPICAL.
2. ALL CONTACTORS AND TIME SWITCH SHALL BE INSTALLED IN ONE (1) GENERAL PURPOSE CABINET WITH HINGED DOOR, VERIFY CABINET SIZE IN FIELD.
3. PROVIDE AND WALL MOUNT TIME SWITCH "TS", CONTACTORS, AND PHOTOCELLS, TO CONTROL ALL EXTERIOR LIGHTING AND SIGNAGE AS SHOWN IN "CONTACTOR DIAGRAM" THIS SHEET. COORDINATE WITH STORE MANAGER THE HOURS OF OPERATION AND DEMONSTRATE ALL "TIME SWITCH" FUNCTIONS. PROVIDE STORE MANAGER AND FIRESTONE CONSTRUCTION DEPARTMENT WITH COPIES OF ALL OPERATION AND INSTALLATION MANUALS.
4. PROVIDE PHOTOCELL DOWNSTREAM OF TIMESWITCH TO ALLOW FOR PHOTOCELL OVERRIDE OF TIMESWITCH CONTROLS. CONTROL INTENT IS FOR PARKING LOT LIGHTING, SIGNAGE AND BUILDING SIGN LIGHTING TO BE 'OFF' BETWEEN 2AM AND STORE OPENING TIME. AT STORE OPENING TIME, THE FIXTURES SHOULD BE ON PHOTOCELL CONTROL ONLY TO ALLOW THESE FIXTURES TO ENERGIZE 'ON' DURING DARKER PERIODS THROUGHOUT THE DAY. WALL PACKS SHALL BE ON PHOTOCELL CONTROL ONLY 24 HOURS/DAY.
5. THE CONDUIT WHICH PROVIDES POWER TO THE EXTERIOR SIGN LIGHTING, EXTERIOR LIGHTING, OR OTHER EXTERIOR REQUIREMENTS REQUIRING UNDERGROUND CONDUIT SHOULD COMMENCE UNDERGROUND AT THE INSIDE FACE OF AN EXTERIOR WALL AND EXIT THE BUILDING IMMEDIATELY WITHOUT RUNNING HORIZONTAL UNDER OR IN THE GROUND FLOOR CONSTRUCTION.

ONE-LINE DIAGRAM NOTES

1. ALL METERING EQUIPMENT AND PANELS SHALL BE AS MANUFACTURED PER THE ELECTRICAL SPECIFICATION, AND MEET ALL REQUIREMENTS.
2. GROUNDING CONDUCTORS AND ALL GROUNDING REQUIREMENTS SHALL BE INSTALLED AS DIRECTED BY EQUIPMENT MANUFACTURER AND AS SHOWN ON DRAWINGS.
3. LABEL EACH JUNCTION BOX, PULL OR TAP BOX, DISCONNECT SWITCH ETC., WITH BLACK LETTERING ON AN ORANGE STICKER WITH LETTERING SIZED IN RELATION TO SIZE OF COVER. FOR PANELS SEE SPECIFICATIONS.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL REQUIREMENTS WITH THE UTILITY COMPANY. FIELD VERIFY THE AVAILABLE FAULT CURRENT WITH THE UTILITY COMPANY AND CONTACT THE ENGINEER OF RECORD WITH THE DISCREPANCY SO AS TO REVISE THE EQUIPMENT RATINGS AS NEED BE.
5. PROVIDE MULTI-LAYERED ACRYLIC LABELS PER SPECIFICATION FOR ALL DISTRIBUTION PANELBOARDS, BRANCH CIRCUIT PANELBOARDS, SWITCH GEAR SECTIONS, STARTERS AND INDIVIDUAL SWITCH GEAR FUSED SWITCHES.
6. SIZE ALL BRANCH CIRCUITS NOT TO EXCEED 3% VOLTAGE DROP. ALL WIRE SIZES SHALL BE FOR AMPERAGE REQUIRED PER NEC.
7. ALL CONDUIT SHALL BE RIGID GALVANIZED STEEL THROUGHOUT, EXCEPT WHERE OTHERWISE NOTED.
8. SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
9. INCLUDE IN CONTRACT ALL ONE TIME TAP CHARGERS AND FEES FROM UTILITY COMPANY, COORDINATE WITH UTILITY COMPANY.
10. ALL ELECTRICAL AND TELEPHONE CONDUITS THAT PENETRATE FIRE RATED WALLS SHALL BE SEALED WITH FIRE STOP MATERIAL TO MEET ALL GOVERNING CODE REQUIREMENTS.
11. CONTRACTOR TO PROVIDE LABEL STATING ARC-FAULT AND AIC RATING ON EACH PANEL

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Firestone COMPLETE AUTO CARE

NEW FCAC STORE
2020 ER
3561 SW MARKET ST
JACKSON COUNTY
LEE'S SUMMIT, MISSOURI 64082

STATE OF MISSOURI
RANDALL A. NELSON NUMBER PE-2007003990
PROFESSIONAL ENGINEER
04/15/2020

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ISSUE BLOCK

1	04/16/20	ADD #1

PROPERTY NO.: 160085
6 DIGIT NO.: 906983
4 DIGIT NO.: 78C9
AOR PROJECT NUMBER: 1955B71
TO PERMIT: DATE: 03/26/2020
TO BID: DATE: ##-##-##

SHEET TITLE:
ONE-LINE DIAGRAM, PANEL SCHEDULES, AND NOTES

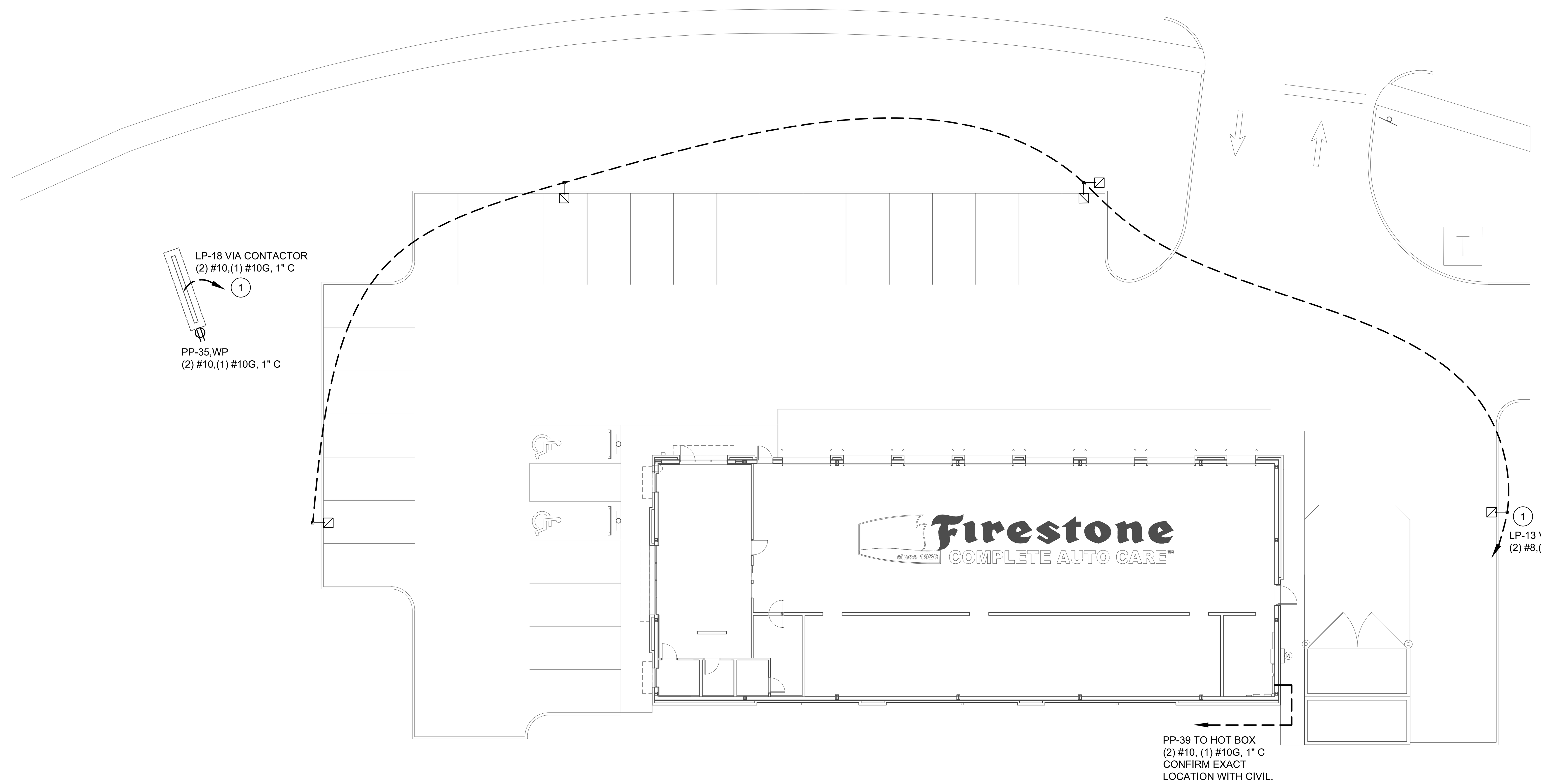
SHEET NUMBER:
E5

SITE LIGHTING PLAN GENERAL NOTES

1. FURNISH AND INSTALL ALL CONDUIT, WIRE AND DEVICES REQUIRED FOR MONUMENT SIGN. VERIFY LOCATION AND REQUIREMENTS WITH SIGN MANUFACTURER PRIOR TO ROUGH-IN.
2. PROVIDE ALL GROUNDING FOR MONUMENT SIGN PER MANUFACTURER'S AND LOCAL CODE REQUIREMENTS.
3. REFERENCE PHOTOMETRIC SITE LIGHTING SHEET FOR THE FOLLOWING INFORMATION:
   - 3.1. POLE SPECIFICATIONS
   - 3.2. LIGHTING FIXTURE MOUNTING HEIGHT
   - 3.3. LIGHTING FIXTURE SPECIFICATIONS
   - 3.4. LIGHTING FIXTURE DESIGNATIONS
4. REFER TO SHEET E2 FOR BUILDING MOUNTED LIGHT FIXTURE LOCATIONS AND DESIGNATIONS

SITE LIGHTING PLAN KEYNOTES

1. REFERENCE SHEET E5 FOR CONTACTOR DIAGRAM AND PANELBOARD SCHEDULES.



1 / ESL1 **ELECTRICAL SITE PLAN**
SCALE: 1/16" = 1'-0"

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Apr 15, 2020 – 12:17pm – USER IanCollins
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