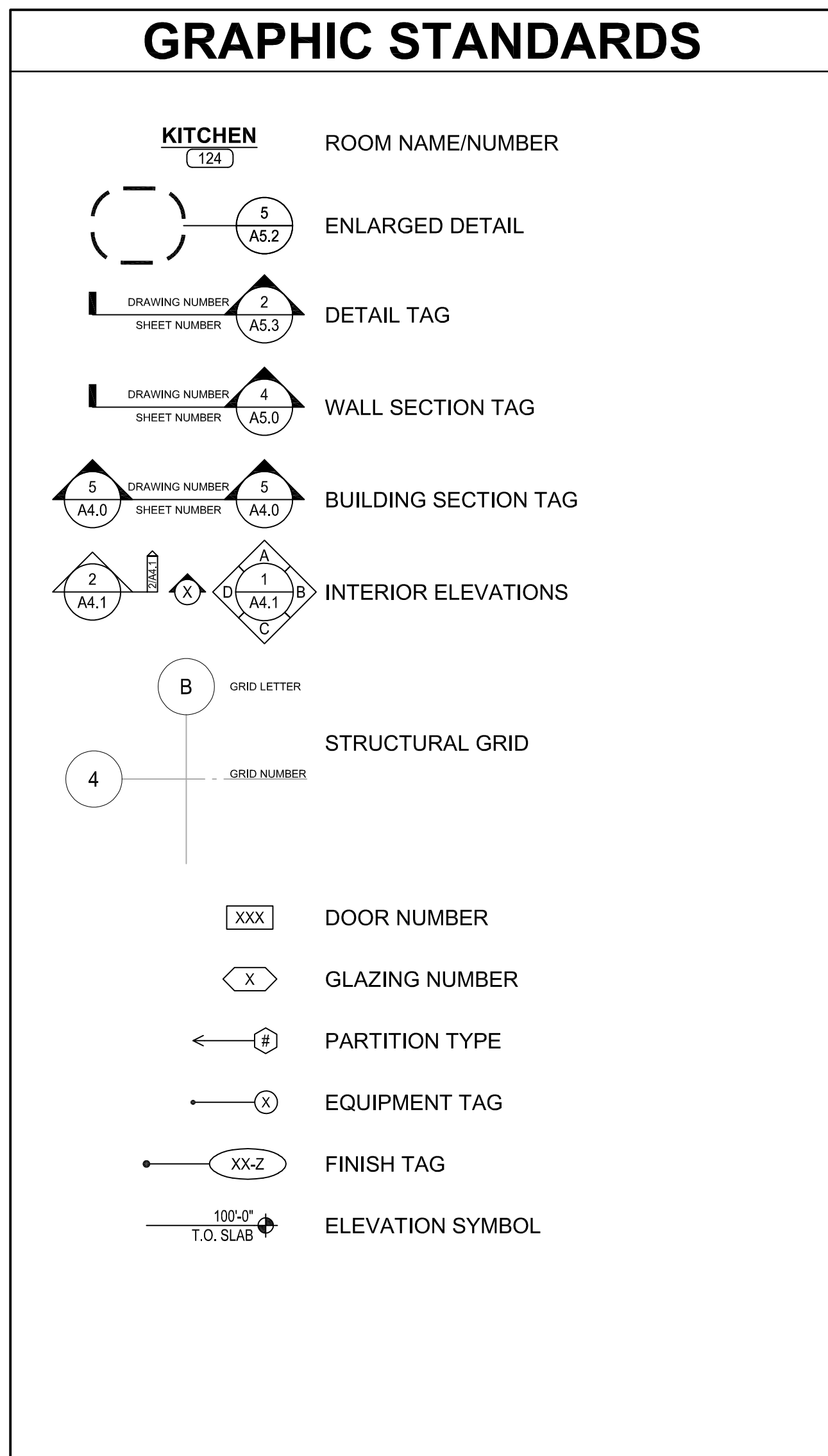


RESPONSIBILITY SCHEDULE									
GENERAL CONTRACTOR RESPONSIBLE FOR ALL WORK DESCRIBED IN THE CONSTRUCTION DOCUMENTS. CONFLICTS BETWEEN THIS SCHEDULE AND THE REST OF THE CONTRACT DOCUMENTS WILL BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO BEGINNING WORK.	LEGEND								
	FURNISHED			INSTALLED			NOTES		
	O	GC	OC	L	O	GC	OC	L	
GENERAL REQUIREMENTS									
BUILDING PERMITS	•	•			•	•			GC to obtain permits required. Owner to reimburse the GC for the building permit only. All others are to be paid for by appropriate sub. Fire sprinkler & alarm subs are to pay Plan Review and permit fees associated with the design build of these components.
INSPECTIONS		•				•			GC responsible for all inspections including but not limited to Building, Fire, Health. GC must obtain C of O by date shown in contract.
TEMPORARY UTILITIES		•				•			Daily & final
CLEAN UP / FINAL		•				•			Full time site superintendent through opening date
PROJECT SUPERVISION		•				•			As required by LL & Craftworks Inc.
INSURANCE		•				•			
UTILITIES	O	GC	OC	L	O	GC	OC	L	
WATER		•				•			GC to make all connections
WATER METER AND BF		•				•			GC to make all connections
GAS		•				•			GC to make all connections
GAS METER AND MANIFOLD		•				•			GC to make all connections
ELECTRIC		•				•			GC to make all connections
ELECTRIC METER		•				•			GC to make all connections
TRANSFORMER		•				•			GC to make all connections
SECONDARY CABLES		•				•			GC to make all connections
SEWER		•				•			GC to make all connections
BUILDING	O	GC	OC	L	O	GC	OC	L	
SLAB		•				•			
EXTERIOR WALL FRAMING		•				•			
INTERIOR WALL FRAMING		•				•			
STRUCTURAL STEEL		•				•			
DEMISING WALLS		•				•			
WIM DOORS & FRAMES - INTERIOR		•				•			
WOOD DOORS & FRAMES		•				•			
DOOR HARDWARE		•				•			
EXTERIOR ALUMINUM STOREFRONT		•				•			
GLAZING		•				•			
WINDOW BLINDS		•				•			
WATERPROOFING		•				•			
INSULATION		•				•			
STUCCO/E.F.S.		•				•			
AWNINGS		•				•			
GUTTERS & DOWNSPOUTS		•				•			
AIR & VAPOR BARRIERS		•				•			
METAL FLASHINGS		•				•			
SEALANTS - EXTERIOR		•				•			
SEALANTS - INTERIOR		•				•			Interior caulk, butyl, fire, concrete, etc.
MEMBRANE ROOFING SYSTEM		•				•			
GYP BD		•				•			
CERAMIC FLOOR AND WALL TILE		•				•			
RUBBERIZED PVC FLOORING		•				•			
VINYL COMPOSITE FLOORING		•				•			All trim, cabinets, countertops, footralls, etc. as shown on plans
MILLWORK		•				•			
VINYL BASE		•				•			
PAINT		•				•			
ACT & GRID		•				•			
SIGNAGE		•				•			Sign vendor to furnish and install. GC to provide final connections and sealant
WALL GRAPHICS & DECOR		•				•			
TOILET ROOM WALLS & DOORS		•				•			
PAPER TOWEL DISPENSER		•				•			
TOILET PAPER DISPENSER		•				•			
SOAP DISPENSERS		•				•			
MIRRORS		•				•			
SANITARY DISPOSAL		•				•			
GRAB BARS		•				•			
DIAPER CHANGING STATION		•				•			
RESTROOM SIGNAGE		•				•			Direction & H.C. signage by GC
FIRE EXTINGUISHERS		•				•			Per local fire marshal & building code
KNOX CABINETS		•				•			Location coordinated with fire marshal
EMPLOYEE LOCKERS		•				•			
KITCHEN EQUIPMENT	O	GC	OC	L	O	GC	OC	L	
COOLERS & FREEZERS		•				•			Electrical and plumbing connections by GC. Low voltage and refrigeration by kitchen vendor
OVENS		•				•			KEY furnished, GC provides final connections for plumbing, electrical & fire
SELF CONTAINED COOLER & FREEZERS		•				•			KEY furnished and installed. GC to provide final connections
STATIONARY TABLES & SINKS		•				•			KEY to furnish and install unit, refrigeration and control wiring. GC to make final connections for plumbing & electric
ICE MAKER		•				•			Hoods, controls, curbs, skirts, SST wall panels furnished by KEV. GC to furnish duct, fire wrap, access doors and install all
HOODS		•				•			KEY furnished, installed by GC.
EXHAUST FANS		•				•			Units, rails, controls by KEV. Final connections by GC
CONDENSERS		•				•			
EQUIPMENT / FURNITURE	O	GC	OC	L	O	GC	OC	L	
DINING TABLES		•				•			
DINING CHAIRS		•				•			
DINING BENCH		•				•			Re: 3/A5.1
SAFE		•				•			
OFFICE CHAIR		•				•			
FILE CABINET		•				•			
SAFE		•				•			
MECHANICAL	O	GC	OC	L	O	GC	OC	L	
FIRE SPRINKLER - RISER & GRID SYSTEM		•				•			Provide engineered plans and specifications per local codes. GC to coordinate inspection and test.
FIRE SPRINKLER - DROPS FOR TENANT FINISH		•				•			
WATER PIPING		•				•			
WASTE PIPING		•				•			
VENT PIPING		•				•			
CONDENSATE PIPING		•				•			
FLOOR DRAINS & FLOOR SINKS		•				•			
WATER HEATER		•				•			Tag all shutoff valves, provide floor plan map for gas & water
GAS SUPPLY SYSTEM		•				•			Final connections by GC
RTU EQUIPMENT - HVAC		•				•			Final connections by GC
RTU EQUIPMENT - EXHAUST, MUA & CONDENSERS		•				•			
DUCT WORK		•				•			
DIFFUSERS		•				•			
CONTROLS		•				•			
SMOKE DETECTORS		•				•			Controls, temp sensors, CO2 sensors & T-stats
AIR BALANCE		•				•			Air Balance Sub-contractor must be certified
BATH EXHAUST FANS		•				•			
ELECTRICAL	O	GC	OC	L	O	GC	OC	L	
DISTRIBUTION SYSTEM		•				•			Including all switch gear. All outlets and switches to be labeled by EC
PANELS		•				•			
LIGHT FIXTURES & LAMPS		•				•			Wiring, assembly and materials needed to achieve desired mounting height by GC
LIGHTING CONTROLS		•				•			
TVs & SPEAKERS		•				•			Equipment, cabling, mounts by vendor. GC to provide vertical conduits w/ pull strings and power
POS, COMPUTERS & PRINTERS		•				•			Equipment furnished and installed by vendor. GC to provide power, data, vertical conduits w/ pull strings and final connections
CCTV VIDEO SYSTEM		•				•			Vendor to provide and install equipment. GC to provide vertical conduit w/ pull strings
BURGLAR ALARM		•				•			Vendor to provide and install equipment. GC to provide vertical conduit w/ pull strings
PANELS		•				•			Breakers to be verified by EC prior to typing panel directories
PHONE & DATA CONDUITS		•				•			Equipment by vendor. Vertical conduits w/ pull strings by GC
FIRE ALARM		•				•			EC to furnish design build plans, permits and inspections complete to meet local codes. Must use landlord's subcontractor.



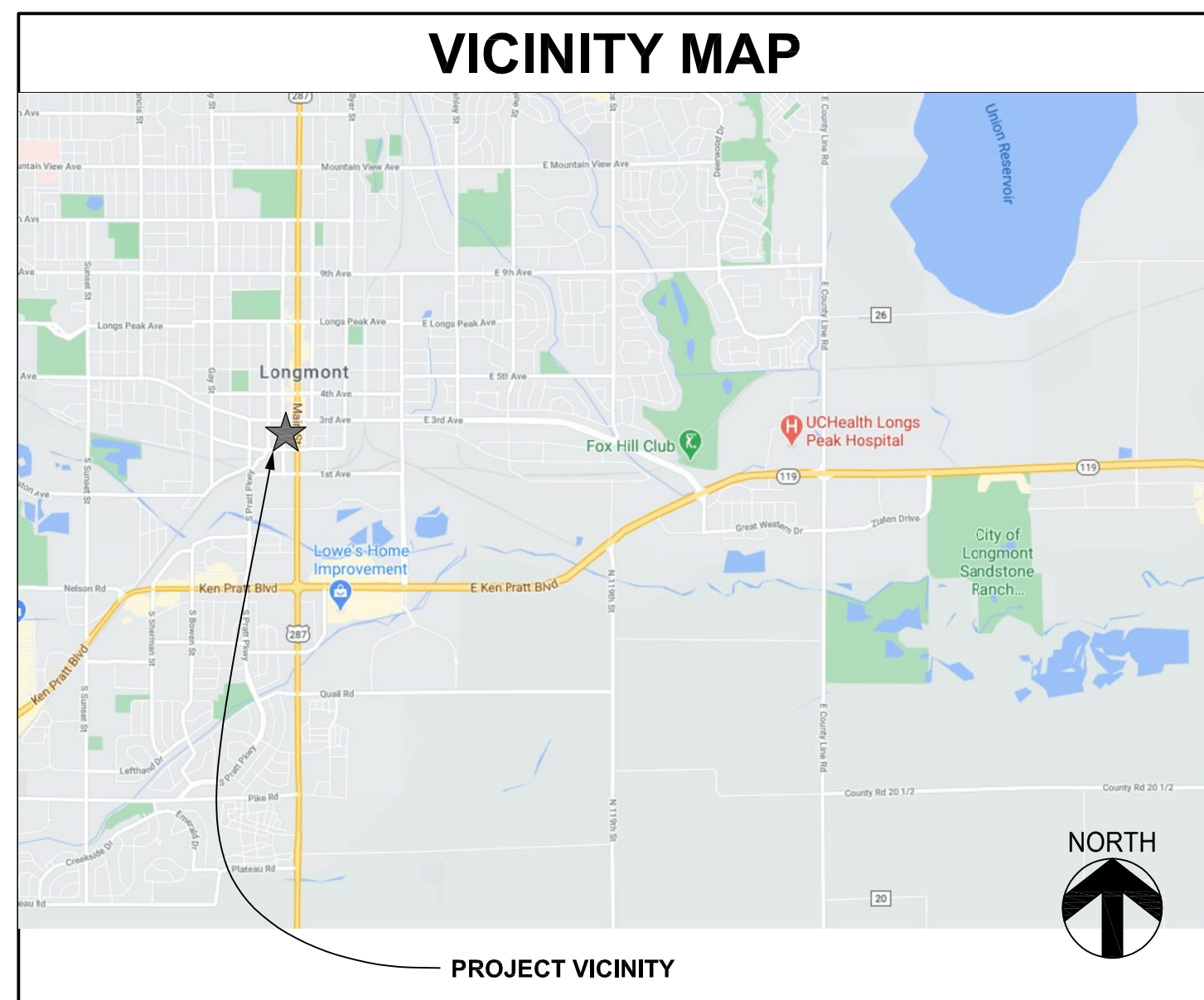
- ### GENERAL NOTES
- Contractor shall be governed by the currently adopted edition of all codes and regulations having jurisdiction over aspects of this construction project.
 - Written dimensions and existing conditions shall be verified in the field by the Contractor and/or his Subcontractors. Do not scale drawings. If further clarification is required, contact Architect and provide him with field dimensions as required to assist him with his clarification.
 - Any discrepancy in dimensions and/or drawings and/or field measurements shall be brought to the attention of the Architect prior to the commencement of any work.
 - These drawings and specifications are the property and copyright of the Architect and shall not be used on any other work except by agreement with the Architect.
 - Duty of Cooperation: Release of these plans anticipates further cooperation among the Owner, Contractor, and Architect. Although the Architect and his consultants have performed their services with due care and diligence, they cannot guarantee perfection. Any ambiguity or discrepancy discovered shall be reported immediately to the Architect. Failure to cooperate by a timely notice to the Architect shall not relieve the Contractor from responsibility for all consequences. Changes made from the plans without the consent of the Architect are unauthorized, and shall relieve the Architect of responsibility for all consequences arising out of such changes.
 - All products shall be installed per manufacturer's recommendations.
 - All products shall be installed per manufacturer's recommendations.
 - All work to be in accordance with "General Conditions of the Contract for Construction - A.I.A. Document A201" and other Contract Documents.
 - The Contractor shall include any work required to make the end result building operative and culpable. If equipment, material and/or intent are not detailed in drawings or specifications but are obviously required as industry standard for operative conditions, this work shall be included in base bid. If the Owner does not accept the Contractor's selection, the additional cost (to the Contractor) of that equipment or materials chosen by the Owner or Architect will be offset by Change Order.
 - Do not use cadmium or cadmium plated products or products containing cadmium for work in place.
 - Electrical equipment shall be certified as containing no PCB's.
 - Do not use asbestos or asbestos containing products for work in place. Contractor shall not cut, drill, remove, or otherwise disturb any material, equipment, construction, etc., if it is thought to contain any hazardous material. If material, equipment, construction, etc., is encountered which appears to be, or is likely to contain hazardous materials, notify Owner immediately.
 - Typographical errors or errors of spelling shall be brought to the Architect's attention for clarification. Interpretation of the meaning of misspelled or misspelled words without clarification from the Architect will be done by the Contractor with acceptance of responsibility for that interpretation and all consequences arising therefrom.
 - Note: All dimensions to face of masonry, center line of structural steel or face of gypsum board, typ. u.o.n. - All masonry dimensions indicated are nominal dimensions.
 - The term "provide" as used herein shall mean that Contractor shall furnish and install said item, construction, equipment, materials, etc., for a complete, finished installation.
 - General Contractor shall be responsible for coordination of all trades doing work and coordination with Owner and Owner's subcontractors regarding installation and provision for all equipment, materials and constructions indicated "by Owner" or "by others" on these documents.
 - All existing areas outside of contract limits are fully finished and beyond the jurisdiction of the owner. Contractor shall take all precautions necessary to protect these areas from damage, debris, and any other deleterious effects caused by this construction. Any areas affected by this construction shall be restored to original condition as required at completion of project.
 - Separate permits/applications shall include, but are not limited to, the following: Fire Sprinkler and Fire Alarm from the Fire Department, and Exterior Tenant Signage from the Planning Department.
 - All glazing shall comply with meeting the safety glazing in hazardous locations requirements per IBC 2406 and IBC 2406.
 - These plans are based upon the Construction Documents by PWN Architects & Planners, Inc., dated 1-11-16. General Contractor to verify all information and notify Architect of any discrepancies in actual field conditions.

225 MAIN STREET
LONGMONT, COLORADO

PERMIT SET
November 30, 2020

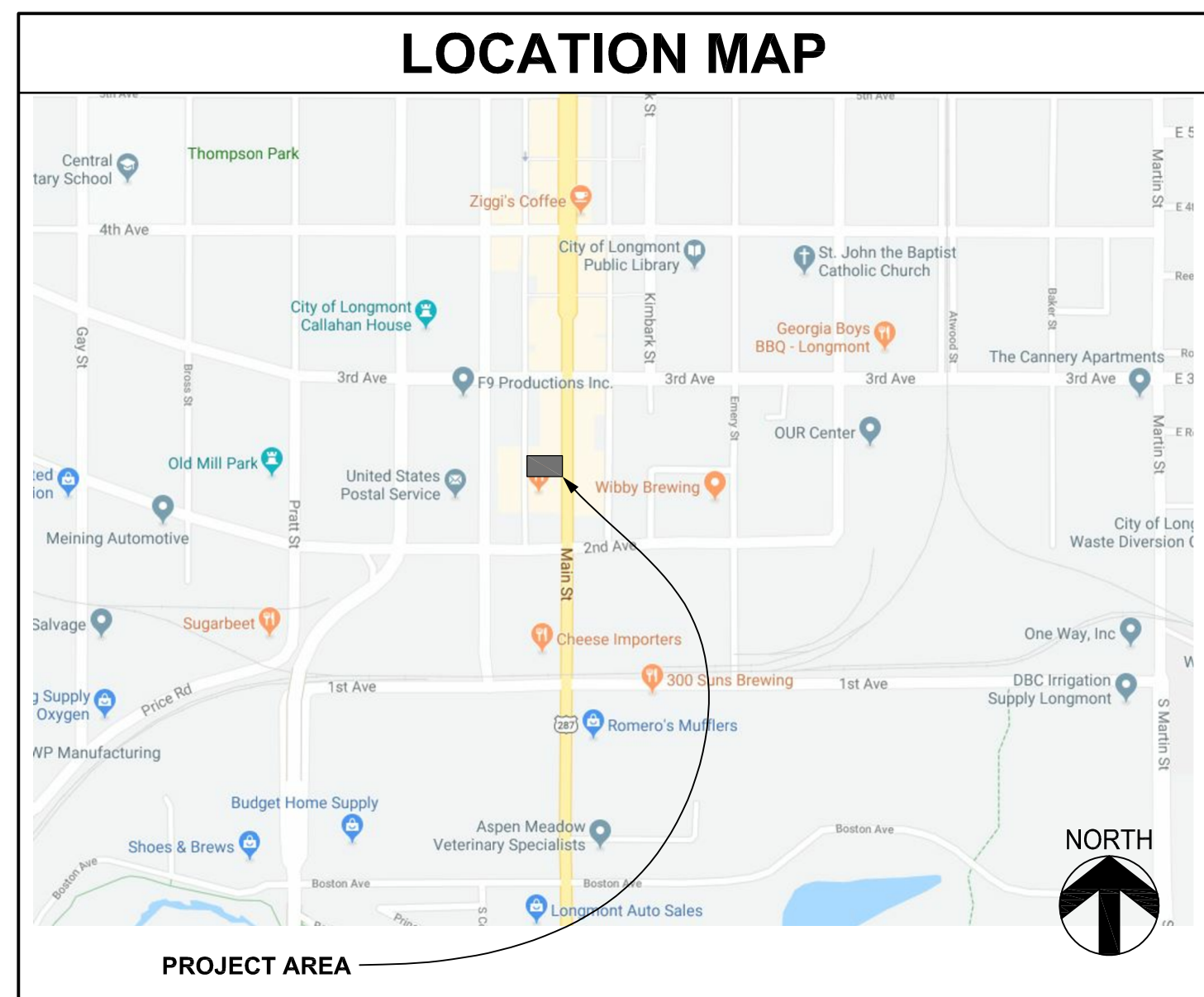
PROJECT DIRECTORY

TENANT / OWNER	Moe's Broadway Bagel 2650 Broadway Boulder, CO 80304 Phone: (303) 444-3252, C: (720) 352-1605 Contact: Peter Sherman Email: peter@moesbagel.com
CIVIL ENGINEER	Civil Resources, LLC 323 5th Street, P.O. Box 680 Frederick, CO 80530 Phone: (303) 833-1416 x 203, C: (720) 556-7667 Contact: Jim Brzostowicz Email: jim@civilresources.com
LANDSCAPE	Topo Landscape Architecture Phone: (303) 500-1058 Contact: Bill Gotthelf Email: bill@topolandscap.com
ARCHITECT	BRAY Architecture, Inc. 1300 - C Yellow Pine Avenue Boulder, CO 80304 Phone: (303) 444-1598 Contact: Jim Bray Email: jim@brayarchitecture.net
STRUCTURAL ENGINEER	Gebau, Inc. 1121 Broadway, Suite 201 Boulder, CO 80302 Phone: (303) 444-8545 Contact: Joel Ambrosino Email: joel@gebau.com
M.E.P. ENGINEER	Boulder Engineering, Inc. 1717 15th Street Boulder, CO 80302 Phone: (303) 444-6038 Contact: Ethan Miley Email: ethan@boulderengineering.com
GENERAL CONTRACTOR	Narvaes Western 474 S. Taylor Ave. Suite B Louisville, CO 80027 Phone: (303) 786-8061 Contact: Amory Narvaes Email: amory@narvaes.com



SHEET INDEX

SHEET	DESCRIPTION	SHEET	DESCRIPTION
CIVIL		STRUCTURAL	
C1	Erosion Control Plan	S1.1	Foundation Plan
C2	Grading Plan	S1.2	Roof Framing Plan
C3	Utility Plan	S2.1	General Structural notes & Typical Details
C4	General Notes & Details	S2.2	Structural Details
C5	Details	PLUMBING	
C6	Details	P1.1	Sewer Floor Plan
LANDSCAPE		P2.1	Plumbing Schedules & Details
L1.0	Landscape Plan	P3.1	Plumbing Specifications
L2.0	Landscape Notes & Details	MECHANICAL	
ARCHITECTURAL		M1.1	HVAC Plans
A0.0	Cover Sheet & Index	M2.1	Mechanical Schedules & Details
A0.1	Life Safety Plan	M3.1	Mechanical Specifications
A1.1	Site Plan	ELECTRICAL	
A2.0	Demolition Plan	E1.1	First Floor Electrical Plans
A2.1	Floor Plan	E2.1	Electrical Details
A2.2	Furniture/Finish Plan	E2.2	Electrical Schedules
A2.3	Kitchen Equipment Plan	E3.1	Electrical Specifications
A2.4	Reflected Ceiling Plan	MEP 1	MEP Site Photometric Plan
A2.5	Roof Plan	MEP 2	Photometric Details & Schedules
A3.0	Exterior Elevations	MEP 3	Details & Schedules
A4.0	Building Sections	1	CaptiveAire General Hoods Information & Schedules
A5.0	Wall Sections	2	CaptiveAire Hoods 1, 2, & 3
A5.1	Wall Sections	3	CaptiveAire Exhaust Fans
A5.2	Details	4	CaptiveAire MAU
A5.3	Details	5	CaptiveAire Electrical Info
A6.0	Enlarged Restroom Plan & Elevations	6	CaptiveAire Electrical Info
A7.0	Finish, Door, & Window Schedules		
A8.0	Outline Specifications		
A8.1	Outline Specifications		



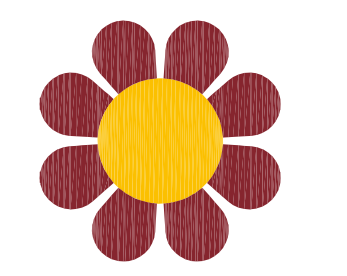
BRAY Architecture, Inc.
1300-C Yellow Pine
Boulder, CO 80304

BRAY ARCHITECTURE, INC.
11/30/20

Moe's BROADWAY BAGEL
225 MAIN STREET
LONGMONT, CO

PROJECT No: 201914
ISSUE DATE: 11-30-20
REVISIONS:

SHEET TITLE:
COVER SHEET
SHEET NUMBER:
A0.0



PROJECT DATA

1. **SCOPE OF WORK**
Remodel and addition to existing vacant building along with addition of new patio.
Increase in square footage and change of use to A2.
2. **BUILDING CODES ENFORCED**
2018 INTERNATIONAL BUILDING CODES
2017 NATIONAL ELECTRIC CODE
3. **BUILDING CLASSIFICATION**
3.1 CONSTRUCTION TYPE VB Construction
No Automatic Sprinkler System provided
4. **BUILDING HEIGHT**
4.1 BUILDING HEIGHT 1-STORY
5. **OCCUPANCY CLASSIFICATION**
5.1 OCCUPANCY GROUPS A-2 - Restaurant
6. **BUILDING AREA/OCCUPANCY**
6.1 AREA
Floor area includes the entire area "within the surrounding exterior walls."

USE	AREA
Tenant floor area	1,698 sf
Total Square Feet	1,698 sf

7. **OCCUPANT LOAD**
7.1 OCCUPANT LOAD / EGRESS REQUIREMENTS
Per Table 1004.5

FUNCTION	AREA	LOAD FACTOR	OCC. LOAD	EXITS REQD	EXITS PROV'D
Dining (A-2)	520 sf	15 net	35	1*	1
Kitchen (A-2)	1,041 sf	200 gross	6	1*	1
OCCUPANT LOAD			41		
Patio (A-2)	534 sf	15 net	36	1*	3
TOTAL OCCUPANT LOAD			77		

*1 exit permitted per Table 1006.2.1: 41 occ < 49 occ, 44'-3" max. travel distance < 75'-0"

- 7.2 MISCELLANEOUS REQUIREMENTS
Maximum Travel Distance: 200' Per Table 1017.2
Maximum Dead End: 20' Per Sec. 1020.4
Door Swing Direction: Per Sec. 1010.1.2
Exit Illumination: Per Sec. 1008
Illumination Emergency Power: Per Sec. 1008
Exit Sign Requirements: Per Sec. 1013

8. **BUILDING FIRE RESISTANCE**
8.1 SPRINKLERS REQUIRED
Sprinklers are not required per 903.2.1.2

1. The fire area exceeds 5,000 sf, 1,698 sf (per section 5.1) < 5,000 sf.
2. The fire area has an occupant load of 100 or more: 41 occ. (per section 6.1) < 100 occ.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies: The fire area is completely located on the level of exit discharge.

9. **PLUMBING REQUIREMENTS**
9.1 OCCUPANT LOAD - Per Code Analysis, Section 6.1 = 77 Occupants
9.2 PLUMBING REQUIREMENTS
Per Table 2902.2

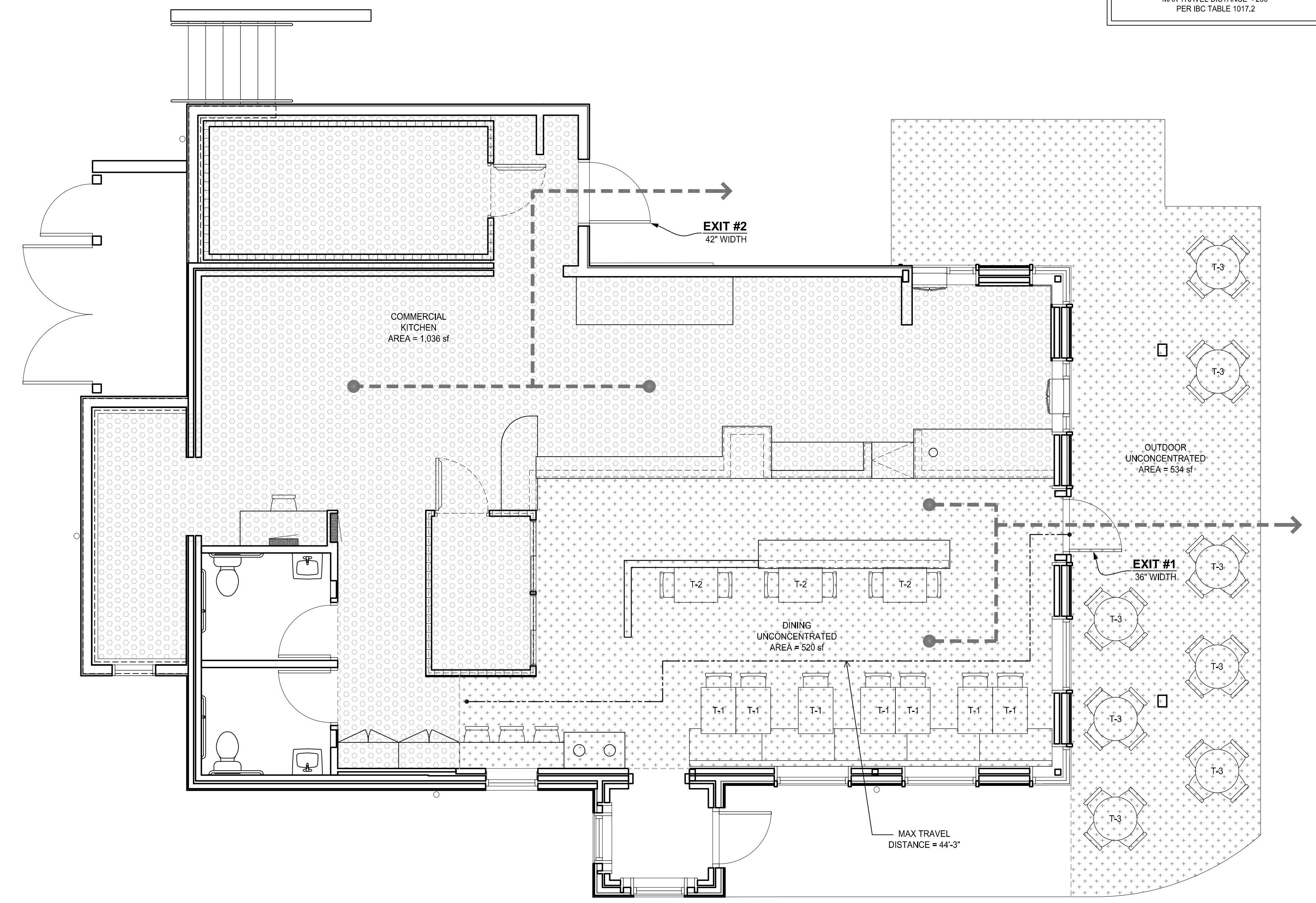
GENDER	WATER CLOSETS 1 PER 25	URINALS	LAVATORIES 1 PER 200	SERVICE SINK
REQUIRED				
MALE	1	-	1	1
FEMALE	1	-	1	1
PROVIDED				
MALE	1	-	1	1
FEMALE	1	-	1	1

10. **ACCESSIBILITY**
10.1 ACCESSIBILITY - All primary functions are fully accessible per IBC section 3409

11. **ENERGY COMPLIANCE**
11.1 CLIMATE ZONE: (per table C301.1) BOULDER COUNTY = 5
11.2 OPAQUE THERMAL ENVELOPE REQUIREMENTS: (per table C402.1.3)
ROOF: ATTIC AND OTHER = R-38
WALLS ABOVE GRADE: WOOD FRAMED AND OTHER = R-13 + 3.8 CI
SLAB-ON-GRADE FLOORS: UNHEATED SLAB = R-10 FOR 24" BELOW BELOW-GRADE WALLS: R-7.5 CI
11.3 BUILDING ENVELOPE REQUIREMENTS: FENESTRATION (per table C402.4)
VERTICAL FENESTRATION:
FIXED FENESTRATION = U-0.38
OPERABLE FENESTRATION = U-0.45
ENTRANCE DOORS = U-0.77
SHGC = 0.38

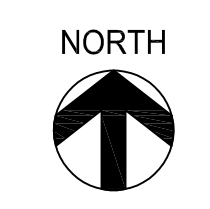
OCCUPANCY LEGEND

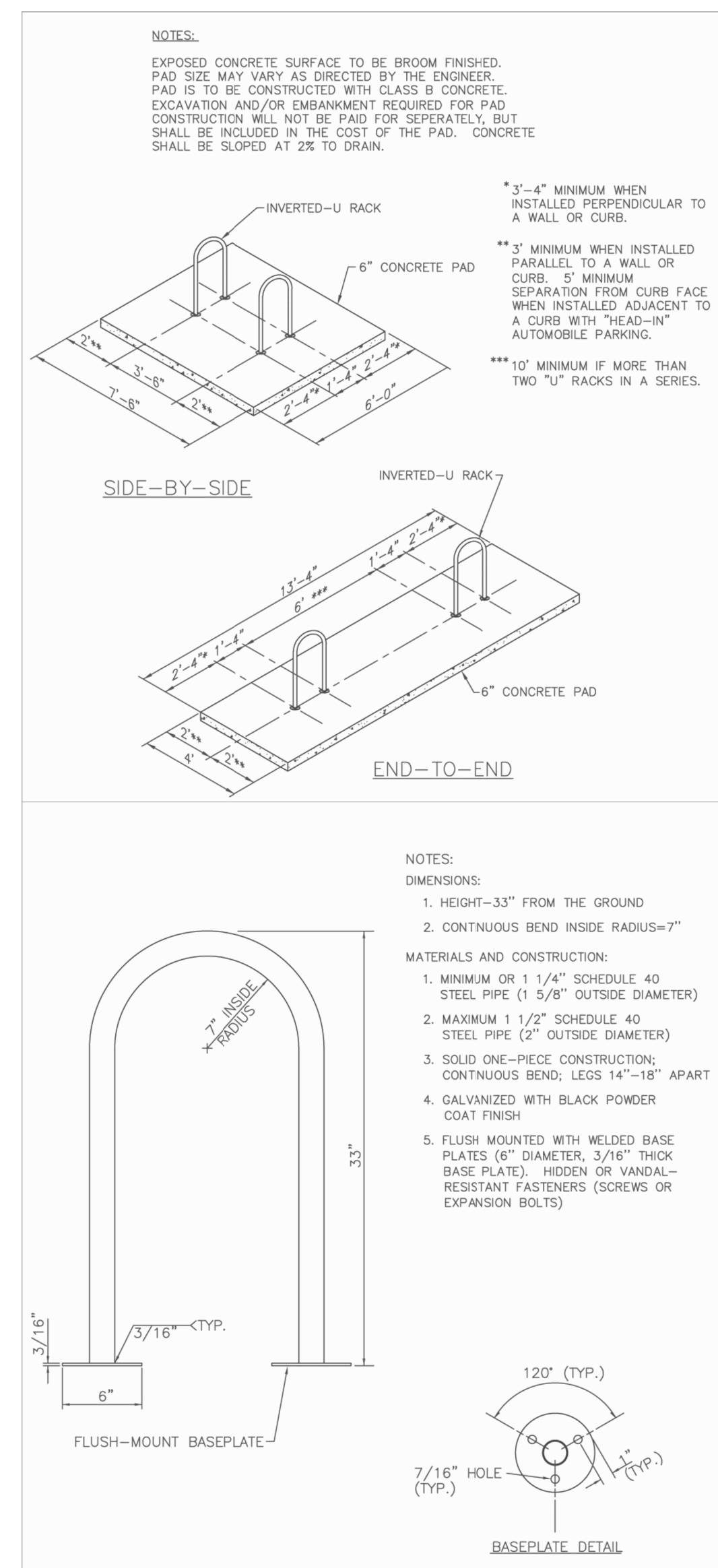
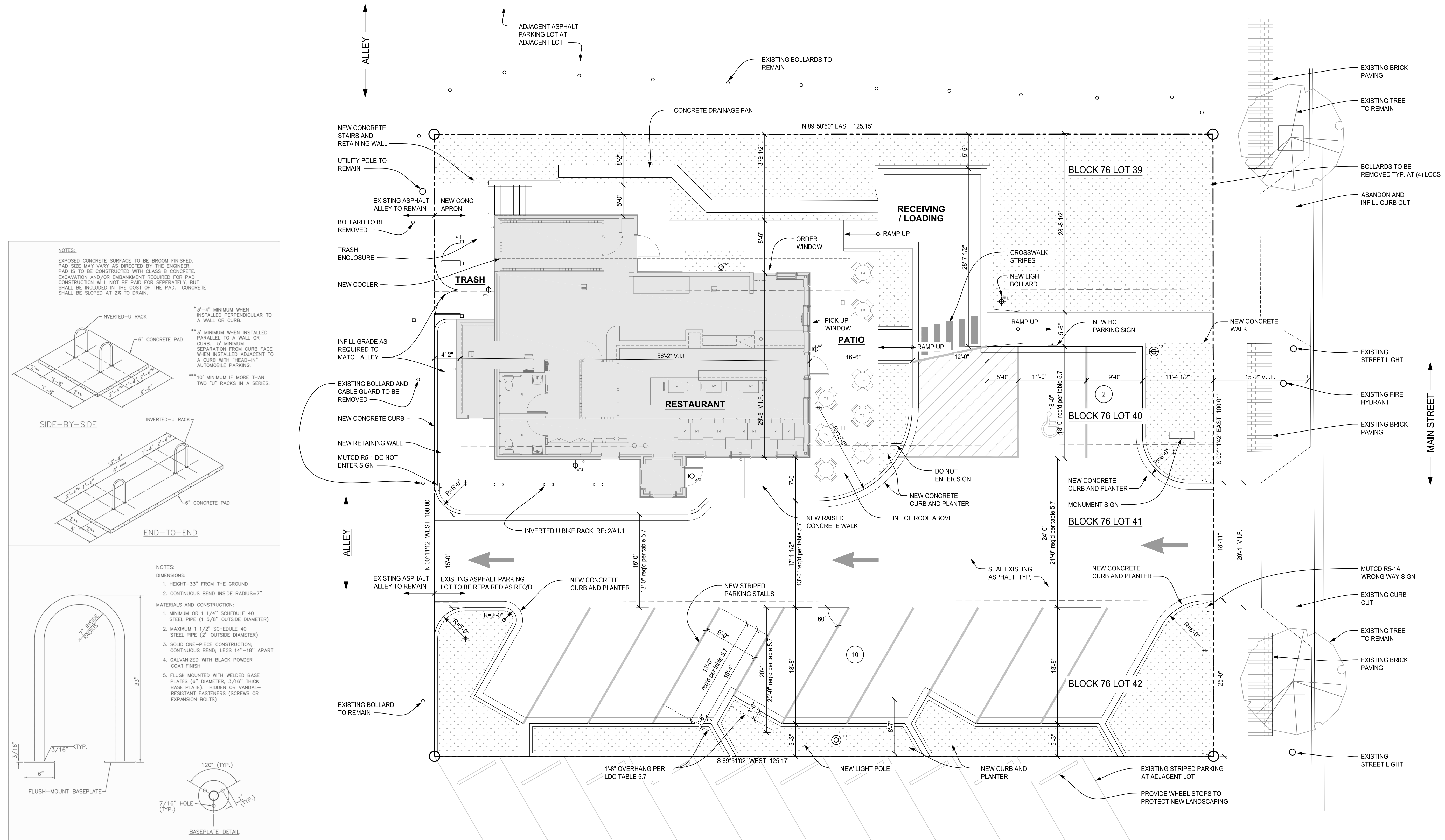
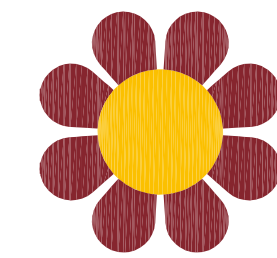
- UNCONCENTRATED (Tables & Chairs)
- COMMERCIAL KITCHEN SPACE
- EXIT PATH
- MAXIMUM TRAVEL DISTANCE



ACCESSIBLE ROUTE TO PUBLIC WAY:
1:20 MAX SLOPE W/ 1:50 MAX CROSS SLOPE
MAX TRAVEL DISTANCE < 200'
PER IBC TABLE 1017.2

1 MAIN LEVEL LIFE SAFETY & OCCUPANCY PLAN
A0.1 1/4" = 1'-0"

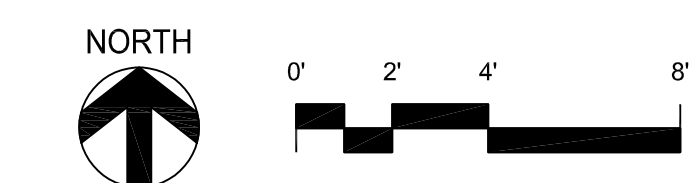




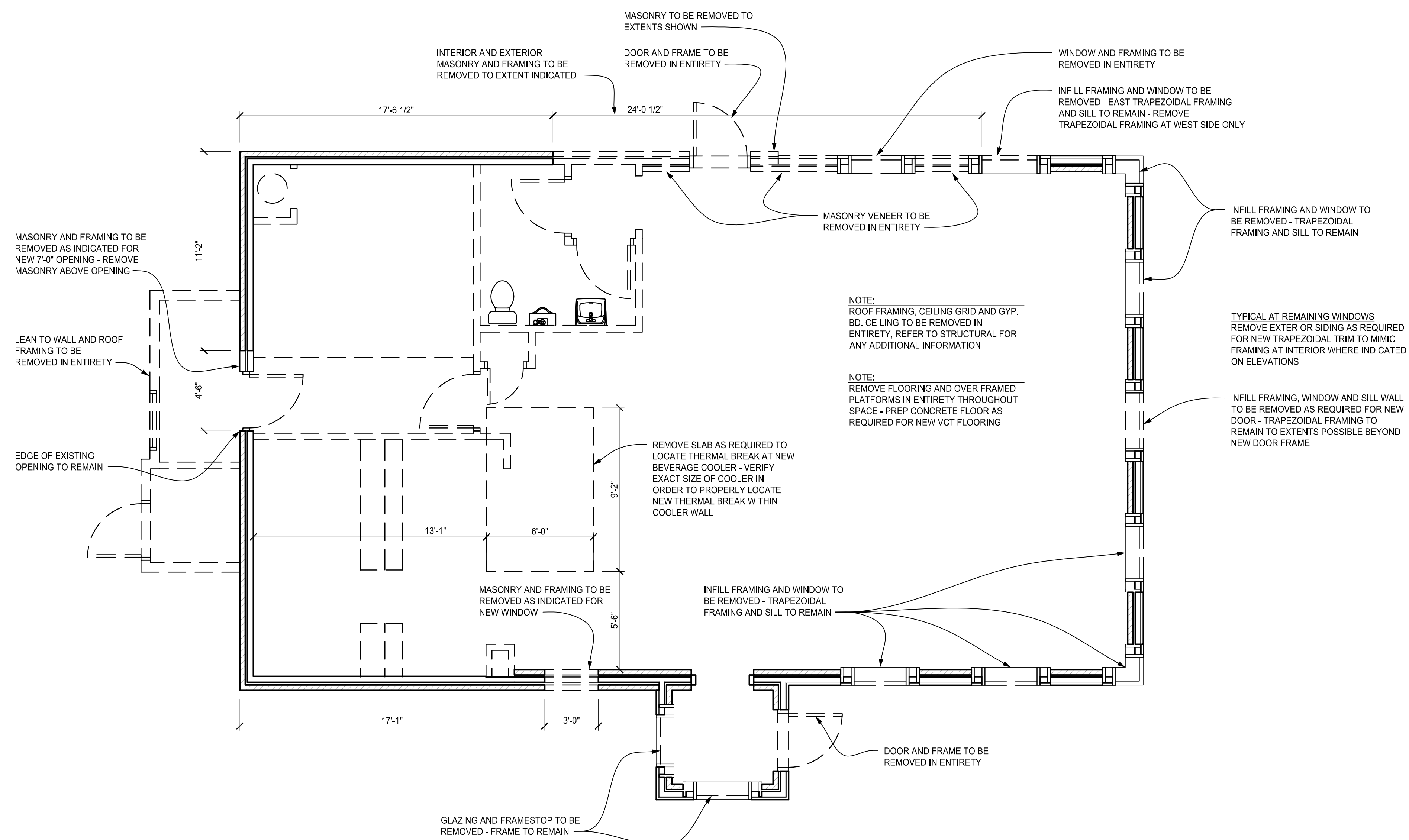
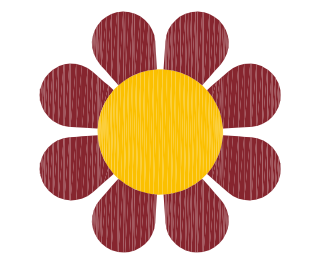
EXTENT OF EXISTING & PROPOSED BUILDING FOOTPRINT

LAND USE	
Lot Square Footage =	12,517 SF
Building Area =	1,855 SF 14.82%
Driveway Area =	5,594 SF 44.69%
Public Open Area =	1,113 SF 8.89%
Other Impervious Area =	758 SF 6.06%
Landscaped Area =	3,197 SF 25.54%

1 SITE PLAN
1/8" = 1'-0"



2 BIKE RACK DETAIL
A1.1



DEMOLITION LEGEND	
	EXISTING MASONRY WALLS TO REMAIN
	EXISTING PARTITION TO REMAIN
	PARTITION OR ITEM TO BE REMOVED

DEMOLITION NOTES	
1.	ALL REMOVAL & CAPPING OF EXISTING WATER, SEWER, GAS, ELECTRICAL, AND OTHER UTILITY LINES SHALL BE COORDINATED WITH MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACTORS/ENGINEERS, AND WITH LOCAL UTILITY SERVICES.
2.	COORDINATE ADDITIONAL DEMOLITION WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
3.	COORDINATE ADDITIONAL DEMOLITION WITH CIVIL FOR SITE WORK.
4.	EXECUTE ALL CUTTING, REMOVAL AND DEMOLITION BY METHODS THAT WILL PREVENT DAMAGE TO ADJACENT REMAINING CONSTRUCTION AND UTILITIES.
5.	NOTIFY THE ARCHITECT IN ADVANCE OF EXECUTING ANY CUTTING, REMOVAL, OR DEMOLITION WHICH AFFECTS THE STRUCTURAL COMPONENTS OF THE BUILDING.
6.	ASBESTOS ABATEMENT BY OTHERS.
7.	REMOVE ALL EXISTING EQUIPMENT, FINISHES, MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT NOT INDICATED TO BE RE-USED.
8.	COORDINATE BARRICADE AND SEQUENCE PLANS WITH OWNER REPRESENTATIVE.

1 DEMOLITION PLAN
A2.0 1/4" = 1'-0"



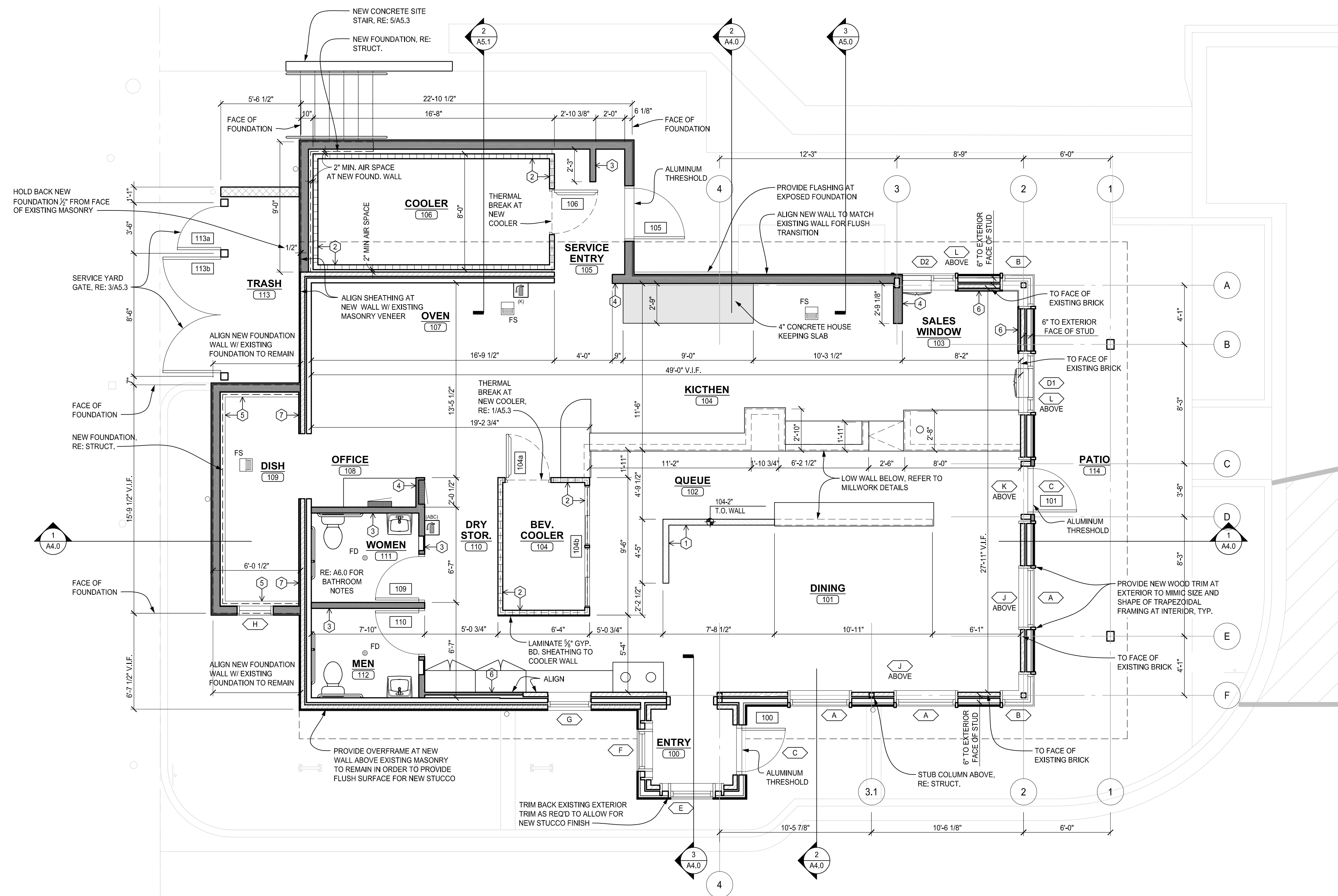
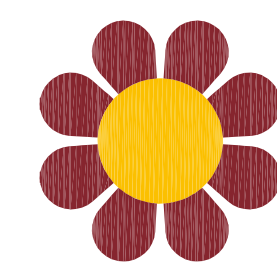
PROJECT No: 201914
ISSUE DATE: 11-30-20
REVISIONS:

SHEET TITLE:

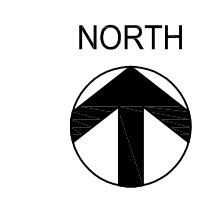
FLOOR PLAN

SHEET NUMBER:

A2.0



1 FLOOR PLAN
A2.1 1/4" = 1'-0"

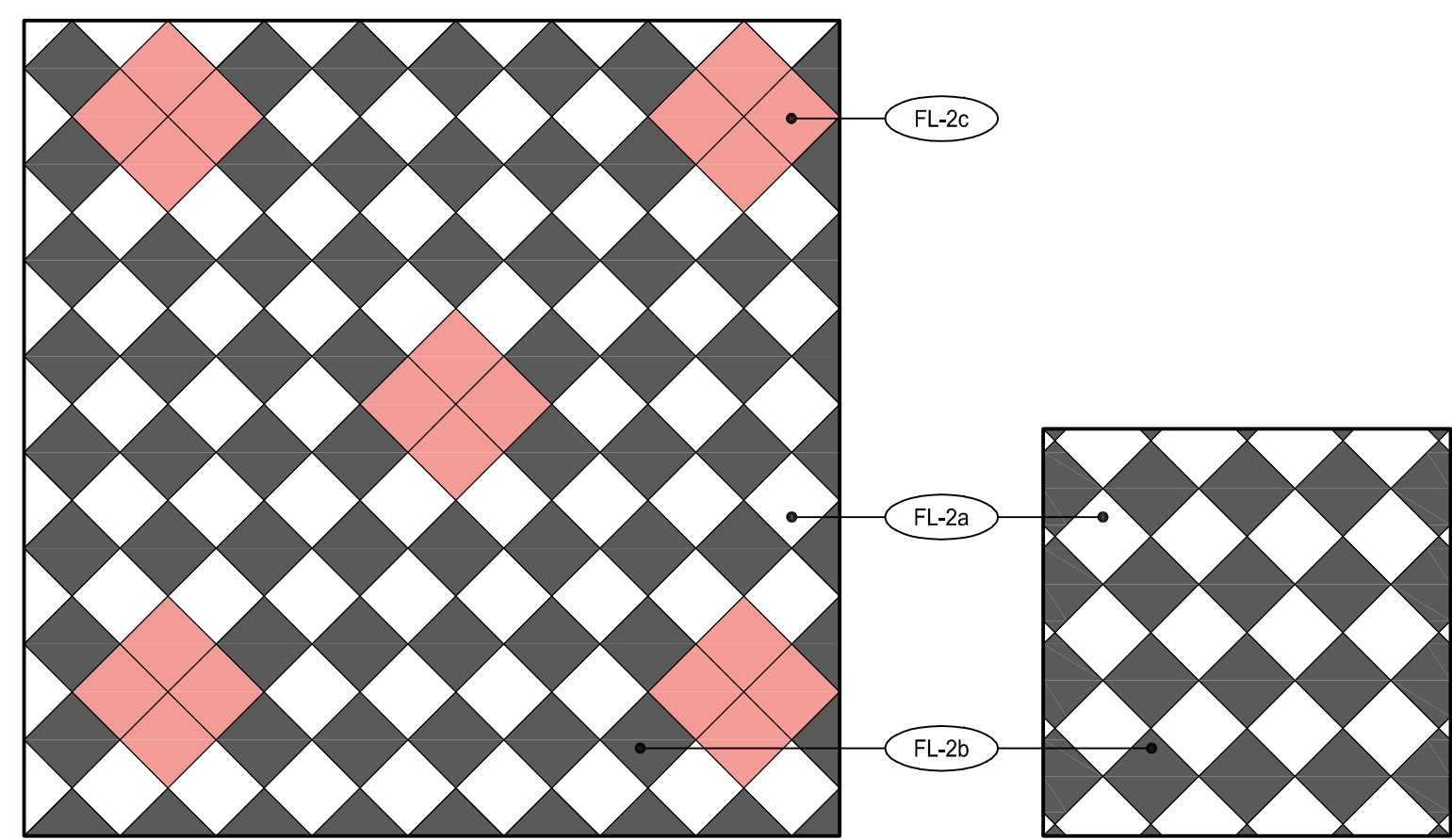
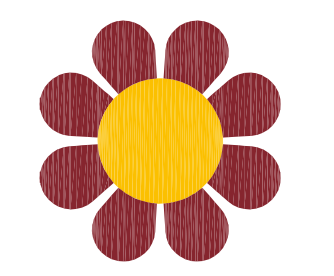


FLOOR PLAN LEGEND	
	FULL HEIGHT PARTITION WALLS
	LOW HEIGHT WALLS RE: 5/A4.0
	ALUMINUM & GLASS STOREFRONT WALL
	COOLER WALLS
	EXISTING FULL HEIGHT WALLS
	EXISTING FULL HEIGHT CMU WALLS
	EXISTING FULL HEIGHT MASONRY WALLS
	REFER TO DOOR SCHEDULE; A7.0
	REFER TO STOREFRONT ELEVATIONS; A7.0
	FIRE EXTINGUISHER (TYPE IN PARENTHESIS) COORDINATE FINAL LOCATION WITH FIRE MARSHAL PROVIDE RECESSED CABINETS WHERE POSSIBLE

WALL/PARTITION TYPES	
1	LOW HEIGHT PARTITION, STEEL STUDS AT 16" O.C. AS REQUIRED FOR VARYING WALL WIDTHS. ONE LAYER 1/2" GYP. BD. ON EACH SIDE. 3/4" PLYWOOD AT TOP. RE: FLOOR PLANS & MILLWORK DRAWINGS FOR HEIGHTS, WIDTHS, AND FINISHES.
2	PREFABRICATED COOLER WALL BY MANUFACTURER. G.C. TO COORDINATE CLOSURE PANELS ADJACENT WALLS AND SEALANT AT FLOOR PERIMETER.
3	FULL HEIGHT PARTITION FROM FLOOR TO DECK. 3/4" STEEL STUDS AT 16" O.C., ONE LAYER OF 1/2" GYP. BD. ON EACH SIDE.
4	FULL HEIGHT PARTITION FROM FLOOR TO DECK. 6" STEEL STUDS AT 16" O.C., ONE LAYER OF 1/2" GYP. BD. ON EACH SIDE.
5	PARTIAL HEIGHT FURRING PARTITION TO 4'-0" A.F.F., MIN. 1 1/2" STEEL STUD AT 16" O.C. AT FOUNDATION WALL, ONE LAYER OF 1/2" CEMENT BOARD.
6	FULL HEIGHT FURRING PARTITION FROM FLOOR TO DECK. 1 1/2" STEEL STUD AT 16" O.C. AT FOUNDATION WALL, ONE LAYER OF 1/2" GYP. BD.
7	FULL HEIGHT FURRING PARTITION FROM FLOOR TO 6" ABOVE CEILING. 1/2" HAT CHANNEL AT 16" O.C., ONE LAYER 1/2" PLYWOOD.

NOTE: THESE ARE ALL GENERAL WALL ASSEMBLIES NOTED ON THE PLAN. REFER TO "WALL/PARTITION NOTES" FOR SPECIAL CONSIDERATIONS IN SPECIFIC ROOMS, OR AREAS OF THE PLAN.

WALL/PARTITION NOTES	
1.	ALL DIMENSIONS ARE TO FINISH FACE OF SHEATHING. AND DO NOT INCLUDE THE THICKNESS OF TILE, FRP, OR OTHER FINISH MATERIALS.
2.	ALL DIMENSIONS OF BLOCK WALLS ARE TO FACE OF BLOCK.
3.	SUBSTITUTE GYP. BD. W/ BOTTOM 12" OF CEMENT BOARD AND 1/2" PLYWOOD FOR REMAINING HEIGHT OF WALLS AT THE FOLLOWING ROOMS: 103, 106, 107, 108, & 109.
4.	SUBSTITUTE GYP. BD. W/ 1/2" MOLD RESISTANT GYP. BD. AT ALL WALLS BEHIND WALK-IN COOLERS 106.
5.	SUBSTITUTE GYP. BD. W/ BOTTOM 12" OF CEMENT BOARD, AND 1/2" MOISTURE/MOLD RESISTANT GYP. BD. FOR REMAINING HEIGHT AT ALL RESTROOMS 109 & 110.
6.	CEMENT BOARD TO CEILING BEHIND HOODS. DISHWASHER & 3-COMPARTMENT SINK. EXTEND CEMENT BOARD MIN. 18" PAST HOODS ON EACH SIDE.
7.	PROVIDE SOUND BATT INSULATION IN WALLS SURROUNDING BATHROOMS.
8.	MIN. 26 GAUGE FOR PARTIAL HEIGHT PARTITION.
9.	IF WALL CONSTRUCTION CREATES A CONCEALED SPACE, WALL SHEATHING MAY BE OMITTED FROM INSIDE THE CONCEALED AREA, UNLESS NOTED OTHERWISE.



DINING & COMMON AREAS RESTROOMS

2 VCT FLOOR PATTERNS
A2.1 3/8" = 1'-0"

MARK	DESCRIPTION	DETAIL
A	ORDER COUNTER	SIM. 1/A5.2
B	FOOD PREP COUNTER	2/A5.2
C	REFRIGERATOR COUNTER	4/A5.2
D	TRANSACTION COUNTER	1/A5.2
E	CONDIMENT COUNTER	SIM. 1/A5.2
F	BANQUETTE SEATING	3/A5.2
G	DISPLAY CABINET	9/A5.2
H	REFUSE CABINET	6/A5.2
J	TALL STORAGE CABINET	10/A5.2
K	DINING COUNTER	11/A5.2

WALL FINISH LEGEND

REFER TO SHEET A4.0, A4.1, & A6.0 FOR LOCATIONS AND HEIGHTS OF FINISHES

--- WALLS WITH FULL HEIGHT FRP PANELING USE WF-1 UNLESS NOTED OTHERWISE

~ ~ ~ WALLS WITH FULL HEIGHT STAINLESS STEEL PANELING

--- WALLS WITH CERAMIC TILE: HEIGHT AS INDICATED ON INT. ELEV.

└ ┘ STAINLESS STEEL CORNER AND END WALL GUARDS

FINISH KEY

CON EXTERIOR CONCRETE

EPX EPOXY FLOOR COATING (FF-1)

VCT VINYL COMPOSITION TILE (FF-2)

FINISH NOTES

- INTERIOR WALL & CEILING FINISHES TO HAVE A FLAME SPREAD INDEX NOT GREATER THAN CLASS C AT ROOMS AND ENCLOSURES AND CLASS B AT CORRIDORS PER IBC(2018) TABLE 803.13.
- INTERIOR FLOOR FINISHES AND FLOOR COVERING MATERIALS SHALL NOT BE LESS THAN CLASS II PER IBC(2018) SECTION 804.4.2.
- COOLER WALLS TO HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 75 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450 PER IBC(2018) SECTION 2603.3.
- REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL FINISHES OVERHEAD.
- PROVIDE STAINLESS STEEL WALL CAPS AT ALL WING WALLS LESS THAN 6" WIDE AND CORNER GUARDS AT ALL EXTERIOR CORNERS FROM TOP OF COVE TO B.O. CEILING GRID.
- PROVIDE GALVALUME CLOSURE STRIPS AT ALL OUTSIDE CORNERS OF COOLERS BUTTING TO WALLS, TYP.

SEATING SUMMARY

TYPE	TABLES	SEATS
DINING		
Stools		3
2-Tops	10	20
4-Tops	8	32
Total	18	55

ACCESSIBLE ACCESS CALCULATIONS

ALL TABLES TO CONFORM TO ANSI A117.1-2009 SECTION 902.2, 902.3, & 902.4.

REQUIRED ACCESSIBLE SEATING
PER IBC 2018, SECTION 1108.2.9.1

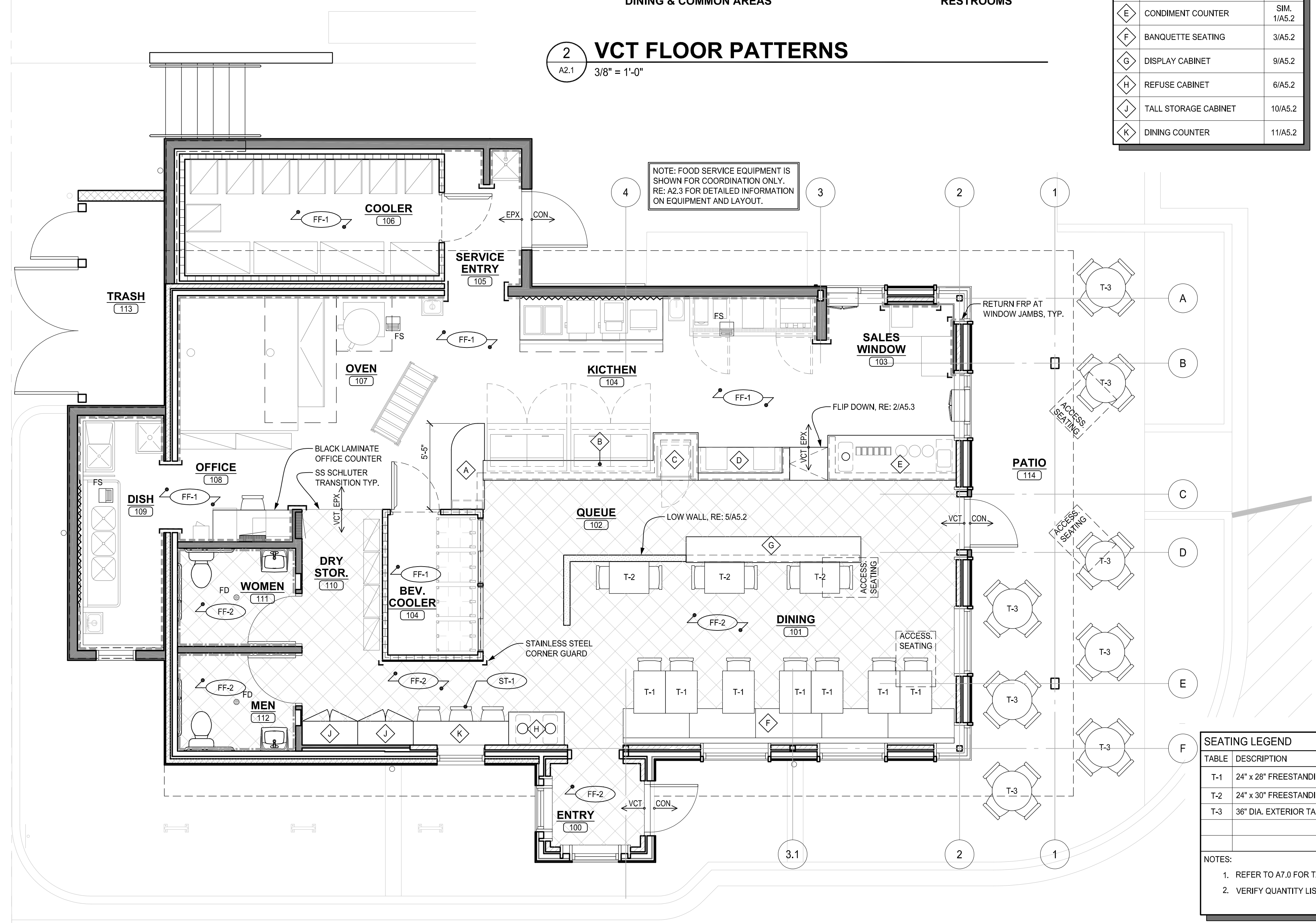
DINING = 20 SEATS x 0.05 = 1 SEAT
PATIO = 32 SEATS x 0.05 = 2 SEATS

SEATING LEGEND

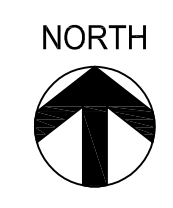
TABLE	DESCRIPTION	QUANTITY	BASE	SEAT
T-1	24" x 28" FREESTANDING TABLE, 30" A.F.F	7	B-1	CH-1 & 3/A5.2
T-2	24" x 30" FREESTANDING TABLE, 30" A.F.F	3	B-1	CH-1
T-3	36" DIA. EXTERIOR TABLE	8	-	-

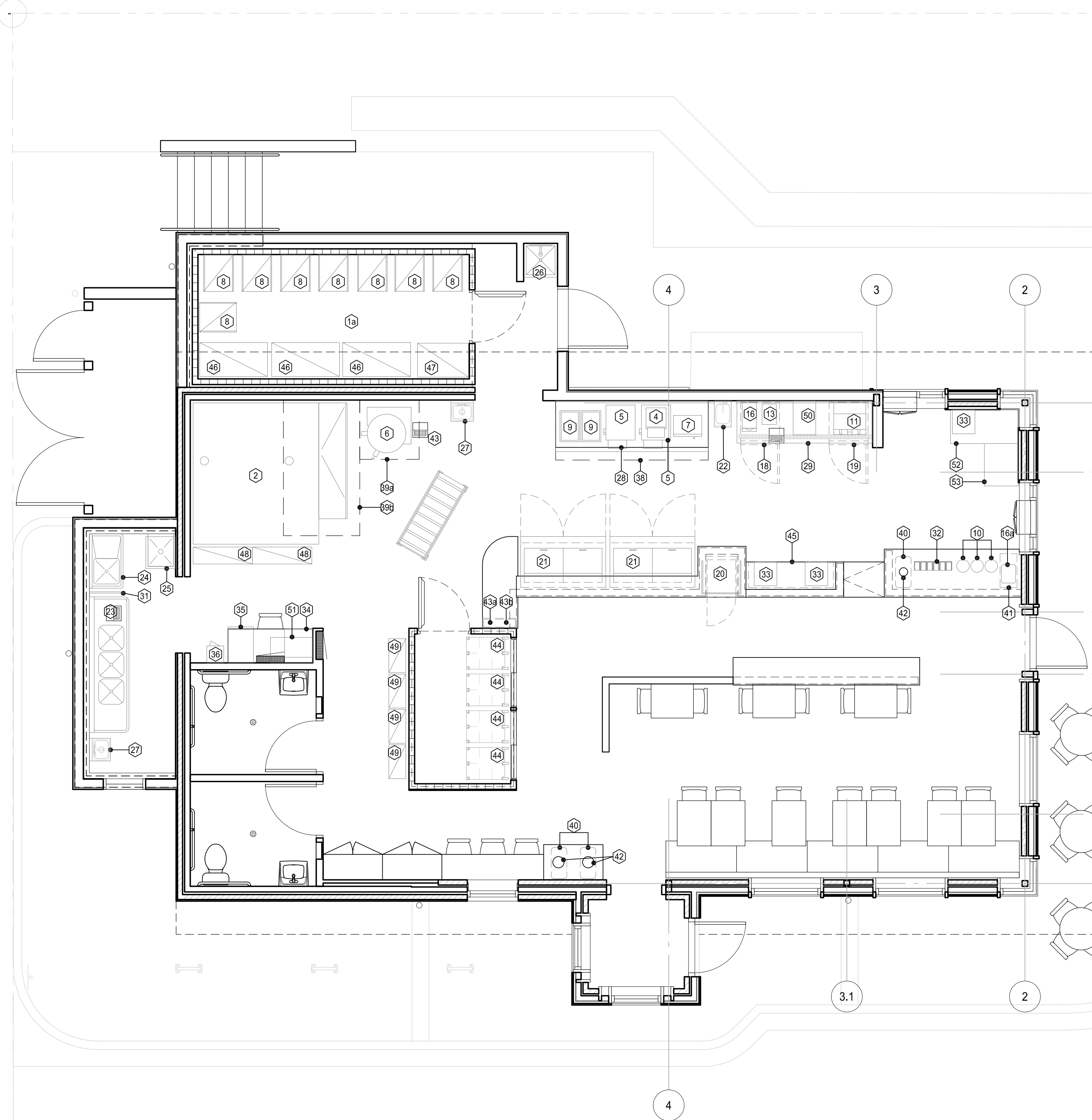
NOTES:

- REFER TO A7.0 FOR TABLE, CHAIR & BASE SPECIFICATIONS
- VERIFY QUANTITY LISTED WITH TABLES SHOWN IN PLAN BEFORE ORDERING.



1 FURNITURE / FINISH PLAN
A2.2 1/4" = 1'-0"



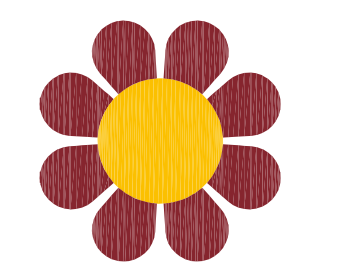


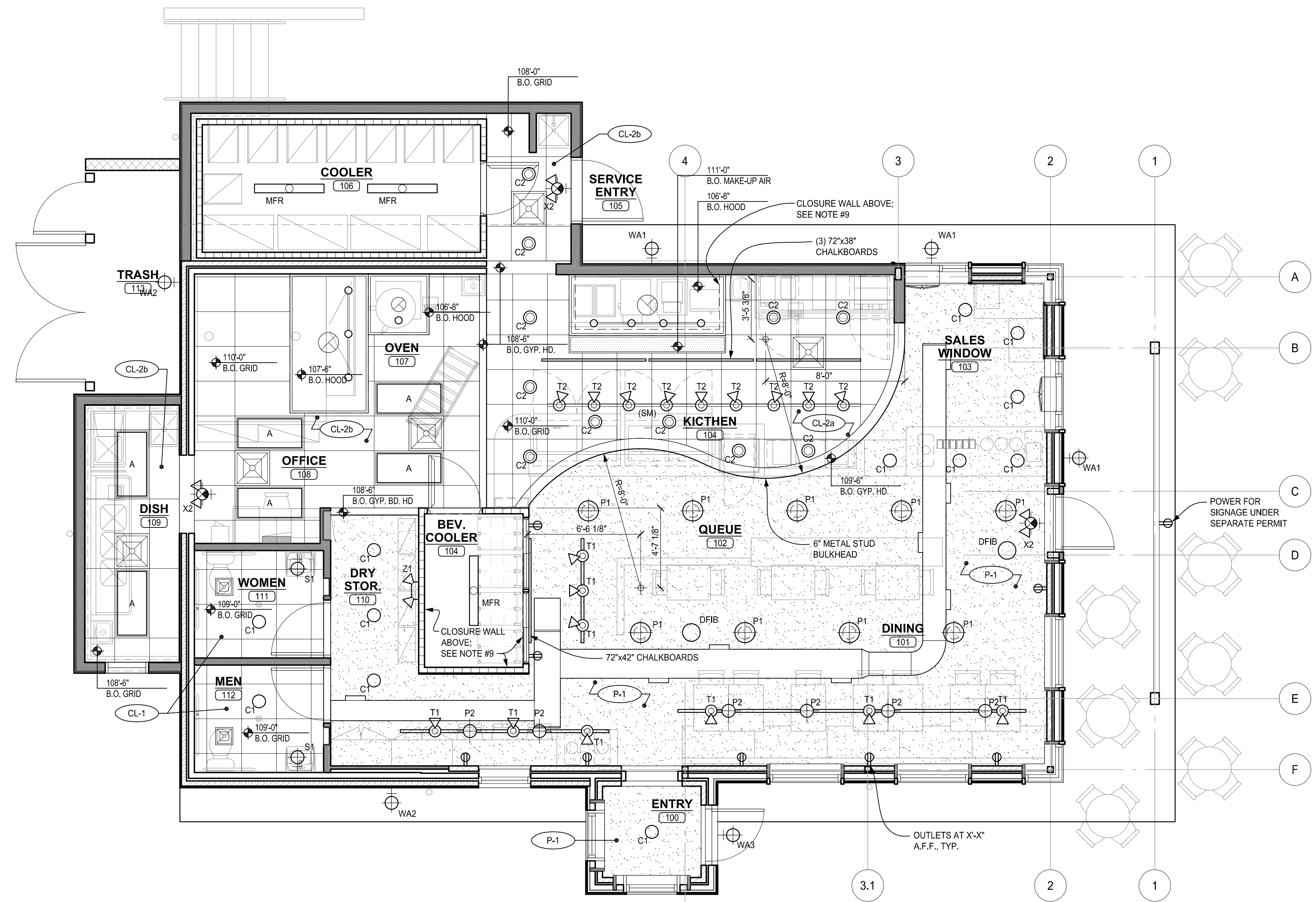
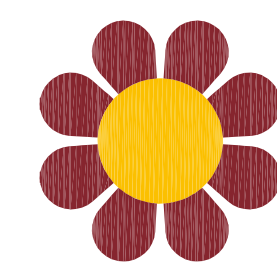
1
A2.3
1/4" = 1'-0"

KITCHEN EQUIPMENT PLAN



NO.	DESCRIPTION	QTY.	SIZE (WxDxH)	ELECTRICAL	GAS	WATER	SUPPLIED	INSTALLED	NOTES
1a	WALK-IN COOLER	1	8'-0" x 16'-10" x 8'-6"	208 /60 /3 & 115 /60 /1	N/A	N/A	TENANT	TENANT	
1b	WALK-IN BEVERAGE COOLER	1	6'-4" x 9'-7" x 8'-6"	208 /60 /3 & 115 /60 /1	N/A	N/A	TENANT	TENANT	
2	BAGEL OVEN	1	7'-4" x 7'-5" x 6'-11"	115 /60 /1 10.0 AMPS	6" WC / 155,000 BTU	N/A	TENANT	TENANT	
3	NOT USED	-	-	-	-	-	-	-	
4	CONVEYOR TOASTER	1	15" x 21" x 14"	208 /60 /1 15.9 AMPS	N/A	N/A	TENANT	TENANT	
5	THERMO FINISHER	2	31" x 22" x 17"	208 /60 /3 19.0 AMPS	N/A	N/A	TENANT	TENANT	
6	GAS KETTLE	1	36" x 37" x 41"	115 /60 /1 10.0 AMPS	3/4" MALE / 4'-14" WC / 140,000 BTU	3/4" SOFT COPPER TUBING	TENANT	CONTRACTOR	
7	MICROWAVE	1	20" x 16.5" x 12.25"	120 /60 /1 15.0 AMPS	N/A	N/A	TENANT	TENANT	
8	BAGEL RACK	8	21" x 26" x 72"	N/A	N/A	N/A	TENANT	TENANT	
9	STEAM TABLE	2	14" x 22" x 9"	120W/700 WATTS 8.3 AMPS	N/A	N/A	TENANT	TENANT	
10	COFFEE AIRPOT	3	TBD	N/A	N/A	N/A	TENANT	TENANT	
11	COFFEE BREWER - DOUBLE	1	23" x 23" x 37"	240 /60 /1 25.8 AMPS	N/A	3/4" MALE FLARE	TENANT	TENANT	VERIFY SINGLE PHASE OR THREE PHASE SERVICE PRIOR TO ORDERING
12	NOT USED	-	-	-	-	-	-	-	
13	COFFEE GRINDER	1	10.1" x 14.5" x 29.3"	115 /60 /1 8.0 AMPS	N/A	N/A	TENANT	TENANT	
14	NOT USED	-	-	-	-	1/2" COLD	-	-	
15	NOT USED	-	-	-	-	-	-	-	
16	ICE TEA BREWER	1	10" x 20.5" x 37.5"	115 /60 /1 13.8 AMPS	N/A	1/2" MALE FLARE	TENANT	TENANT	
16a	ICE TEA DISPENSER	1	10" x 13" x 37.5"	N/A	N/A	N/A	TENANT	TENANT	
17	NOT USED	-	-	-	-	-	-	-	
18	UNDERCOUNTER REFRIGERATOR	1	27 1/2" x 30" x 30 5/8"	115 /60 /1 2.0 AMPS	N/A	N/A	TENANT	TENANT	
19	UNDERCOUNTER FREEZER	1	27 1/2" x 30" x 30 5/8"	115 /60 /1 5.0 AMPS	N/A	N/A	TENANT	TENANT	
20	UNDERCOUNTER DISPLAY REFRIG.	1	20 3/8" x 26 1/2" x 36"	115 /60 /1 2.3 AMPS	N/A	N/A	TENANT	TENANT	
21	SANDWICH TABLE	2	60 1/8" x 36" x 44 1/2"	115 /60 /1 7.8 AMPS	N/A	N/A	TENANT	TENANT	
22	DUMP SINK	1	12" x 18 1/2" x 34"	N/A	N/A	1/2" HOT & COLD	TENANT	CONTRACTOR	
23	3 COMP. SINK	1	102" x 24" x 44 1/2"	N/A	N/A	1/2" HOT & COLD	TENANT	CONTRACTOR	
24	VEGETABLE SINK	1	38.5" x 24" x 44.8"	N/A	N/A	1/2" HOT & COLD	TENANT	CONTRACTOR	
25	PAN SINK	1	31" x 21" x 36"	N/A	N/A	1/2" HOT & COLD	TENANT	CONTRACTOR	PROVIDE SPRAY HOSE
26	MOP SINK	1	24" x 24" x 10"	N/A	N/A	1/2" HOT & COLD	CONTRACTOR	CONTRACTOR	
27	HAND SINK	2	15" x 16" x 6"	N/A	N/A	1/2" HOT & COLD	TENANT	CONTRACTOR	
28	STAINLESS STEEL TABLE W/ ENCLOSED CABINETS	1	108" x 40" x 36"	N/A	N/A	N/A	TENANT	TENANT	SITS ON 4" HOUSEKEEPING SLAB - CUSTOM TABLE
29	STAINLESS STEEL TABLE	1	100" x 30" x 36"	N/A	N/A	N/A	TENANT	TENANT	CUSTOM TABLE
30	STAINLESS STEEL TABLE	1	52" x 30" x 36"	N/A	N/A	N/A	TENANT	TENANT	
31	STAINLESS STEEL DIVIDER	1	24" x 24"	N/A	N/A	N/A	TENANT	TENANT	
32	CONDIMENT BIN	-	TBD	N/A	N/A	N/A	TENANT	TENANT	
33	POS COMPUTER / CASH DRAWER	3	16" x 16.8" x 5"	115 /60 /1	N/A	N/A	TENANT	TENANT	
34	OFFICE SAFE	1	20" x 20" x 40"	N/A	N/A	N/A	TENANT	TENANT	
35	FILE CABINET	1	18" x 26.5" x 28.5"	N/A	N/A	N/A	TENANT	TENANT	
36	EMPLOYEE LOCKERS	1	12" x 14" x 72"	N/A	N/A	N/A	TENANT	TENANT	
37	BAG-IN-BOX	1	28" x 19" x 60"	N/A	N/A	N/A	TENANT	TENANT	
38	TYPE 2 EXHAUST HOOD	1	42" x 108" x 24"	TBD	N/A	N/A	CONTRACTOR	CONTRACTOR	COOKLINE HOOD (6'-8" A.F.F.)
39a	TYPE 2 EXHAUST HOOD	1	42" x 42" x 48"	TBD	N/A	N/A	CONTRACTOR	CONTRACTOR	GAS KETTLE HOOD (6'-8" A.F.F.)
39b	TYPE 2 EXHAUST HOOD	1	52" x 84" x 36"	TBD	N/A	N/A	CONTRACTOR	CONTRACTOR	OVEN HOOD (7'-8" A.F.F.)
40	SLIM JIM TRASH CAN	1	11" x 22" x 30"	N/A	N/A	N/A	TENANT	TENANT	
41	BEVERAGE CONTAINER STORAGE	1	TBD	N/A	N/A	N/A	TENANT	TENANT	
42	STAINLESS STEEL SCRAP CHUTE	2	6" DIAMETER	N/A	N/A	N/A	CONTRACTOR	TENANT	
43	MOBILE BAGEL DISPLAY RACK	1	60" x 24" x 74"	N/A	N/A	N/A	CONTRACTOR	CONTRACTOR	RE: X/A5.0
43a	SMALL BAG RACK	1	7" x 24" x 12 1/2"	N/A	N/A	N/A	CONTRACTOR	CONTRACTOR	RE: X/A5.0, MOUNT AT 3'-10" A.F.F.
43b	LARGE BAG RACK	1	7" x 24" x 17 1/2"	N/A	N/A	N/A	CONTRACTOR	CONTRACTOR	RE: X/A5.0, MOUNT AT 2'-0" A.F.F.
44	REFRIGERATOR SHELF RACKS	4	21" x 26" x 72"	N/A	N/A	N/A	TENANT	TENANT	
45	ADJUSTABLE SHELVES	4	18" x 60" x 14"	N/A	N/A	N/A	TENANT	TENANT	
46	ADJUSTABLE SHELVES	3	24" x 48" x 88"	N/A	N/A	N/A	TENANT	TENANT	
47	ADJUSTABLE SHELVES	1	24" x 36" x 88"	N/A	N/A	N/A	TENANT	TENANT	
48	ADJUSTABLE SHELVES	2	12" x 42" x 88"	N/A	N/A	N/A	TENANT	TENANT	
49	ADJUSTABLE SHELVES	4	12" x 24" x 88"	N/A	N/A	N/A	TENANT	TENANT	
50	ESPRESSO MACHINE	1	13" x 24" x 35"	208 /60 /1 23.0 AMPS	N/A	3/8" COLD	TENANT	TENANT	PROVIDE RECEPTACLE IN PROXIMITY FOR STEREO AND INTERNET EQUIP.
51	STEREO RACK	1	TBD	N/A	N/A	N/A	TENANT	TENANT	
52	STAINLESS STEEL TABLE W/ UNDERSHELF	1	48"x24"x42"	N/A	N/A	N/A	TENANT	TENANT	
53	STAINLESS STEEL TABLE W/ UNDERSHELF	1	30"x24"x42"	N/A	N/A	N/A	TENANT	TENANT	





REFLECTED CEILING PLAN LEGEND

- GYP. BD. CEILING
- ACOUSTICAL CEILING TILE
CL-1, CL-2a, & CL-2b
- ACOUSTICAL BOARD - USE 2x4 SHEETS CENTERED IN JOIST BAYS
CL-3, P-7
- E.T.S. (Exposed To Structure)
P-7
- LIGHT FIXTURES
- TRACK FIXTURES
- ROLLER SHADES

REFLECTED CEILING PLAN NOTES

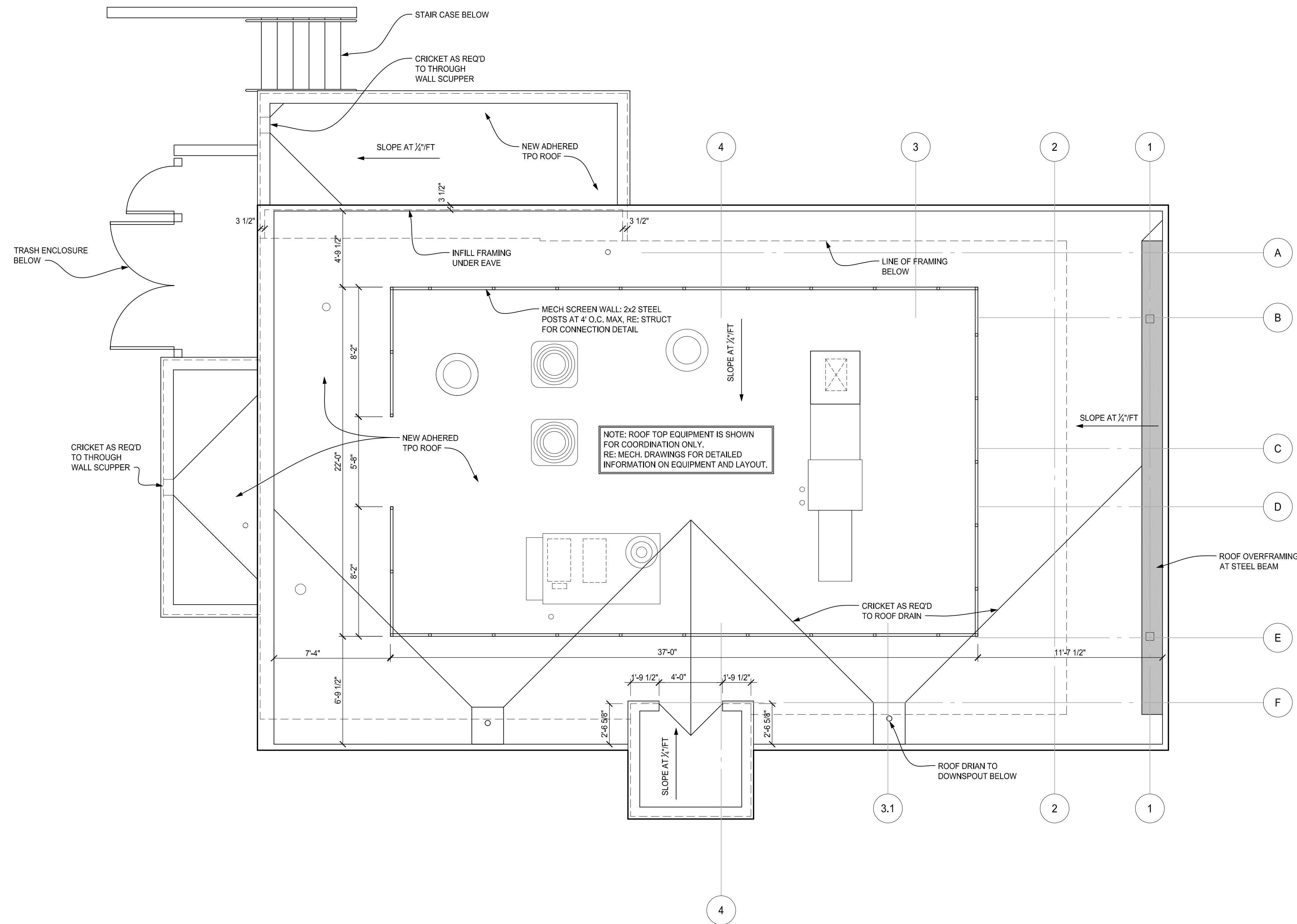
- ALL SPRINKLER HEADS AT FRONT OF HOUSE AREAS, AND IN ANY GYPSUM BOARD CEILINGS ARE TO BE FULLY CONCEALED.
- PROTECT ALL SPRINKLER HEADS WITH GUARDS IN ALL COOLERS.
- "MFR" INDICATES NEW FIXTURE PROVIDED BY MANUFACTURER.
- ALL NEW SIGNAGE UNDER SEPARATE PERMIT.
- WHERE DUCTWORK INTERFERES WITH LIGHTING, PROVIDE TRAPEZE SUPPORT FOR LIGHT TO MAINTAIN INDICATED LOCATION.
- ALL LIGHTING AND FIXTURE DIMENSIONS ARE TO CENTER LINE UNLESS NOTED OTHERWISE.
- ALL LIGHT FIXTURES IN CEILING TILES ARE TO BE CENTERED IN TILE UNLESS NOTED OTHERWISE.
- ALL ELECTRICAL & PLUMBING LINES, EXPOSED CEILING STRUCTURE, TO BE PAINTED (P-7).
- PROVIDE STEEL STUD @ GYP. BD. CLOSURE WALLS TO 6" ABOVE CEILING ABOVE ALL OPEN SIDES OF COOLERS AND HOODS, TYP. PROVIDE ACCESS PANELS WHERE POSSIBLE

TYP. INTERIOR LIGHT MOUNTING HEIGHTS

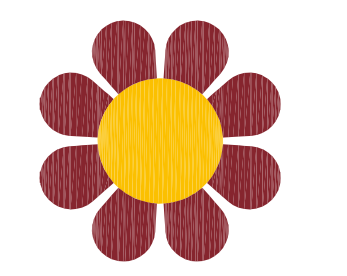
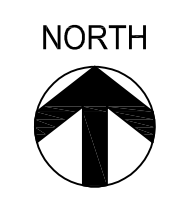
NOTES:
1. SEE INTERIOR ELEVATIONS ON A4.0 & A4.1 FOR ADDITIONAL INFORMATION.

TYPE	MOUNTING HEIGHT
P1	110'-0" (U.N.O.)
P2	107'-0" (U.N.O.)
T	111'-0" (U.N.O.) (SM) - SURFACE MOUNTED TRACK

1 REFLECTED CEILING PLAN
A2.4 1/4" = 1'-0"



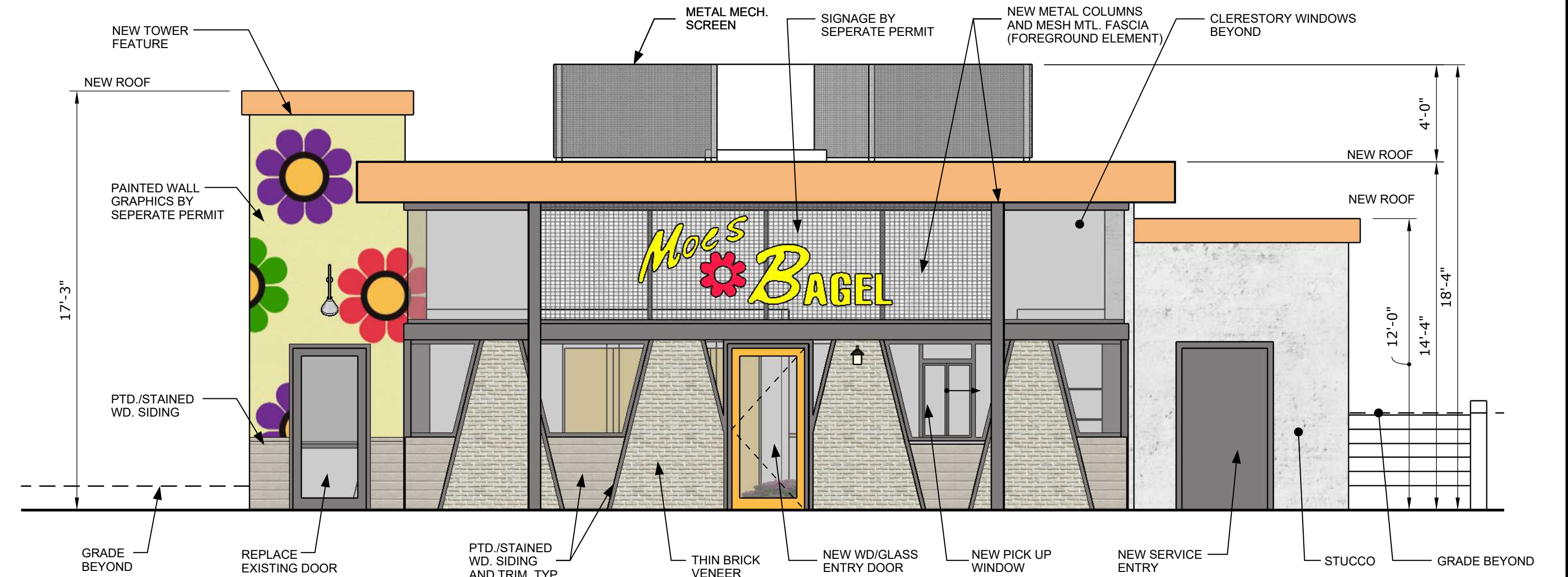
1 ROOF PLAN
A2.5 1/4" = 1'-0"



PROJECT No:	201914
ISSUE DATE:	11-30-20
REVISIONS:	
SHEET TITLE:	ROOF PLAN
SHEET NUMBER:	A2.5



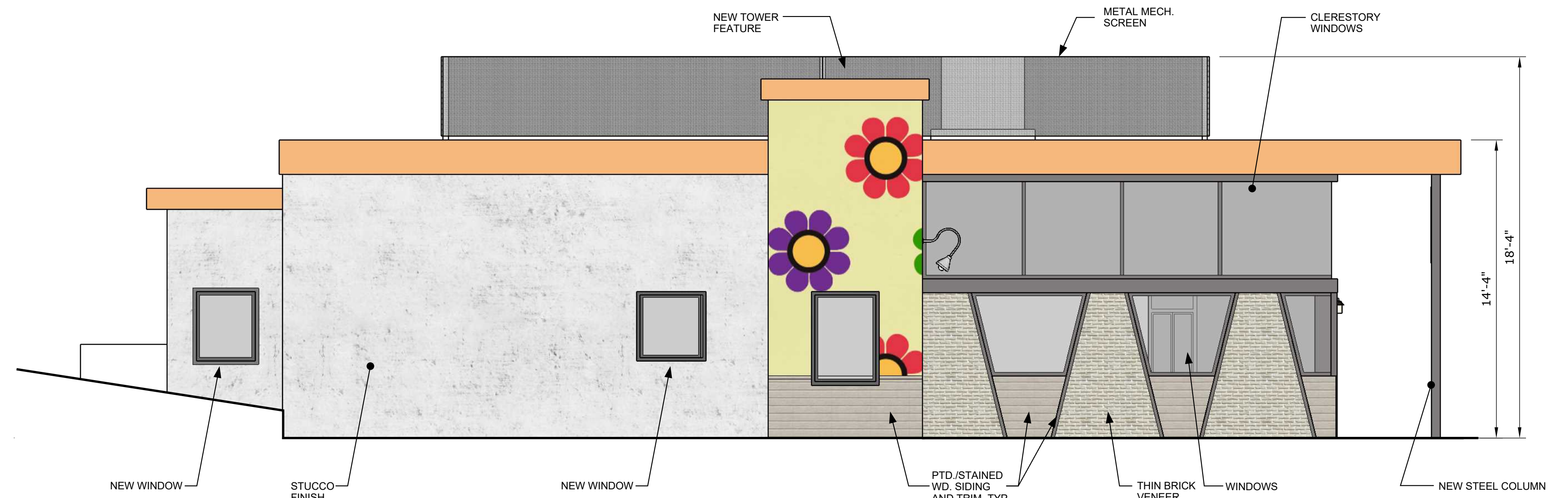
EXISTING



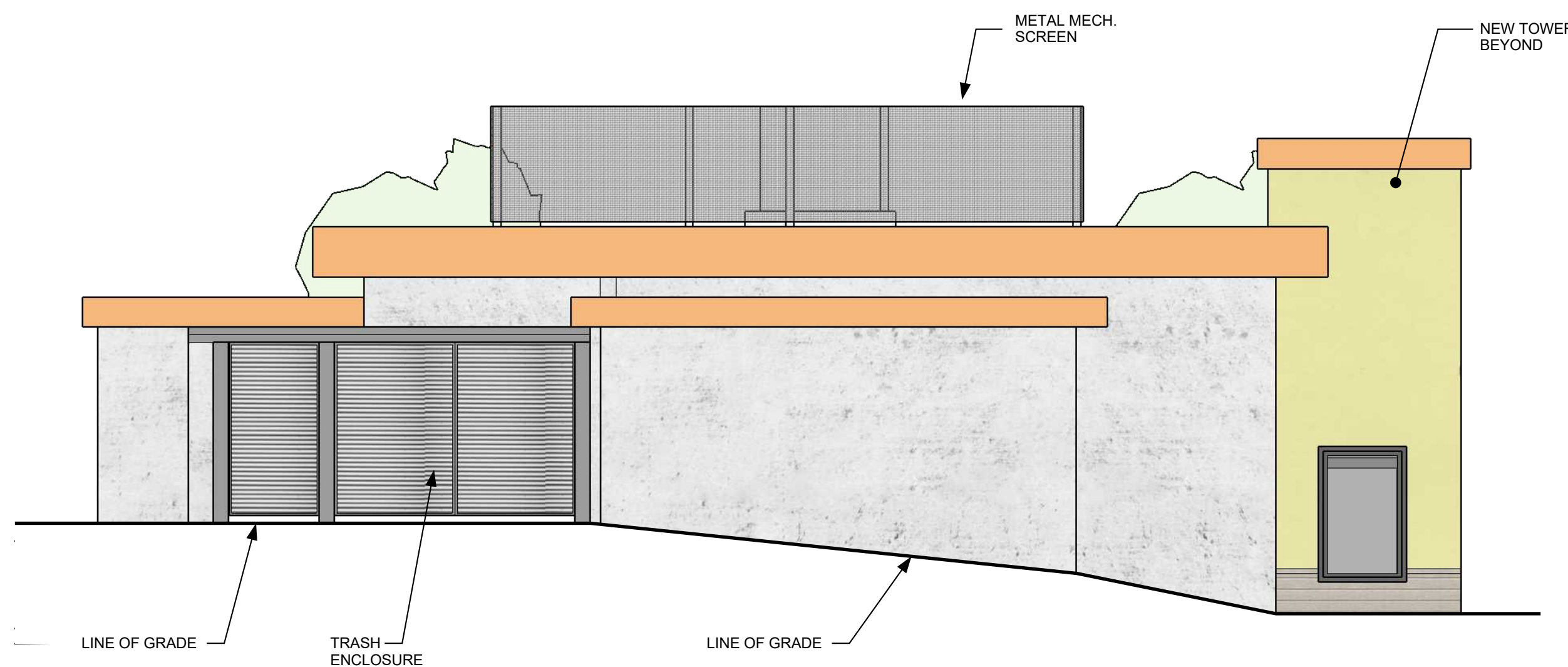
3 EXTERIOR ELEVATION (FRONT/EAST)
A3.0 1/4" = 1'-0"



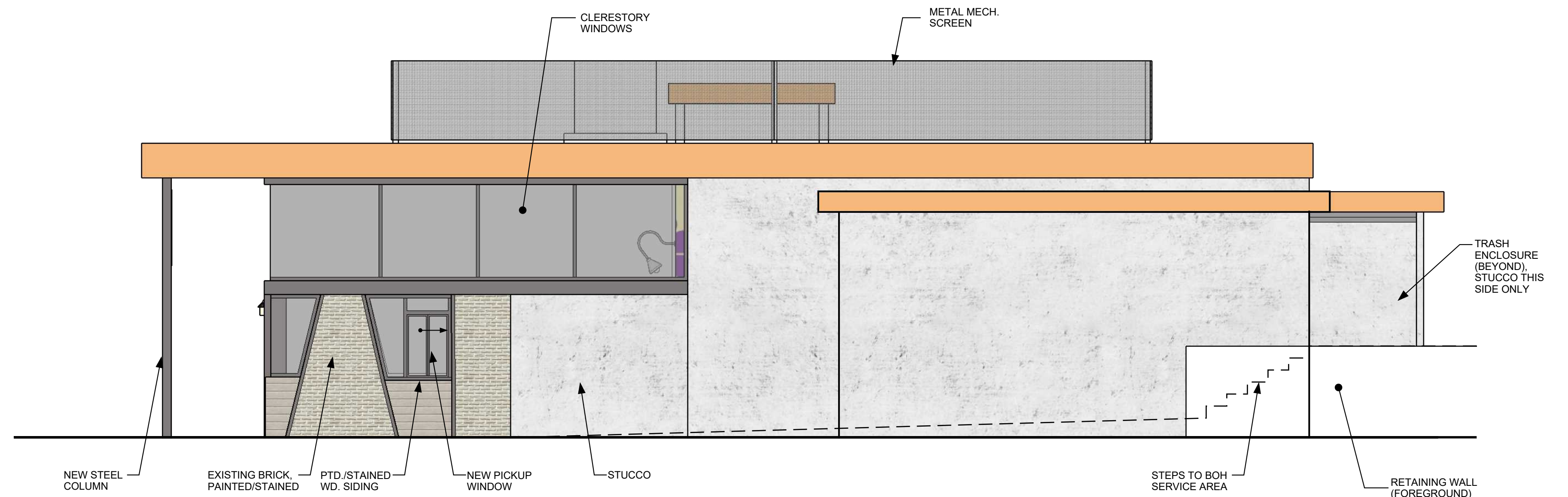
PERSPECTIVE VIEW



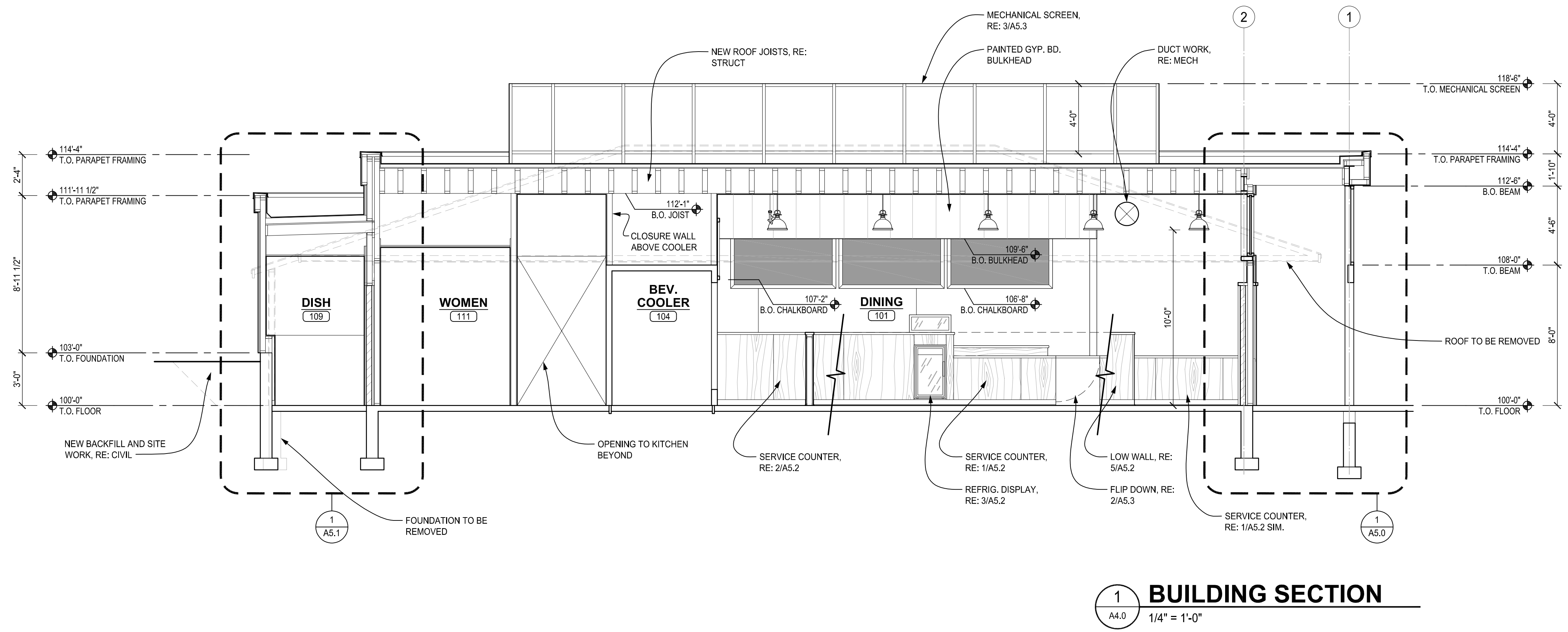
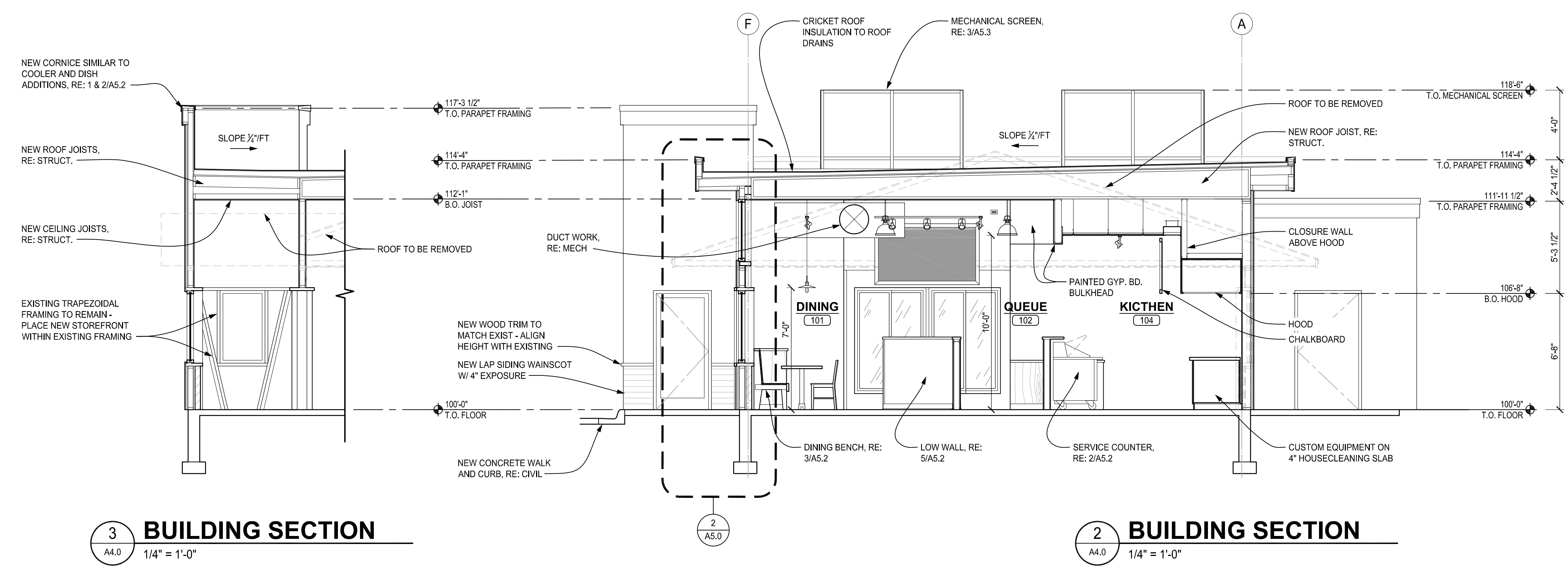
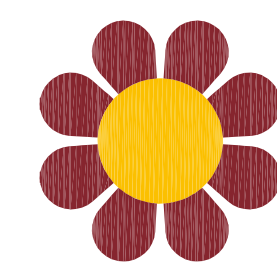
2 EXTERIOR ELEVATION (SIDE/SOUTH)
A3.0 1/4" = 1'-0"

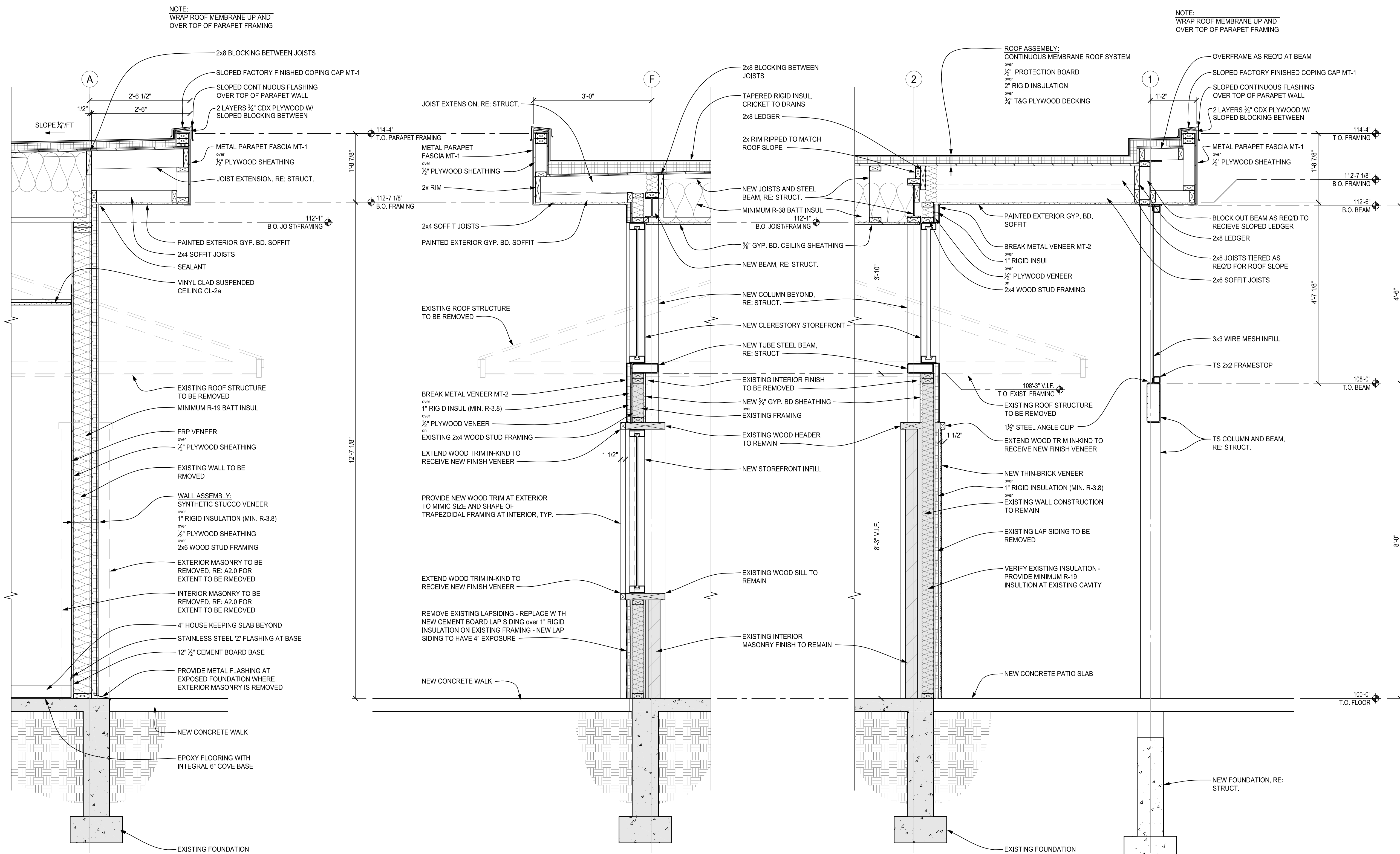
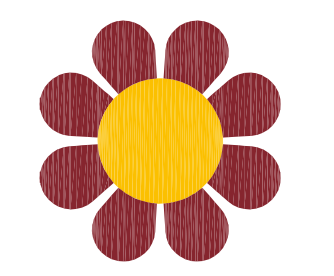


4 EXTERIOR ELEVATION (REAR/WEST)
A3.0 1/4" = 1'-0"



1 EXTERIOR ELEVATION (SIDE/NORTH)
A3.0 1/4" = 1'-0"



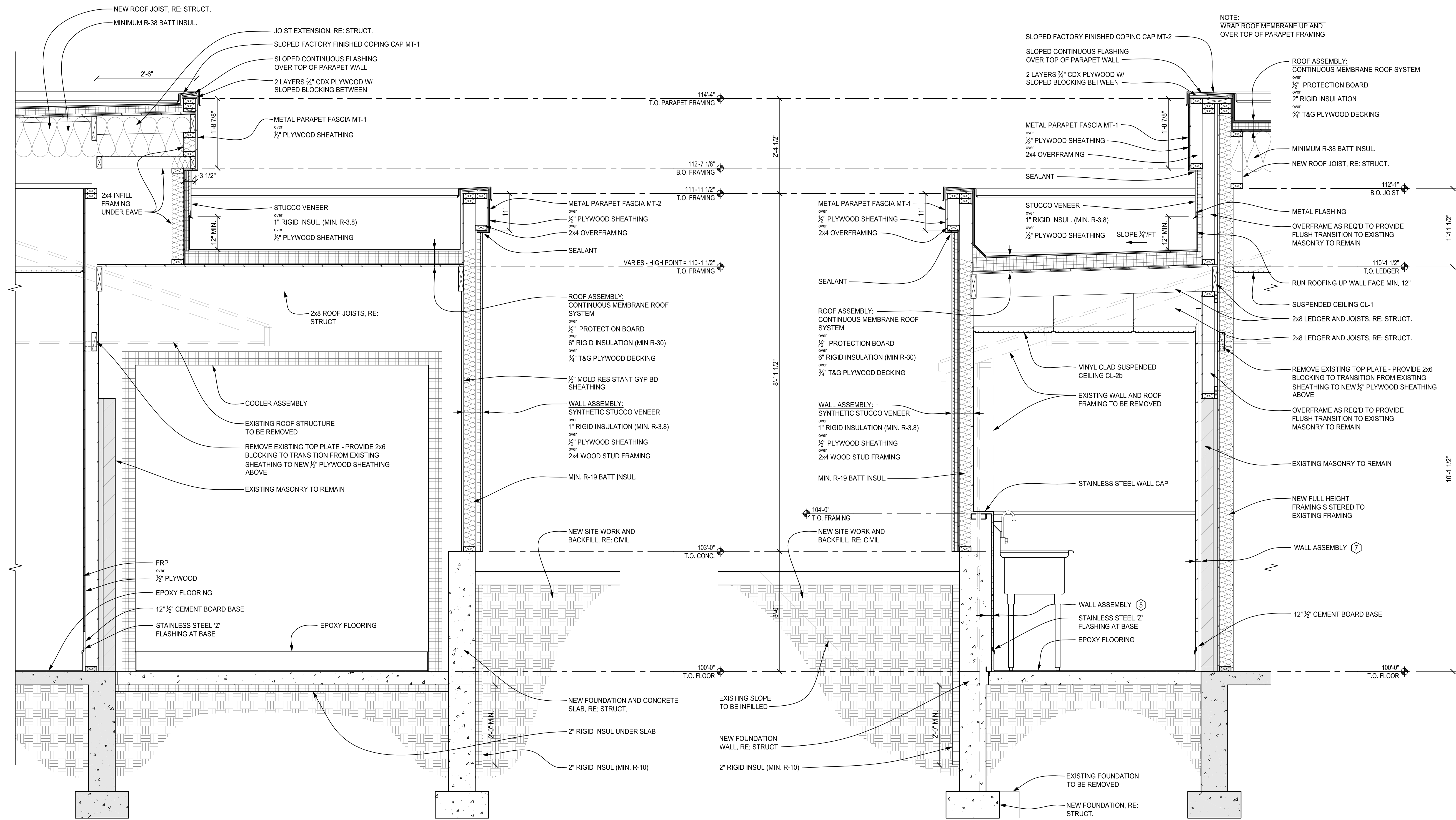
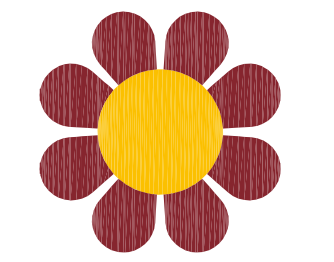


3 WALL SECTION
A5.0 3/4" = 1'-0"

2 WALL SECTION
A5.0 3/4" = 1'-0"

1 WALL SECTION
A5.0 3/4" = 1'-0"

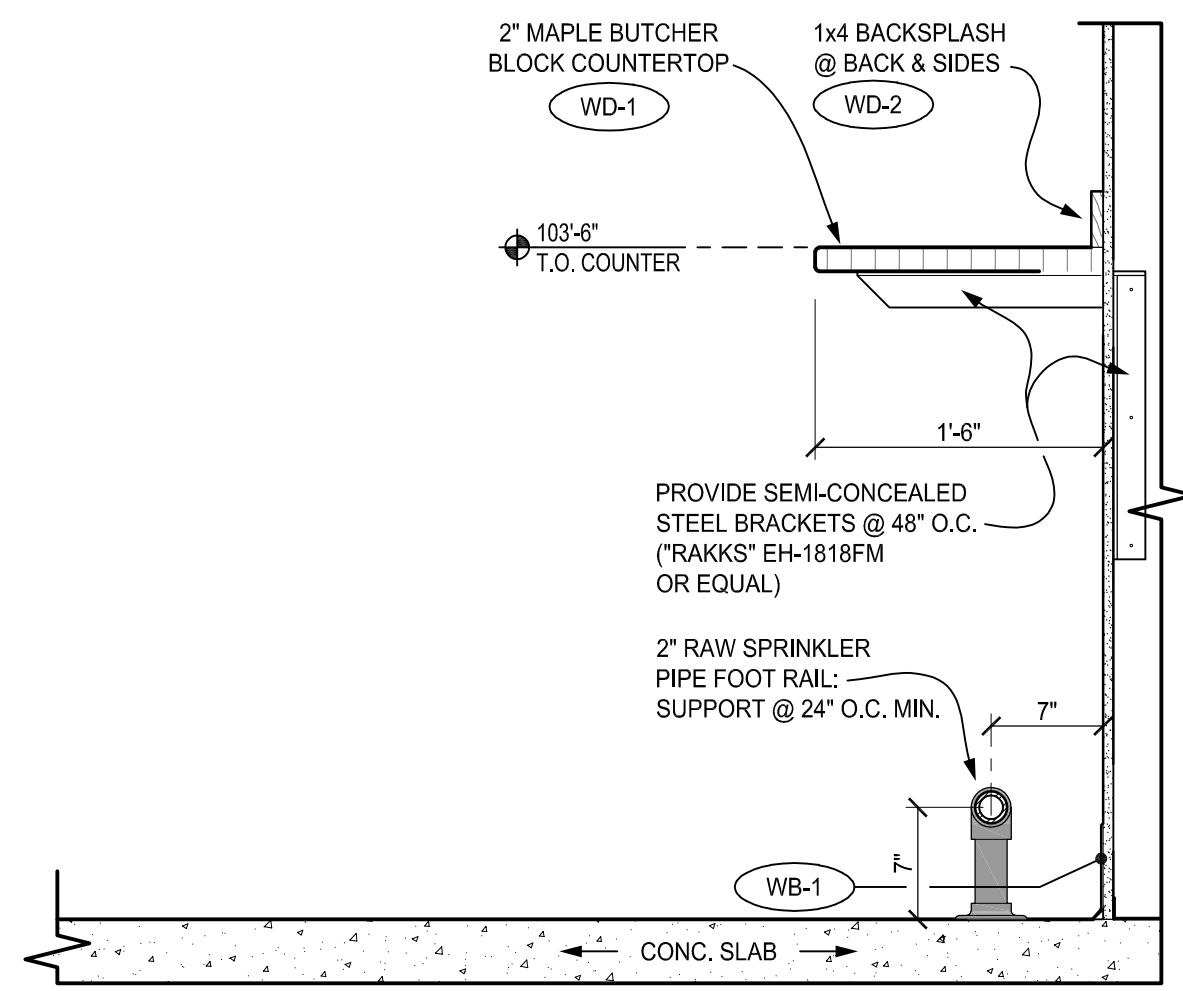
EXISTING STRUCTURE TO REMAIN - VERIFY INSULATION/PROVIDE MINIMUM R-19 INSULATION AT EXISTING FRAMING



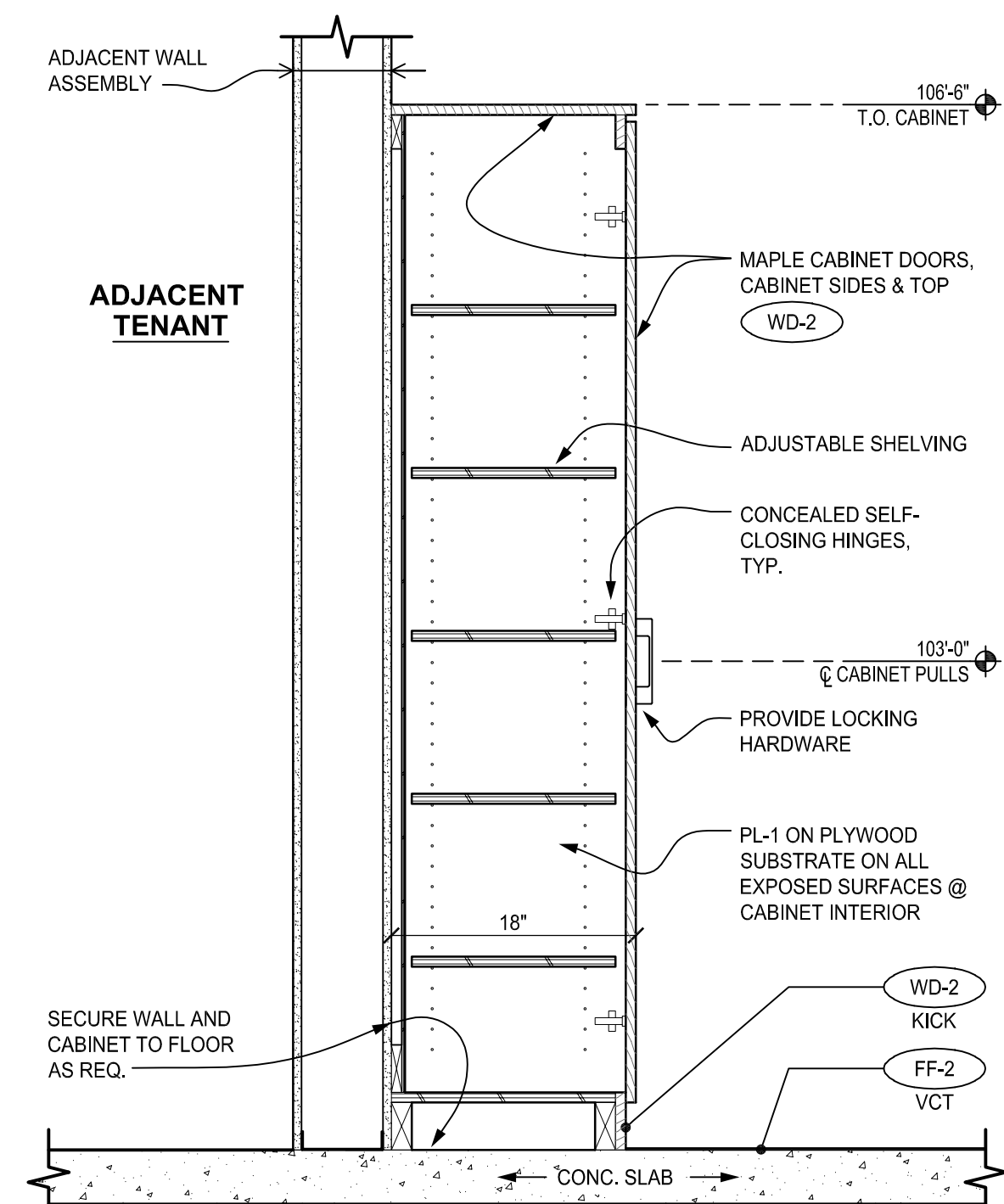
2 WALL SECTION
3/4" = 1'-0"

1 WALL SECTION
3/4" = 1'-0"

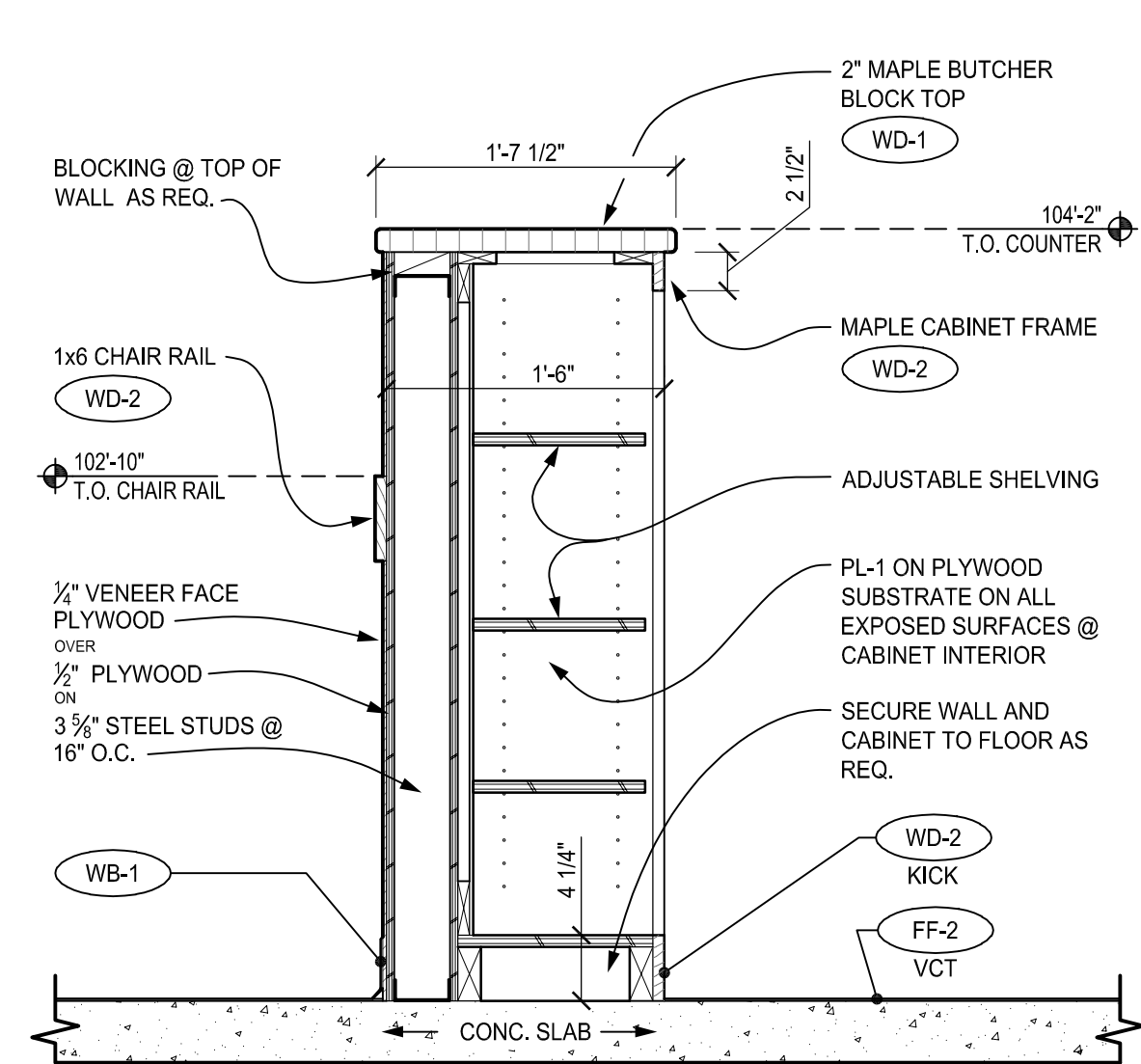
EXISTING STRUCTURE TO REMAIN - VERIFY INSULATION/PROVIDE MINIMUM R-19 INSULATION AT EXISTING FRAMING



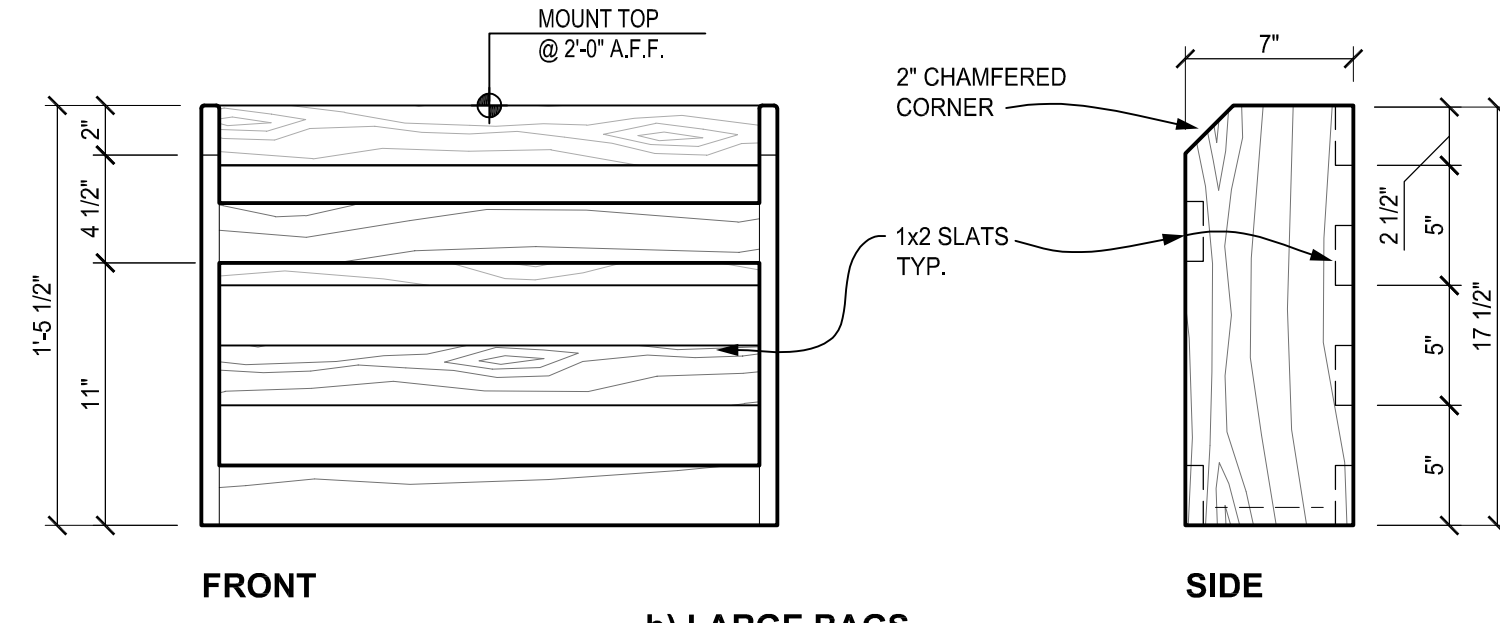
11 DINING COUNTER
A5.2 1" = 1'-0"



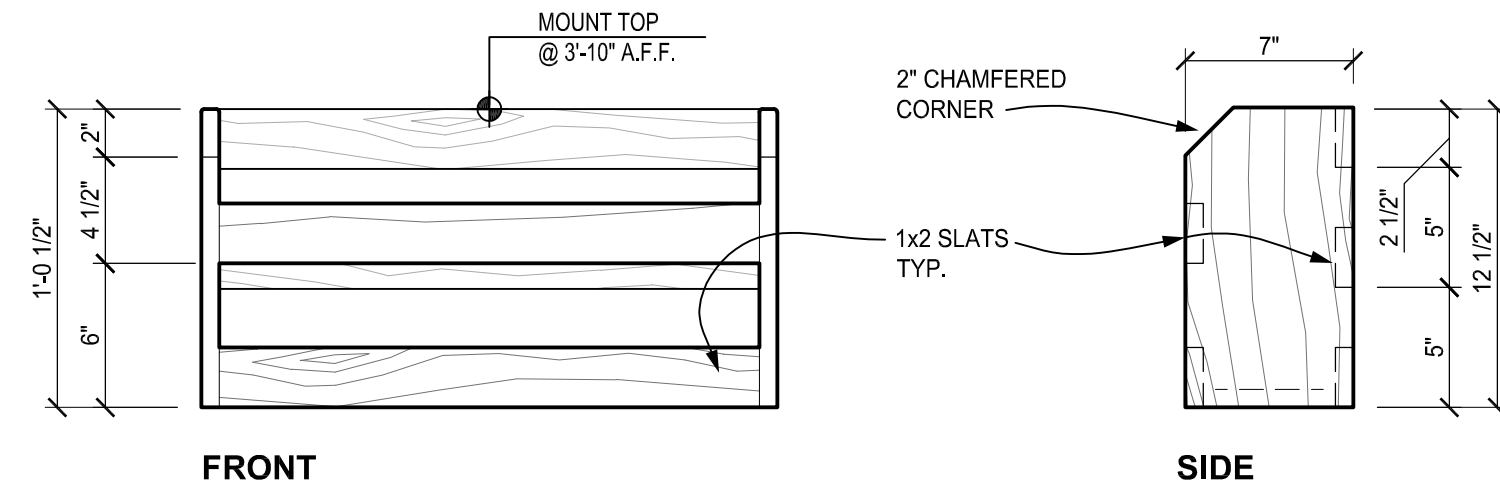
10 TALL STORAGE
A5.2 1" = 1'-0"



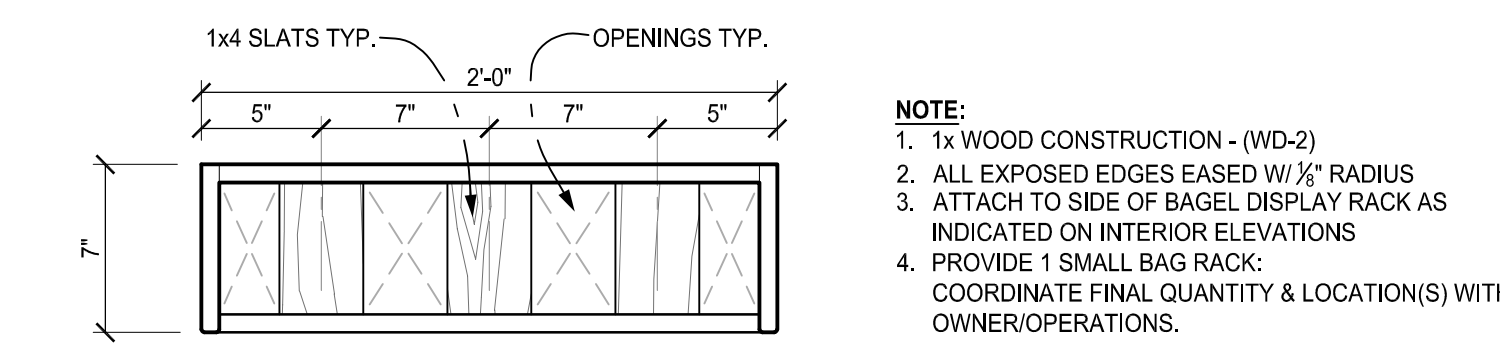
9 DISPLAY CABINET
A5.2 1" = 1'-0"



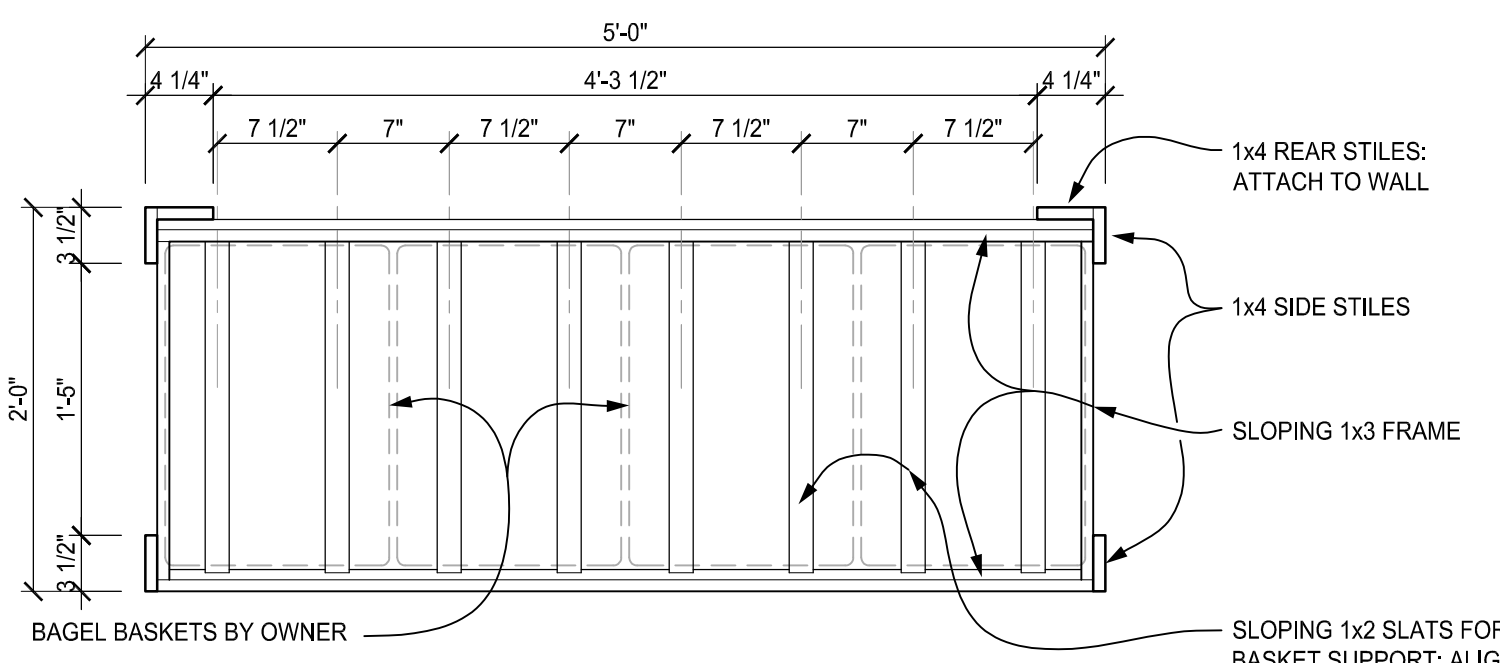
b) LARGE BAGS



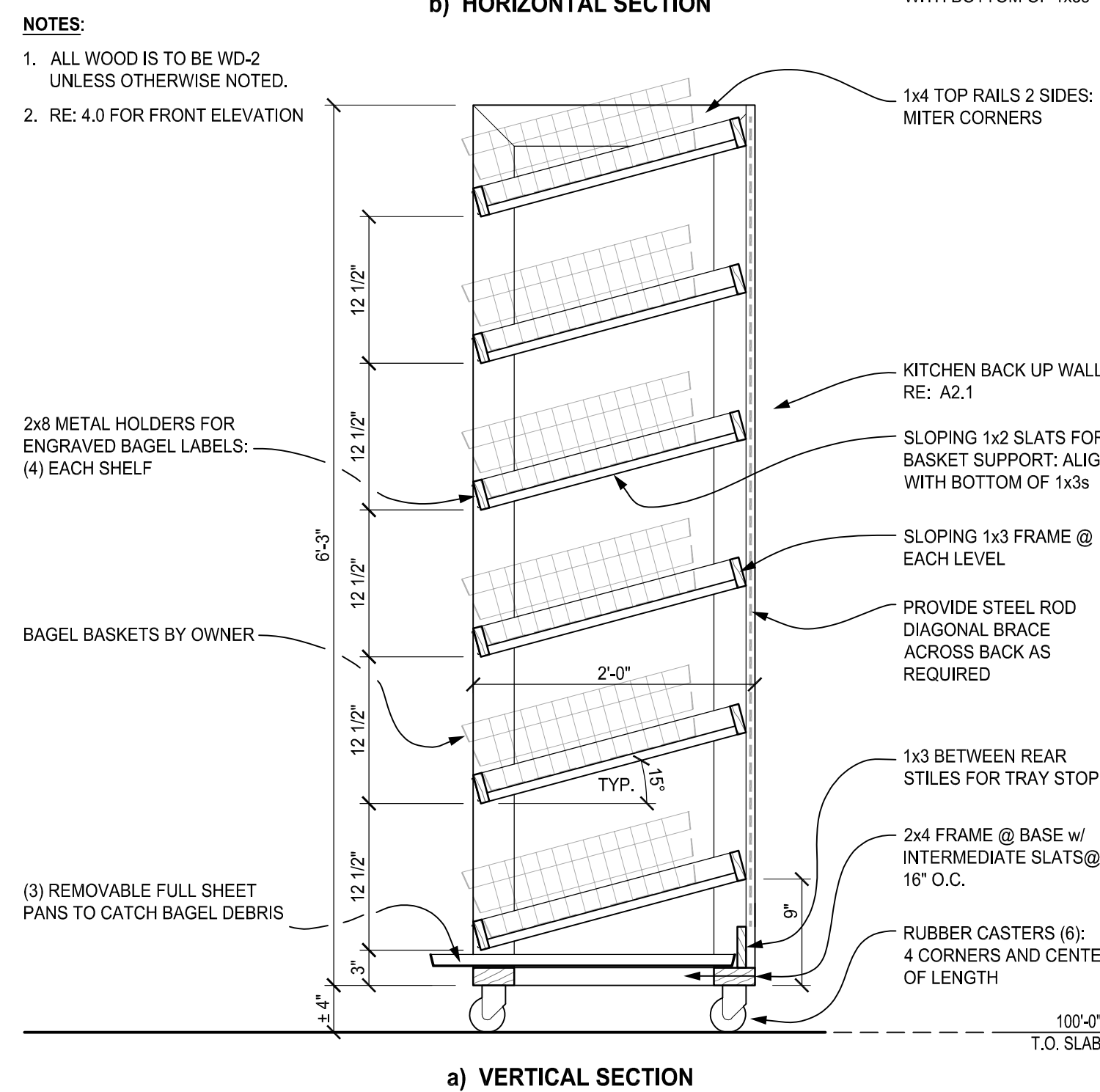
a) SMALL BAGS



8 PAPER BAG RACKS
A5.2 1-1/2" = 1'-0"

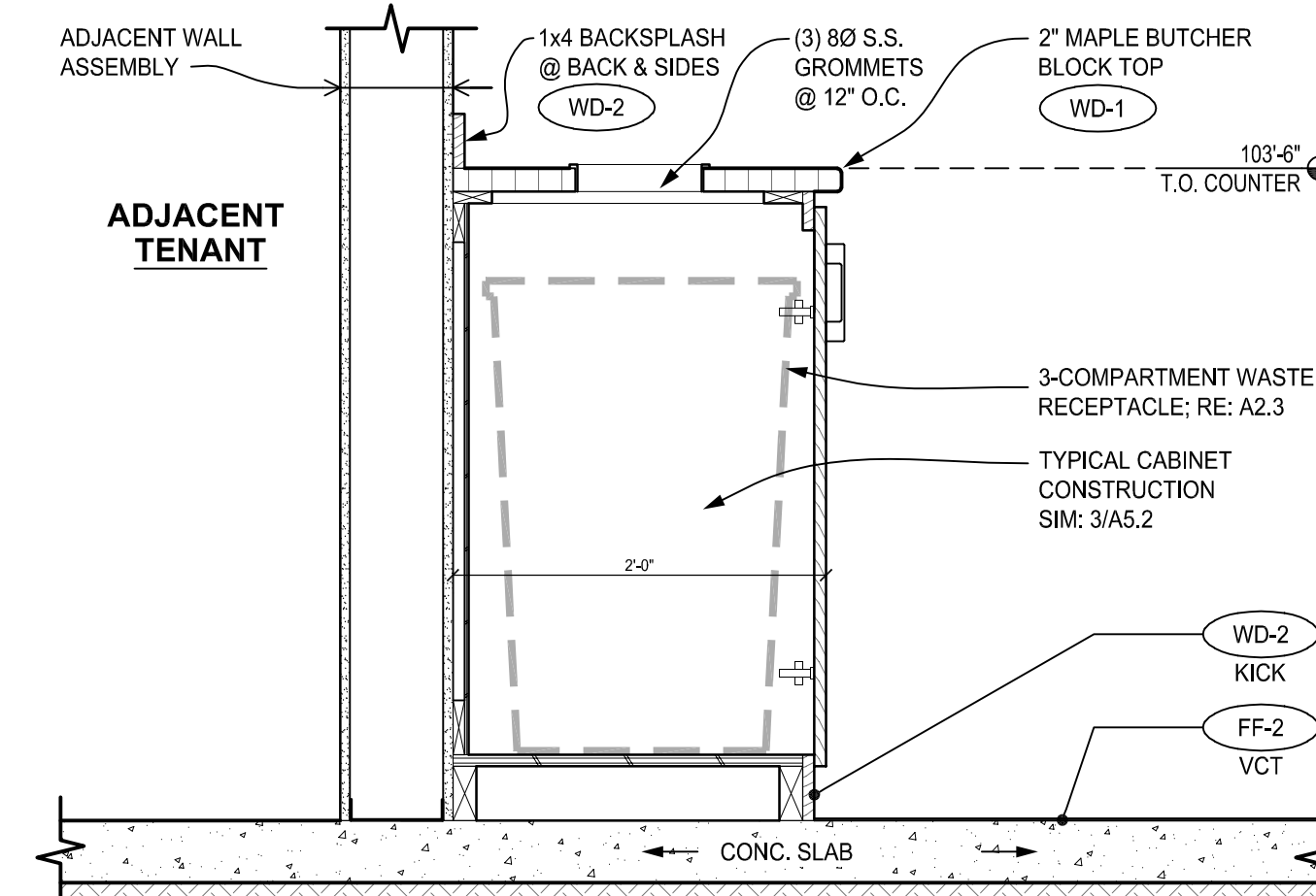


b) HORIZONTAL SECTION

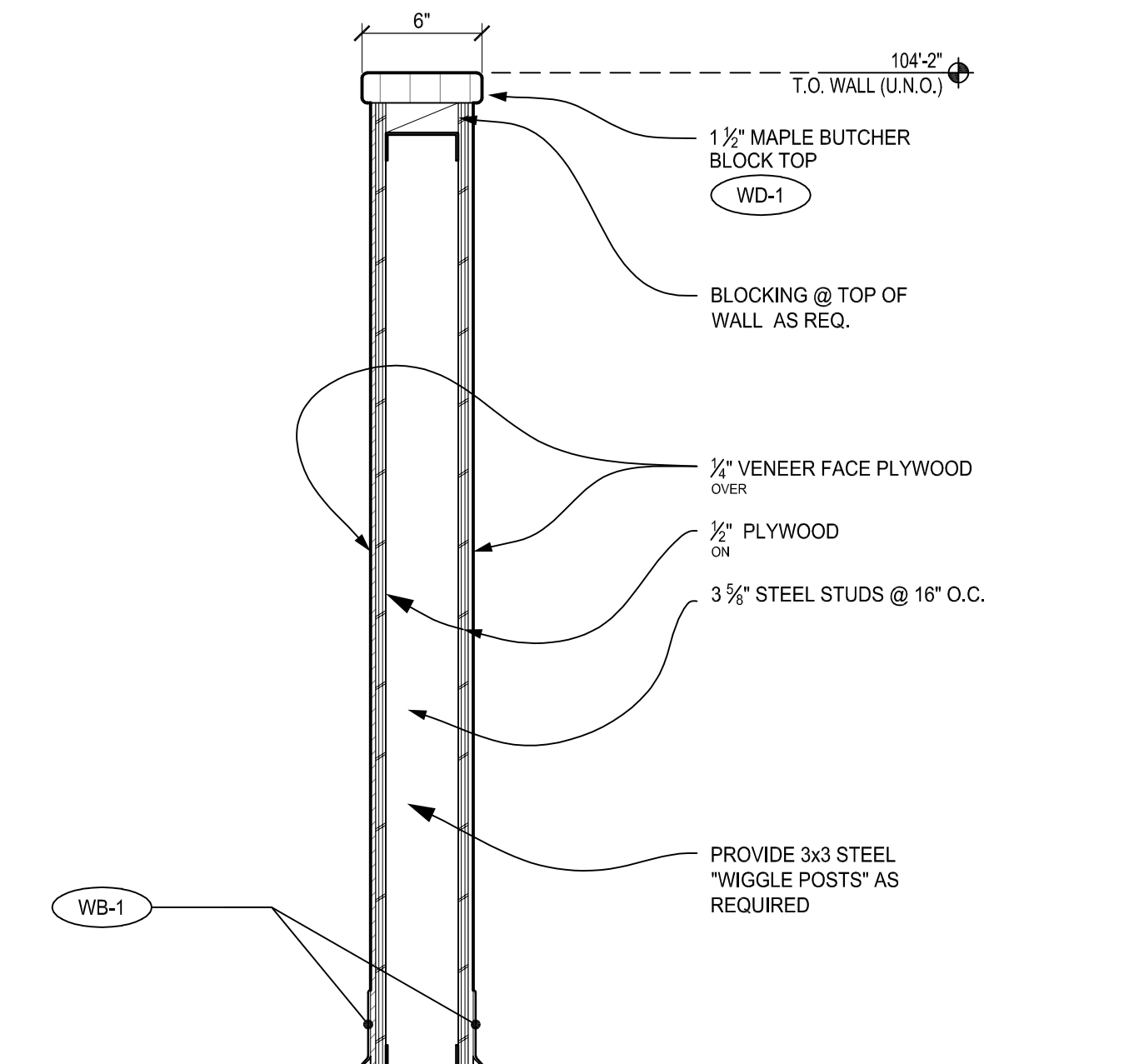


a) VERTICAL SECTION

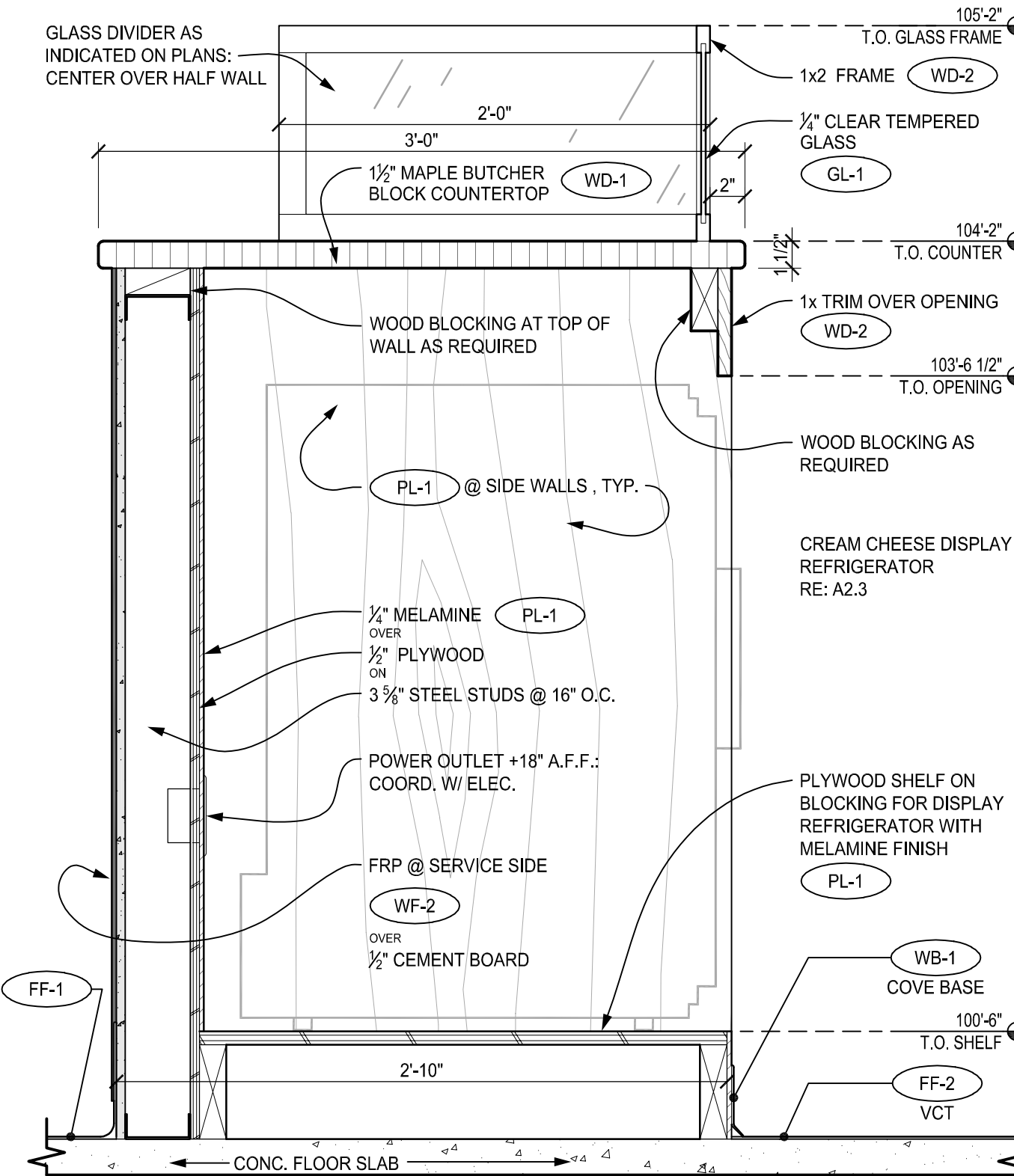
7 MOBILE BAGEL DISPLAY RACK
A5.2 1" = 1'-0"



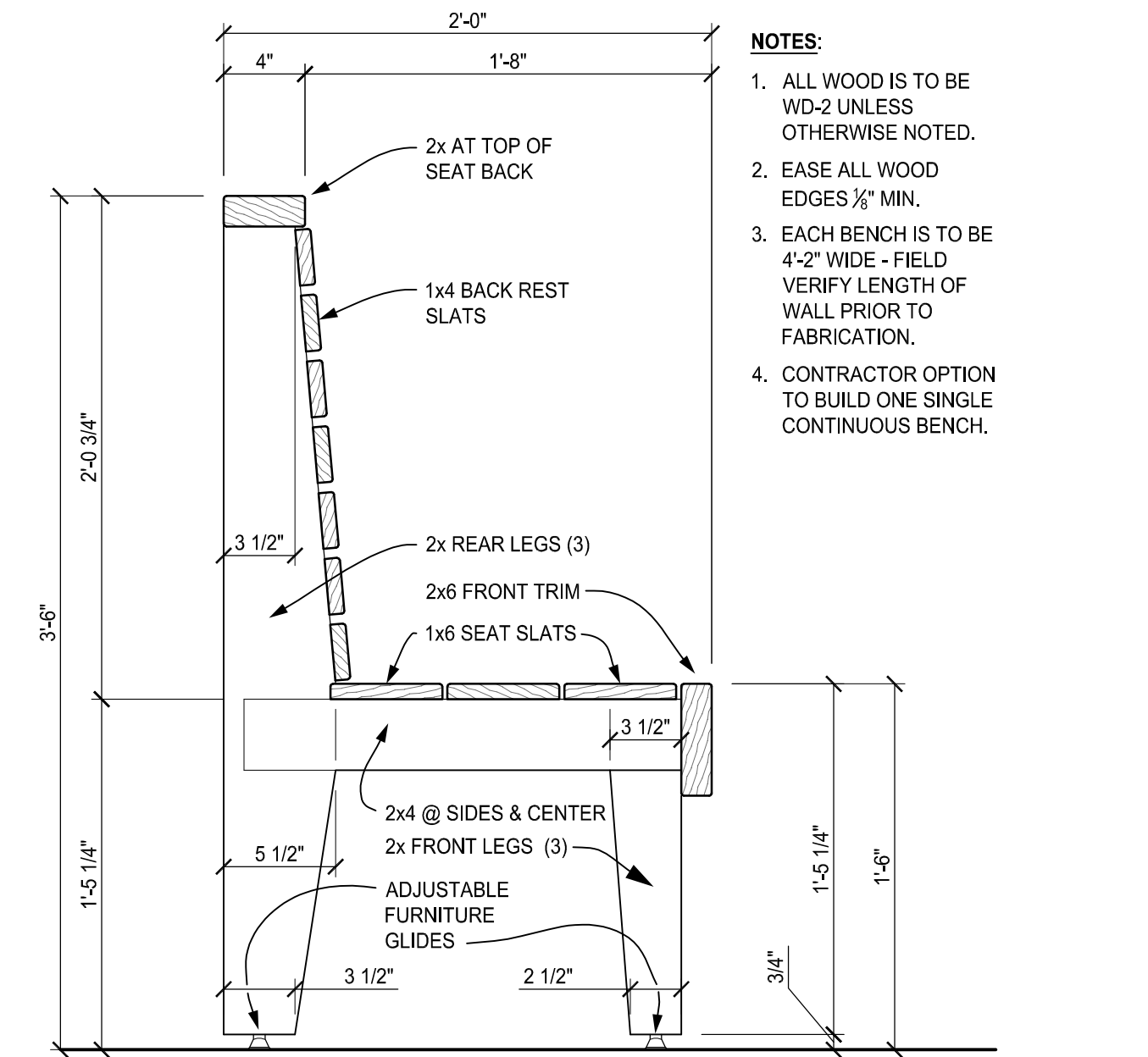
6 REFUSE CABINET
A5.2 1" = 1'-0"



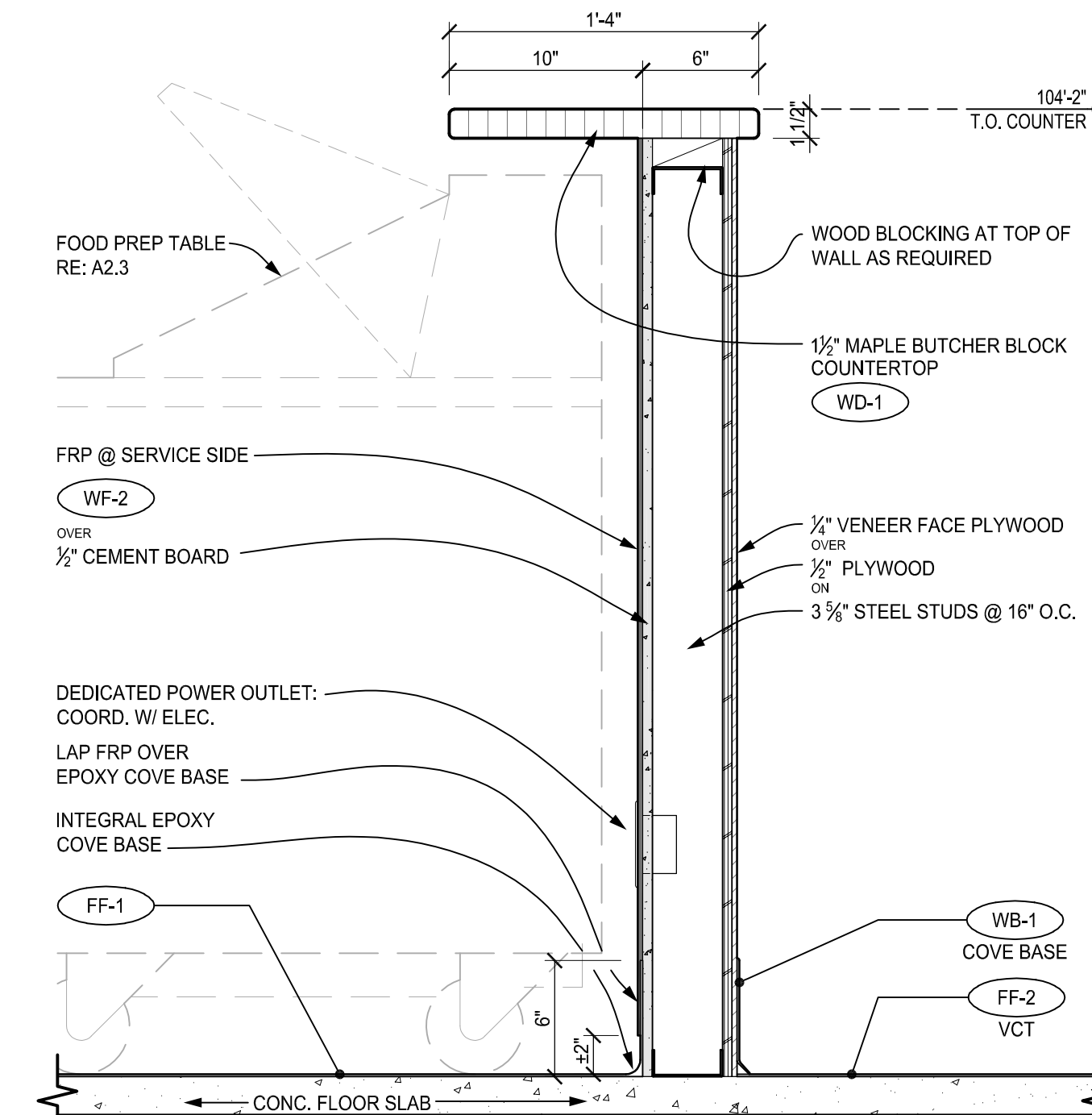
5 TYPICAL HALF WALL
A5.2 1 1/2" = 1'-0"



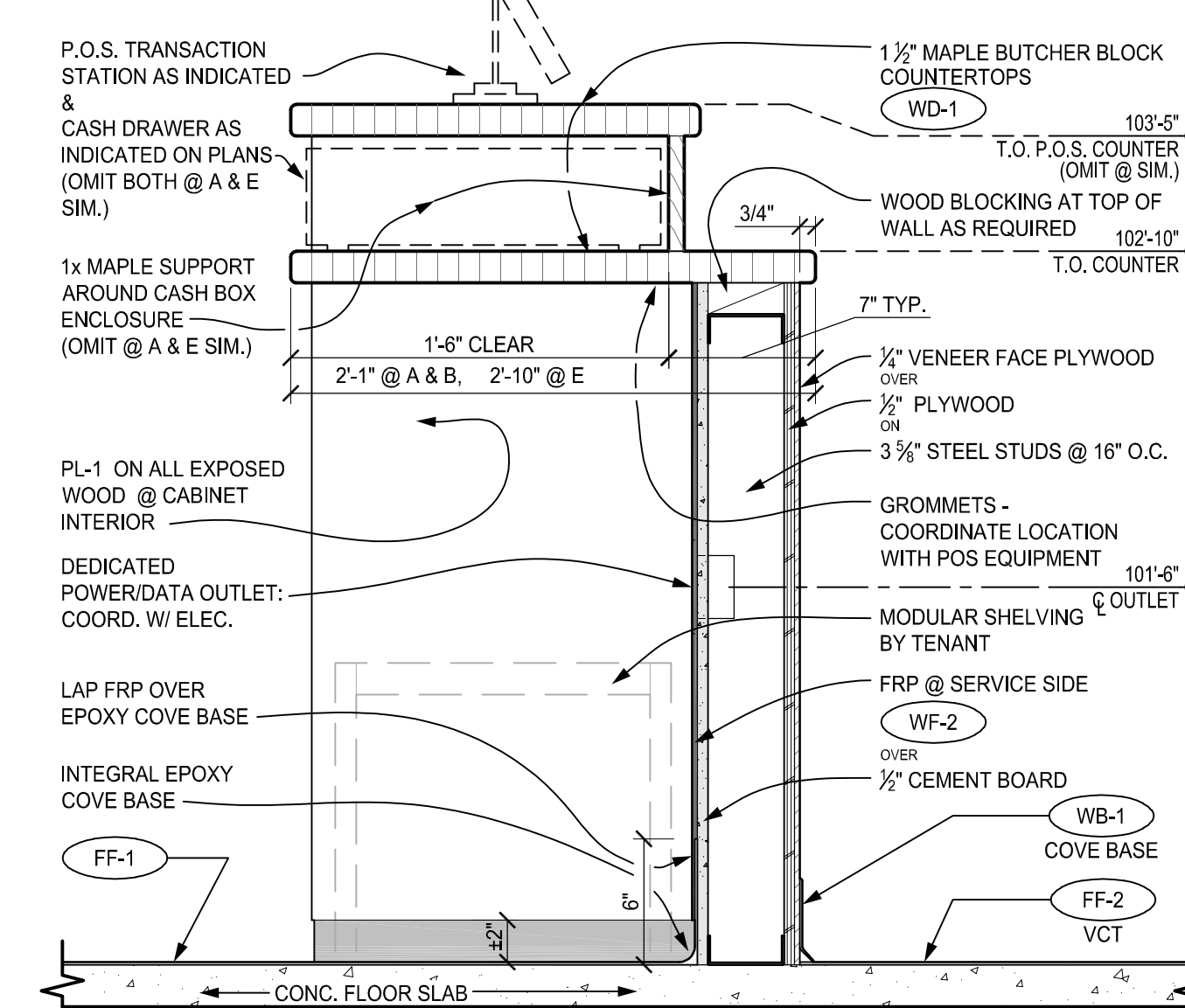
4 REFRIGERATOR COUNTER / WALL
A5.2 1-1/2" = 1'-0"



3 DINING BENCH
A5.2 1-1/2" = 1'-0"

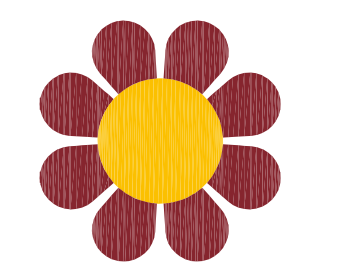


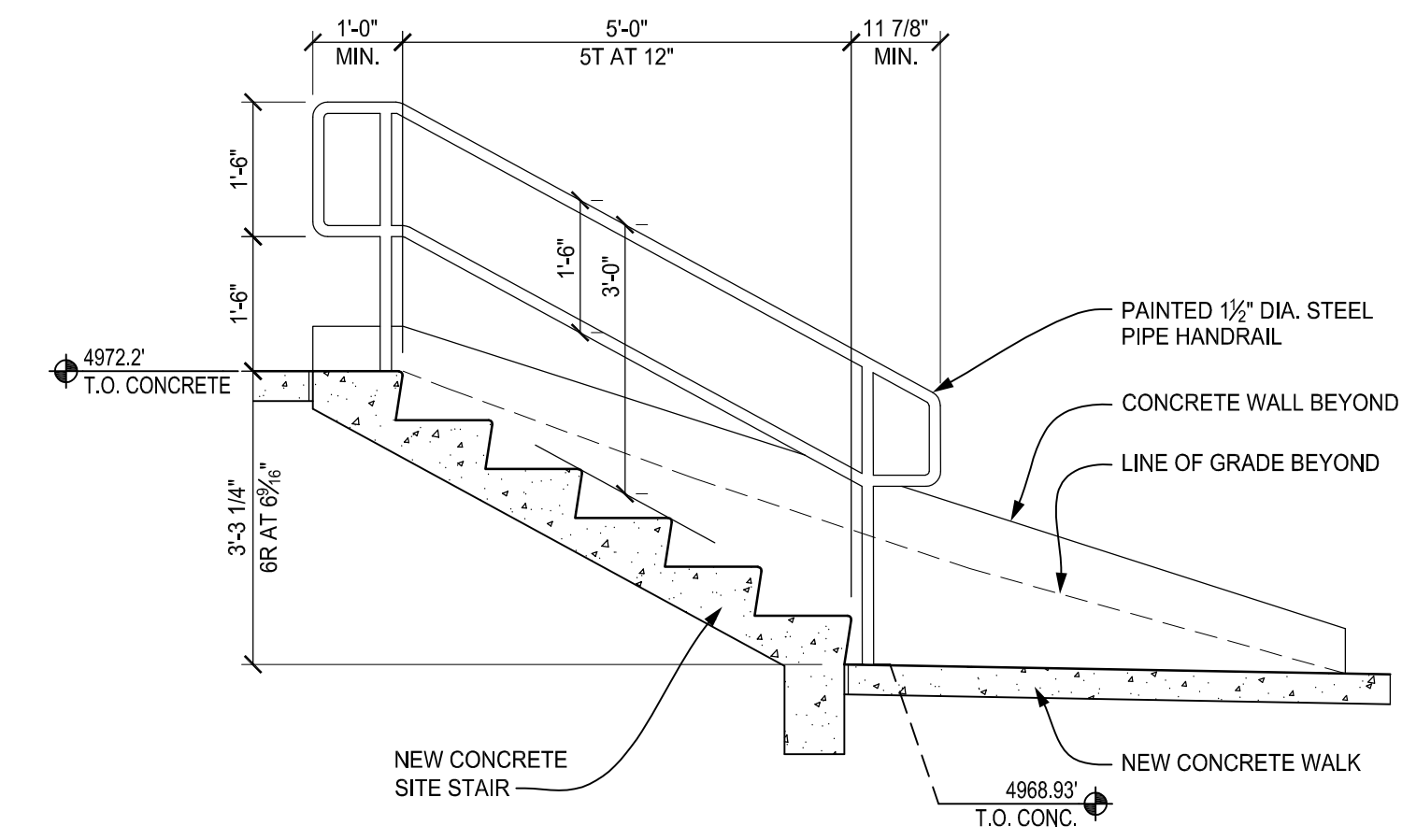
2 FOOD PREP COUNTER / WALL
A5.2 1-1/2" = 1'-0"



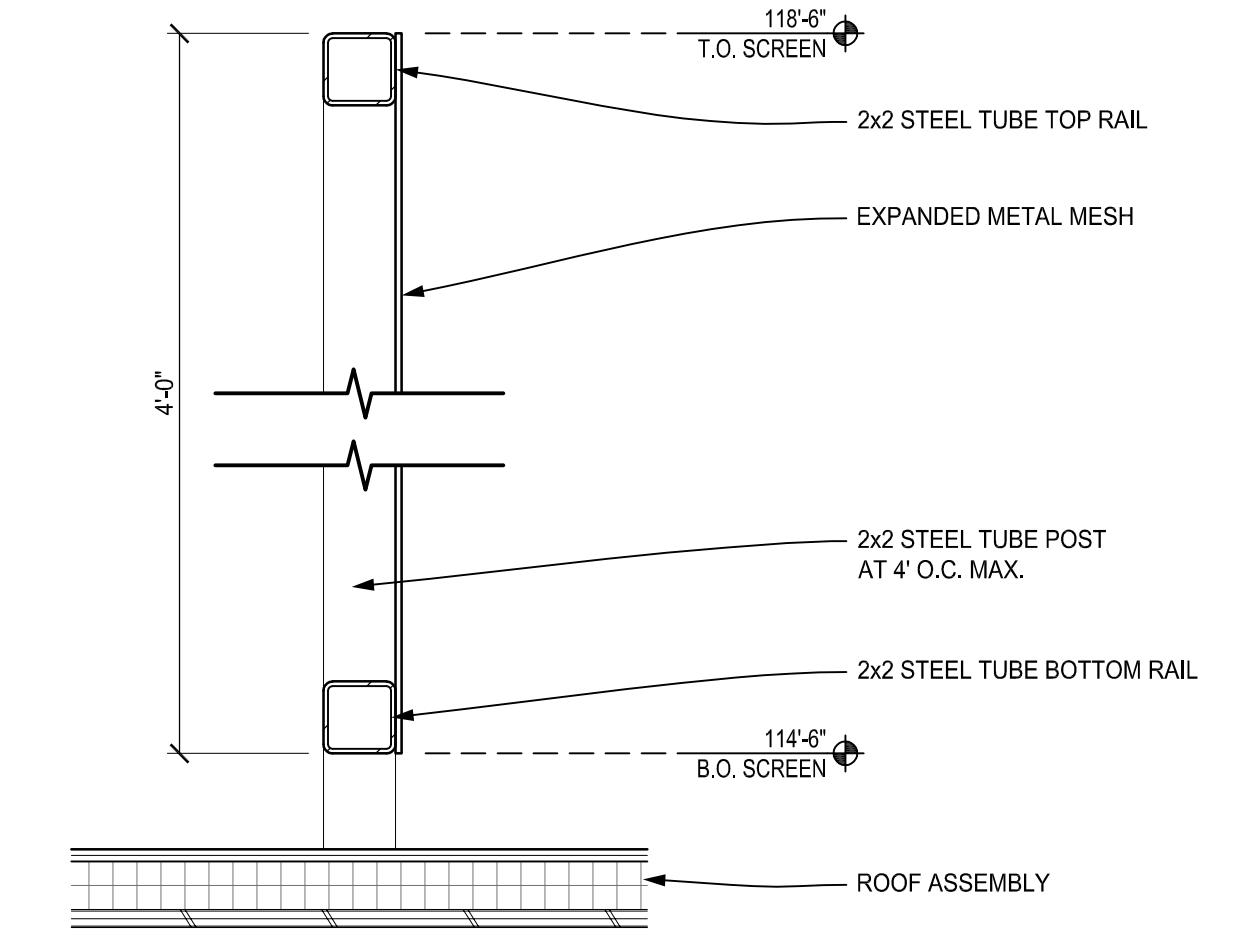
1 SERVICE COUNTER / WALL
A5.2 1-1/2" = 1'-0"

- NOTES:**
1. ALL WOOD IS TO BE WD-2 UNLESS OTHERWISE NOTED.
 2. EASE ALL WOOD EDGES 1/8" MIN.
 3. EACH BENCH IS TO BE 4'-2" WIDE - FIELD VERIFY LENGTH OF WALL PRIOR TO FABRICATION.
 4. CONTRACTOR OPTION TO BUILD ONE SINGLE CONTINUOUS BENCH.

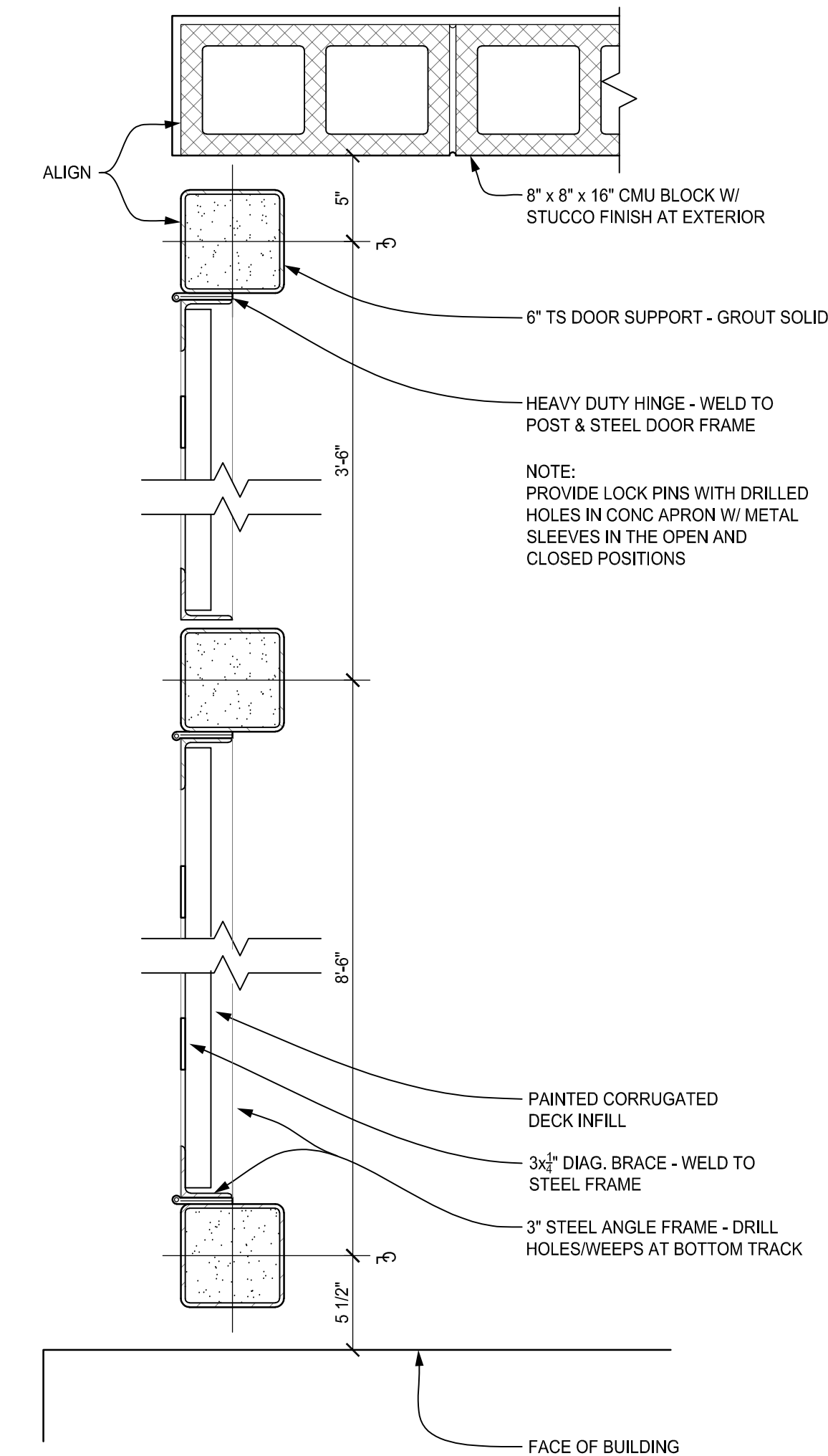




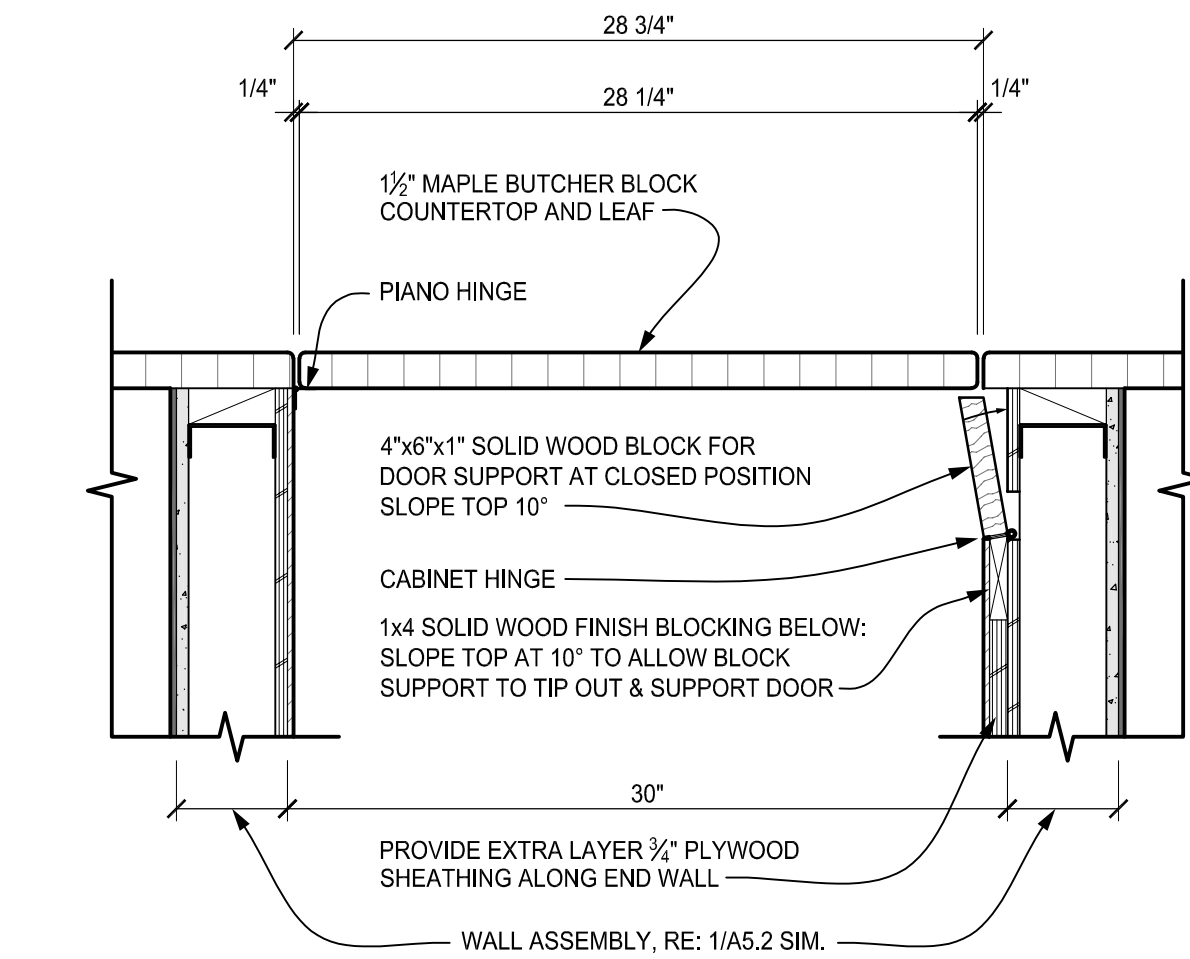
5 SITE STAIR SECTION
A5.3 1/2" = 1'-0"



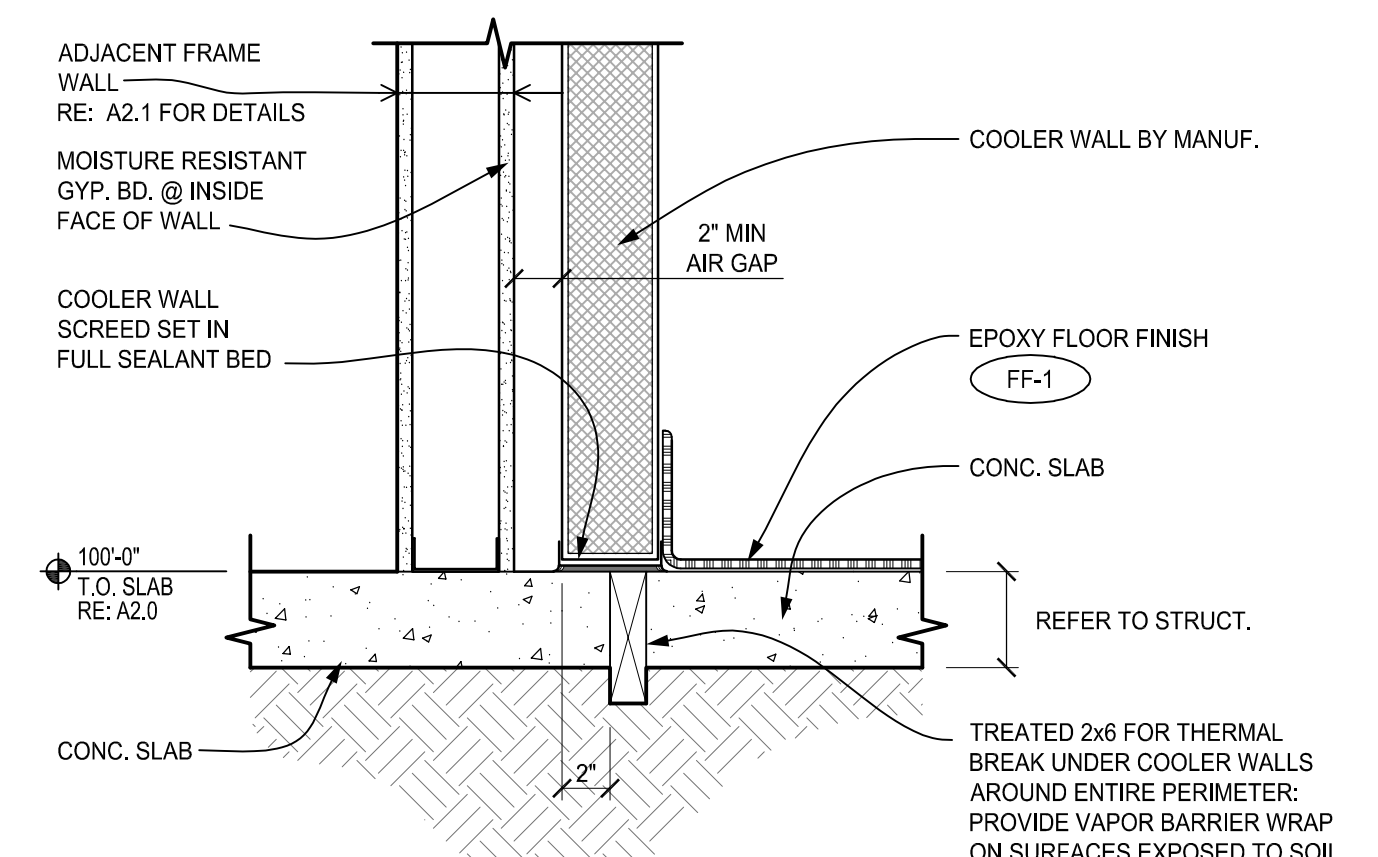
3 MECHANICAL SCREEN
A5.2 1-1/2" = 1'-0"



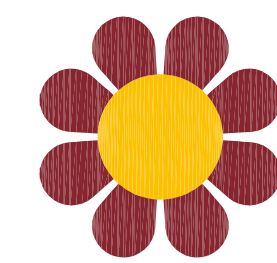
4 SERVICE YARD GATE DETAIL
A5.2 1 1/2" = 1'-0"

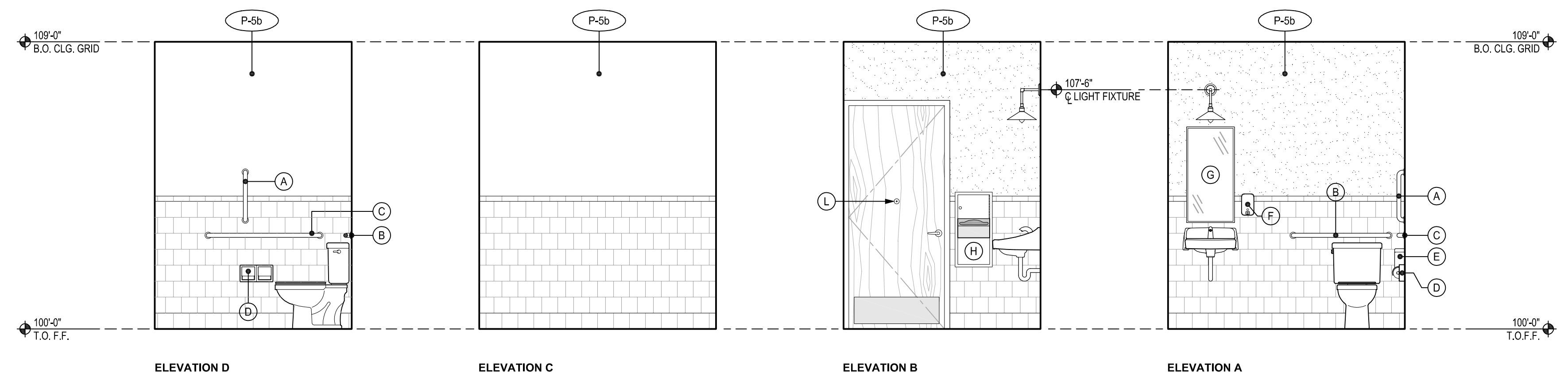
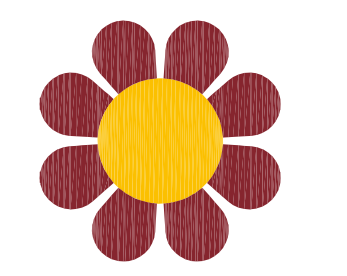


2 FLIP-DOWN BAR TOP DOOR
A5.2 1-1/2" = 1'-0"

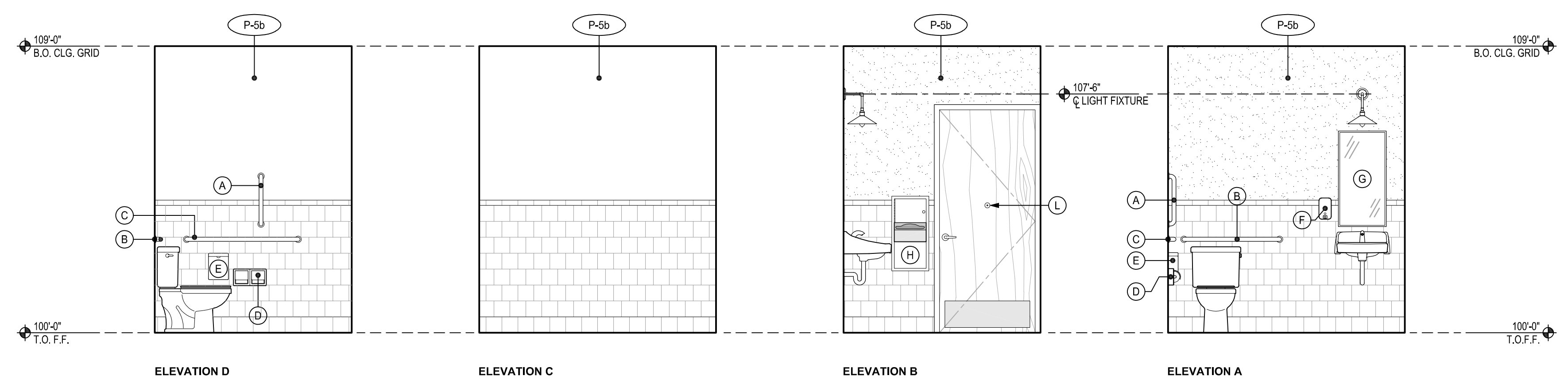


1 THERMAL BREAK @ COOLER
A5.2 1-1/2" = 1'-0"





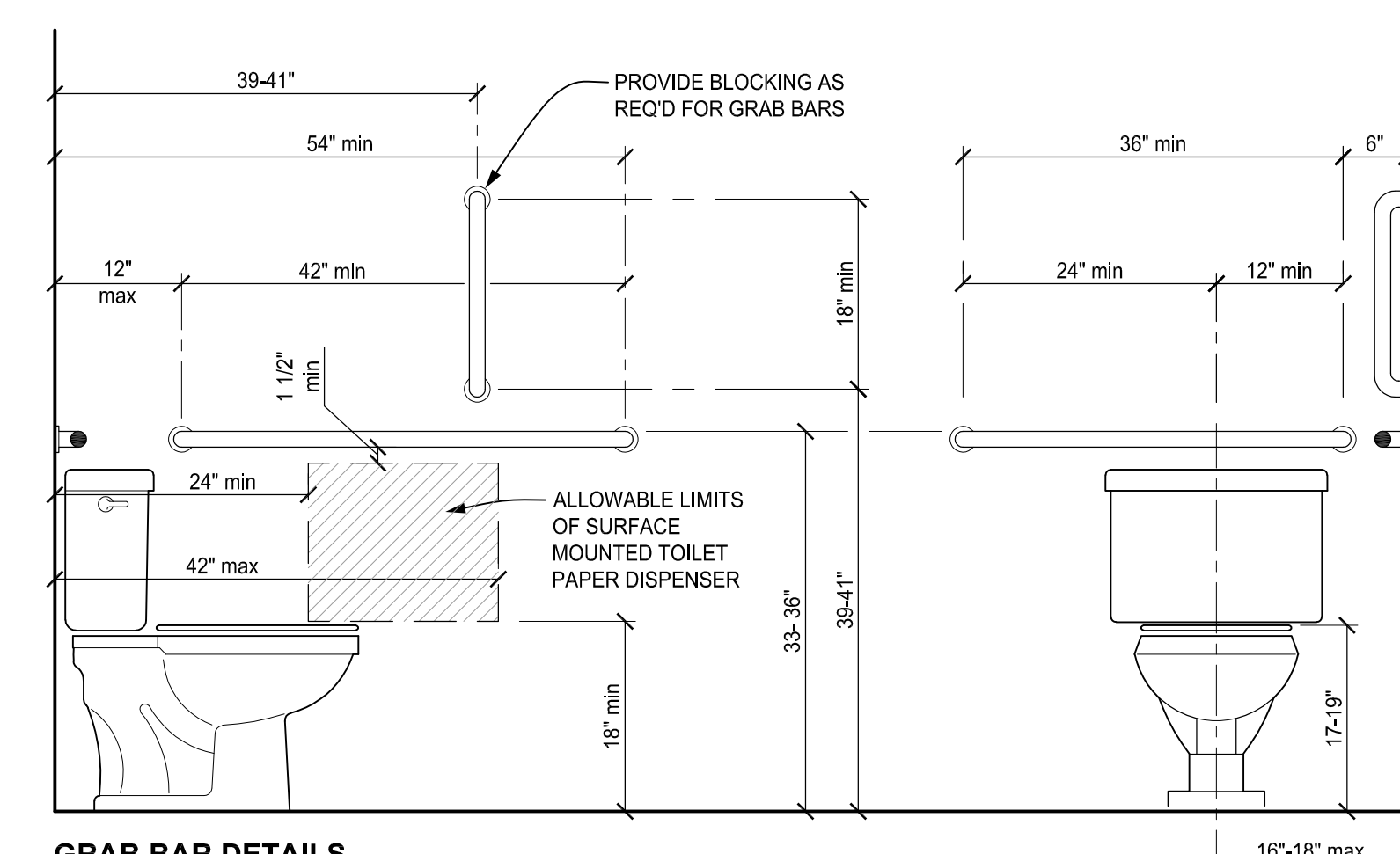
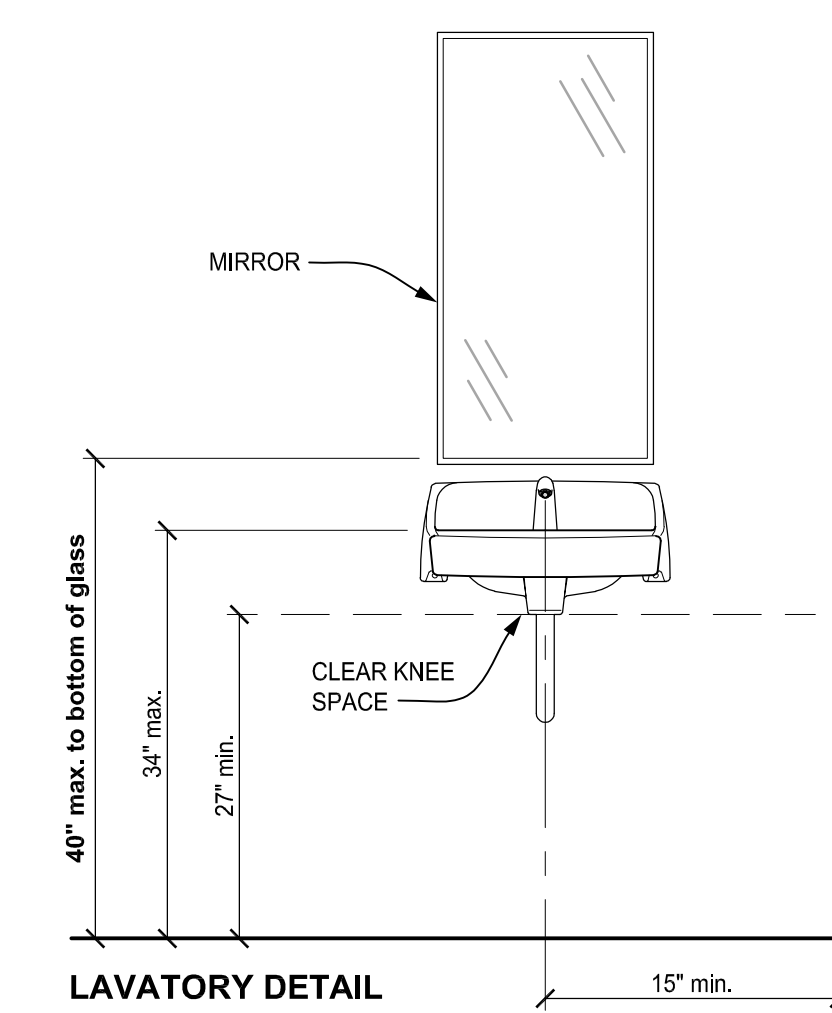
5 MEN'S RESTROOM ELEVATIONS
 A6.0 3/8" = 1'-0"



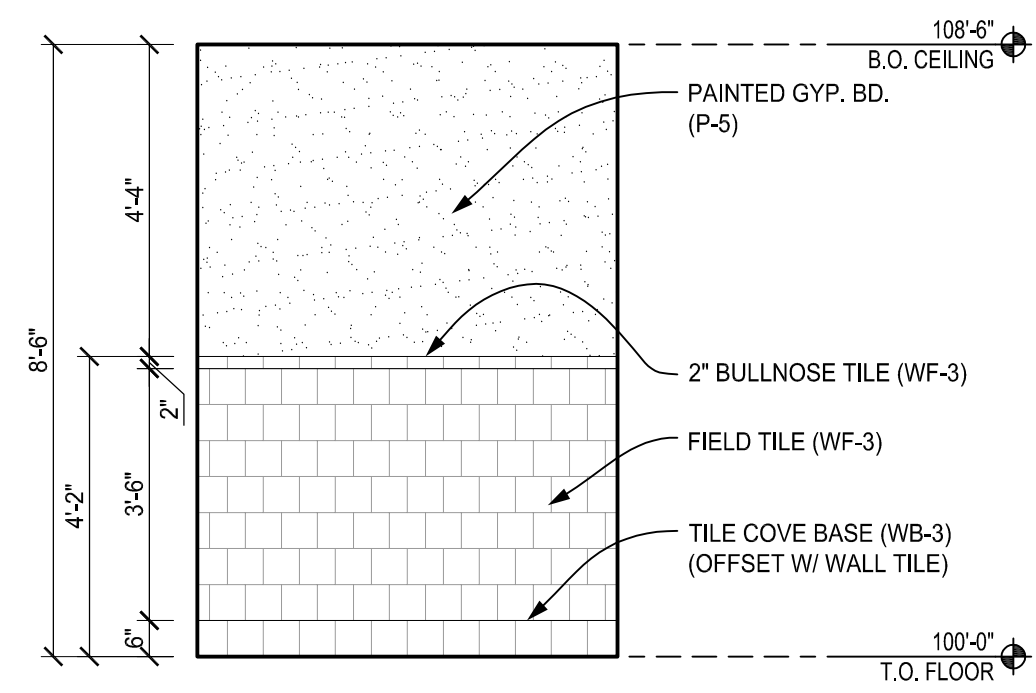
4 WOMEN'S RESTROOM ELEVATIONS
 A6.0 3/8" = 1'-0"

TOILET ACCESSORIES SCHEDULE		
REF.	DESCRIPTION	MOUNTING HEIGHT
A	S.S. GRAB BAR W/ EXPOSED MOUNTING; 1 1/2" DIA., SATIN FINISH, 18" LONG	50" A.F.F. TO CENTER
B	S.S. GRAB BAR W/ EXPOSED MOUNTING; 1 1/2" DIA., SATIN FINISH, 36" LONG	33" TO CENTER
C	S.S. GRAB BAR W/ EXPOSED MOUNTING; 1 1/2" DIA., SATIN FINISH, 42" LONG	33" TO CENTER
D	SURFACE MOUNTED TISSUE DISPENSER; BOBRICK B-69997	34" T.O. UNIT U.N.O., 28" T.O. AT HC STALL
E	SURFACE MOUNTED SANITARY NAPKIN DISPOSAL - BOBRICK B-254	15" TO B.O. UNIT
F	SOAP DISPENSER - BOBRICK B-2111	PER MFR. FOR UNIVERSAL DESIGN
G	MIRROR - BOBRICK B-165 1836 CHANNEL FRAMED MIRROR	40" TO BOTTOM OF GLASS AT LAVATORIES
H	RECESSED PAPER TOWEL DISPENSER / WASTE RECEPTACLE - BOBRICK B-369	PER MFR. FOR UNIVERSAL DESIGN
J	HC SIGNAGE	BRAILLE TO BE MIN 48" AND 60" MAX. ABOVE FLOOR
K	NOT USED	-
L	COAT HOOK W/ BUMPER - BOBRICK #B-212	48" T.O. HOOK

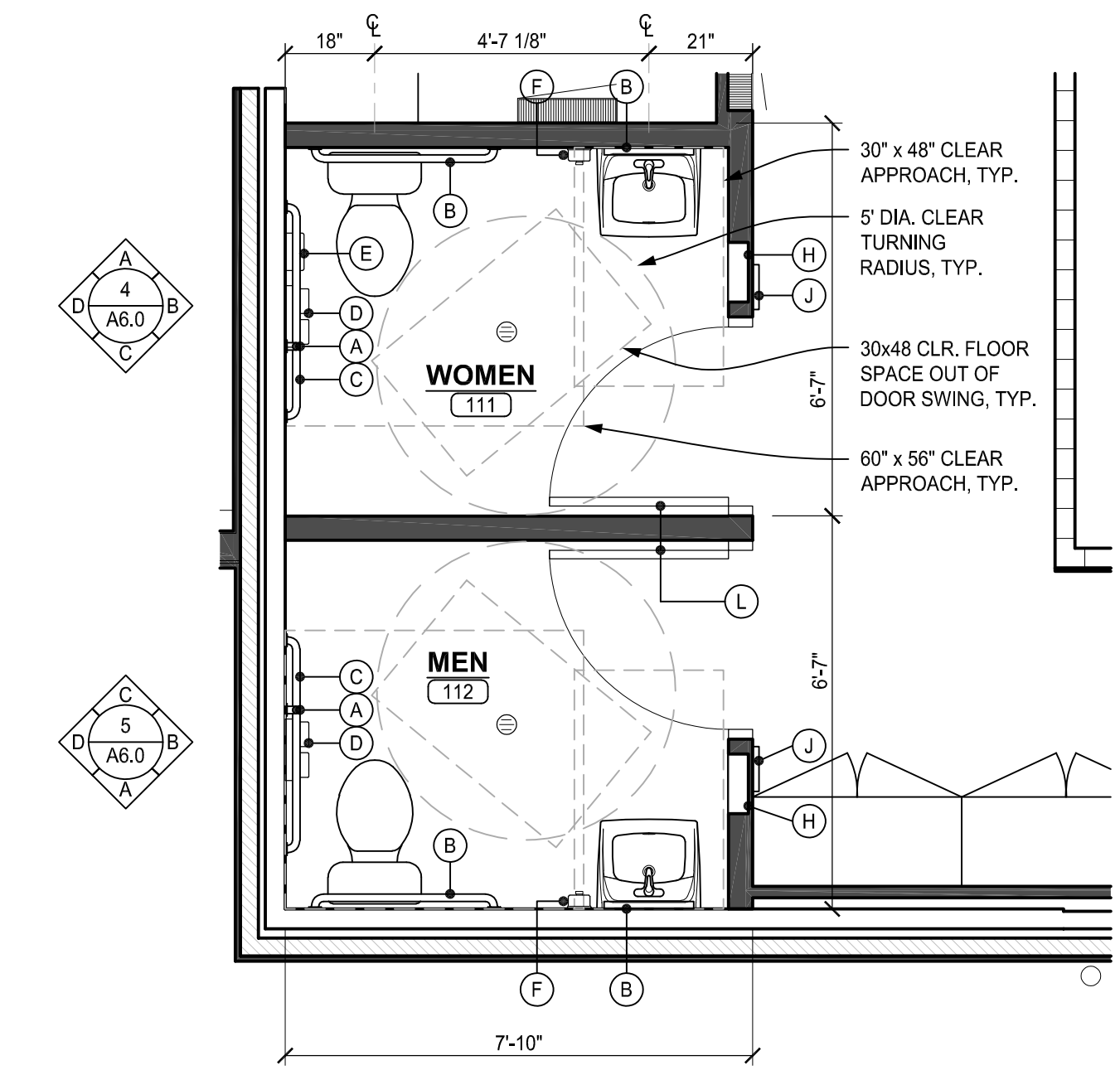
NOTES: 1. PROVIDE BLOCKING FOR ALL WALL MOUNTED EQUIPMENT & ACCESSORIES.
 2. MOUNT GRAB BARS PER 3/A6.0
 3. REFER TO RESPONSIBILITY SCHEDULE ON SHEET A0.0 FOR PROVISIONS AND INSTALLATION RESPONSIBILITIES.



3 GENERAL ACCESSIBILITY DETAILS
 A6.0 3/4" = 1'-0"



2 TYP. WALL FINISH
 A6.0 3/8" = 1'-0"



1 ENLARGED RESTROOM PLAN
 A6.0 3/8" = 1'-0"

INTERIOR FINISH SPECIFICATIONS

CEILING:

ACOUSTIC TILE CEILING (PUBLIC AREAS) **CL-1** TYPE: USG ECLIPSE CLIMA PLUS, 2x2 GYP. BD. TILES - FL EDGE
 COLOR: FLAT WHITE (050)
 GRID: 1/2" FINELINE - DXFF SLOTTED SUSPENSION GRID

ACOUSTIC TILE CEILING (KITCHEN) **CL-2B** TYPE: VINYL CLAD, 2x2 GYP. BD. TILES - SQ EDGE
 COLOR: STANDARD 'WHITE'
 GRID: 1/2" 'WHITE', TO MATCH PANEL (ALUM)

ACOUSTIC TILE CEILING (BACK OF HOUSE) **CL-2B** TYPE: VINYL CLAD, 2x4 GYP. BD. TILES - SQ EDGE
 COLOR: STANDARD 'WHITE'
 GRID: 1/2" 'WHITE', TO MATCH PANEL (ALUM)

ACOUSTICAL BOARD **CL-3** MFR.: OWENS CORNING
 PRODUCT: 'SELECT SOUND' BLACK ACOUSTIC BOARD
 TYPE: 2" MAT FACED

PAINT:

PAINTED GYP. BD. **P-1** MFR.: BM = BENJAMIN MOORE, SW = SHERWIN WILLIAMS
 COLOR: BM - OC-17 'WHITE DOVE' - FLAT FINISH
 NOTE: CEILINGS

P-2 COLOR: BM - 2018-50 'MORNING SUNSHINE' - EGGSHELL FINISH
 NOTE: WALL COLOR - 1

P-3 COLOR: BM - 2017-40 'SWEET ORANGE' - EGGSHELL FINISH
 NOTE: WALL COLOR - 2

P-4 COLOR: BM - 2161-40 'ACORN YELLOW' - SATIN FINISH
 NOTE: DOOR TRIM

P-5B COLOR: BM - 2067-40 'BLUE LAPIS' - PEARL FINISH
 NOTE: MEN'S BATHROOM WALLS

P-5B COLOR: BM - 2078-20 'RASPBERRY GLAZE' - PEARL FINISH
 NOTE: WOMEN'S BATHROOM WALLS

P-6 COLOR: BM - 2018-70 'MILKYWAY' - SATIN FINISH
 NOTE: BACK OF HOUSE WALLS

P-7 COLOR: BM - 2111-30 'MUSTANG' - FLAT FINISH
 NOTE: EXPOSED CEILING STRUCTURE & ROOF DECK

P-8 COLOR: SW - 6678 SUNFLOWER - SATIN FINISH
 NOTE: STEEL COUNTER LEGS

P-9 COLOR: SW - 1015 SKYLINE STEEL - EXTERIOR
 NOTE: LAP SIDING

P-10 COLOR: SW - 6672 MORNING SUN - EXTERIOR
 NOTE: ENTRY TOWER

P-11 COLOR: SW - 2849 WESTCHESTER GRAY - EXTERIOR
 NOTE: MECHANICAL SCREEN, EXTERIOR STEEL, SERVICE DOOR

P-12 COLOR: SW - 6678 SUNFLOWER - EXTERIOR
 NOTE: WOODEN ENTRY DOOR

BASE:

RUBBER BASE (OFFICE & MECH) **WB-1** MFR.: FLEXCO or EQUAL 4" BASE
 COLOR: BLACK

CERAMIC TILE (BATHROOMS) **WB-2** MFR.: DAL TILE
 PRODUCT: SEMI-GLOSS WALL TILE - S-3619T 6x6 SANITARY COVE
 COLOR: ARCTIC WHITE (0190)
 NOTE: CUT DOWN TILE TO 2" TALL

FLOOR:

EPOXY (KITCHEN & COOLER) **FF-1** MFR.: FLOWCRETE AMERICAS - 1-836-569-6700
 PRODUCT: FLOWFRESH SLB
 TOP COAT: FLOWFRESH FC
 COLOR: MID GRAY
 BASE: INTEGRAL 6" BASE

VCT (DINING & RESTROOMS) **FF-2A** MFR.: ARMSTRONG - STANDARD EXCELON VINYL COMPOSITION TILE
FF-2B COLOR: CLASSIC WHITE 12" x 12" SQUARE - 51911
FF-2C COLOR: BLACK 12" x 12" SQUARE - 56790
FF-2D COLOR: CANTALOUPE 12" x 12" SQUARE - 51867

WALLS:

F.R.P. PANELS (KITCHEN) **WF-1** MFR.: MARLITE: (330) 343-6621
 PRODUCT: STANDARD FRP, P199 BRIGHT WHITE, PEBBLED SURFACE
 NOTE: SEAM JOINT INSTALLATION, MARLITE SILICONE SEALANT MS-251 WHITE

F.R.P. PANELS (MILLWORK) **WF-2** MFR.: MARLITE: (330) 343-6621
 PRODUCT: STANDARD FRP, P807 BLACK, PEBBLED SURFACE
 NOTE: SEAM JOINT INSTALLATION, MARLITE SILICONE SEALANT MS-250 CLEAR

TILE CERAMIC (REST ROOMS) **WF-3** MFR.: DAL TILE
 PRODUCT: SEMI-GLOSS WALL TILE - 6x6 FIELD TILE
 COLOR: ARCTIC WHITE (0190)
 GROUT: CUSTOM BUILDING PRODUCTS #115 PLATINUM; 1/8"
 NOTE: RUNNING BOND
 TRIM: S-4269 2x6 BULLNOSE @ TOP OF FIELD, OFFSET

STAINLESS PANELS **WF-4** MFR.: BY CONTRACTOR
 PRODUCT: 4x8 STAINLESS STEEL SHEET WITH BATTENS @ SEAMS

GLAZING:

TEMPERED GLASS (MILLWORK) **GL-1** MFR.: BY CONTRACTOR
 PRODUCT: 1/2" TEMPERED GLASS
 NOTE: PROVIDE SUBMITTAL FOR GLASS DIVIDER

EXTERIOR THIN BRICK:

BR-1 MFR.: ENDICOTT
 COLOR: GREY SANDS
 GROUT: STANDARD GREY

ALT-1 **BR-1** MFR.: ENDICOTT
 COLOR: GLAZED VC-1
 GROUT: STANDARD GREY

ALT-2 **BR-1** MFR.: ENDICOTT
 COLOR: GLAZED VC-3
 GROUT: STANDARD GREY

EXTERIOR METAL:

MT-1 MFR.: BERRIDGE METALLIC COLOR
 COLOR: COPPER COTE

MT-2 MFR.: BERRIDGE METALLIC COLOR
 COLOR: ZINC GREY

MILLWORK:

PLASTIC LAMINATE - 1 (INNER CABINETS) **RL-1** PRODUCT: MELAMINE, MAPLE FINISH TO MATCH MILLWORK

WOOD **WB-1** MFR.: MILLWORK FABRICATOR
 SPECIES: MAPLE BUTCHER BLOCK, 1/2" HEIGHT
 STAIN: CLEAR
 NOTE: 1/2" ROUND OVER EDGE AT ALL SIDES

WB-2 MFR.: MILLWORK FABRICATOR
 SPECIES: MAPLE
 STAIN: CLEAR

FURNITURE:

STANDARD TABLE TOP: MAPLE BUTCHER BLOCK
 FINISH: HESSE PUR 2-PART CATALYTIC VARNISH, MIN. 3 COATS
 DIMS: 2" THICK W/ 1/2" SEGMENTS
 BASE: REFERENCE SEATING LEGEND ON SHEET A2.2
 GAR PRODUCTS TELESCOPING COLUMN AT ACCESSIBLE BAR TABLES
 NOTE: 1/2" ROUND OVER EDGE AT ALL SIDES
 SIZE: REFERENCE SEATING LEGEND ON SHEET A2.1

TABLE BASE **B-1** MFR.: WESNIC INC.;
 PRODUCT: 2W3-22

DINING CHAIR **CH-1** MFR.: WESNIC;
 PRODUCT: WES-1991AS - SCHOOL HOUSE CHAIR
 FINISH: MAPLE STAIN
 NOTE: USED AT INTERIOR DINING TABLES

BARSTOOL **ST-1** MFR.: WESNIC;
 PRODUCT: WES-1992AB-UPBK - SCHOOL HOUSE BARSTOOL WITH BACK
 FINISH: MAPLE STAIN
 NOTE: USED AT BAR HEIGHT SEATING

SPECIALTIES:

OFFICE SHELVES TYPE: GRAY MELAMINE, 3/4" THICK
 SUPPORT: KNAPE + VOIGHT, #188 BRACKETS W/ HEAVY DUTY STANDARDS

TRANSITION STRIPS MFR.: SCHLUTER SYSTEMS (800) 472-4588
 MATERIAL: BRUSHED STAINLESS STEEL
 FLOORING: EPOXY to VCT: RENO-UJ

EXTERIOR STUCCO **ST-1** MFR.: MASTER WALL
 TEXTURE: FINE SAND TEXTURE
 COLOR: AMARILLO WHITE

NOTES:

- PROVIDE MANUFACTURER GROUT COLOR CHART/SAMPLES FOR BOTH EPOXY AND OTHER GROUT TO ARCHITECT.
- REFERENCE SPECIFICATION FOR FURTHER TILE SETTING METHODS
- WATERPROOF ALL WET AREAS, FLOORS AND WALLS UP TO 6" VERTICALLY & 12" HORIZONTALLY, INCLUDING RESTROOMS, BAR, KITCHEN & MECHANICAL AREAS PER FLOORING MANUFACTURER'S RECOMMENDED PRODUCT.
- USE OPAQUE PAINTABLE SEALANT BETWEEN ALL DISSIMILAR MATERIALS WHERE ONE OR BOTH OF THE MATERIALS ARE PAINTABLE. PAINT SEALANT TO MATCH PAINTED SURFACE. AVOID THE USE OF CLEAR SEALANTS EXCEPT AT THE FOLLOWING GENERAL LOCATIONS
 - STAINLESS STEEL TO ANY OTHER SURFACE THAN PAINTED DRYWALL
 - MILLWORK TO MILLWORK
 - STOREFRONT TO ANY OTHER SURFACE THAN PAINTED DRYWALL
 - AS SPECIFICALLY NOTED ON THE PLANS

DOOR SCHEDULE

DOOR REF	DOOR SIZE (WxH)	THICKNESS	DOOR TYPE	MATERIAL	FINISH	GLASS	RATING	FRAME	FRAME COLOR	HARDWARE GROUP	NOTES
100	3'-0" x 6'-8" V.I.F.	1 1/4"	A	ALUM	ANOD	CL	-	ALUM	ANOD	1	
101	3'-0" x 6'-8" V.I.F.	1 1/4"	A	WD	PAINT	CL	-	ALUM	ANOD	1	4
104a	3'-0" x 7'-0"	MFR	C	MFR	MFR	-	-	MFR	MFR	MFR	1
104b	(2) 48" x 73"	3 1/2" (UNIT)	D	ALUM	BLACK	CL	-	ALUM	BLACK	MFR.	2
105	3'-6" x 7'-0"	1 1/4"	B	HM	PAINT	-	-	HM	P11	3	3
106	3'-0" x 7'-0"	MFR	C	MFR	MFR	-	-	MFR	MFR	MFR	1
109	3'-0" x 7'-0"	1 1/4"	B	WD	STAIN	-	-	HM	P-4	2	
110	3'-0" x 7'-0"	1 1/4"	B	WD	STAIN	-	-	HM	P-4	2	

DOOR NOTES:

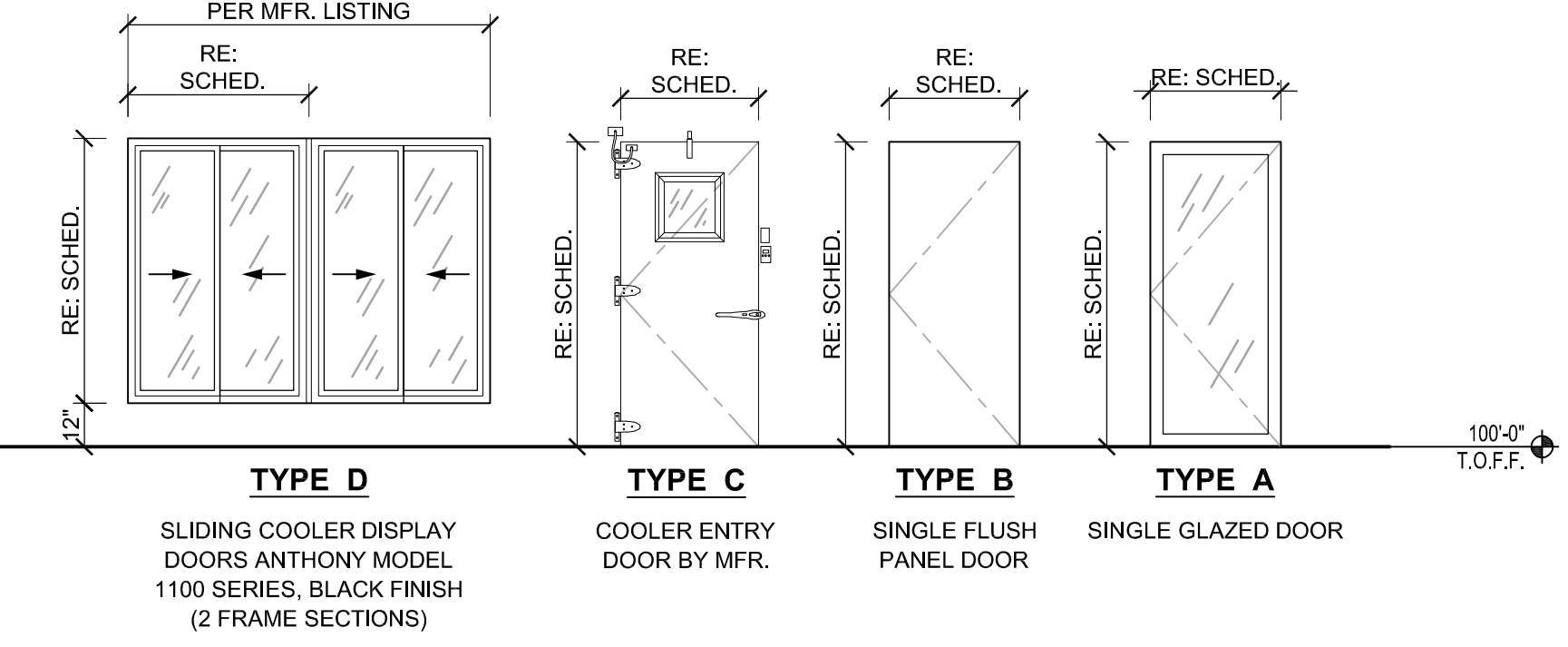
- Cooler door per manufacturer
- Cooler sliding door
- Paint door & frame color P-11
- Paint door color P-12

DOOR HARDWARE SCHEDULE

GROUP	CLOSER	HANDLE	FUNCTION	ACCESSORIES	COMMENTS
1	SURFACE	FALCON 2090 PANIC, D-PULL W/ CYLINDER KEY LOCK	ENTRANCE	-	HOLD OPEN FUNCTION AT CLOSER
2	SURFACE	VIZILOK C3FK - SATIN CHROME	PRIVACY	KICK PLATES BOTH SIDES, & WALL STOP	-
3	SURFACE	ND50PD ATHENS - 626	ENTRANCE	HALF HEIGHT KICK PLATE AT INSIDE & PEEP HOLE	HOLD OPEN FUNCTION AT CLOSER

DOOR HARDWARE NOTES:

- All hardware referenced is to be Schlage or approved equal Unless noted otherwise.
- Unless noted otherwise, all doors with head height 8'-0" and below to have 1 1/2" pair hinges - matching door hardware finish.
- G.C. to furnish lock sets, levers, strike plates, bumpers and all other items to provide a complete and functioning hardware package all of matching 626 finish. Refer to Owner representative for keying requirements.
- Provide puck style floor stops at exterior doors, minimum 3".
- Provide weather-stripping at all exterior doors.
- All door handles, pulls latches, locks and other operating devices on doors required to be accessible shall not require tight grasping, tight pinching, or twisting of the wrist to operate per 1008.9.1.

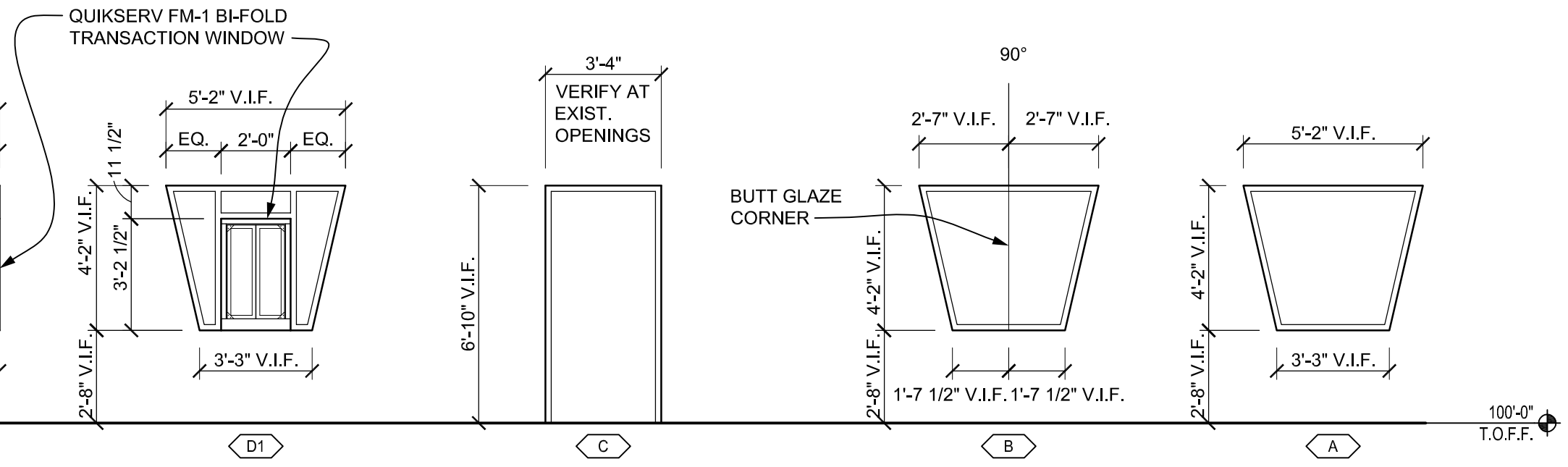
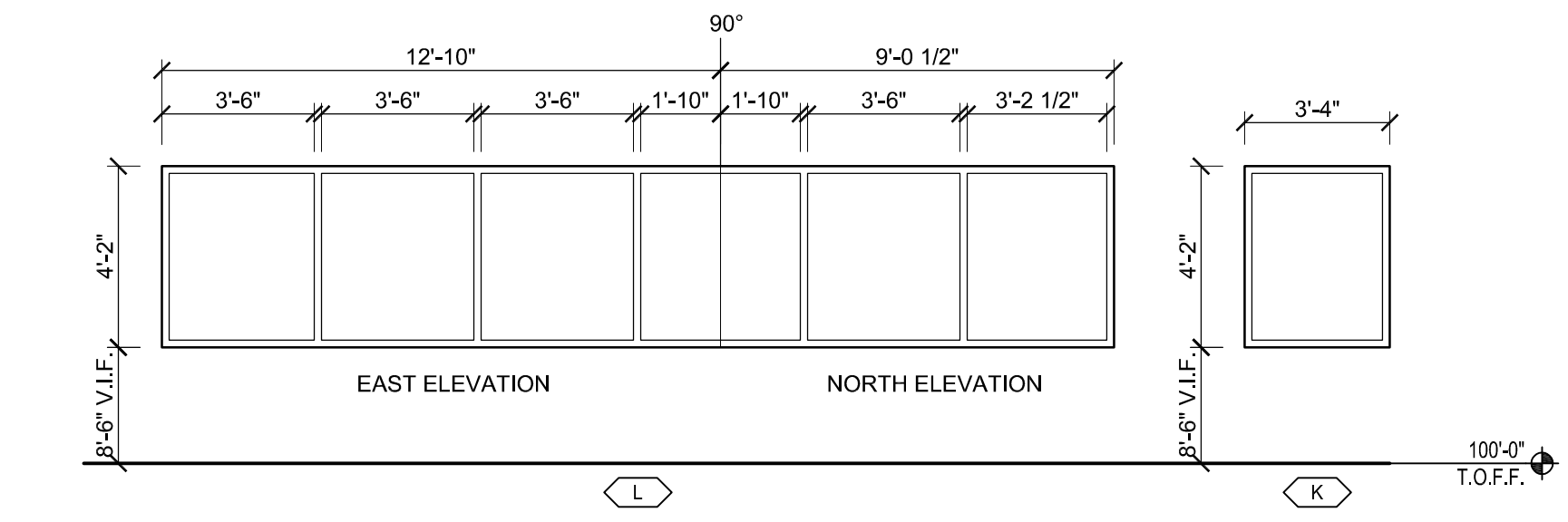


2 DOOR TYPES & ELEVATIONS

2 A7.0 1/4" = 1'-0"

DOOR NOTES:

- All new storefront doors to have dark bronze anodized finish, unless noted otherwise.
- All glazing in doors to be safety glazing.
- Refer to Interior Elevations and Millwork drawings for wood and stain types on doors unless noted otherwise.

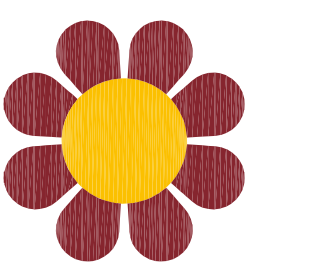
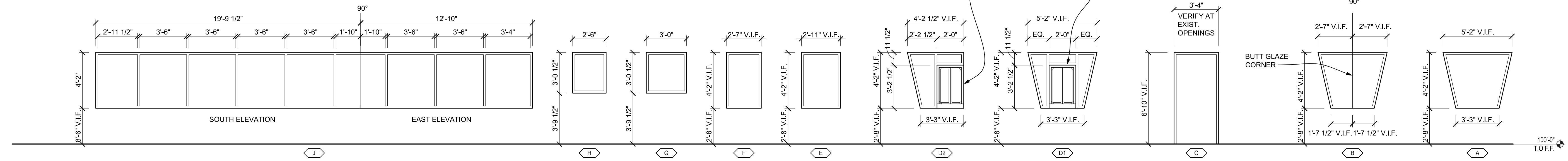


1 WINDOW & STOREFRONT ELEVATIONS

1 A7.0 1/4" = 1'-0"

STOREFRONT NOTES:

- All storefront to have dark bronze anodized finish.
- (SG) Safety Glazing as required by IBC 2406.3
- Field verify all openings prior to fabrication.



OUTLINE SPECIFICATIONS:

DIVISION 0 – CONDITIONS OF THE CONTRACT

A. GENERAL CONDITIONS:

- Unless otherwise noted in written form and approved by Owner and Architect the terms and conditions set forth herein, inclusive of "for construction" set of drawings shall be followed by Contractor. The "General Conditions of the Contract For Construction," AIA Document A201, Fourteenth Edition, 1997, Articles 1 through 14 inclusive, is a part of the Contract and is incorporated as fully as if here set forth.

B. SUPPLEMENTARY CONDITIONS:

1. INSURANCE:

- The Contractor shall procure, pay for, and maintain at all times during the prosecution of the work under the, various forms of insurance with carriers acceptable to the Owner. All insurance policies shall have the Architect, design consultants, the Owner, and their employees as additional insurers. Contractor shall furnish insurance policies to Owner prior to commencement of work.

DIVISION 1 – GENERAL REQUIREMENTS

A. GENERAL:

- The project has been designed in accordance with applicable codes. Contractor shall comply with code requirements for construction and inform Architect of discrepancies observed or noted by others.
- Contractor shall not scale Drawings. "Written or instst" dimensions will govern. Contractor shall verify all dimensions and conditions at job site and notify Architect in writing of conflicts or discrepancies before proceeding. Contractor shall not delay work.
- All dimensions shown on architectural drawings are from finish surface, unless noted otherwise.
- Contractor shall apply for and bear the cost of all fees, permits licenses, inspections, top charges and other agency requirements for temporary and permanent services or utilities to commence and complete the work.
- The Contractor shall protect the work and all adjacent property from loss or damage resulting from operations. In the event of such loss or damage, Contractor shall make such replacements or repairs as required without additional cost to Owner.

B. SPECIAL REQUIREMENTS

- Owner furnished Equipment and services:

The Owner will furnish certain items of equipment/furnishings and related services as shown on the drawings. Contractor will be responsible for coordinating his work to accommodate these items with owner.

C. TESTING SERVICES:

- The Owner will pay for all initial testing services requested by the Owner.
- Inspections and tests required by codes or ordinances, or by a plan approval authority, and made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.
- Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.
- Representatives of the testing laboratory shall have access to the work at all times; provide facilities for such access in order that the laboratory may properly perform its functions.
- All specimens and samples for testing, unless otherwise provided in these Contract Documents, will be taken by the testing laboratory; all sampling equipment and personnel will be provided by the testing laboratory; and all deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

D. TEMPORARY FACILITIES AND UTILITIES:

- The Contractor shall provide, maintain and make available to subcontractors, temporary job site facilities as required to complete the work, including but not limited to:
 - Field office
 - Portable toilet facilities
 - Lockable storage shed, or containers
 - Trash bins
 - Temporary telephone – (3) G.C.
 - Electrical power
 - Water service
 - Temporary heating and air conditioning
 - Construction fences, barriers and security devices
 - On-site fax machine and answering machine or voice mail
 - Digital Camera and Email

E. CONSTRUCTION CLEANING:

- Provide central trash collection facility for use of all trades and dispose of collected trash 14 days. Each contractor and subcontractor is responsible for cleaning his work and removing his trash to the central collection point daily. On-site burning is not permitted. Do not allow trash to be blown away or to litter the site or adjacent areas. Do not use Owner's waste receptacles.
- The Contractor shall keep the premises free from accumulation of waste materials or rubbish caused by his employees and subcontractors. At the completion of the work the Subcontractors shall remove from building and site all rubbish, tools, and surplus materials and leave the work swept broom clean. Should Subcontractor ignore removal of debris, Owner will clean up and haul off debris and transfer appropriate costs to the Subcontractor (including labor, material, equipment, OH&P). General Contractor to provide entire project completely cleaned and ready for business. Clean all windows, light fixtures, stainless, etc. Change all HVAC filters to pleated on T.O. day and clean 1 day after T.O.

F. COORDINATION:

- Contractor shall coordinate the work of the all trades affecting his/her work. Including but not limited to Owner's Food Service, and Signage Contractors.
- Mechanical, Electrical & Plumbing Contractors to be fully coordinated with each other and with General Contractor regarding supply, installation, controls, and proper operation of all equipment, hoods, food service items, etc.

G. SEPARATE CONTRACTS:

- Contractor shall cooperate with Owner and other Contractors performing work under separate contracts to ensure project progress according to schedule.

H. COORDINATION OF OWNER SUPPLIED ITEMS:

- DELIVERIES:**

The general Contractor shall provide all labor to unload materials and equipment to be purchased directly by Owner and delivered to the job site and for verifying quantities delivered. The General Contractor will report any discrepancies in deliveries to Owner and the Construction Manager immediately. The General Contractor will be held responsible for all missing items once logged in and received.
- STORAGE:**

The General Contractor will be responsible for the storage of deliveries to job site (i.e. Light fixtures, brew equipment, smoke eaters, etc.)
- KITCHEN EXHAUST HOODS:**

The cook line hood, prep line hood and dish hood will be supplied by owner vendor along with the associated duct work, fire wrap (if required), exhaust fans and make-up air unit. This vendor will be responsible for hanging hoods, ducts, chases and structure for the hoods and the fans; for unloading, uncrating and installing the hoods and related equipment; General Contractor is responsible for providing electrical and duct smoke detector hookup. The hood fire suppression system will be installed and tested as part of the hood suppliers contract, and is not part of the general contract. The scheduling of the hood fire suppression subcontractor is a part of the general contractor contract.
- WALK-IN COOLERS:**

All walk-in coolers will be supplied and installed by the owner's vendor. The General Contractor will be responsible for verifying the dimensions, unloading and coordinating the install. The refrigeration will be an owner-supplied sub and the General Contractor will coordinate the install. The General Contractor will coordinate all roof penetration with refrigeration contractor and be responsible for the electrical hookups and the plumbing connections.
- KITCHEN EQUIPMENT AND SMALL WARES:**

All kitchen equipment and small wares will be supplied to the job site. Kitchen equipment will be uncrated, assembled and moved into place by the kitchen supplier. The General Contractor is responsible for all utility roughs, blocking, for shelving, millwork and other such items and for the final connection of all utilities to equipment. General Contractor is responsible for code compliance when connecting all equipment including but not limited to such items as back flow preventers or vacuum breakers, size of air gaps on indirect wastes, etc.

6. SIGNAGE AND AWNINGS:

- Signage and awnings will be supplied and installed under separate contract. The General Contractor is responsible for providing the proper structure, blocking and electrical roughs, and final hook up and for coordinating installation to ensure proper scheduling.

7. SECURITY SYSTEMS:

- Security system may be provided and installed under separate contract. The General Contractor shall coordinate installation and provide for the system per plans (i.e. conduit runs, boxes, etc.) The General Contractor is responsible for site security until turnover.

8. SOUND SYSTEM/SATELLITE/VIDEO:

- The Audio/Video system shall be provided and installed under separate contract. The General Contractor shall coordinate installation and provide for the system per plans (i.e. conduit runs, boxes, etc.). General Contractor shall provide all necessary backing for TV hangers.

9. OFFICE:

- The General Contractor will be responsible to supply and install the counter tops and shelving in the office. The General Contractor is responsible for all locking required.

10. SAFE:

- The safe shall be provided by Owner vendor and installed by the General Contractor.

11. ART AND ARTIFACTS:

- All artwork and decor shall be provided and delivered to the job by others. The General Contractor should familiarize himself with the artwork package selected by the owner. The General Contractor is responsible for assistance in the installation of artwork and decor.

14. TRASH REMOVAL:

- The General Contractor will need to supply adequate trash removal at turnover times. Kitchen install, A/V install, small wares and first food shipment.

15. CLEANERS:

- The General Contractor should allow for adequate cleaning before the kitchen install, before the kitchen turnover, before the design turnover and a thorough cleaning before the restaurant turnover. Owner and the General Contractor will set all of the turnover dates. Total number of interior cleaning will be 4 complete cleanings.

16. OTHER CONDITIONS:

- The owner reserves the right to refuse any or all bids, to request clarification of any bid, and to elect to not proceed with the project, at the Owner's sole discretion.
- By submitting the bid, the bidder represents that he/she:
 - Has visited the site and has become familiar with the existing conditions.
 - Has disclosed to the Owner any deficiencies in the plans and specifications of which he/she has knowledge and which would prevent construction of the project in a good and workman like manner.
 - That he/she has included in the bid any incidental items required of the project in a good and workman like manner.
- General Contractor will include a listing of all-major subcontractors, suppliers and vendors that represent or support the bid amounts.
- As a condition precedent to contract award, Owner will consider work experience, bidder financial status, proposed subcontractors, and proper licensing, Owner reserves the right to award the contract in its best interests and reject any or all proposals.

17. BID NOTES:

- Walk-in boxes and refrigeration will be furnished and installed by Owner's vendor, General Contractor to assist in unloading and provide final utility connections.
- Fire-resistant wood is not desired except where it is specifically required by the building representative and are operational.
- Speaker grills and light trims in any colored ceiling system are to be painted to match.
- Where we are interested in cost saving options on major mechanical and electrical components. Owner will entertain any areas of substantial cost impact reduction. These items must be noted and listed as an alternate on the document. Alternates will not be entertained during the submittal process.
- Provide necessary roll-off dumpsters for use by Owner receiving. Remove one day prior to front of house turnover.
- Amounts paid to General Contractor for general conditions, profit and overhead related to construction to the building shall be fixed. No addition, deletion or modification of the scope of work shall change these amounts except for an increase due to an Owner directed addition as evidenced by a change order. The percentage of profit and overhead for any change order shall not exceed 5% from General Contractor and 5% from subcontractor.
- The General Contractor is to provide necessary secureable storage area for operations and labor to unload FBO items as noted on the delivery schedule (inside leased space).
- The General Contractor shall be responsible for ensuring that all fixtures, furniture and equipment shall be stored and protected in the building, and the building shall be secured at all times after delivery.
- The Electrical subcontractor shall be responsible for receiving, inspecting and daily reporting of all light fixture shipments and deliveries. Confirmation to be sent via facsimile to a designated Owner representative.
- The General Contractors shall be responsible for receiving, inspecting and daily reporting of all other items/shipments and deliveries. Confirmation to be sent via facsimile to a designated Owner representative.

I. OWNER OCCUPANCY:

- The Owner reserves the right to occupy the premises at any time before completion. Such occupancy shall not constitute final acceptance of all or any part of the work included in the Contract.

J. CUTTING AND PATCHING:

- Contractor shall cut and fit components for alterations of existing work and installation of new work. Patch disturbed areas to match adjacent materials and finishes. Cost associated with same are included.

K. FIELD ENGINEERING:

- Contractor shall provide field engineering services, establish grades, lines and levels by use of recognized engineering and surveying practices. Contractor responsible for all required layout. Contractor must review actual site and is responsible for all field conditions, conflicts with field conditions and Construction Documents shall be brought immediately to the attention of Architect.

L. UTILITIES:

- Contractor responsible to locate and protect all existing utilities as required.
- The Contractor shall determine the location of utility services in the area and notify utility company and Owner's representative prior to beginning construction.

M. MARKED-UP DRAWINGS:

- During the prosecution of the Work, Contractor shall maintain a complete set of Contract Drawings in job office, upon which set he/she is required to mark in red, or other clear manner, all authorized deviations from the Contract Documents. Marked-up Drawings prepared from this job set are a part of the project close-out documents and made available to Architect and the Owner.

N. SUBMITTALS:

- Contractor shall inform Owner's Representative in writing at time of bid submission of any proposed deviation from requirements of Contract Documents.
- Submittal by Contractor represents that field measurements, field construction criteria, materials, catalog numbers and similar data have been reviewed and verified by Contractor, and that each has been checked and coordinated with requirements of Contract.
- Architect's review of submittals shall be for design concept only and shall not be construed as approving departures from Contract Documents.
- Provide submittal review to the Building Owner for all structural work, Exterior work (including canopies, awnings, canopies, rainscreen, storefront, doors, etc.), and mechanical items to be installed outside the limits of the premises.
- Contractor shall provide to Architect & Building Owner the following submittals:
 - Product Data:
 - Contractor shall submit no less than two copies for each stock manufactured items.
 - Contractor shall indicate item to be used where data for more than one product is provided.
 - Shop Drawings:
 - Contractor shall submit four print for all custom fabricated products and products not fully identified by product data.
 - Manufacturers' Samples:
 - Contractor shall provide two samples of each exposed finish, minimum size 6" square.

O. MATERIAL AND EQUIPMENT:

- Material and equipment shall be new and of a type intended usage indicated. Like components shall be by one manufacturer and for component parts shall be interchangeable.
- Contractor shall comply with industry standards for workmanship except when more stringent tolerances are required. Exceptions made by Owner or Architect and will be documented to Architect and Owner.
- Contractor shall assure that all work is performed by persons qualified to produce workmanship of the specified quality.
- Contractor shall secure all products in place with positive anchorage devices designed and sized to withstand stress, vibration, and rocking.
- Contractor shall transport, handle, store, protect and install manufactured items in strict accordance with manufacturers' recommendations. Should conflict exist between Construction Documents and manufacturers' instructions, Contractor should consult with Owner's Representative.
- Contractor shall protect products and finishes from damage during construction operations.

P. SUBSTITUTIONS:

- Contractor shall make every effort to provide products specified.
- Substitutions will be considered if:
 - Contractor has submitted substitution to Architect in writing.
 - Contractor has investigated proposed product and determined that it is equivalent to that specified.
 - Contractor has indicated in writing cost, time or other benefits for substitution.
- Architect shall be judge of acceptability and reserves right to reject proposed substitution.

Q. CONTRACT CLOSEOUT:

1. FINAL COMPLETION

- When work is complete, submit written certification indicating:
 - Work has been inspected for compliance with Contract Documents.
 - Work has been completed in accordance with Contract Documents and deficiencies listed with Certificate of Substantial Completion have been corrected.
 - Equipment and systems have been tested in presence of Owner's representative and are operational.
 - Work is complete and ready for final inspection.

2. FINAL CLEANING

- Execute final cleaning prior to final inspection.
 - Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum soft surfaces.
 - Clean equipment and fixtures to a sanitary condition, clean filters of mechanical equipment, replace filters where cleaning is impractical.
 - Clean site; sweep paved areas.
 - Remove waste, surplus materials and rubbish from project and site.

3. PROJECT RECORD DOCUMENTS

- Indicate actual work on as-built drawings; indicate actual products used in Project Manual, including manufacturer, model number and options.
- At contract close-out submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents and signature of Contractor.

4. OPERATION AND MAINTENANCE DATA

- Provide data for:
 - Electrically operated items.
 - Mechanical equipment and controls.
 - Electrical equipment and controls.
 - Submit two sets prior to final inspection, bound in 8 1/2"X 11" three ring binders.

5. SYSTEMS DEMONSTRATION

- Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using operation and maintenance data as basis of instruction.

R. WARRANTIES

1. CORRECTION OF WORK

- Contractor shall promptly correct work rejected by Architect as defective or as failing to conform to Contract Documents whether observed before or after Substantial Completion, and whether or not fabricated, installed or completed.
 - Contractor shall bear costs of correcting such rejected work, including compensation for Architect's additional services made necessary because of corrections.
 - Period of correction shall be one year after date of Substantial Completion of work or designated portion of work, or within such longer period as prescribed by law and by terms of special warranties required in Contract Documents.

2. WARRANTIES

- Warranty shall be countersigned by manufacturer.
- Where specified, warranty shall be countersigned by subcontractor and installer.
 - Provide required warranties for waterproofing and roofing systems countersigned by subcontractor and installer.
- Replacement Cost: Replace or restore failing warranted items without regard to anticipated useful service lives.

DIVISION 2 – SITE WORK

A. EARTHWORK: (RE: CIVIL / STRUCTURAL DRAWINGS)

1. EXCAVATION AND BACK FILL FOR NEW CONSTRUCTION:

- Clean and re-compact old fill
- Dispose excess fill off site
- Use of explosives prohibited
- Compaction
 - Standard Test ASTM D698
 - Structural fill: 95% of Standard Proctor Density
 - Paving and slab fill: 95%
 - Landscape fill: 90%
 - Moisture: +or- 2% of optimum

DIVISION 3 – CONCRETE (RE: STRUCTURAL DRAWINGS)

A. CAST-IN-PLACE CONCRETE:

- GENERAL:
 - Cast-in-place concrete as shown on the drawings and covers forming, reinforcing, concrete, placement, consolidation, curing, stripping and finishing.
- QUALITY ASSURANCE:
 - ACI 301 "Specifications for Structural Concrete for Buildings"; ACI 347 "Recommended Practice for Concrete Form work"; ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete"; comply with applicable provisions and other standards referenced therein, except as otherwise indicated. Conform to ACI 301, ACI 347, and ACI 117 for tolerances.
- CONCRETE MATERIALS:
 - Portland Cement: ASTM C150, Type I.
 - Aggregates: ASTM C33.
 - Water: Clean, drinkable.
 - Fly Ash, ASTM C618, Class F or C, may be used as cement replacement but not to exceed 20% by weight of cement.
 - Provide 4000 psi minimum 28 day compressive strength mix having less than 5.5 sacks of cu. yd. for all concrete not otherwise indicated.
 - Provide 4000 psi mix with not less than 6 sacks of cement per cu. yd. with water reducing admixture for flatwork. Including fibrous mesh reinforcement.
 - Ready-Mix Concrete: ASTM C94.
 - Color additives – per plans and finish specifications.

4. REINFORCEMENT:

- Deformed Reinforcing Bars: ASTM A615, Grade 60 unless otherwise indicated. Use grade 40 for ties and for dowels to be field bent.
- JOINTS:
 - Provide isolation and control joints as indicated or required. Place isolation and control joints in slab-on-ground to stabilize differential settlement and control cracking.
 - Comply with the specified codes and standards, CRSI "Manual of Standard Practice", ACI 301 and ACI 318. Do not weld reinforcing unless so indicated or specifically acceptable to an Architect.
 - Install welded wire fabric in as long lengths as practicable, lapping at least one mesh.

B. INTERIOR CONCRETE FLAT WORK:

1. GENERAL:

- Edge and face forming for interior on-grade slabs; the conveying, placement, finishing and curing of all interior on-grade slabs.

2. QUALITY ASSURANCE:

- Conform to applicable ACI, ASTM, and PCA standards.

3. REINFORCING, CONCRETE MATERIALS:

- Conform to applicable requirements for cast-in-place concrete.

4. JOINTS:

- Expansion and Isolation Joints: Closed cell polyethylene foam, 0.5" thick, 4" deep.

- Control Joints: 0.125" to 0.25" thick plastic or hardwood strips of depth equal to 25% or more of slab thickness except where otherwise shown.

- Construction Joints: Burke "Keyed Cold", John "Load Key Joint" or approved equal.

- Isolate flat work from building elements, walls, columns, with control or slip joints unless otherwise indicated.

- Form construction joints with specified construction joint form.

5. FINISHING:

- Apply float finish to monolithic slab surfaces that are to receive trowel finish and other finishes.

- Apply broom finish to monolithic slab surfaces that are to be exposed to view, or are to be covered with carpet, resilient flooring, paint, or other thin-film finish coating system.

- For interior surfaces to be left exposed use curing-hardening sealing compound, as indicated on drawings.

- For Retro Placed concrete, hone & polish floor to 1500 grit with densifier and color dye (color TBD).

DIVISION 4 – MASONRY

A. UNIT MASONRY:

1. GENERAL:

- Concrete Masonry Units as shown on the drawings

2. QUALITY ASSURANCE:

- Except where otherwise specified comply with recommendations of BIA and BIA Technical Notes, International Masonry Institute NOMA, and ANSI/NBS 211-1954-174.

- Concrete Masonry Units (CMU): Conform to ASTM C90, Grade N, Type 1, made with approved ASTM C331 lightweight aggregate.

2. MORTAR MATERIALS:

- Portland Cement: ASTM C150, Type I.
- Hydrated Lime: ASTM C207, Type S.

- Sand: ASTM C144, except for joints less than 0.25", use on aggregate passing with 100% passing the NO. 16 sieve.

- Aggregates for Masonry Grout: ASTM C404, size 1 for fine aggregate, size 8 or 89 for coarse.

- Water: Clean, potable and free of salts or alkalis which could cause efflorescence.

4. CONTINUOUS REINFORCING TIES:

- Provide welded wire units prefabricated in straight lengths of not less than 10', with matching corner and tee units. Fabricate from 9 gage cold drawn steel wire complying with ASTM A82, with formed continuous side rods and plain cross-rods, and a unit width of 1.5" to 2" less than thickness of wall or partition. Furnish with galvanized finish, ASTM A641, Class 1.

- Provide with perpendicular (ladder) cross ties.

5. PATTERN BOND:

- Lay exposed masonry in running bond with vertical joint in each course. Bond and interlock each wythe at corners unless otherwise shown.

6. MORTAR MIXES:

- For all locations not otherwise specified, conform to ASTM C270, type N Proportions. Color TBD – Contractor to provide color chart color chart with block sample for approval.

7. GROUT MIXES:

- ASTM C476, proportioned as follows:
 - Fine: 1 part cement, 0.10 part lime, 2.25 to 3 parts sand 2500 psi.
 - Coarse: 1 part cement, 0.10 part lime, 2.25 to 3 parts sand 1.5 to 2 parts coarse aggregate, 2500 psi.

8. JOINTS:

- Except where otherwise shown lay walls with 0.375" joints. Cut joints flush for masonry walls which are to be concealed or to be covered by other materials. Tool exposed joints slightly concave.

9. SEALERS:

- Prosocon, Blok-Guard & Graffiti Control. Apply 4x4 sample for color variations.

B. THIN BRICK VENEER:

- GENERAL:
 - Brickwork as shown on the drawings.
- QUALITY ASSURANCE:
 - Engage an installer for the work of this section experienced in the type of brickwork required and having not less than 5 years of experience on similar jobs.
 - Thin Brick – Install product per manufacturers recommendation over two layers of 5/8" felt and self furring wire lath. Install brick per TCA W241 and provide flashings at material transitions – do not rely on just caulk.
 - Full Brick – Install per Rocky Mountain Masonry Institute recommendations over two layers of 15 lbs felt (reinforced at corners). Provide galv. masonry ties at min of 24" O.C.

DIVISION 5 – METALS

A. STRUCTURAL METAL FRAMING (RE: STRUCTURAL DRAWINGS)

- STRUCTURAL STEEL:
 - ASTM A36 steel, fabrication, design and erection conforming to AISC standard specifications.
 - Connections: Shop welded; field welded and bolted as required.

B. METAL FABRICATIONS:

- GENERAL:
 - Metal fabrications work as shown on drawings for items fabricated from iron and steel shapes, plates, bars, studs, tubes, pipes, and castings which are not a part of structural steel or other metal systems specified elsewhere.
- FERROUS METALS:
 - Steel plates, shapes and bars: ASTM A36.
 - Steel Plates to be Bent or Cold-Formed: ASTM A238, Grade C.
 - Steel Pipe: ASTM A53; type as selected; Grade A; black finish, Schedule 40, unless otherwise indicated.
 - Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
 - Furnish bent or otherwise custom fabricated bolts, plates, anchors, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete structures.

DIVISION 6 – WOOD AND PLASTICS

A. ROUGH CARPENTRY:

- GENERAL:
 - Carpentry work as shown on drawings/and work normally performed by carpenters not elsewhere specified and generally not exposed to normal view.
- QUALITY ASSURANCE:
 - Lumber: Comply with PS 20, WPPA Grading Rules and other grading rules as specified.
 - Plywood: Comply with PS 1, "U.S. Product Standard for Construction and Industrial Plywood".

3. PRODUCTS:

- Provide dressed lumber, S4S, unless otherwise shown or specified, seasoned or kiln dried to maximum 19% moisture content except for thickness less than 2" nominal limit to 15%.

A. Dimension Lumber:

- West Coast Douglas Fir-Larch or Hem-Fir when graded under NLGA, WCLIB, or WPPA.
- Studs: Stud, No. 3 or Standard Grade (4x6 max).
- Light Framing: Standard Grade (4x4 max).

- Structural Light Framing: Douglas Fir-Larch No. 2 or Hem-Fir No. 2 (4x4 max.).

- Structural Framing: (2" to 4" thick, 5" and wider) Douglas Fir-Larch No. 2 or Hem-Fir No. 2 with allowable stress rating of F = 1200 psi for single use and 1400 psi for repetitive member use, and E = 1,500,000 psi.

- Beams and Stringers: Douglas Fir-Larch No. 1 and Hem-Fir Select Structural when graded under WCLIB rules.

- Furring, Blocking: Standard Grade, any species.

B. Plywood:

- Underlayment: APA Rated, fully sanded face, Exposure 1, Group 1 or 2 species, span rating and thickness as shown on drawings or as required to meet job conditions. Furnish with fire retardant treatment.

- Exposed at storage: Stud-I-Floor.
- Interior Exposed Plywood, for Paint: APA A-D, Group 1 or 2, Exposure 1 or 2.
- Telephone or Electrical Equipment Backing Board: APA C-D, Group 1 or 2, Exposure 1 or 2, 0.5" thickness. Furnish with fire retardant treatment.

OUTLINE SPECIFICATIONS: continued

DIVISION 7 — THERMAL AND MOISTURE PROTECTION

A. INSULATION:

- FLOORS:
 - Provide 2" Dowboard non-compressible insulation, 25 psi min. where indicated on drawings.
- SOUND ATTENUATION (Walls or Ceilings):
 - Sound Attenuation Blankets: ASTM C665, Type I, glass fiber blankets without membrane. Provide 3" mineral fiber 3.0 lb. density or full thickness of 1.0 density glass fiber.
- EXTERIOR WALL BATTS:
 - Faced mineral-fiber blanket insulation: ASTM C665, Type III, Class A, Category 1, faced with foil-scrim-kraft, foil-scrim membrane on one face.

B. FIRE RESISTANT BOARD: (Not Used)

C. FIBERGLASS ROOF PANELS: (Not Used)

D. FLASHING AND SHEET METAL:

- GENERAL:
 - Flashing and sheet metal work as shown on the drawings for:
 - Wall Panels
 - Downspouts
 - Metal flashing and counter flashing
 - Exposed metal trim
 - Cappings and wall caps
 - Sealants for sheet metal
- QUALITY ASSURANCE:
 - Except as otherwise noted, conform to requirements and recommendations of SMACNA "Architectural Sheet Metal Manual" Fourth Edition, 1987, as applicable and including forming, anchoring, cleaning and forming expansion joints, seams and details for accommodation of thermal movement.
 - Metals: Mill Phosphatized Zinc-Coated Steel Sheet: Commercial quality carbon steel sheets with minimum of 0.20% copper content complying with ASTM A526 or A527 for lock-forming; hot-dip galvanized to comply with ASTM A525, 90% mill Phosphatized, 0.0359" thick (20 gauge) except as otherwise indicated.
 - Hanging Gutters: Fabricate using prefinished metal to profiles shown either in individual 8' to 10' lengths or by roller forming from coil stock to 40' maximum lengths. For formed sheet gutters, lap across joints 1.5", rivet and solder.
 - Downspouts: Fabricate using prefinished metal to profiles shown either in 8' to 10' lengths or by roll forming from 26 gauge coil stock, with full -locked longitudinal joints.
 - Rubberized Asphalt sheet of 60 mil thick, self adhering sheet applied to back wrap all window openings and where indicated on drawings. Mfg.: Carlisle Corp., W.R. Grace or equal.

E. ROOFING:

- GENERAL:
 - 4.0 smooth surface APP membrane. Triple reinforced with fiberglass mat, fiberglass and polyester scrim composite to provide maximum resistance to weathering, high tensile properties and puncture resistance. Permastic w/ heat welded laps or heat weld.
 - Shop Drawings and Submittals: Shop Drawings to include outline and size of roof, location and size of penetrations, perimeter and penetration flashing detail references to mfr. standard. Non-mfr. standard details to be submitted for approval from roofing mfr. Provide manufacturer's data sheets, preparation instructions and recommendations, storage and handling recommendations, and installation methods.
 - Warranty: Submit warranty certification from mfr. of approval of project design and intent to issue warranty. Fastener pull tests from independent testing agency shall be approved by roof mfr. Upon completion of the installation, an inspection will be performed by a representative of the roofing manufacturer to ascertain that the roofing membrane system has been installed according to Manufacturer's approved specifications and details. Upon approval of the project, a Warranty shall be written. Provide 10 YEAR WARRANTY.
- QUALITY ASSURANCE:
 - Installer: Roofing Contractor shall be authorized by Manufacturer to install roof.
 - Material: Membrane shall be classified by UL as Class A sheathing material for use in construction of Class A roof assemblies.
 - Alternate fully adhered grease resistant membrane w/ surrounds @ equipment and walkways between.

F. JOINT SEALERS:

- GENERAL:
 - Each form and type of joint sealer as shown on the drawings or as specified, including, but are not necessarily limited to the following:
 - Exterior penetrations and joints between different materials.
 - Floor (interior) joints and penetrations
 - Partition and ceiling joints
 - Sealants for penetrations and joints at fire-rated constructions
 - Interior joints between different materials
- WARRANTY:
 - Submit 2 copies of written 2-year warranty agreeing to repair or replace joint sealers which fail to perform as airtight and watertight joints; or fail in joint adhesion, cohesion, abrasion resistance, weather resistance, extrusion resistance, migration resistance, stain resistance, or general durability; or appear to deteriorate in any other manner.
- MANUFACTURERS:
 - Dow Corning Corporation
 - General Electric Company
 - Mameco International, Inc.
 - Pecora Corporation
 - Sika Corporation
 - Sonneborn Building Products Division, Rexnord Chemical Products, Inc.
 - Tremco, Inc.

G. METAL WALL PANELS

- GENERAL:
 - Install metal wall panels in accordance with drawings.
- PRODUCTS:
 - Barridge pre-weather galvalume sheet metal
 - Manufactures recommended underlayment - Grace Ice and water shield
- EXECUTION:
 - Provide 24"x24" on site mock up for approval of Owner's representative.

DIVISION 8 — DOORS AND WINDOWS

A. STANDARD STEEL DOORS AND FRAMES:

- GENERAL:
 - Standard steel doors and frames manufactured in accordance with SDI Recommended Standards:
 - Doors: Flush, hollow or composite construction standard steel doors for interior and exterior locations.
 - Frames: Pressed steel frames for doors, transoms, sidelights, Mullions, interior glazed panels, and other interior and exterior openings of following type: Knockdown field assembled type, except where fire rated Heavy Duty Grade.
- QUALITY ASSURANCE:
 - Provide doors and frames complying with the Steel Door Institute "Recommended Specifications for Standard Steel Doors and Frames" ANSI/SDI 100, and as herein specified.
 - Wherever fire-rated door assemblies are indicated or required, provide fire-rated door and frame assemblies that comply with NFPA 80 and have been tested, listed and labeled in accordance with ASTM E152 by UL, FM, Warnock Hersey or other testing and inspection agency acceptable to authorities having jurisdiction
- PRODUCTS:
 - Doors:
 - Conform to ANSI/SDI 100, Grade II, Model 1 for materials quality, metal gauges and construction details. Close ends with flush channels on exterior doors. Interior doors may have flush or recessed channel ends.
 - At exterior locations and elsewhere as shown or scheduled, provide doors which have been fabricated as thermal insulating assemblies is 0.24 BTU/hr./ft. squared/degrees F.
 - Frames:
 - Conform to ANSI/SDI 100, frames for Grade II doors, widths as indicated, 1.5" face returns.

B. WOOD DOORS:

- GENERAL:
 - Wood doors as shown on the drawings and in schedules for flush and stile and rail doors.
 - Shop Drawings: Submit Shop Drawings indicating the location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, and other pertinent data.
- QUALITY ASSURANCE:
 - AWI Quality Assurance
 - "Architectural Woodwork Quality Standards", including Section 1300 "Architectural Flush Doors", of Architectural Woodwork Institute (AWI) for grade of door, core construction, finish and other requirements exceeding those of NWWDA quality standard.
 - Flush Wood Doors:
 - NWWDA Quality Standard: I.S. 1 "Industry Standard for Wood Flush Doors", of National Wood Window and Door Association (NWWDA).
 - Mat-formed particle board core, CS236 Type I, Density C, with PC-5 or PC-7 construction. Assemble with Type I adhesive bond, NWWDA I.S. 1.6.
- INSTALLATION:
 - Install all doors to comply with manufacturer's written instructions, referenced quality standards, and as indicated. Install fire rated doors in corresponding fire rated frames according to NFPA 9-80.

C. STILE AND RAIL DOORS:

- NWWDA Quality standards NWWDA I.S.6, "Industry Standard for Stile and Rail Doors".
 - AWI Quality standard : AWI's "Architectural Woodwork Quality Standards" for grade of door core, construction, finish and other requirements.
 - Refer to Glazing section for safety glass standards.
 - Provide doors per door schedule, prepared for door hardware. Premium finish for transparent finishes, per finish schedule.
 - Exterior doors to be assembled with wet-use adhesives, and faces and edges shall be shop sealed for transparent finishes or shop primed for opaque finishes.
- ### D. ALUMINUM STOREFRONT— THERMALLY BROKEN:
- GENERAL:
 - Aluminum storefront work of the following types:
 - Interior storefront framing
 - Exterior storefront framing
 - QUALITY ASSURANCE:
 - Standards: Comply with the requirements and recommendations in applicable specifications and standards by NAIMM, AAMA, and AA, including the terminology definitions, except to the extent more stringent requirements are indicated.
 - MATERIALS:
 - Framing: Provide entire system including anchors, connectors, accessories and trim for flush glazing by Kawneer or equal, to match existing exterior storefront framing. Fabricate system for glazing with 1" insulating glass units at exterior storefront and 0.25" low-e" glass at interior storefront.
 - Anodized Finish: NAIMM AA-M12C22M42/M44, (min. thickness of 0.7 mils), integral color or electrolytically deposited color, anodized finish complying with AAMA 606.1 or 608.1, "Bronze/Dark Bronze" or match existing.

E. HARDWARE:

- GENERAL:
 - "Builder's" or "Finish" hardware as shown on drawings and schedules.
 - Include lock cylinders for locks furnished in other sections where so specified.
- SUBMITTALS:
 - Submit complete detailed hardware schedule sufficiently in advance to assure proper preparation and coordination of other work. Review and acceptance by the Architect or Owner does not relieve the Contractor of his exclusive responsibility to fulfill the requirements as shown and specified.
 - Wherever needed, furnish templates to fabricators of other work which is to receive finish hardware.
 - Prepare keying schedules for approval, and key locks in accordance with approved schedule.
- QUALITY ASSURANCE:
 - Suppliers: A recognized builders hardware supplier who has been furnishing hardware in the project's vicinity for a period of not less than 2 years, and who is, or employs an experienced AHC certified hardware consultant.
 - Warranty: Furnish 2 copies of written warranties for failure of any hardware part for 2 years and for mechanical failure of door closers for 5 years.

DIVISION 9 — FINISHES

A. GYPSUM BOARD SYSTEMS:

- GENERAL:
 - Gypsum board work as shown on the drawings and in schedules.
- QUALITY ASSURANCE:
 - Terminology and Performance: Applicable publication's by the Ceilings and Interior Systems Contractors (CISCA).
 - Acoustical Materials: FS SS-5-118 and ABPA publications.
 - Fire Hazard Classification: UL tested, listed and labeled as "Class 0-25", smoke developed of 50 or less.
- PRODUCTS:
 - Wood support systems - RE: Rough Carpentry section.
 - Metal support systems
 - General: To the extent not otherwise indicated, complying with ASTM C645 and C754, for metal system supporting gypsum wallboard work.
 - Ceilings: Ceiling Suspension Main Runners: 1.5" steel channels, 0.475 lb. per ft., cold rolled. Hanger Wire: ASTM A641, Class I zinc coating, soft tempered, 8 gauge.
 - Partitions: Studs: ASTM C645; 25 gauge (0.0179") x 3.625" deep, except as otherwise indicated. At door jambs and for the backing use 20 gauge (0.0329") or heavier studs. Runners: Match studs; type recommended by stud manufacturer for floor and ceiling support of studs, and for vertical abutment of drywall work at other work.
 - Furring Members: ASTM C645; 25 gauge (0.0179"), hat shaped, 0.875" depth, except as noted.
 - Exposed Gypsum Board: ASTM C36, standard taper long edges, 0.625" thick except where otherwise indicated, Type X, 4 ft. width by maximum lengths to minimize end joints.
 - Gypsum Backing Boards: ASTM C442 backing board or ASTM C36 gypsum wallboard - 0.625" thick, square edge, Type X, except where otherwise indicated, 4 ft. width.
 - Provide moisture resistant type gypsum board at all wet areas.
 - Kitchen Exhaust Hood Duct Enclosures: Provide steel shaft-wall support system as shown on drawings and as required for fire resistance rating indicated.

B. WATERPROOFING:

- GENERAL:
 - Install water proofing at the kitchen and bar as indicated on drawings.
- PRODUCTS:
 - Chlorinated polyethylene (CPE) sheet waterproofing system - NobleSeal TS
 - Liquid waterproofing/anti-fracture membrane - Hydro Ban Latcrete
 - Epoxy thin set mortar and grout - Latcrete
- SUBMITTAL:
 - Provide product data to include manufactures installation instruction, MSDS sheets, Material Means and Methods, Shop Drawings which would include details of joints, sheet flashings, penetrations, inside/outside corners and other termination conditions.
- INSTALLERS:
 - Installers Certificate: certifying installer complies with manufactures certification requirements
 - Manufacturer's warranty
- QUALITY ASSURANCE:
 - Provide mock up on site for approval of Owner's representative and building Owner.
 - Conduct a pre-installation conference with GC and Owner's representative to review surface preparation, substrate conditions, pretreatment, min. cure times and other special details required for project.
 - 24 hour water test after completing waterproofing, but before overlying construction is placed. Min. of 2" of water - max of 4".
- EXECUTION:
 - Install products per manufactures recommendations.
 - Insure compatibility of all products.

C. CARPET:

- GENERAL:
 - Refer to Finish & Material schedules for suppliers.
- PRODUCTS AND ADHESIVES:
 - Carpet to be supplied by General Contractor per responsibility schedule.
 - Carpet Edge Guard extruded or molded vinyl or rubber carpet edge guard and transition strips of size, profile and color as Selected by Architect from those available within the industry (any mfg.).
 - Adhesive for carpet- provide adhesive as recommended by the carpet manufacturer specifically formulated for intended use and which complies with flame spread rating required for the carpet installation.
- INSTALLATION:
 - Comply with manufacturer's instructions and recommendations. Place seams in the directions indicated, and as accepted on shop drawings, if any. Maintain direction of pattern and texture, including lay of pile. Do not seam w/ft to warp, except as directed.
 - Check matching of carpet before cutting and ensure there is no visible variation between dye lots.
 - Use an approved cementitious filler to patch cracks, small holes and for leveling. Grind or smooth offsets to eliminate wear points.
 - Lay carpet on floors with run of the pile in same direction of anticipated traffic. Lay carpet on stairs with the run of the pile in opposite direction of anticipated traffic to avoid peaking of backing nosings.
 - At doors, center seams under doors; do not seam in traffic direction at doorways.
 - Install carpet edge guard at every location where edge of carpet is exposed to traffic.
 - Provide direct Glue-down installation.

B. TILE:

- GENERAL:
 - Ceramic tile work as shown on the drawings and in schedules for:
 - Wall tile
 - Floor tile
 - Quarry tile
- QUALITY ASSURANCE:
 - Furnish tile conforming with standard Grade req't's of ANSI 137.1.
 - Conform to Tile Council of America "Ceramic Tile Installation Handbook" and ANSI A108, A118 and A136 as applicable.
- PRODUCTS:
 - Provide ceramic tile and quarry tile as indicated on Finish Schedule and drawings.
 - Provide ceramic tile units having less than 0.5% water absorption, ASTM C373.
 - Latex-Portland Cement Mortar: Latex-modified, acrylic based Portland cement thinned mortar complying with ANSI A118.4.
 - Flexible Mortar: "Flex Mortar" by PCI, Kerastick/Kerabond System by Mapei Corporation USA, or approved equal.
 - 100% Epoxy setting and mortar products.
 - Latcrete Hydro Ban waterproofing membrane @ cove and 12" out at all kitchen / bar walls.
- PLACEMENT METHODS:
 - Interior Walls: (Gypsum board at cove base)
 - TCA Method: W-243
 - Bond Coat: Thinned latex Portland cement
 - Grout: Colored latex Portland cement
 - Interior walls (wet locations over cementitious backerboard)
 - TCA Method: W-244.
 - Bond Coat: Thinned latex Portland cement
 - Membrane: 15 lb. roofed felt or 4 mil. polyethylene film
 - Grout: Colored latex Portland cement
 - Interior Floors (Brewing, Kitchen, Bar areas, slope to drains):
 - TCA Method: F-131
 - Bond Coat: Epoxy Mortar
 - Grout: Epoxy
 - Interior Floors (Toilet rooms and Public Rooms):
 - TCA Method: F-115
 - Bond Coat: Epoxy Mortar
 - Grout: Epoxy
 - Exterior Walls:
 - TCA Method: W202-1
 - Bond Coat: Dry or Latex Portland Cement
 - Grout: ANSI A118.6 or A118.7

C. ACOUSTICAL CEILINGS:

- GENERAL:
 - Acoustical ceiling work as shown on the drawings and in schedules.
- QUALITY ASSURANCE:
 - Terminology and Performance: Applicable publication's by the Ceilings and Interior Systems Contractors (CISCA).
 - Acoustical Materials: FS SS-5-118 and ABPA publications.
 - Fire Hazard Classification: UL tested, listed and labeled as "Class 0-25", smoke developed of 50 or less.
- PRODUCTS:
 - Provide ceiling units as indicated on Finish Schedule and Drawings.
 - Kitchen & Office Areas: Vinyl-clad gypsum board panels.
 - Public Dining Room/Bar Areas: Refer to drawings.
 - Comply with ASTM C635, intermediate-duty system as applicable to the type of suspension system required for the type of ceiling units indicated. Coordinate with other work supported by or penetrating through the ceilings. Hanger wires: Galvanized carbon steel, ASTM A641, yield stress load of at least 3 times design load, but not less than 12 gauge (0.106"). Size for 5 times the design load indicated in ASTM C635, Table 1, Direct Hung.
 - Coordinate layout and installation of acoustical ceiling units and suspension system components with other work supported by or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system components (if any), and partition system (if any).
 - Install edge moldings of the type indicated at edges of each acoustical ceiling area, and at the locations where edge of units would otherwise be exposed after completion of the work. Level moldings and ceiling suspension system, to a level tolerance of 0.125" in 12'-0", 1 carton each and extra tile to be stored on site (colors per spec).

D. RESILIENT FLOORING: (Not Used)

E. WOOD FLOORING:

- As indicated on finish specifications. Flooring to be installed per manufacturer's instructions and recommendations.

F. CARPET:

- GENERAL:
 - Refer to Finish & Material schedules for suppliers.
- PRODUCTS AND ADHESIVES:
 - Carpet to be supplied by General Contractor per responsibility schedule.
 - Carpet Edge Guard extruded or molded vinyl or rubber carpet edge guard and transition strips of size, profile and color as Selected by Architect from those available within the industry (any mfg.).
 - Adhesive for carpet- provide adhesive as recommended by the carpet manufacturer specifically formulated for intended use and which complies with flame spread rating required for the carpet installation.
- INSTALLATION:
 - Comply with manufacturer's instructions and recommendations. Place seams in the directions indicated, and as accepted on shop drawings, if any. Maintain direction of pattern and texture, including lay of pile. Do not seam w/ft to warp, except as directed.
 - Check matching of carpet before cutting and ensure there is no visible variation between dye lots.
 - Use an approved cementitious filler to patch cracks, small holes and for leveling. Grind or smooth offsets to eliminate wear points.
 - Lay carpet on floors with run of the pile in same direction of anticipated traffic. Lay carpet on stairs with the run of the pile in opposite direction of anticipated traffic to avoid peaking of backing nosings.
 - At doors, center seams under doors; do not seam in traffic direction at doorways.
 - Install carpet edge guard at every location where edge of carpet is exposed to traffic.
 - Provide direct Glue-down installation.

H. PAINTING:

- GENERAL:
 - Painting work as shown on the drawings and schedules, and as follows:
 - Paintings and finishings of new exterior exposed items and surfaces, except as indicated.
 - Painting and finishing of interior exposed items and surfaces throughout the project, except as otherwise indicated.
 - Painting of exposed bare and covered pipes and ducts, and of handrails, exposed steel and iron work, and primed metal surfaces of equipment installed under the mechanical and electrical work, except as otherwise indicated. Coordinate with Division 15 and 16 installers for color coding, if any.
 - Painting of mechanical grilles, registers, louvers (except aluminum), and panel covers and frames for electrical work and systems.
 - Where items or surfaces are not specifically mentioned, paint these the same as adjacent similar materials or areas. If finish is not designated, the Architect will select the materials or system.
 - Do not paint floors, walls or ceilings of rooms or spaces scheduled as unfinished, unless noted otherwise.
- SUBMITTALS:
 - On actual wall surfaces and interior building components, produce painted finishes of specified color samples. On at least 100 sq. ft. of surface as directed, provide full-coat finish samples.
- QUALITY ASSURANCE:
 - Where not otherwise specified, follow recommendations of "Architectural Specifications Manual" by Painting & Decorating Contractors of America.
 - Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.
 - Perform preparation and cleaning procedures in strict accordance with the paint manufacturer's instructions for each particular substrate condition.
- PRODUCTS:
 - Colors and Finishes: As indicated on Finish Schedule and as selected by Architect.
 - Provide manufacturer's recommended oil-base paint, stain or finish system at galvanized steel, shop primed metal, exterior wood, wood windows and doors, interior trim, exposed metal mechanical and electrical systems, and all interior wood.
 - Provide manufacturer's recommended water-base paint or finish systems at interior gypsum board and interior and exterior plaster.
 - Stained trim and millwork shall receive one coat stain, one coat sanding sealer, steel wool wipe and two coats clear glass varnish unless noted otherwise in schedules.

DIVISION 10 — SPECIALTIES

A. AWNINGS:

- GENERAL:
 - Fabric awnings per awning package.

B. TOILET ACCESSORIES:

- GENERAL:
 - Toilet and bath accessories, as shown on the drawings and schedules.
- QUALITY ASSURANCE:
 - Conform to requirements of ASTM F446 for grab bars and accessories for test methods, anchorage and functional performance.
- PRODUCTS:
 - MATERIALS:
 - Stainless Steel: AISI Type 302/304, with polished No. 4 finish, 22 gauge minimum, unless otherwise indicated.
 - Sheet Steel: Cold-rolled, commercial quality ASTM A366, 20 gauge minimum, unless otherwise indicated. Surface preparation and metal pretreatment as required for applied finish.
 - Provide toilet and bath accessories as manufactured by Bobrick or equal, as listed in Toilet Accessory Schedule and shown on drawings.

D. PORTABLE FIRE EXTINGUISHERS:

- Conform to N.F.P.A. pamphlets #10, 10A and manufactured by J.L. Industrial Morris Industries (FRYFTE) or equal. Provide fully recessed cabinets in public areas and wall mounted extinguisher at back of house areas. Submit shop drawings for approval.

DIVISION 11 — EQUIPMENT

A. FOOD SERVICE:

- The General Contractor shall be responsible for coordination of this work and for final utility hookup of food service and brewing equipment provided by others and for the installation of certain items provided to General Contractor by the food service equipment contractor.
- All work shown on the food service equipment drawings is for the purpose of indicating the General Contractor's work in relationship to the food service equipment contractor's work. The fixtures themselves will be supplied and set in place under a separate contract with no final hook-up.
- The food service and brewing contractor will visit the site at mutually agreed upon times for the purpose of verifying the correctness of stub outs for utilities and construction in general related to the installation of food service equipment.

B. RELATED WORK DESCRIBED ELSEWHERE:

- Plumbing: Work of Section "Plumbing" includes setting of faucets and connections to services, interconnections of equipment; floor drains in vicinity of indirect drain outlets; faucets and trim.
- Electrical: All line switches, safety cutouts, control panels, fuse boxes and other controls, electrical receptacles, fittings and connections, except as otherwise specified in Section "Electrical". Electrical Contractor, Section "Electrical", will make final connection to the building from all junction boxes.

DIVISION 12 — FURNISHINGS

Furnished by Owner.

DIVISION 13 — SPECIAL CONSTRUCTION

Not Applicable.

DIVISION 14 — CONVEYING SYSTEMS

Not Applicable.

DIVISION 15 — MECHANICAL

A. PLUMBING:

- See Plumbing Specifications, Sheet P4.1.

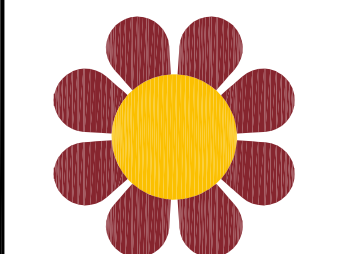
B. HEATING, VENTILATING, AIR CONDITIONING AND EXHAUST HOODS:

- See Mechanical Specifications, Sheet M4.1.

DIVISION 16 — ELECTRICAL

A. ELECTRICAL:

- See Electrical Specifications, Sheet E4.1.



DESIGN LOADS - 208 IBC

SNOW	30	FSF
WIND (V _w ULT)	D3	MPH EXP B, CAT II
SEISMOIC		CATEGORY B
FLOOR	100	FSF

INSPECTIONS

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION FROM GEBAU, INC. OR BY AN INSPECTION AGENCY APPROVED BY GEBAU, INC. WITH A 24 HOUR ADVANCED NOTICE:
FOOTINGS, FOUNDATION WALL FORMS, REINFORCING ANCHOR BOLTS, MOMENT FRAME EMBED PLATES, AND WELDED DOVELS PRIOR TO CONCRETE POUR
STRUCTURAL STEEL FRAMING ELEMENTS, BOLTING, FIELD WELDS
CMU VERTICAL REINFORCING, BOND BEAM STEEL, AND EMBED LOCATIONS PRIOR TO GROUTING AT ALL LIFTS.

FOUNDATIONS

FOUNDATION DESIGNED WITHOUT ENGINEER'S SOIL INVESTIGATION
FOUNDATION CRITERIA (BELOW) WERE ASSUMED FOR PURPOSES OF FOUNDATION DESIGN AND SHALL BE CONFIRMED BY SOILS ENGINEER AT OWNER'S EXPENSE PRIOR TO CONSTRUCTION (THIS PROCEDURE MAY REQUIRE REVISIONS TO FOUNDATION DESIGN IF SOIL ENGINEER DETERMINES THAT SUCH DESIGN CRITERIA ARE INAPPROPRIATE FOR THIS BUILDING SITE)
FOOTINGS SHALL BE PLACED UPON UNDISTURBED NATURAL SOIL OR COMPACTED FILL TESTED AND APPROVED BY SOILS ENGINEER
MAXIMUM DESIGN SOIL PRESSURE: 2000 PSF NON-EXPANSIVE
FLOAT ALL PARTITIONS AND TRIM MATERIAL A MINIMUM OF 1/2" FROM SLAB ON GRADE
DESIGN LATERAL SOIL PRESSURE (EQUIVALENT FLUID PRESSURE): 45 PSF/FT.
PROVIDE PERIMETER DRAIN PER SOILS ENGINEER
SLOPE PERIMETER GRADING AWAY FROM BUILDING PER SOILS ENGINEER

CONCRETE AND REINFORCEMENT

CONCRETE SHALL CONFORM TO APPLICABLE PROVISIONS OF LATEST REVISION OF ACI-308 MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:
ALL CONCRETE: 3800 PSI
CEMENT TYPE V. IN CONCRETE EXPOSED TO SOIL, ALL OTHER TYPE VII.
DEFORMED REINFORCEMENT: ASTM A63 GRADE 60
WELDED WIRE FABRIC: ASTM 185
REINFORCEMENT FABRICATED AND PLACED PER ACI MANUAL OF STANDARD PRACTICE (ACI-308).
SPICES, DOVEL PROJECTION OR EMBEDMENT SHALL BE 32 BAR DIAMETERS, BUT NOT LESS THAN 24" FOR 15 BARS OR SMALLER.
TYPICAL FOUNDATION REINFORCEMENT 2-#8 TOP AND 2-#8 BOTTOM OR MORE AS NOTED. SEE PLANS FOR OTHER REQUIREMENTS.
CONCRETE MUST BE PLACED CONTINUOUSLY WITHOUT HORIZONTAL COLD JOINT. IF COLD JOINT IS DEEMED APPROPRIATE VERTICAL REINFORCEMENT MUST BE PROVIDED.
COLD WEATHER PLACEMENT SHALL CONFORM TO PRACTICE SET FORTH IN ACI MANUAL OF CONCRETE PRACTICE.
EPOXY: SIMPSON AT-XP HIGH STRENGTH ACRYLIC ADHESIVE OR CEMENTITIOUS ANCHOR CEMENT - 6000 PSI 3 DAY. PREPARE HOLES PER ADHESIVE MANUF. RECOMMENDATIONS

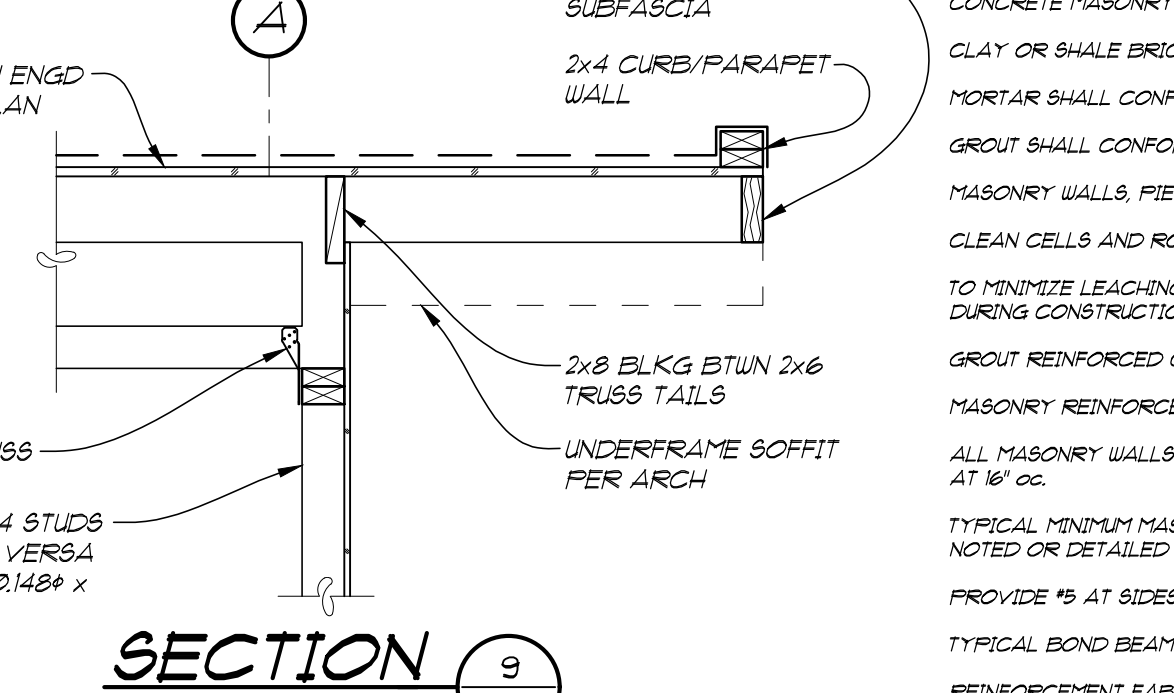
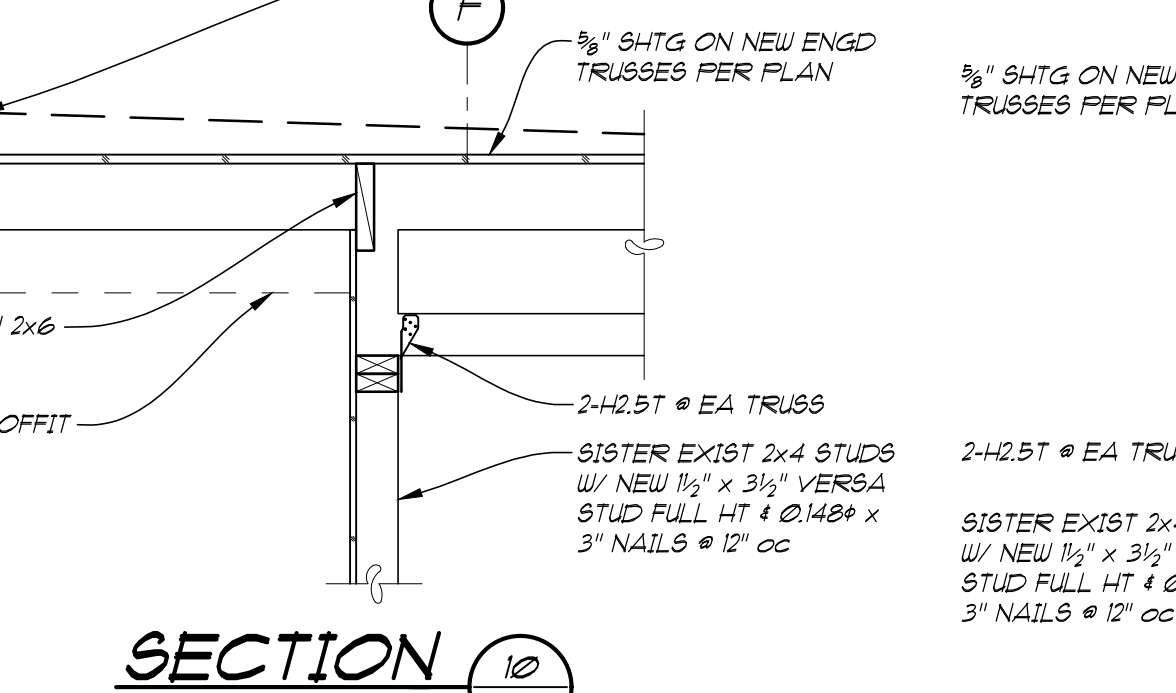
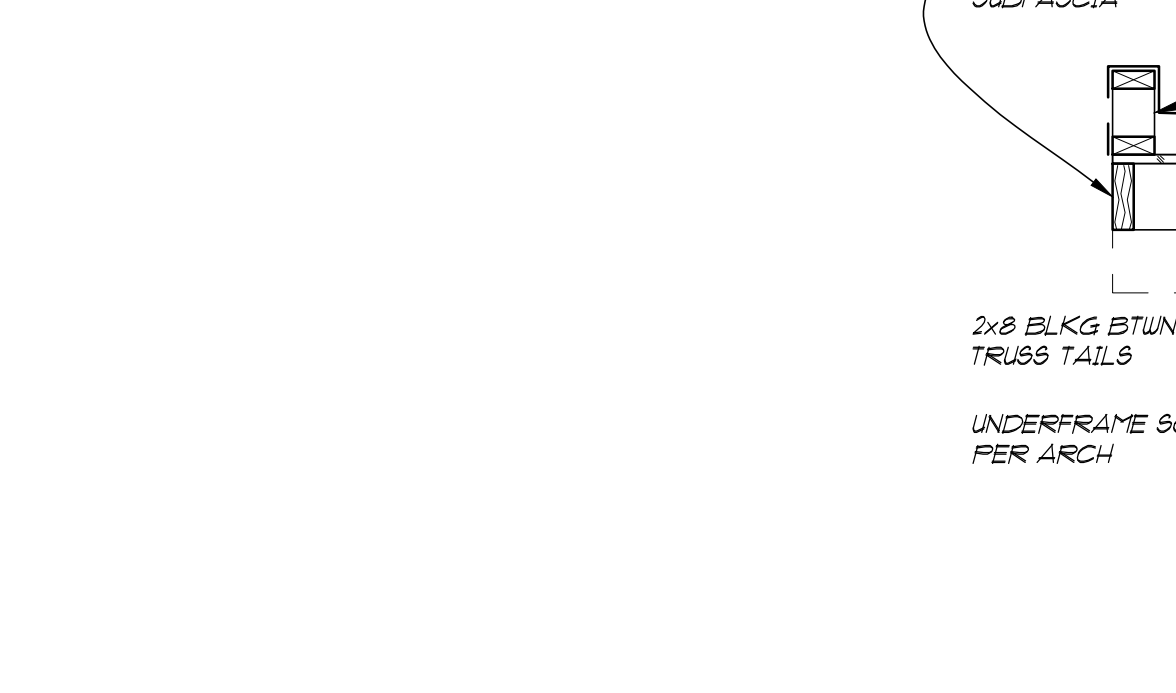
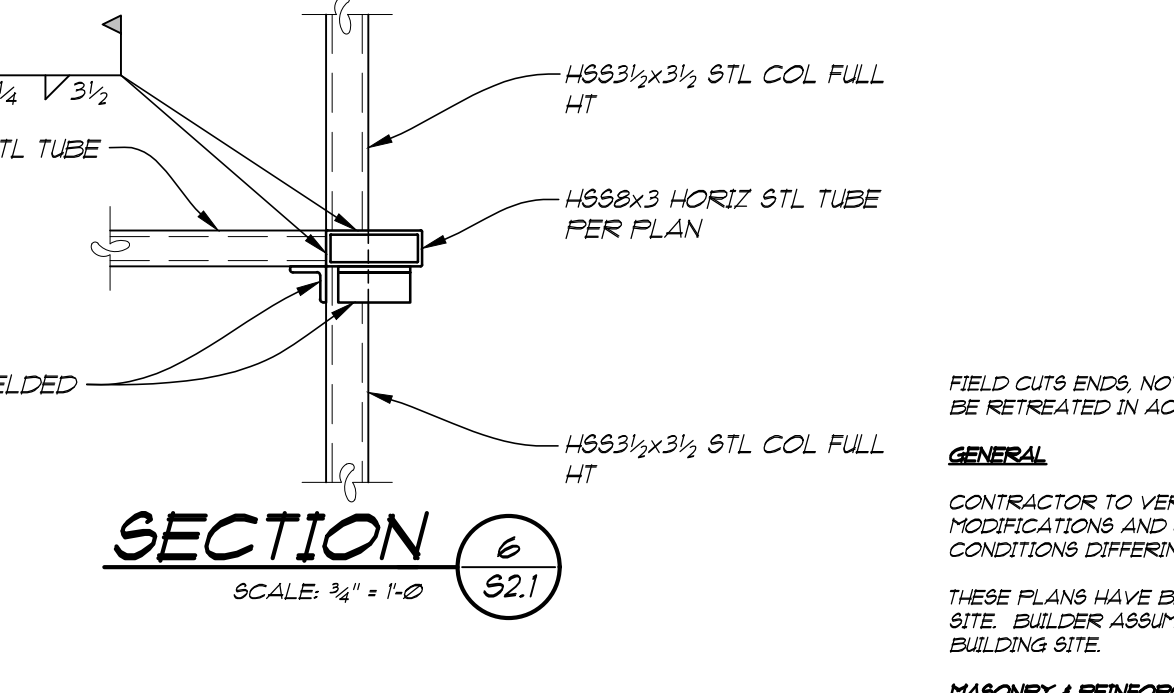
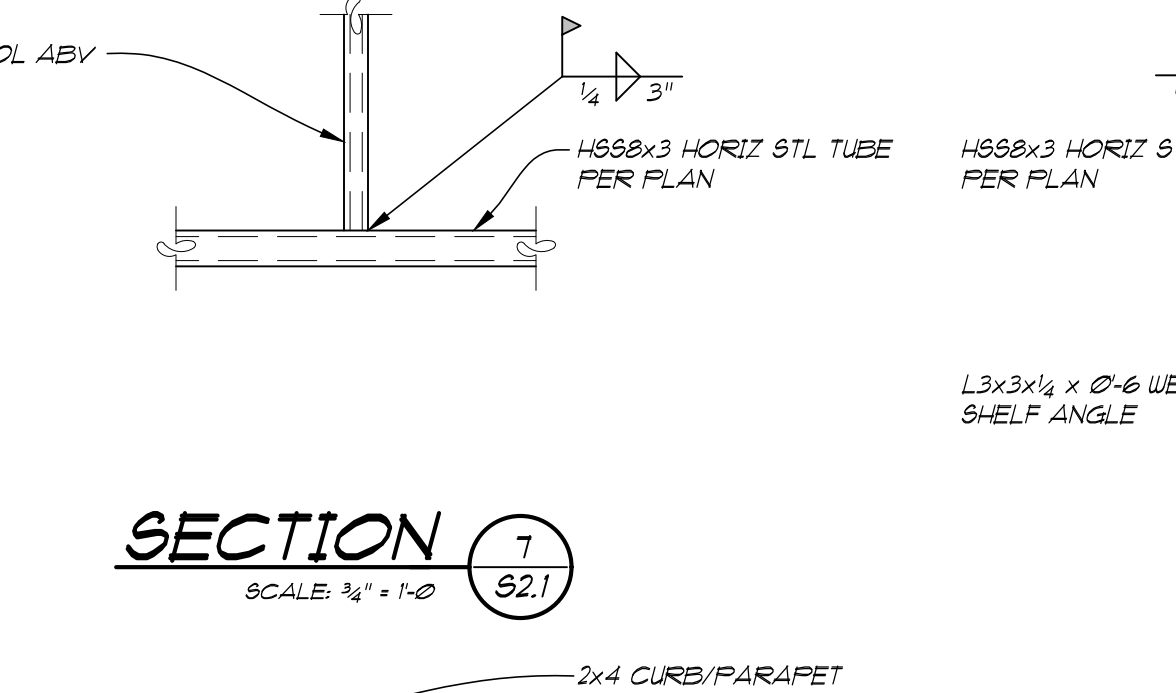
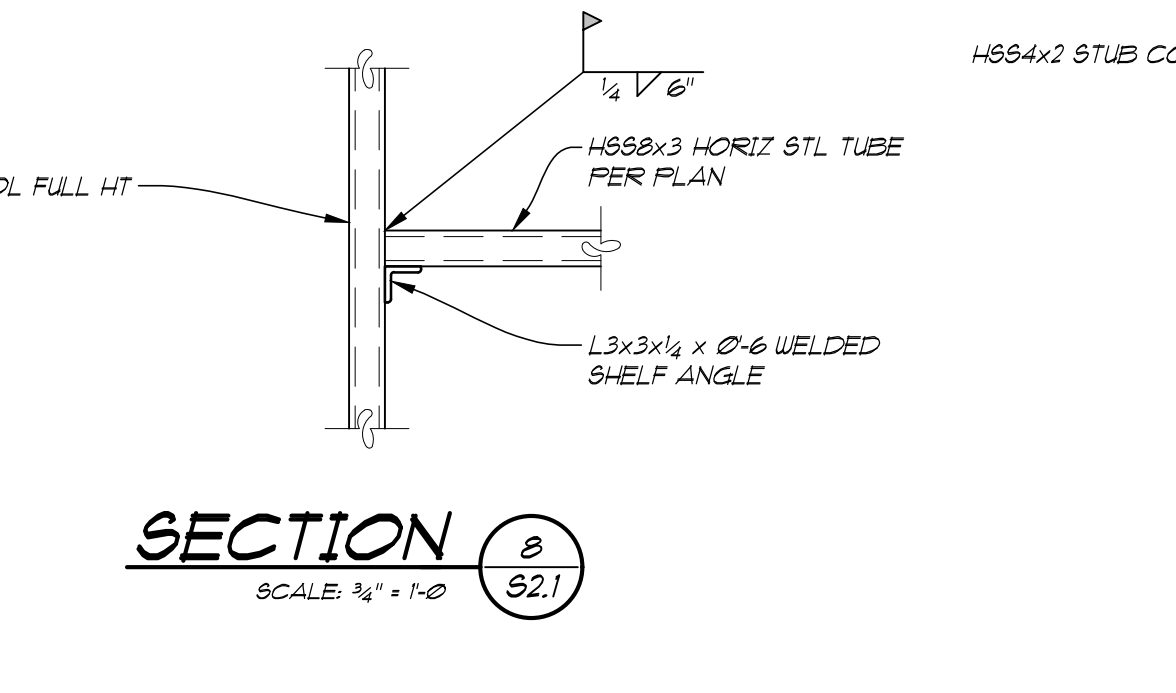
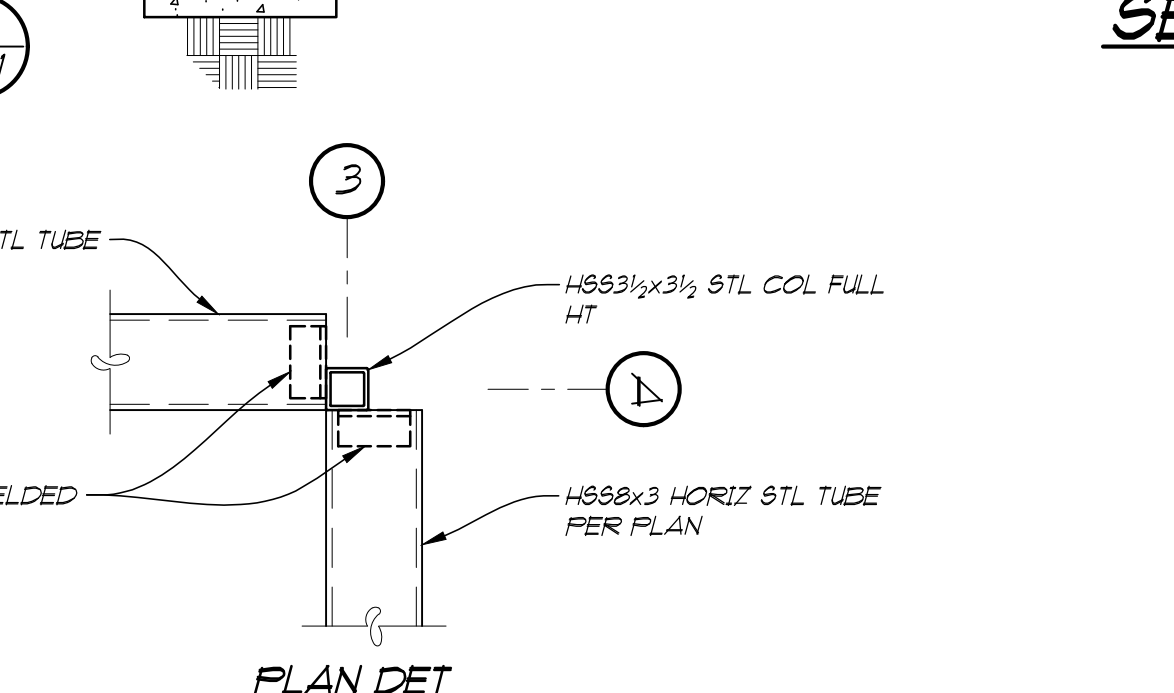
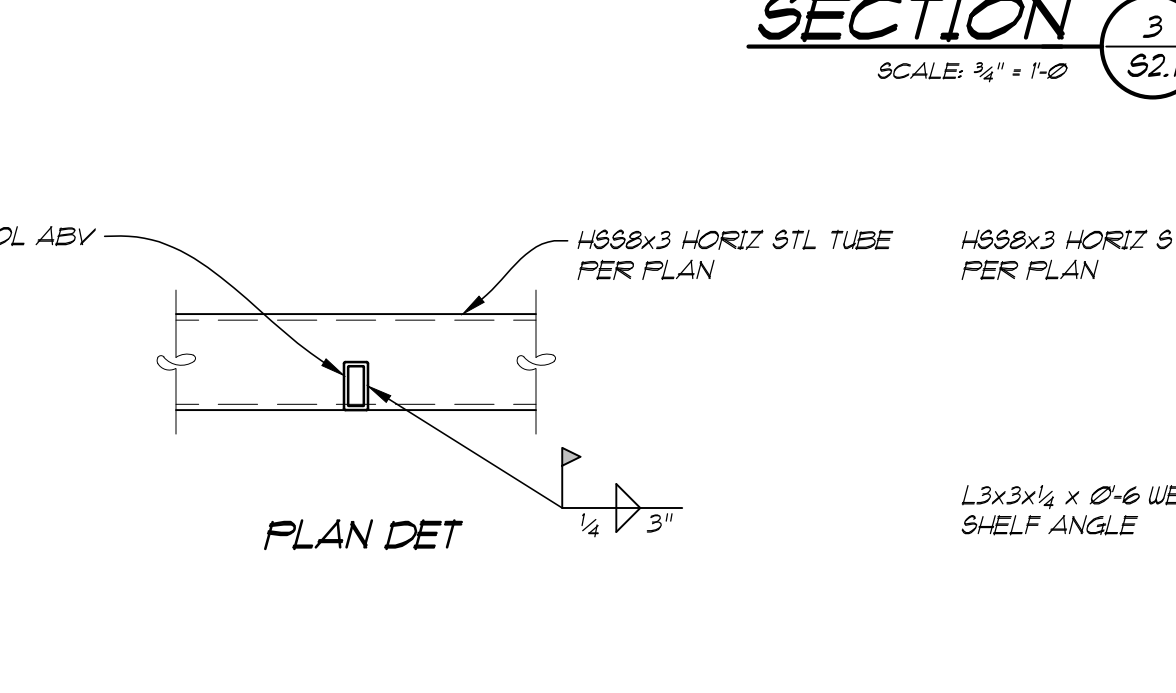
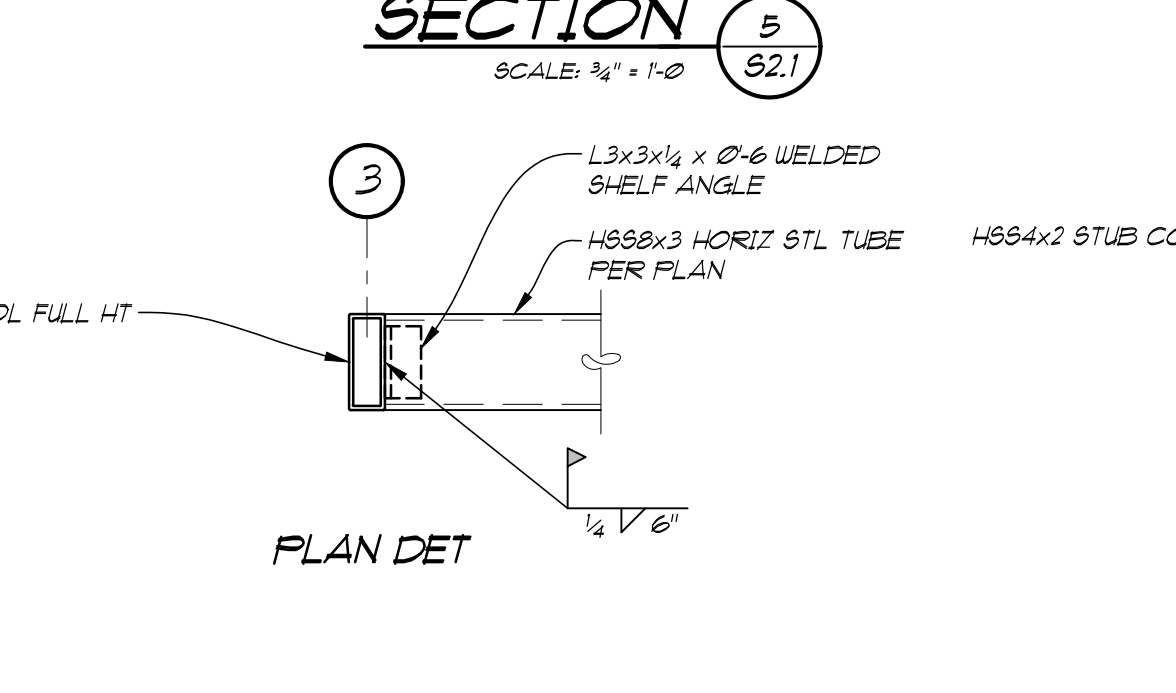
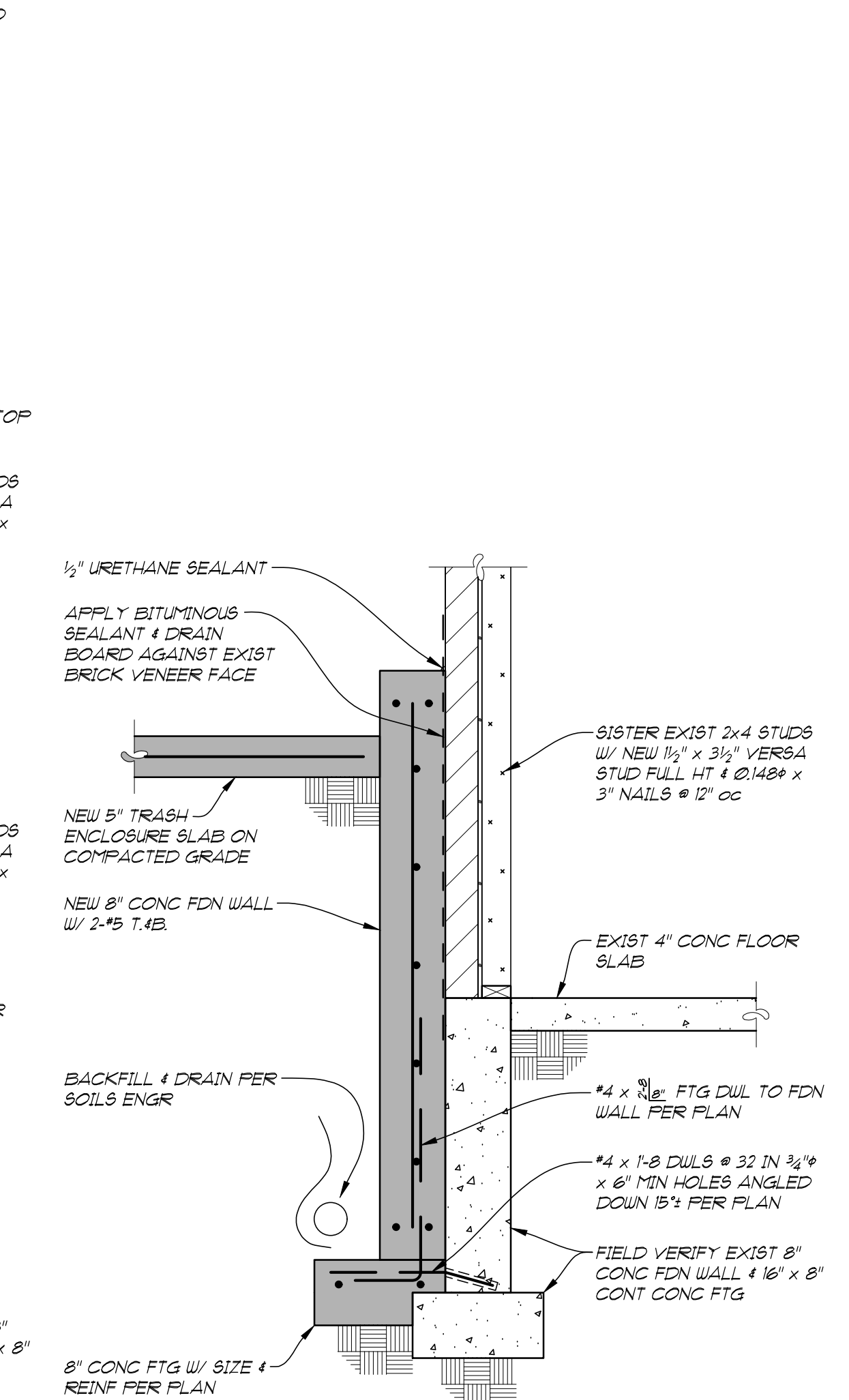
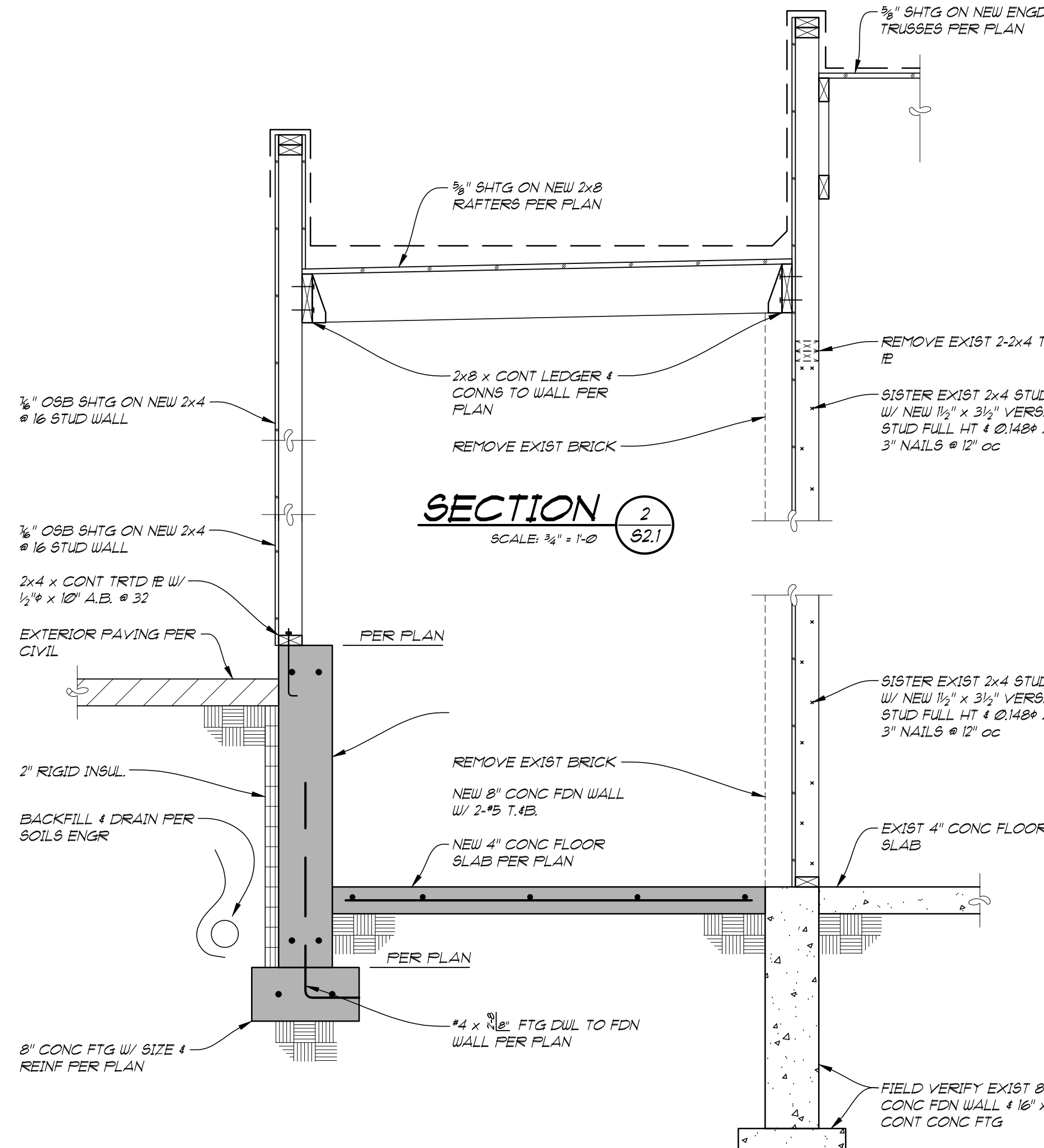
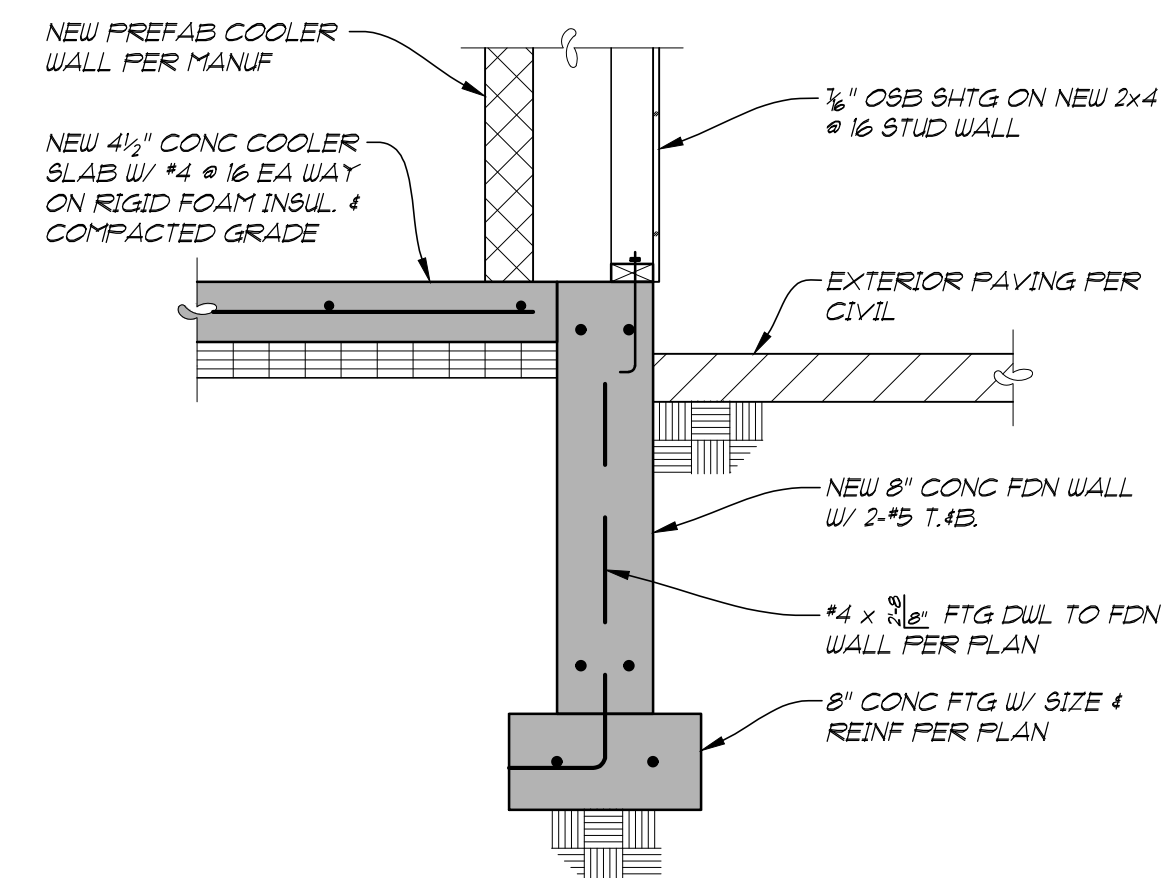
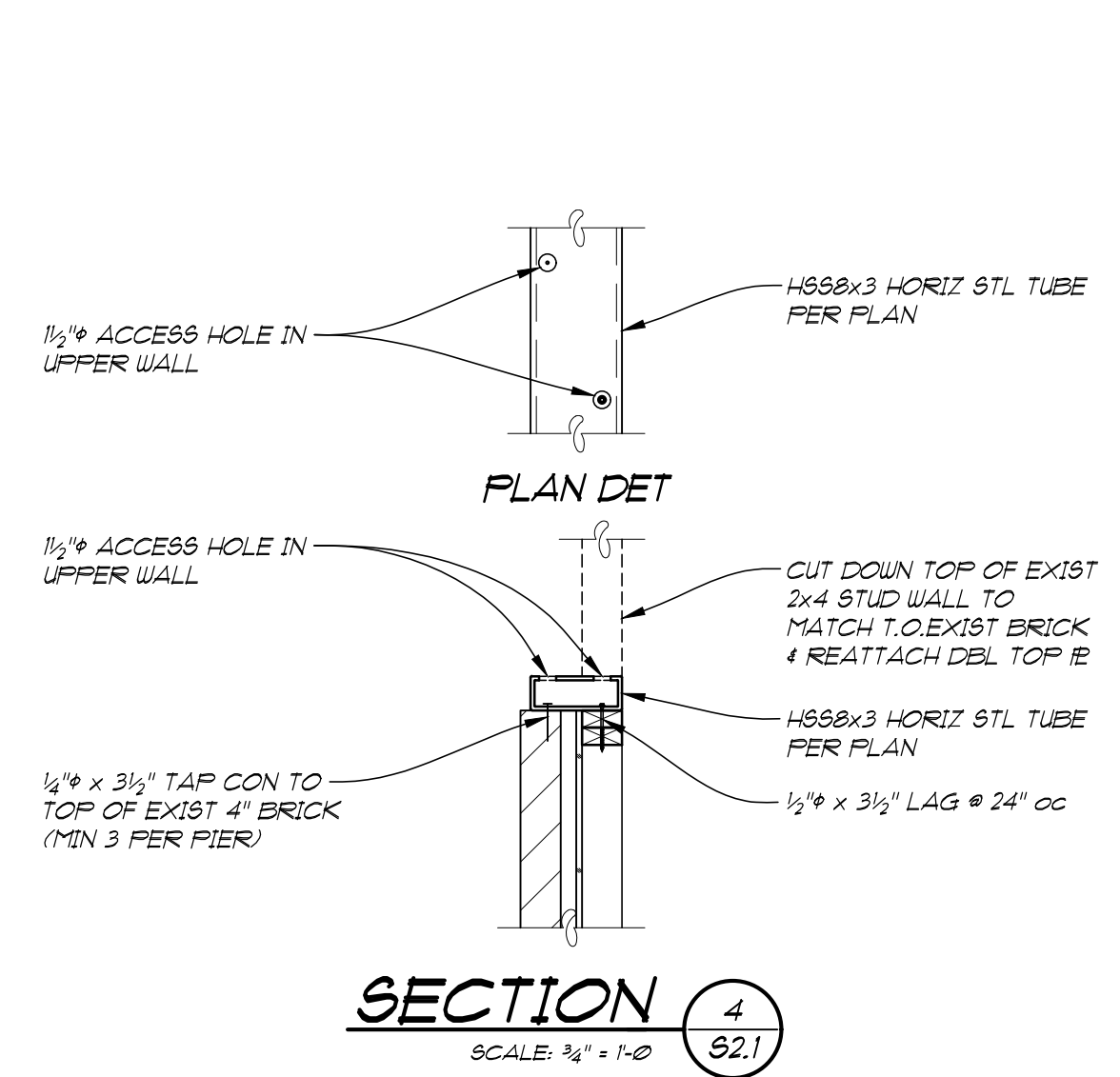
STRUCTURAL STEEL

STRUCTURAL STEEL: W-SHAPES ASTM A992 F_y = 50 KSI, ALL OTHER A36 F_y = 36 KSI
STANDARD PIPE COLUMNS: ASTM A53 GRADE B
HOLLOW STRUCTURAL SECTIONS (HSS): ASTM A500 GRADE B F_y = 46 KSI
3" SCHEDULE 40 STD PIPE COLUMNS WITH ADJUSTABLE SCREW CAP PLATE MUST BE CERTIFIED BY SUPPLIER TO SAFELY SUPPORT A SUPERIMPOSED LOAD OF 28,000 LBS OR AS NOTED ON PLANS.
BOLTS: ASTM A307 FOR STEEL TO WOOD, ASTM A325 FOR STEEL TO STEEL
WELD MATERIAL: E70XX
ALL WELDERS SHALL HAVE EVIDENCE OF HAVING PASSED THE AWS STANDARD QUALIFICATION TEST.
ALL EXPANSION ANCHORS TO BE KWIK BOLT 3, AS MANUFACTURED BY HILTI, OR STRONGBOLT 2 AS MANUFACTURED BY SIMPSON OR EQUIVALENT TO BE REVIEWED AND APPROVED BY GEBAU PRIOR TO INSTALLATION.
MASTIC COAT ALL STEEL BELOW GRADE.
ALL STRUCTURAL STEEL BEAMS SHALL BEAR MINIMUM OF 3/4" IN BEAM POCKETS WITH STEEL SHIMS & NON-SHRINK GROUT AS REQUIRED OR AS NOTED. ALL BEAMS TO BE LATERALLY BRACED AT BEARING.
ALL STRUCTURAL STEEL FABRICATED AND ERECTED PER AISC STEEL CONSTRUCTION MANUAL.

WOOD FRAMING

WOOD DESIGN VALUES IN PSI OR AS NOTED:
LAPINATED VENEER LUMBER (LVL): F_x 2400, E: 1,900,000 (1/4" WIDE MINIMUM)
FRAMING LUMBER (MAXIMUM MOISTURE CONTENT: 19%)
FOUNDATION SILL PLATES: HEM FIR NO. 2 TRTD F_x = 405, F_y = 50
BEARING WALL PLATE MTL: HEM FIR NO. 2 F_x = 405, F_y = 50
STUDS < 9'-0": DOUGLAS FIR STUD GRADE F_x = 1000, E: 1,600,000 F_y = 850
STUDS > 9'-0": DOUGLAS FIR NO. 2 F_x = 900, E: 1,600,000
JOISTS-HEADERS: DOUGLAS FIR NO. 2 F_x = 900, E: 1,600,000
COLUMNS (4x4 & GREATER): DOUGLAS FIR NO. 1 F_x = 1000, E: 1,600,000 F_y = 1000
SOUTHERN YELLOW PINE NO. 1 F_x = 1000, E: 1,600,000 F_y = 1000

CONTRACTOR TO CONTACT GEBAU, INC. IF ANY OF SUPPLIED WOOD MEMBERS DIFFER FROM THE MATERIAL SPECIFICATIONS ABOVE PRIOR TO CONSTRUCTION
NAILING PER INTERNATIONAL BUILDING CODE EXCEPT WHERE MORE OR LARGER NAILING SHOWN ON DRAWINGS
ALL ROOF RAFTERS, JOISTS, TRUSSES BEAMS ANCHORED TO SUPPORTS WITH 8 GA SIMPSON LUBT FRAMING ANCHORS OR AS NOTED. TRUSS TO TRUSS CONNECTIONS SPECIFIED BY TRUSS SUPPLIER.
ALL PLYWOOD ROOF SHEATHING AND SUBFLOORING SHALL BE ENGINEERED GRADES WITH GRADE STAMP INDICATING APPROPRIATE MAXIMUM SPACING OF SUPPORTS (APA 312/6) OR OSB CONFORMING TO IRC STANDARD FOR ROOF/FLOOR SHEATHING.
LOWER CHORD OF GABLE END TRUSSES ANCHORED TO WALL PLATE WITH 18 GA FRAMING ANCHORS AT 4'-0" ON CENTER AND LATERALLY BRACED TO ROOF FRAMING AT 8'-0" ON CENTER MAXIMUM SPACING.
ALL EXTERIOR STUD WALLS SHALL BE SHEATHED WITH 1/2" NOMINAL APA RATED PLYWOOD OR OSB SHEATHING AS NOTED WITH NAILING REQUIREMENTS NOTED ON DWGS.
PROVIDE CONTINUOUS WALL STUDS EACH SIDE OF WALL OPENINGS EQUAL TO ONE HALF OR GREATER OF NUMBER OF STUDS INTERRUPTED BY OPENINGS.
ALL WALL STUDS SHALL BE CONTINUOUS FROM FLOOR TO FLOOR OR FROM FLOOR TO ROOF.
BLOCK BETWEEN ROOF TRUSSES W/ SOLID 2x BLOCKING TO UNDERSIDE OF ROOF SHEATHING WHERE TRUSS HEEL HEIGHT EXCEEDS 4'.
WHERE HEADER IS NOT DIRECTLY BELOW TOP OF WALL PLATE, PROVIDE 3x CRIPPLE STUDS ABOVE HEADER AT 16" ON CENTER & ADDITIONAL STUDS AT ALL BEAM AND COLUMN LOCATION EQUAL TO NUMBER OF STUDS OR PLIES OF BEAM ABOVE.
CROSS BRIDGE ALL ROOF AND FLOOR JOISTS AT MIDSPAN WHERE BOTTOM DOES NOT RECEIVE DRY WALL OR OTHER SHEATHING AS PER MANUFACTURERS RECOMMENDATIONS.
PROVIDE SOLID BLOCKING OR RIM JOISTS AT ALL JOIST SUPPORTS AND JOIST ENDS.
ALL FLOOR JOIST AND ROOF TRUSS SYSTEM BRACING AND BRIDGING AND CONNECTIONS SPECIFIED BY MANUFACTURER.
ALL FASTENERS (NAILS, BOLTS, HANGERS) IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE CORROSION RESISTANT AS SPECIFIED BY WOOD MANUFACTURER.
ALL UNTREATED WOOD IN CONTACT WITH CONCRETE INCLUDING BEAM POCKETS SHALL BE MOISTURE PROTECTED WITH CONTINUOUS VAPOR BARRIER PRIOR TO INSTALLATION.
ALL WOOD BEAMS TO BE LATERALLY RESTRAINED AGAINST ROTATION AT BEARING.
METAL CONNECTOR DESIGNATIONS ARE SIMPSON STRONG TIE COMPANY WITH NAILING PER SIMPSON CATALOG. ALL SUBSTITUTIONS TO BE RECOMMENDED BY CONTRACTOR & REVIEWED BY GEBAU PRIOR TO INSTALLATION AT CONTRACTOR'S EXPENSE.



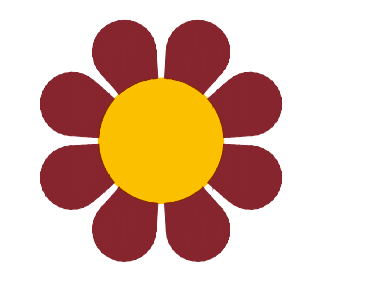
FIELD CUTS, ENDS, NOTCHES, AND DRILLED HOLES OF PRESSURE TREATED WOOD ARE TO BE RETREATED IN ACCORDANCE WITH IRC SECTION R301.11 AND ALPHA 14

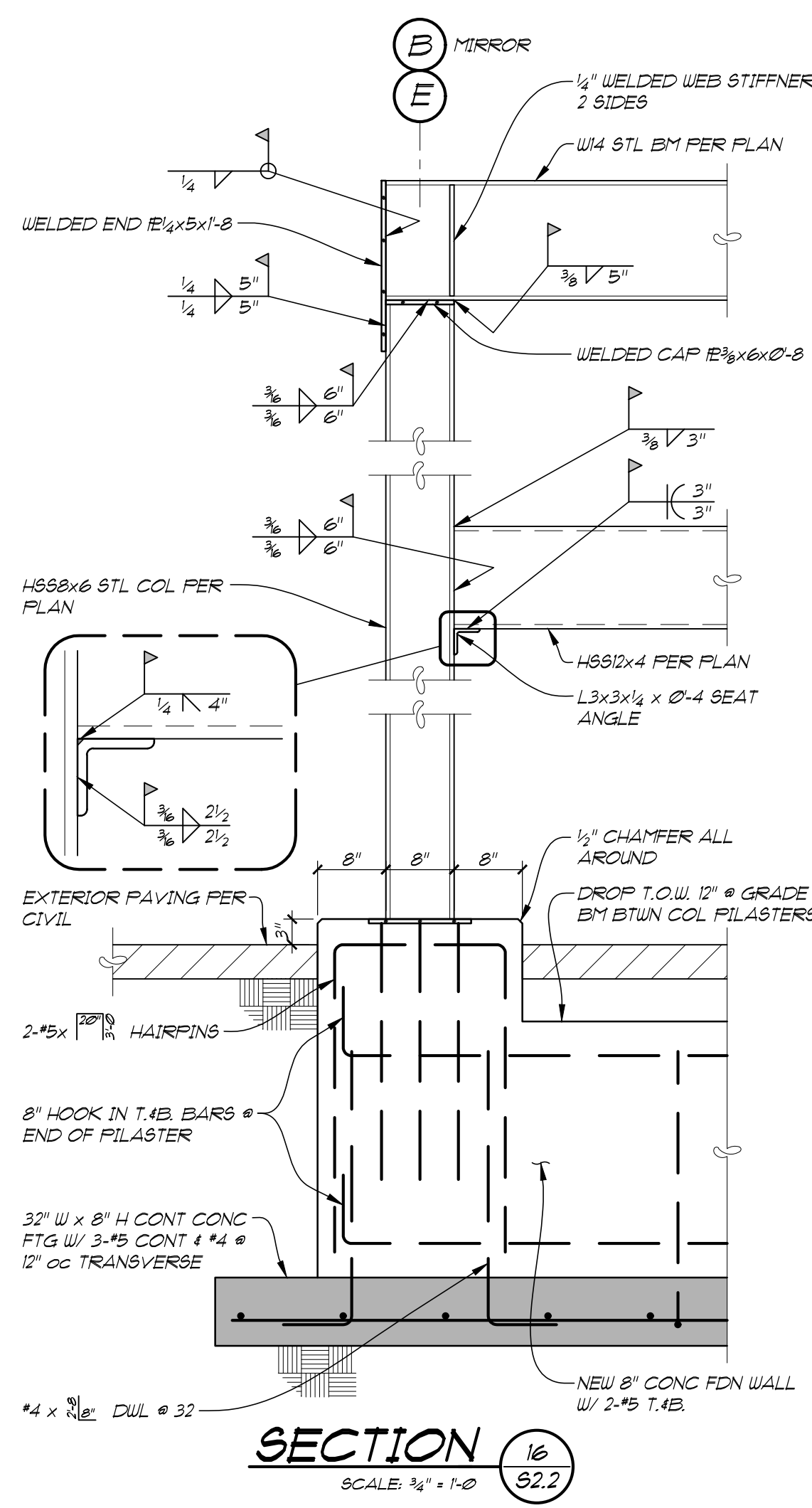
GENERAL

CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO EXECUTING CORRESPONDING MODIFICATIONS AND SHALL NOTIFY GEBAU, INC IMMEDIATELY UPON DISCOVERY OF CONDITIONS DIFFERING FROM THOSE SHOWN.
THESE PLANS HAVE BEEN ENGINEERED FOR CONSTRUCTION AT ONE SPECIFIC BUILDING SITE. BUILDERS ASSUMES ALL RESPONSIBILITY FOR USE OF THESE PLANS AT ANY OTHER BUILDING SITE.

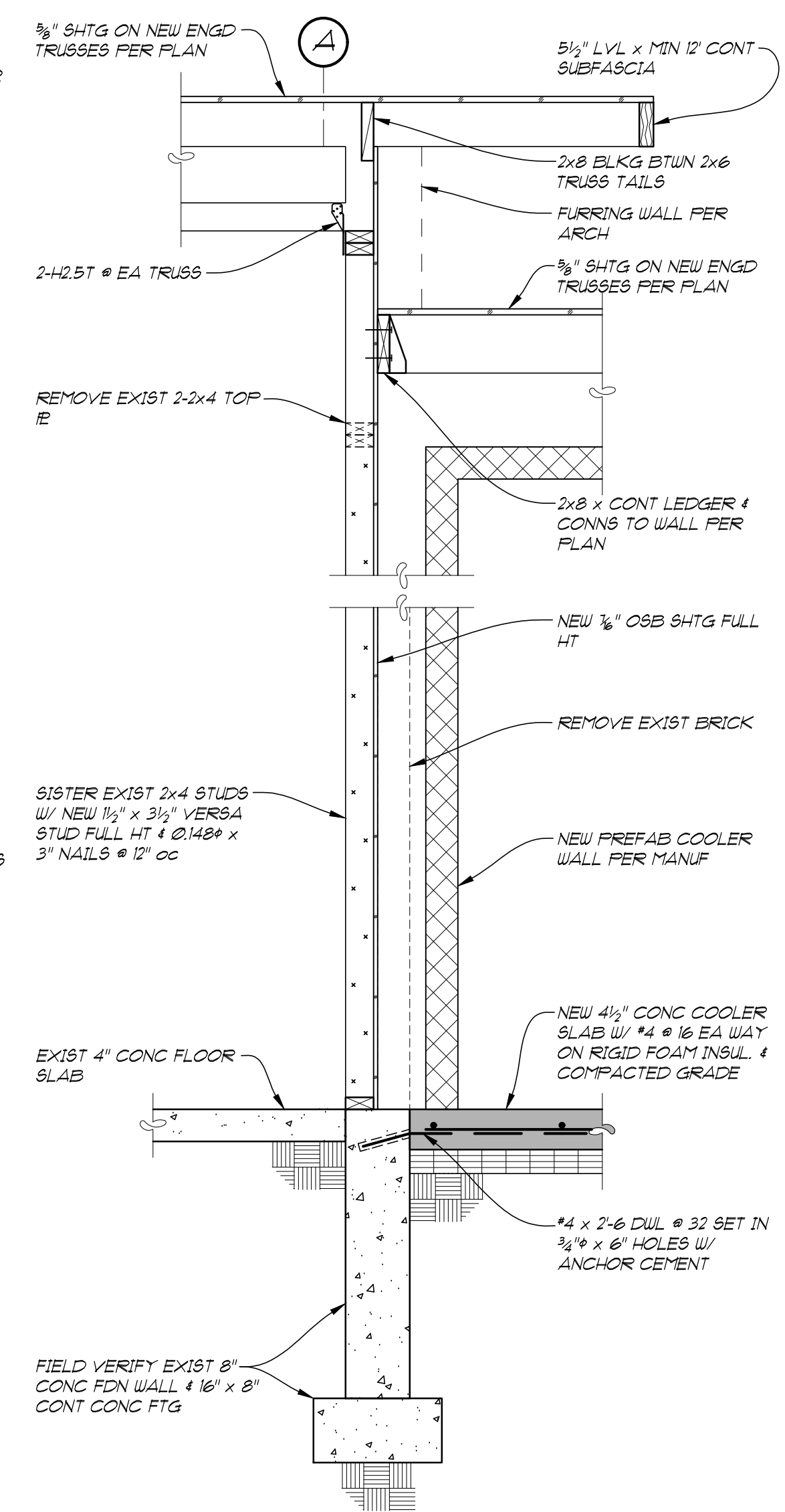
MASONRY REINFORCEMENT

CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90-11, 1500.
CLAY OR SHALE BRICK MASONRY UNITS SHALL CONFORM TO ASTM C216-MUF8S
MORTAR SHALL CONFORM TO ASTM C270 TYPE S.
GROUT SHALL CONFORM TO ASTM 476 2500 PSI 28 DAY STRENGTH
MASONRY WALLS, PIERS, ETC SHALL BE GROUTED IN LIFTS NOT EXCEEDING 6'-0".
CLEAN CELLS AND ROD GROUT INTO PLACE. PROVIDE CLEANOUTS AT BASE OF WALL TO MINIMIZE LEACHING. PROTECT ALL MASONRY WORK FROM MOISTURE INTRUSION DURING CONSTRUCTION.
GROUT REINFORCED CELLS, BOND BEAMS AND ALL CELLS BELOW GRADE.
MASONRY REINFORCEMENT: ASTM A63 GRADE 60.
ALL MASONRY WALLS TO BE HORIZONTALLY REINFORCED WITH STANDARD DURO-WALL AT 16" OC.
TYPICAL MINIMUM MASONRY VERTICAL REINFORCEMENT: #4 AT 32 OC. UNLESS OTHERWISE NOTED OR DETAILED ON DRAWING MINIMUM LAP 24".
PROVIDE 15 AT SIDES OF ALL OPENINGS, CORNERS, CONTROL JOINTS AND WALL ENDS.
TYPICAL BOND BEAM REINFORCEMENT: 2-#4 CONTINUOUS GROUT SOLID.
REINFORCEMENT FABRICATED AND PLACED PER ACI MANUAL OF STANDARD PRACTICE (ACI-308).
COLD WEATHER PLACEMENT SHALL CONFORM TO PRACTICE SET FORTH IN GUIDE SPECIFICATIONS FROM INTERNATIONAL MASONRY ALL WEATHER COUNCIL AVAILABLE THROUGH PCA #118748.
SEE CONCRETE SECTION FOR MASONRY REINFORCEMENT NOTES.

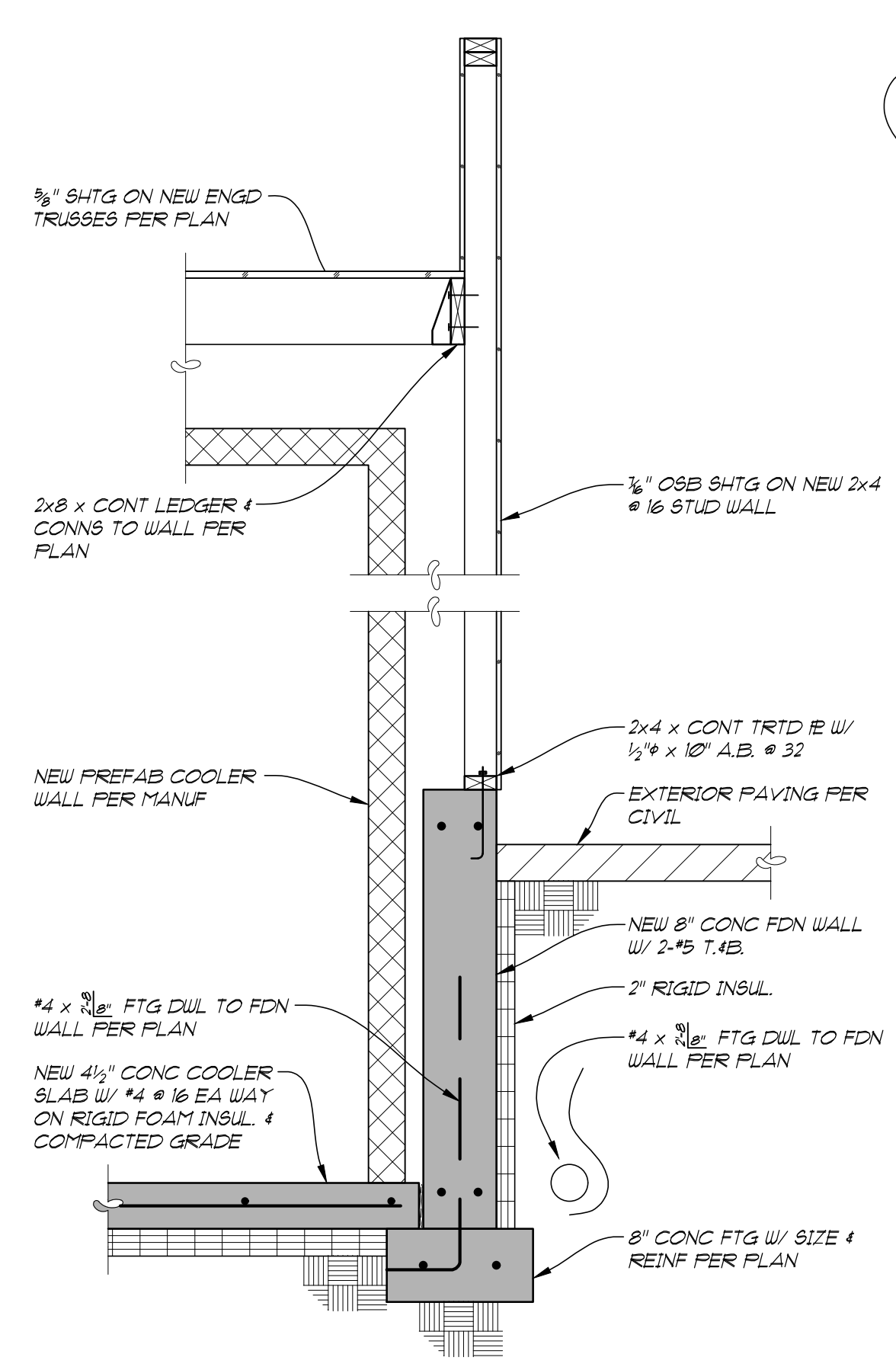




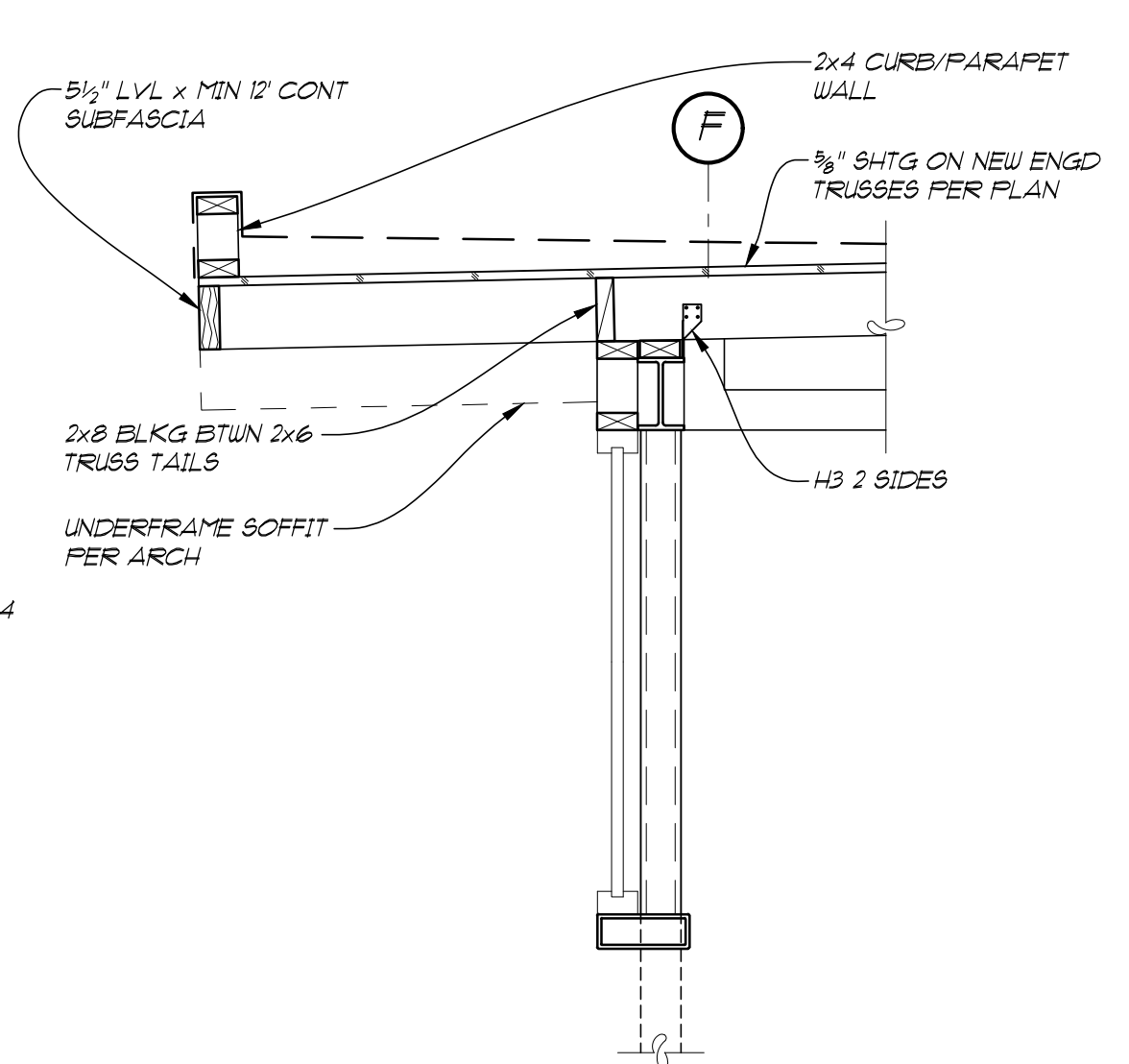
SECTION 16
SCALE: 3/4" = 1'-0"



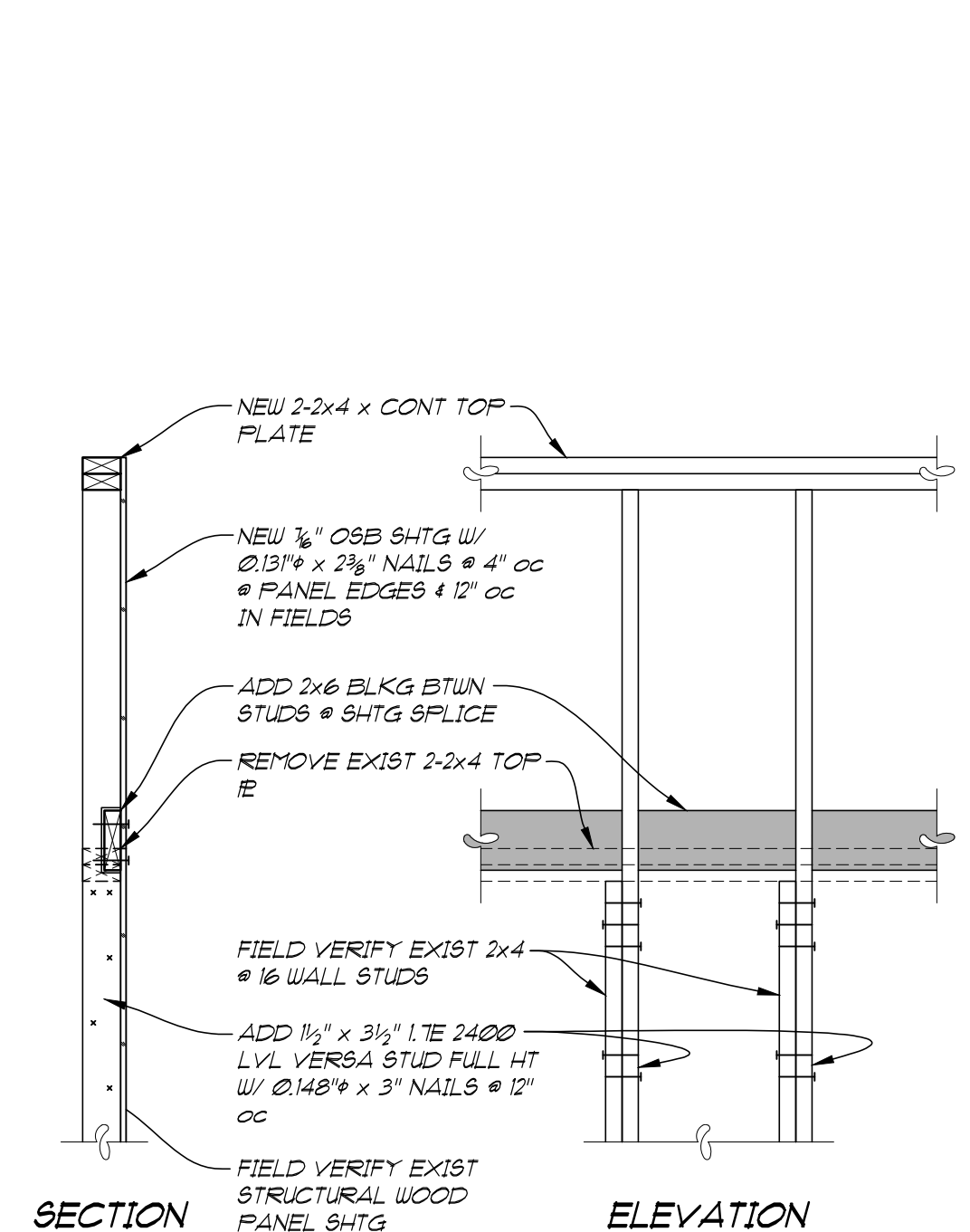
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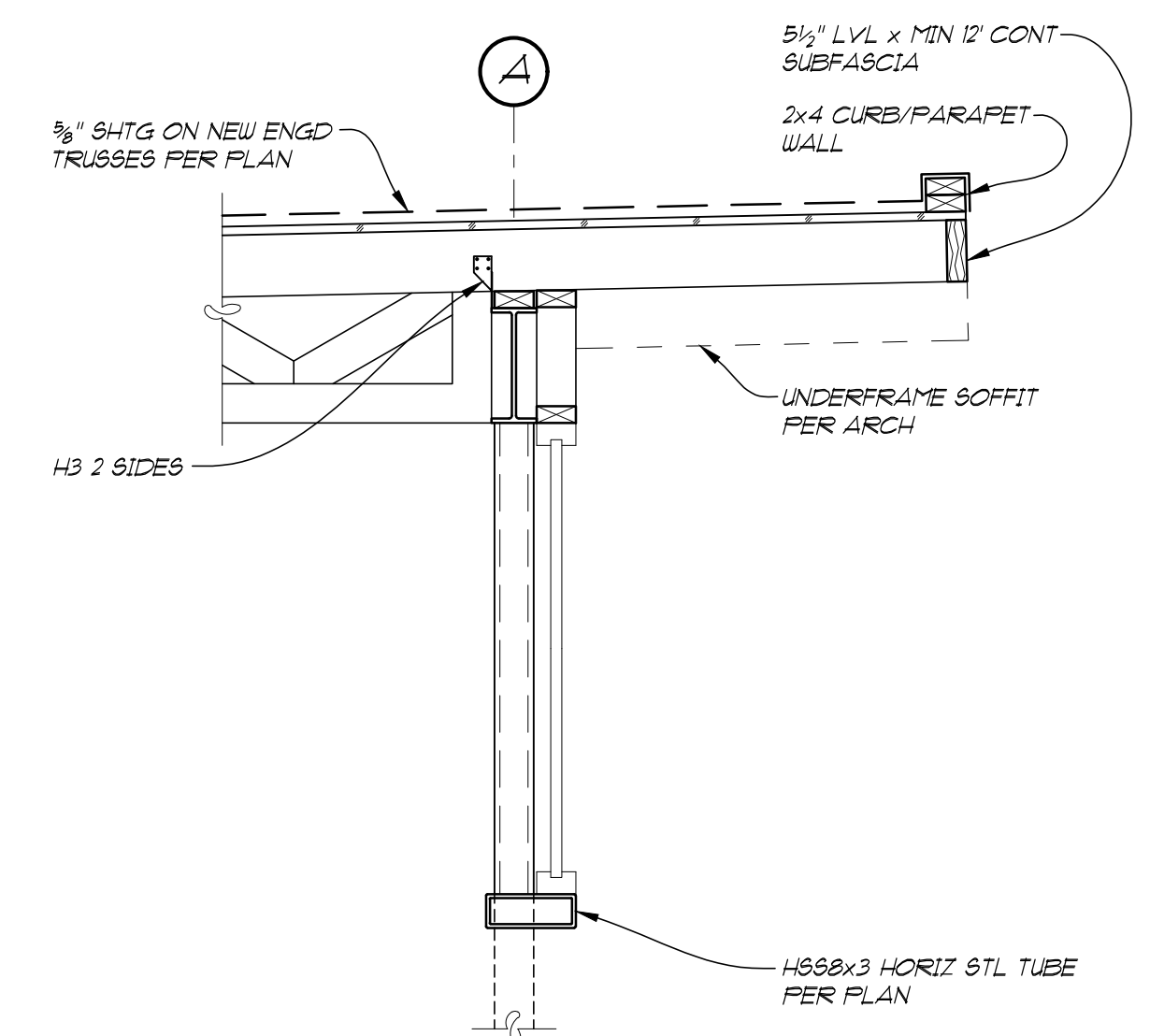
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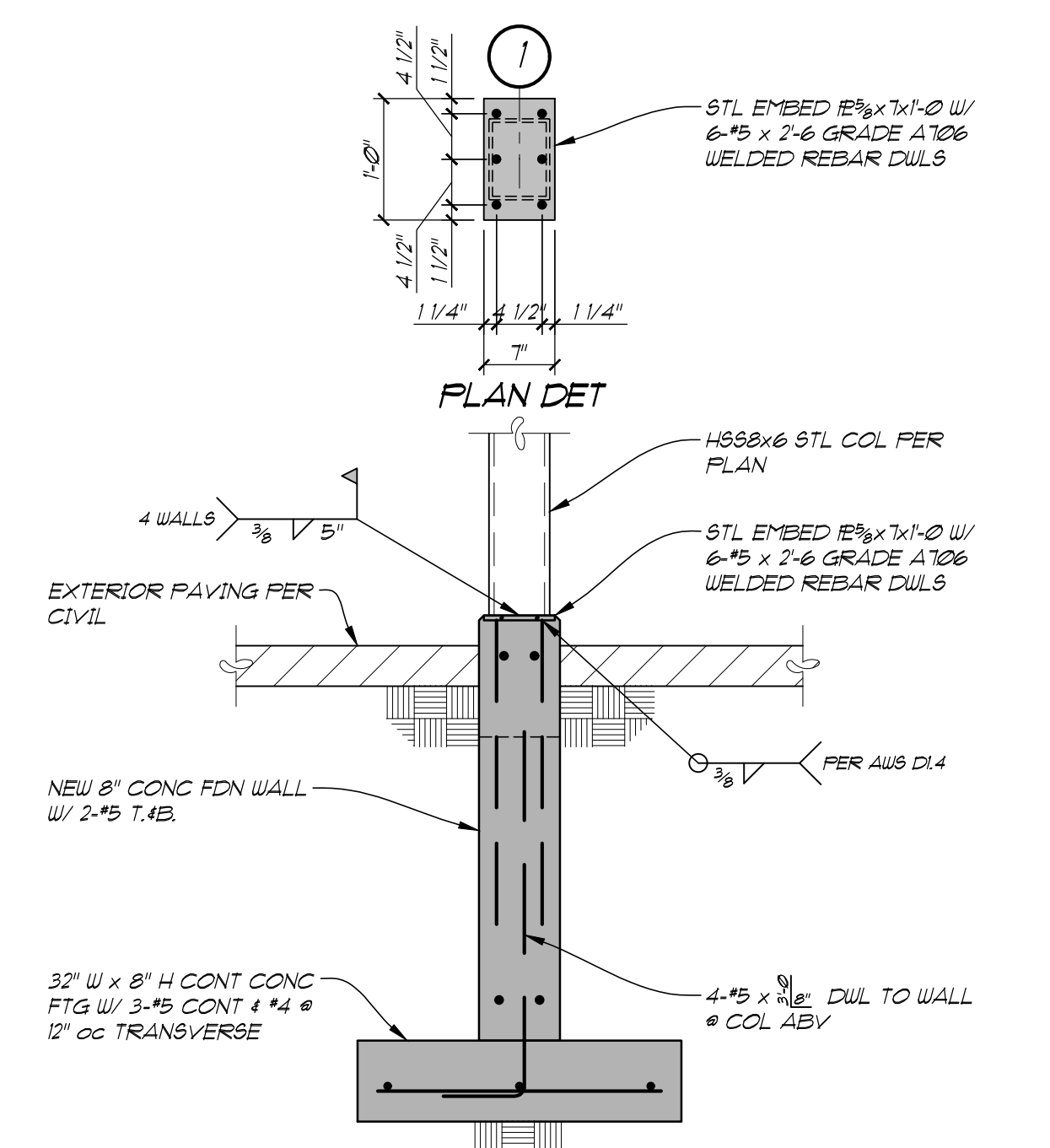
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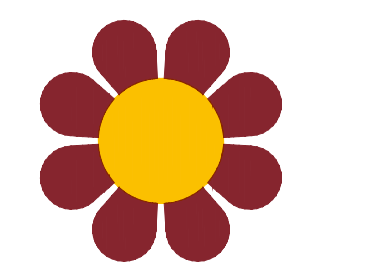
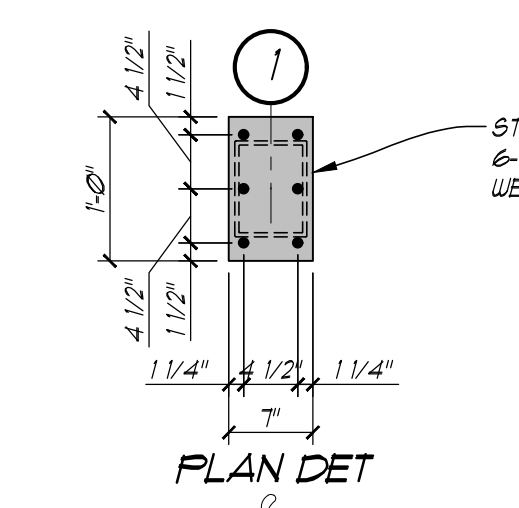
TYP FRAMED WALL EXTENSION 12
SCALE: 3/4" = 1'-0"



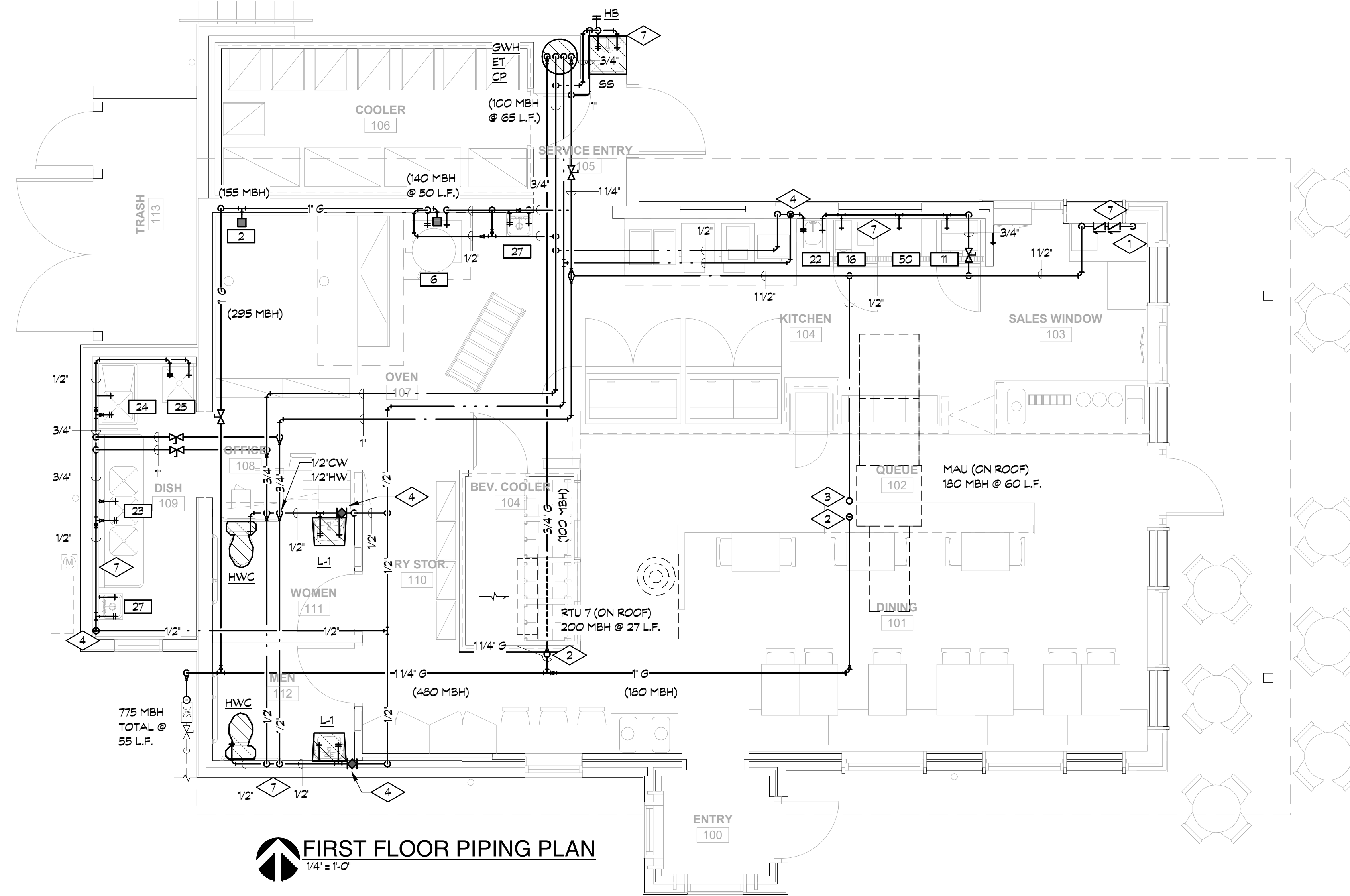
SECTION 17
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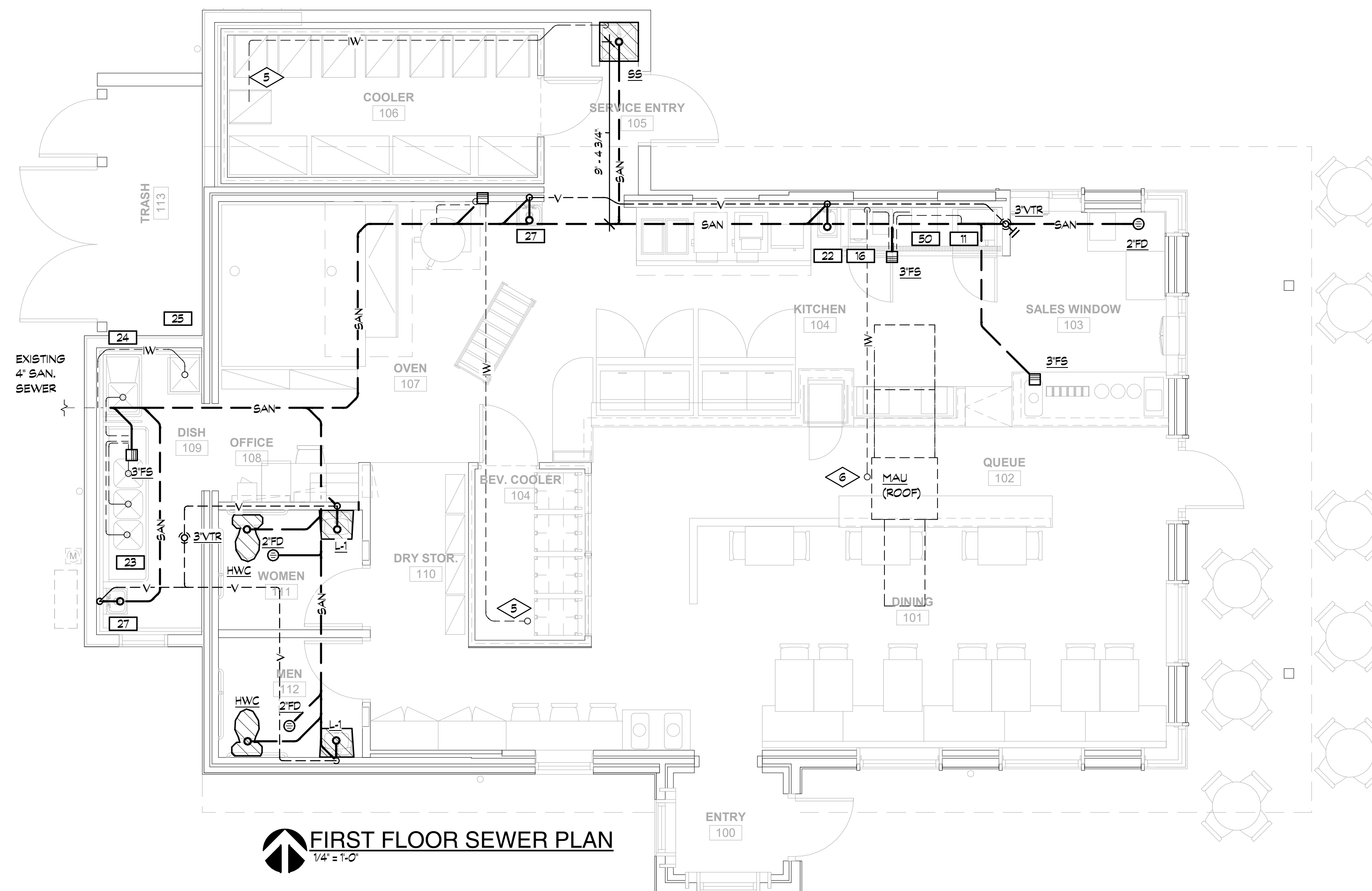
SECTION 18
SCALE: 3/4" = 1'-0"



PROJECT No:	201914
ISSUE DATE:	11-24-2020
REVISIONS:	
SHEET TITLE:	



FIRST FLOOR PIPING PLAN
1/4" = 1'-0"



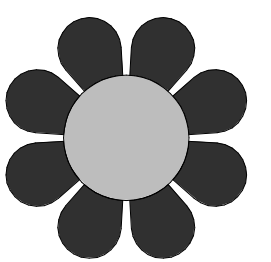
FIRST FLOOR SEWER PLAN
1/4" = 1'-0"

GENERAL NOTES

- A. PLUMBING CONTRACTOR TO COORDINATE SCOPING OF THE EXISTING SANITARY LINES PRIOR TO STARTING WORK.
- B. FIELD VERIFY ALL PLUMBING SYSTEMS, PIPE SIZES, LOCATIONS, ROUTING AND SERVICE IN THE AREA OF WORK PRIOR TO THE START OF ANY WORK.
- C. REFER TO SCHEDULES, DIAGRAMS AND ISOMETRIC DIAGRAMS FOR ALL PIPE SIZES NOT SHOWN ON PLAN. PIPE SIZES OF EXISTING PIPING SHOWN ON PLAN ARE TO BE FIELD VERIFIED, NOTIFY ENGINEER OF ANY DISCREPANCIES.
- D. FIELD COORDINATE ALL EQUIPMENT LOCATIONS AND PIPE ROUTINGS WITH ALL NEW AND EXISTING STRUCTURAL, HVAC, LIGHTS AND ALL OTHER DISCIPLINES PRIOR TO BEGINNING WORK.
- E. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY AND ALL CUTTING AND PATCHING AS REQUIRED TO ACCOMMODATE HIS/HER WORK. COORDINATE LOCATIONS WITH GENERAL CONTRACTOR.
- F. PLUMBING CONTRACTOR TO COORDINATE INSTALLATION HEIGHTS WITH KITCHEN PLANS PRIOR TO ROUGH-IN. MAKE CONNECTION TO EQUIPMENT AS PER KITCHEN SCHEDULE ON P2.1
- G. WATER, SEWER, GAS AND ELECTRICAL CONDUITS MUST FIT WITHIN WALLS. CONFLICTS WITH OTHER TRADES MUST BE COORDINATED OR WORK WILL BE REDONE.
- H. COORDINATE ALL ACCESS PANEL LOCATIONS FOR VALVES, SHOCK ARRESTORS, AIR ADMITTANCE VALVES AND ALL OTHER PLUMBING COMPONENTS INVOLVING ACCESS WITH ARCHITECT.
- I. NOT ALL ISOLATION VALVES SHOWN ON PLANS. PROVIDE ISOLATION VALVES ON ALL DOMESTIC WATER BRANCH PIPING. COORDINATE ANY AND ALL ACCESS PANELS WITH ARCHITECT.
- J. EQUIPMENT GAS CONNECTION SIZE PER PLANS OR SAME AS APPLIANCE SIZE, WHICHEVER IS LARGER. TRANSITION DOWNSTREAM OF ALL SHUTOFFS AND REGULATORS AS CLOSE TO APPLIANCE AS POSSIBLE WHEN PLANS CALL FOR LARGER THAN APPLIANCE.
- K. EXPOSED SEWER PIPING (TRAPS & INDIRECT DRAINS) MUST BE COPPER, EXCEPT FOR SODA MACHINES (PVC OK). RE: PROJECT SPECS.

DETAIL NOTES THIS SHEET

- 1. PROPOSED WATER SERVICE ENTRANCE. NEW 1-1/2" CW CONNECTION, PROVIDE BACKFLOW PREVENTER AND SHUTOFF VALVE.
- 2. 1" GAS LINE UP TO MECHANICAL EQUIPMENT ABOVE. SEE MECHANICAL SHEETS FOR COORDINATION.
- 3. 1/2" CW LINE UP TO MAKE UP AIR UNIT. PROVIDE LINE SHUTOFF BELOW ROOF DECK PER DETAIL #3 ON SHEET P2.1.
- 4. PROVIDE CIRCUIT SOLVER CS-1/2-120 BELOW SINK PER DETAIL #4 ON SHEET P2.1.
- 5. INSTALL CONDENSATE PUMP, ZOELLER S19 AS REQUIRED FOR ROUTING CONDENSATE FROM COOLER EVAPORATOR TO NEAREST/MOST ACCESSIBLE FLOOR SINK/MOP SINK. COORDINATE ELECTRICAL REQUIREMENTS AS REQUIRED. FIELD VERIFY EXACT LOCATION AND PIPE ROUTING.
- 6. ROUTE MAKE UP AIR UNIT OVERFLOW & DRAIN TO NEAREST FLOOR SINK RE: FILL/DRAIN DETAIL.
- 7. ROUTE DOMESTIC WATER LINES ON WARM SIDE OF INSULATION. COORDINATE FURRING W/ GC.



PROJECT No: 19158
ISSUE DATE: 11.25.2020
REVISIONS:

SHEET TITLE:
PLUMBING PLANS

SHEET NUMBER:

P1.1

LEGEND

- STORM - ABOVE FLOOR
- STORM - BELOW FLOOR
- SANITARY - ABOVE FLOOR
- SANITARY - BELOW FLOOR
- SANITARY TO GREASE
- CV --- CIRCUIT VENT
- CWV --- COMBINATION WASTE AND VENT
- W --- WET VENT
- V --- SANITARY VENT
- --- DOMESTIC COLD WATER
- --- DOMESTIC HOT WATER
- --- DOM. HOT WATER, RECIRCULATING
- G --- GAS
- FB --- FIRE SPRINKLER
- HWS --- HOT WATER SUPPLY
- HWR --- HOT WATER RETURN
- CWS --- CHILLED WATER SUPPLY
- CWR --- CHILLED WATER RETURN
- C --- CONDENSATE
- S --- STEAM
- PLUMBING POINT OF CONNECTION
- RISER UP
- RISER DOWN
- BALL VALVE
- BUTTERFLY VALVE
- GATE VALVE
- GAS COCK (GAS ONLY)
- BALANCING COCK
- CIRCUIT SETTER
- CHECK VALVE
- PRESSURE REDUCING VALVE
- HOSE BIBB/SILL COCK
- FLOOR DRAIN
- FLOOR SINK
- ROOF DRAIN
- UNION
- FLEXIBLE CONNECTOR
- THERMOMETER
- PRESSURE GAUGE
- STRAINER
- FIRE DEPARTMENT CONNECTION
- WATER METER
- GAS METER
- MECHANICAL EQUIPMENT
- DETAIL NOTE
- KITCHEN / MEDICAL EQUIPMENT
- A --- COMPRESSED AIR
- VAC --- VACUUM
- O2 --- OXYGEN
- N2 --- NITROUS OXIDE
- (B) EXISTING TO REMAIN
- (ER) EXISTING TO BE REPLACED
- (ED) EXISTING TO BE DEMOLISHED
- NC NORMALLY CLOSED

PLUMBING FIXTURE SCHEDULE

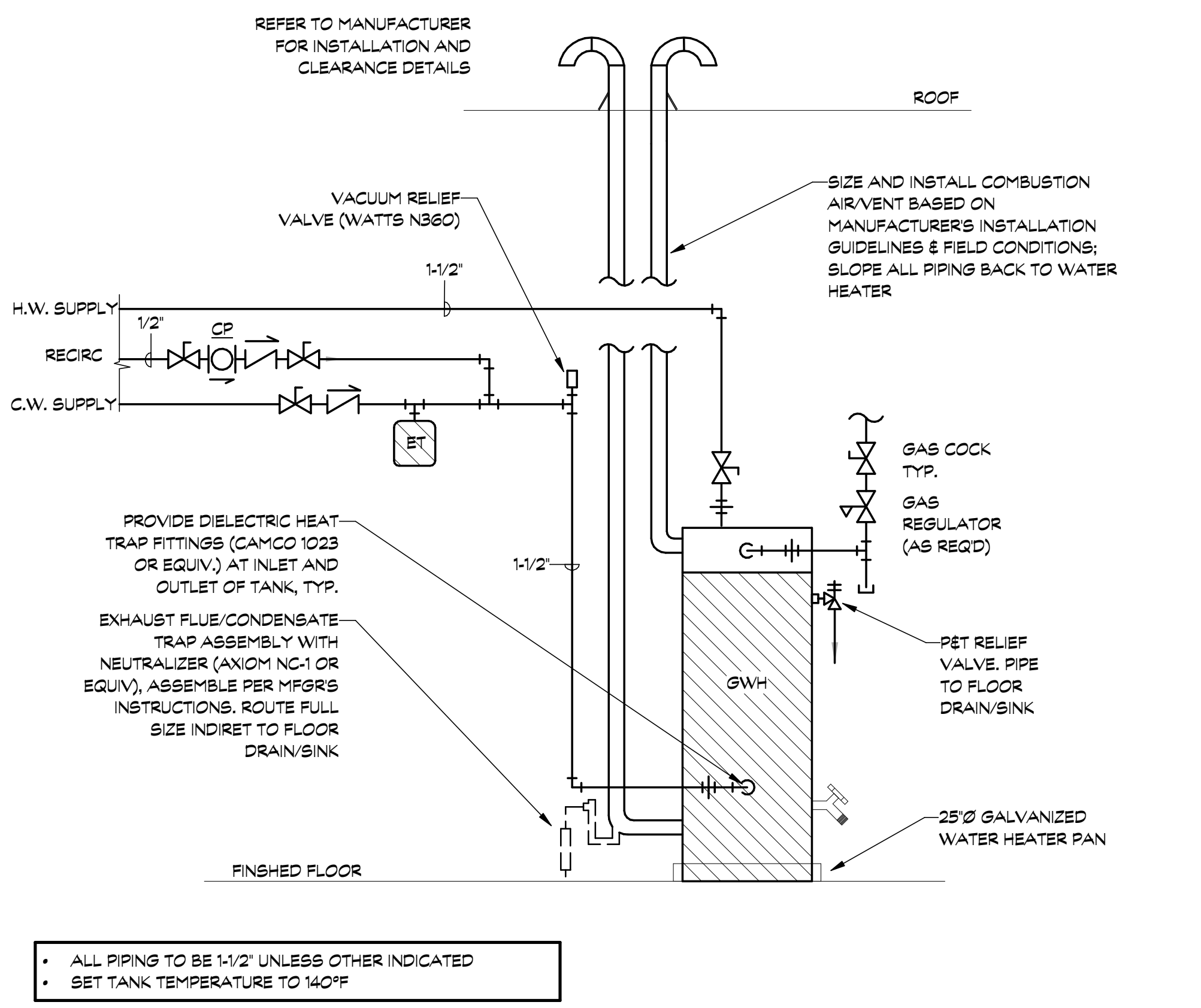
KEY	DESCRIPTION	FITTINGS/ACCESSORIES	MANUFACTURER/CATALOG #
HWC	HANDICAP WATER CLOSET, TANK TYPE, FLOOR MOUNTED, SIPHON JET, ELONGATED BOWL, 1.28 GALLON, 16.5" RIM HEIGHT	EXTRA HEAVY DUTY OPEN FRONT, SOLID PLASTIC SEAT, CHECK HINGE	TOTO CST1444EL (ECO DRAKE), OLSONITE #95 (NO COVER)
L-1	WALL HUNG LAVATORY, ADA, VITREOUS CHINA, 4" O.C. WHITE	PERFORATED DRAIN, LEVER HANDLES, OFFSET TAILPIECE, INSULATED DRAIN PIPING	AMERICAN STANDARD C355.012 (LUCERNE) DELTA #501
SS	SERVICE SINK, FLOOR MOUNTED MOLDED STONE 24"X24"X10"	FAUCET WITH VAC.BREAKER, FLAT SST STRAINER, HOSE & HOSE BRACKET, MOP HANGER	JONES STEPHENS 555-240, 555-349
HB	HOSE BIBB, METAL HANDLE	VACUUM BREAKER	WOODFORD MODEL 24
FD	FLOOR DRAIN, ADJUSTABLE CAST IRON SUMP	ROUND POLISHED BRONZE TOP, INLINE TRAP SEAL	ZURN Z415B SURE SEAL
FS	FLOOR SINK, PORCELAIN ENAMELLED, 12"X12"X6"	HALF GRATE, CHLORALLOY MEMBRANE (EXCEPT IN SLABS ON GRADE)	ZURN Z1901
RPZ-1	REDUCED PRESSURE BACKFLOW PREVENTER, STAINLESS STEEL	STRAINER, SHUTOFF VALVES, AIR GAP	WATTS 55009QTS, 909AG
GW	GAS FIRED WATER HEATER, POWER/DIRECT VENT 100MBH, 50 GAL CAPACITY, 116 GPH @ 100F, FOAM INSULATION	P&T RELIEF	STATE SH50-100NE
ET	DIAPHRAGM EXPANSION TANK, 4.4 GALLONS		AMTROL ST-12
CP	DOMESTIC RECIRC PUMP, IN-LINE, BRONZE, 1/2" SWEAT CONN., INTEGRAL CHECK VALVE, 60W, 120V/1, 2 GPM @ 10F	AUTO TIMER KIT	GRUNDOS UP 15-18BUC5

NOTES: PC IS RESPONSIBLE FOR ALL ANCILLARY EQUIPMENT AND FITTINGS (STOPS, FLEXIBLE TUBING, ESCUTCHEONS, ETC.) NEEDED TO CONNECT FIXTURES

KITCHEN EQUIPMENT PLUMBING SCHEDULE

KEY	DESCRIPTION	CONNECTION		WASTE		GAS		COMMENTS
		CW	HW	IW	DW	SIZE	MBH	
2	BAGEL OVEN					1"	155	QUICK CONNECT COUPLING
6	GAS KETTLE	1/2"	1/2"	2"		1"	140	QUICK CONNECT COUPLING, PROVIDE MANUAL SHUTOFF VALVE AND BACKFLOW PREVENTER (WATTS 50-3), IW TO FLOOR SINK
11	COFFEE BREWER - DOUBLE	1/2"						PROVIDE MANUAL SHUTOFF VALVE AND BACKFLOW PREVENTER (WATTS 50-3), IW TO FLOOR SINK
16	ICE TEA BREWER	1/2"		1"				PROVIDE MANUAL SHUTOFF VALVE AND BACKFLOW PREVENTER (WATTS 50-3), IW TO FLOOR SINK
22	DUMP SINK	1/2"	1/2"		2"			PROVIDE TEMPERING VALVES, SET TO 110°F HW, PROVIDE MANUAL SHUTOFF VALVES
23	3 COMPARTMENT SINK	1/2"	1/2"	(3) 2"				PROVIDE MANUAL SHUTOFF VALVES, IW TO FLOOR SINK, PROVIDE BACKFLOW PREVENTER (WATTS 50-3) ON SPRAYER
24	VEGETABLE SINK	1/2"	1/2"	2"				PROVIDE MANUAL SHUTOFF VALVES, IW TO FLOOR SINK
25	PAN SINK	1/2"	1/2"	2"				PROVIDE MANUAL SHUTOFF VALVES, IW TO FLOOR SINK
27	HAND SINK	1/2"	1/2"		2"			PROVIDE TEMPERING VALVES, SET TO 110°F HW, PROVIDE MANUAL SHUTOFF VALVES
50	ESPRESSO MACHINE	1/2"						PROVIDE MANUAL SHUTOFF VALVE AND BACKFLOW PREVENTER (WATTS 50-3), IW TO FLOOR SINK

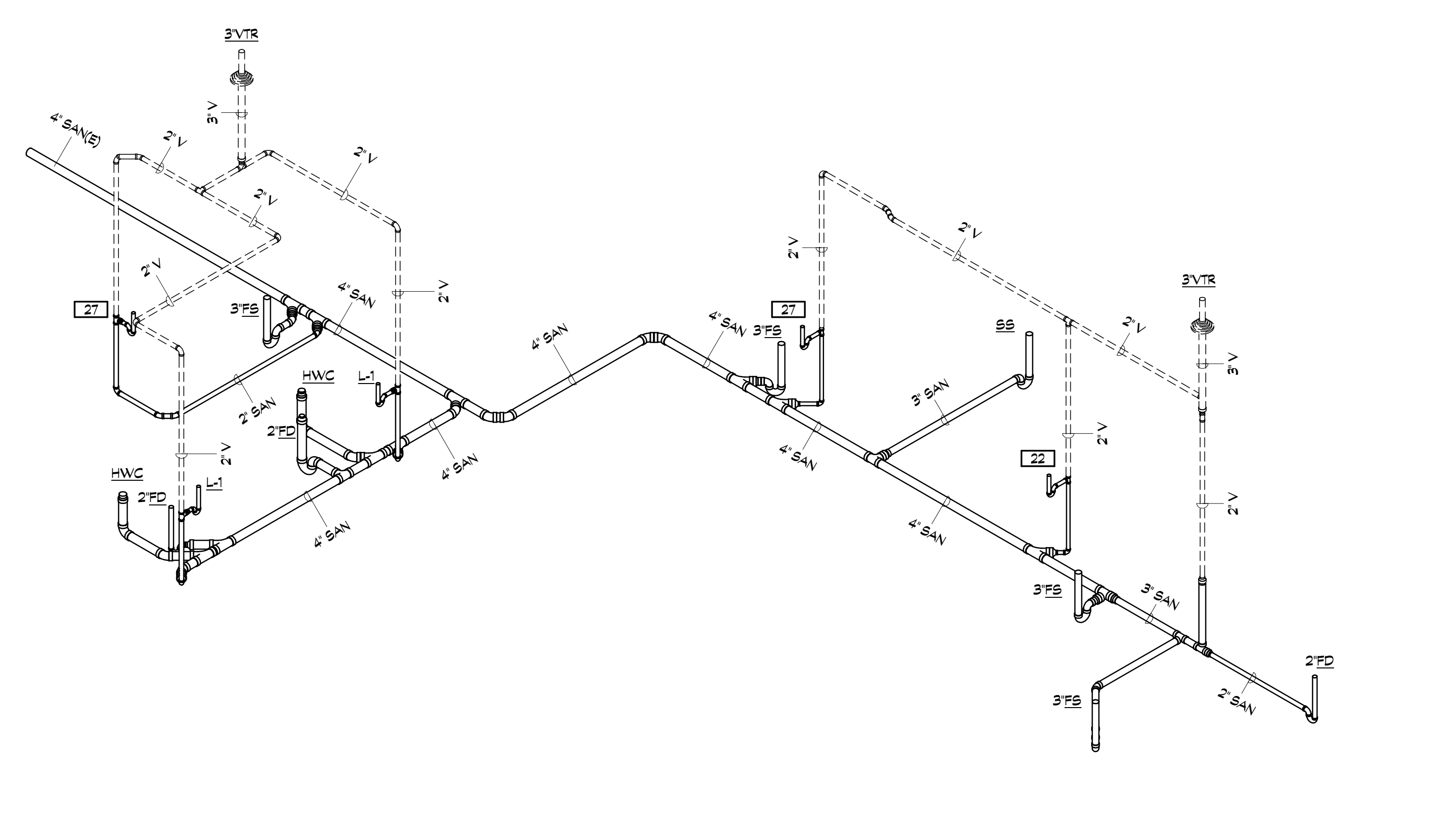
NOTES: *COORDINATE ALL ROUGH-IN HEIGHTS AND LOCATIONS WITH KITCHEN VENDOR AND/OR OWNER.
** PROVIDE GAS PRESSURE REGULATOR (MAXITROL RV) FOR 14" W.C. IF APPLIANCE IS NOT RATED FOR 14" W.C. MAXIMUM PRESSURE OR IF REQUIRED BY LOCAL UTILITY COMPANY



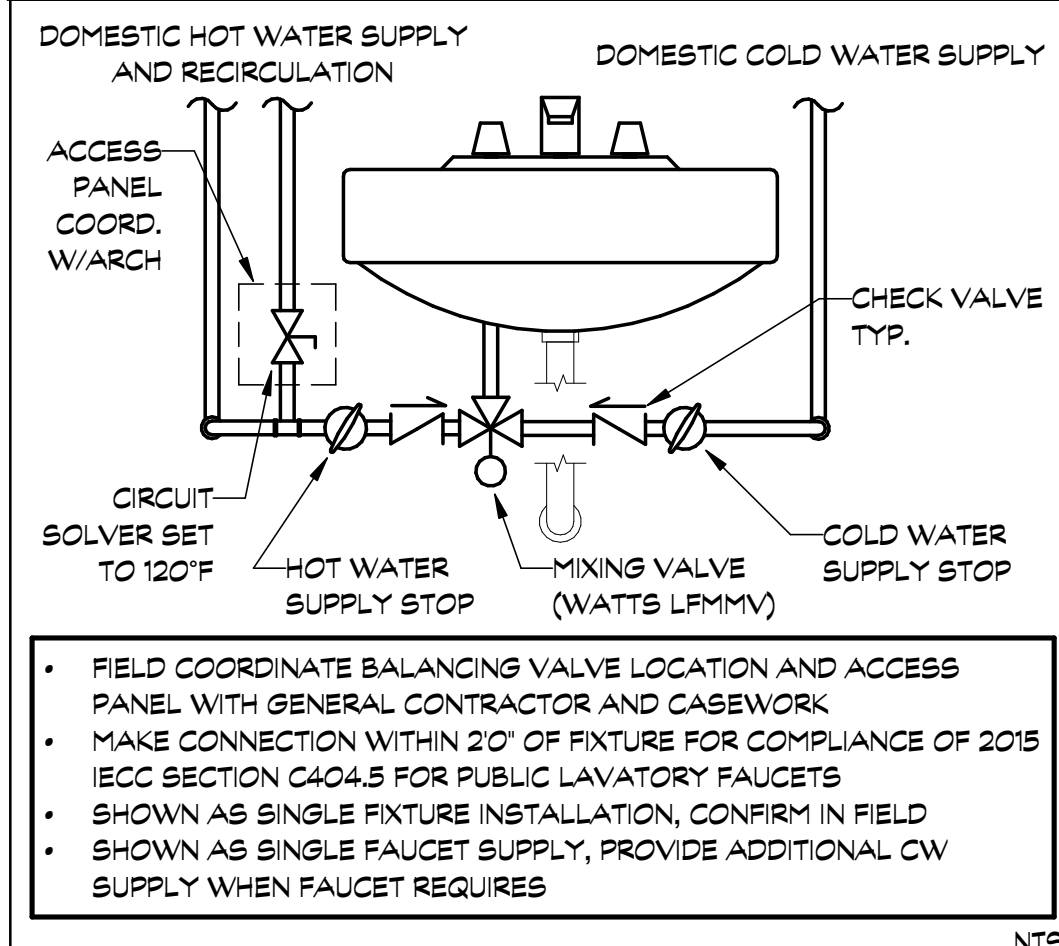
GAS FIRED WATER HEATER DIAGRAM

NTS

6 DWV ISOMETRIC

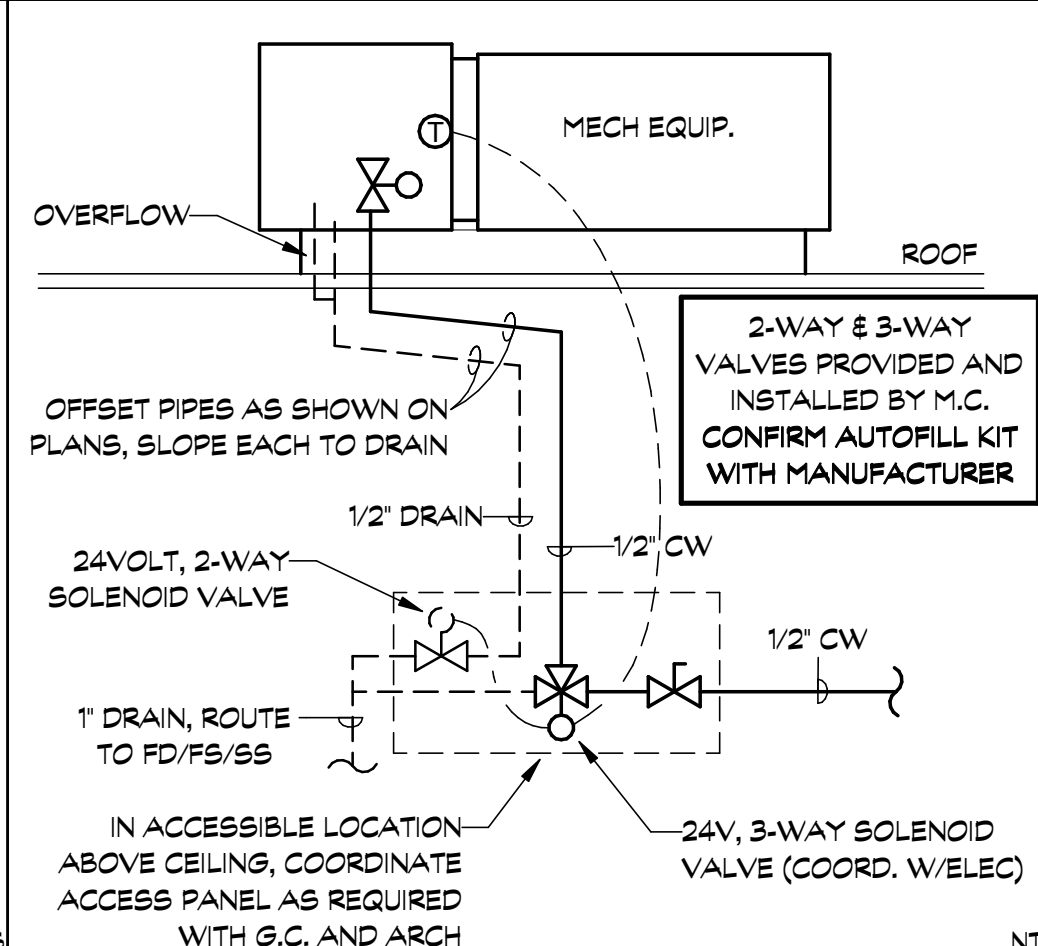


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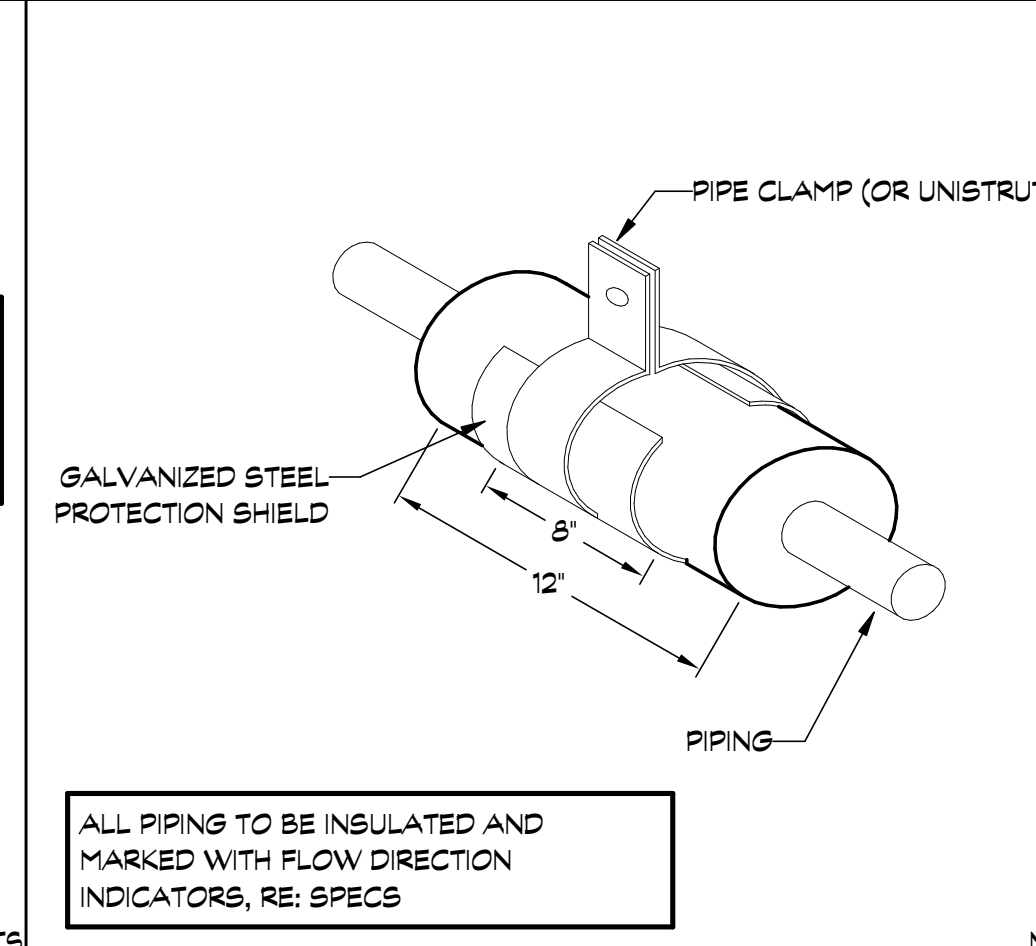
MIXING VALVE DIAGRAM (IECC 2015)

NTS



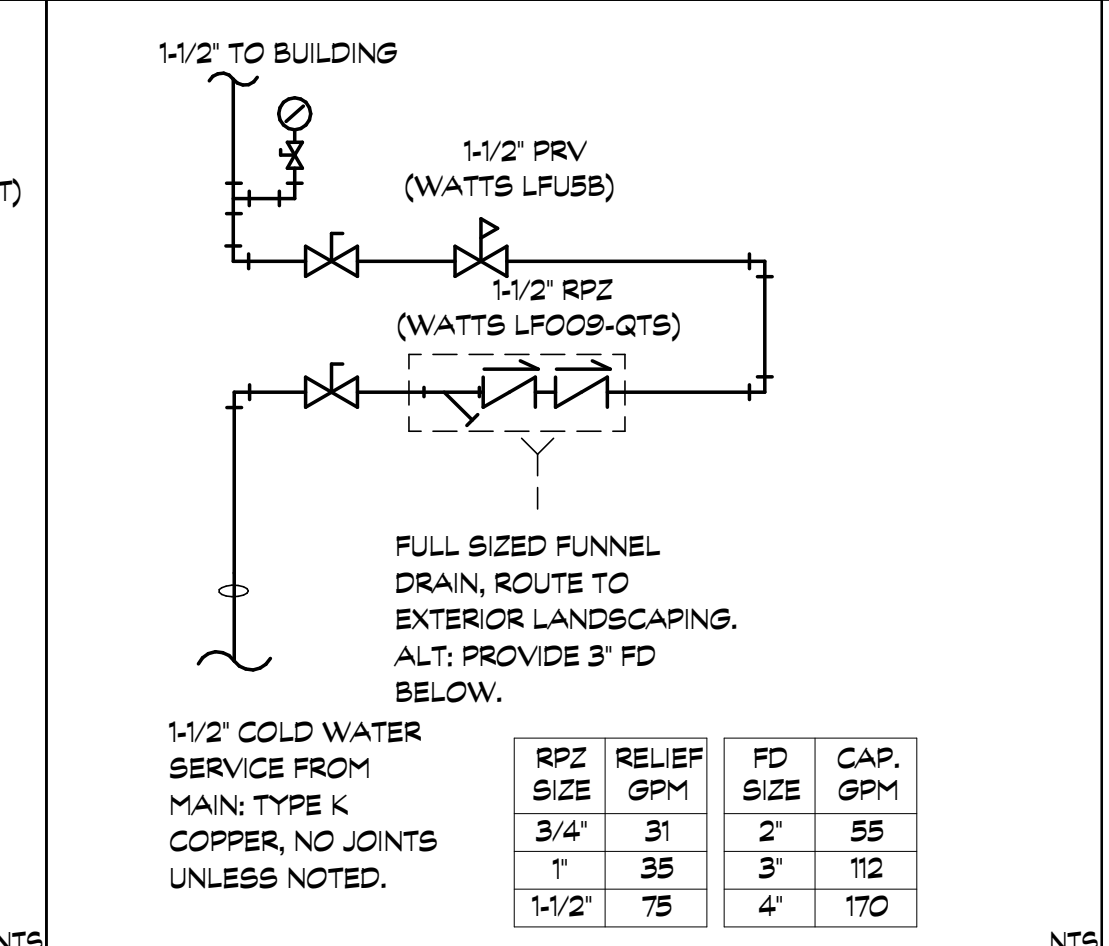
MUA AUTO FILL AND DRAIN DIAGRAM

NTS



PIPE SUPPORT INSULATION DIAGRAM

NTS



COLD WATER PIPING DIAGRAM

NTS

DIVISION 22 - PLUMBING

SECTION 22 05 00 - COMMON WORK RESULTS FOR PLUMBING

1.01 WORK INCLUDED

A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Mechanical Contractor. The general conditions of the specifications apply and are included in this part of this section.

- 1. Gas piping system
2. Domestic hot and cold water systems
3. Interior sanitary sewer system

1.02 CODES AND REGULATIONS

A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:
1. Building Code: 2018 International Building Code
2. Plumbing Code: 2018 International Plumbing Code
3. Mechanical Code: 2018 International Mechanical Code
4. Fire Code: 2018 International Fire Code
5. Gas Code: 2018 International Fuel Gas Code
6. Energy Code: 2018 International Energy Code
7. Electrical Code: 2017 National Electrical Code

1.03 EQUIPMENT AND MATERIALS STANDARDS

A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.

1.04 CONTRACT DRAWINGS

A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected ceiling plans

1.05 SHOP DRAWINGS

A. Submit products data and/or shop drawings as required by the Architect for the following:
1. Insulation
2. Valves
3. Plumbing fixtures and appurtenances.
4. Pumps
B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution shall be accomplished at no additional expense to the Owner.
C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to bid date.

1.06 WARRANTY

A. The Contractor shall be responsible for the successful operation of mechanical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner. Provide four complete service and maintenance calls spaced at equal intervals during the warranty period.

1.07 PRODUCT HANDLING AND CLEAN UP

A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

1.08 CUTTING AND REPAIRING

A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

1.09 OPERATING AND MAINTENANCE DATA

A. Provide the Owner with operating and maintenance instructions (four copies) required for operation of all mechanical systems. Bind the written instructions in a notebook. The General Conditions take precedence. The manuals shall include the following items:
1. Operating manual and spare parts list for each piece of equipment.
2. Preventive maintenance schedule for lubricating and checking each piece of equipment.
3. Instructions on who to call for service during the warranty period.

1.10 PERMITS

A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.

1.11 TEMPORARY SERVICES

A. Provide temporary water service for construction, as required by the General Contractor.

1.12 COORDINATION

A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering equipment.
B. Electrical work performed by this contractor will conform to the standards of Division 26-28. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified. MC = Division 21-23 EC = Division 26-28

Table with columns: Item, Furn, Set, Power, Control, By, Wiring, Writing. Rows include Combination starters, Equipment motors, Motor starters & O.L. relays, Disconnect switches, Thermal overload heaters (1), Variable Speed Drives, Control relays/transformers, Temperature control packs, Temp. Controls conduct/wiring, Actuator and solenoid wiring, Pushbuttons & pilot lights, Room thermostats, Thermostats: line voltage.

C. The general guideline for the division between control (by MC) wiring and power wiring (by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.

D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion of the project.

1.13 DELIVERY, STORAGE, HANDLING

A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after installation.

1.14 AS-BUILT DRAWINGS

A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

1.15 PROJECT/SITE CONDITIONS

A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

1.16 PLAN VERIFICATION

A. After completion of the bidding and selection process, prior to awarding the contract, the contractor must review and verify the contract documents in their entirety, including those of other trades. At this time, discrepancies, conflicts, omissions, etc in the contract documents must be documented. Alterations to the contract will be made at that time to include such items, as well other modifications which might be made by the Owner. After award of the contract, change orders caused by discrepancies, conflicts, omissions in the contract documents will not be allowed.

2.01 EXPANSION JOINTS, GUIDES, AND ANCHORS

A. Provide expansion joints or loops, guides, and anchors in piping to allow for expansion and contractions. Expansion joints shall be bellows type.

2.02 VALVES

A. Gate valves 2" and smaller shall be cast bronze, rising stem, solid disc, 200 PSI WOG
B. Ball valves 2" and smaller shall be cast bronze, full port, stainless steel ball, teflon seats, 400 PSI WOG.
C. Butterfly valves 2" and smaller shall be cast bronze, stainless steel disc, surrounding fluor elastomer seal, 350 PSI WOG.
D. Check valves shall be horizontal, swing-cast bronze, bronze disc, 200 PSI WOG.
E. Valves shall be domestically manufactured by Milwaukee, Powell, Nibco, or equivalent.

2.03 RELIEF VALVES

A. Relief valves shall be all-bronze A.S.M.E. rated valves with external test levers, sized in accordance with the instructions of the appropriate manufacturer. Pipe discharge outside or to floor drain where possible and per code. Valves shall be manufactured by Watts or equivalent.

2.04 FLEXIBLE CONNECTORS

A. Connectors in piping shall be made with molded teflon or neoprene and nylon bellows, metal reinforcing rings, flanged ends and control rods, suitable for 40F to 200F temperature range and 125 lbs. pressure. Alternative shall be stainless steel inner hose with braided exterior sleeve for steel pipe or bronze inner hose with braided exterior sleeve for copper piping. Metra-flex Company, or equivalent.

2.05 SPECIALTIES

A. P/T Plugs: 1/4" diameter, brass with Nordel core, Sisco or equivalent.
B. Pressure Gauges: 4 1/2" dial type, aluminum housing. Ashcroft 1010 or equivalent.
C. Thermometers: 7" red reading mercury type. Palmer Instruments or equivalent.

2.06 ELECTRICAL

A. Lugs: Lugs for wiring connections shall be rated for copper and aluminum, and shall have a minimum rating of 75C.
B. Electric motors shall be rated for the appropriate application: wet location (TEFC), submersible; explosion proof, VFD's, etc.

2.07 ACCESS PANELS

A. The Mechanical Contractor shall furnish and install access panels where required for access to equipment. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.

2.08 EXCAVATION AND BACKFILLING

A. Provide excavating and backfilling for Mechanical Work. Backfill in 12" layers, mechanically tamp to 95% proctor standards. Protect according to OSHA standards. The General Conditions take precedence. Verify the location of underground utilities before excavation; the contractor is responsible for any damage to underground utilities. Restore existing paving, curbs, sod, bushes, etc to match surroundings.

2.09 START-UP PROCEDURES

A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.

2.10 PIPING INSTALLATION

A. Install piping plumb and straight, parallel with walls and partitions. Conceal piping within structure whenever practical. Provide drain valves at all low points, vents at all high points, to allow complete drainage.
B. Material and methods per ASME, ASTM, ASA, AWS, and National Plumbing Code Handbook
C. Provide unions or flanges in piping connections to each valve, device, or item of equipment. Install each union or flange to permit the removal of parts and equipment for inspection or cleaning, without disconnecting any piping, except unions or flanges.
D. Piping on the roof will be supported above the roof on roof pads. The pads shall be approximately 6" wide by 6" high by the length as required. They shall be made of recycled rubber, rated for 500lbs/ft loading each. The pads will have galvanized steel "C" channel attached to the top, which can accommodate pipe clamps to secure the piping. This configuration of individual piping pads may be expanded to include two pads supporting a trapeze style support where multiple pipes are racked together. The pads are C-series manufactured by Cooper B-Line, Erico, or approved equivalent.

2.11 HANGERS AND SUPPORTS

A. Support piping and equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel, except copper hangers will be used with copper piping. Hangers supporting vibrating equipment shall be provided with spring isolators. Chain, perforated iron or wire hangers are not permitted. Hangers will be of a type acceptable to the Engineer, and shall have a capacity and spacing as required by code.

2.12 SLEEVES AND PLATES

A. Provide sleeves and inserts for all mechanical piping. The contractor shall be responsible for the cost of cutting and patching required for piping where sleeves and inserts were not installed or where incorrectly located. Sheetrock joint compound may be used to seal openings in non-rated walls (insulation to be continuous through walls).
B. Drill holes as required for the installation of hangers required for the mechanical work.
C. Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be made completely water-tight.
D. Seal all piping passing through fire-rated construction with approved material to maintain air-tight, fire-rated integrity, with a U.L. listed assembly compatible with the wall or floor assembly being penetrated.

2.13 PIPING TESTING

A. All piping systems shall be tested and witnessed by the Owner prior to concealment. Protect equipment and fixtures or equipment, isolating them during the test. DWV system shall be sealed and hold water without leaks for 24 hours. Domestic water and hydronic piping shall be air tested at 150 PSIG; natural gas piping shall be air tested at 30 PSIG. Air tests shall be held for one hour without loss of pressure.

2.14 CLEANING AND STERILIZATION

A. After testing, water piping systems shall be filled, operated for a sufficient length of time to completely remove all foreign material, and flushed.
B. Sterilize the domestic hot and cold water piping in accordance with the local health authority standards. Flush the systems with clear water until the residual chlorine content is equal to that of clear water.
C. Where there is no water treatment contractor sterilize piping system with chlorine for 24 hours to 50 PPM. Completely flush to less than 1 PPM. Local health authority standards take precedence.

2.15 FLEXIBLE PIPE CONNECTIONS

A. Provide flexible pipe connection suitable to connect to adjoining piping as specified for pipe joints. Use sized pipe units. Install flexible pipe connectors on pipes connected to equipment supported by vibration isolation.

2.16 PIPE IDENTIFICATION

A. After completion of the piping or insulation, paint stenciled descriptive abbreviations, including directional arrows, on piping at equipment and approximately every 25'.

SECTION 22 07 00 - PLUMBING INSULATION

1.01 QUALITY ASSURANCE

A. All insulation shall have a composite rating (insulation, jacket and adhesives) not exceeding flame spread 25 and smoke developed 50.

2.01 PIPE INSULATION FOR PIPING ABOVE GRADE

A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as follows:

Table with columns: Pipe Sizes, <1", 1" to 1 1/2", >1 1/2". Rows: Dom. cold piping, Dom. hot & recirc. Piping.

B. Insulation shall be Armaflex "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.
C. Exterior piping insulation will be painted with a white solvent based alkyd finish (Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.
D. All interior underground water (domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

2.02 PIPE INSULATION FOR PIPING BELOW GRADE

A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75F mean, with thicknesses as follows:

Table with columns: Pipe Sizes, <1", 1" to 1 1/2", >1 1/2". Rows: Dom. cold piping, Dom. hot & recirc. Piping.

B. Insulation shall be Armaflex "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.
C. Exterior piping insulation will be painted with a white solvent based alkyd finish (Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.
D. All interior underground water (domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

3.01 PIPE/ELASTOMERIC

A. Insulation shall be solid slip-on installed prior to connection. Butt joints shall be sealed with manufacturer's adhesive. Where slit seams must be installed, seal the seam with manufacturer's adhesive. Fittings shall be insulated with meter-cut pieces of insulation according to manufacturer's instructions, or insulated with similar sheet insulation installed according to manufacturer's instructions.
B. Provide wood blocks and metal hanger shields at support strap locations on horizontal pipe runs. Insulation will not be interrupted for supports, etc.

SECTION 22 10 00 - PLUMBING

1.01 WATER SERVICE

A. Consult with local authorities to provide water service. Provide meter pit, meter yokes, valves, RPZ valves, PRV valves, etc. for complete installation. Connect to a point 5' from building. Coordinate exact point of connection with site contractor before bidding.

1.02 SANITARY SEWER CONNECTION

A. Consult with local authorities and connect to sewer main as required. Connect to a point 5' from building. Coordinate exact point of connection with site contractor before bidding.

2.01 DOMESTIC WATER SYSTEM PIPING

A. Domestic cold, hot, and recirculating hot water piping may be either copper, or PEX, as noted below:
1. Copper piping:
a. Above grade, piping shall be Type L, hard-drawn copper tubing with wrought copper fittings. Solder shall be lead-free.
b. Below grade, piping shall be Type K, soft-drawn copper tubing with fittings only where specifically allowed by the architect. Where required, the fittings will be wrought copper. Solder shall be 95% tin/antimony, except underground, where it will be silver solder.
2. PEX Tubing:
a. Tubing shall be cross-linked polyethylene using the Engel method of cross-linking. The tubing shall be rated for 80PSI at 200F, and shall be manufactured according to ASTM F 876 and ASTM F 877.
b. Fittings shall be APR(brass) "Pro-pex" style or equivalent. Manifolds may be copper, brass, or plastic, with balancing controls.
c. Stub outs to be copper with brass shut-off valves. Stub outs to be properly secured to wall.
d. Tubing in return air plenums, or other areas designed as air handling plenums, shall be installed to a flame rating of 25/50 according to ASTM E84, whether by spacing, insulation or other approved method.
e. Tubing shall be as manufactured by Wirsbo or equivalent.

2.02 SOIL, WASTE, AND STORM PIPING

A. Soil, waste, and vent piping, and storm piping shall be schedule 40 PVC with solvent joints, except as noted below. Solvent shall be of contrasting color:
1. Service weight, cast iron with stainless steel no-hub connectors shall be used in return air plenums and other areas designed as air handling plenums, or where specifically required by local code.
B. Soil, waste, and storm piping below grade 5' beyond the building may be PVC SDR 35, installed in conformance with ASTM 3034 and utilizing push-on joints.
C. Storm water piping shall be same as soil and waste piping when concealed and galvanized schedule 40 steel pipe when exposed to physical damage. Fittings shall be cast iron, drainage type.

2.03 PLUMBING FIXTURES AND TRIM

A. Provide plumbing fixtures as specified on the plans. Provide carriers, trim, bolts, caps, etc according to the manufacturer's instructions and as required for a complete installation. All fittings and appurtenances (p-traps, connections, etc) shall be brass; chrome plated brass where visible.
B. Provide carriers for wall hung or mounted fixtures such as water closets, lavatories, urinals, sinks, etc. The carriers shall be designed to fit in the wall structure available, and shall transmit the load to the floor. Fixtures will not be supported by the wall structure unless specifically indicated.

2.04 GAS PIPING

A. Above grade in accessible locations, gas piping shall be schedule 40, black iron pipe with threaded fittings. Fittings shall be made of malleable iron. Gas piping run in return plenums, where allowed by local code, shall have welded joints.
B. Regulators shall be Maxitrol, or equivalent, of size and capacity as required.

2.05 GAS WATER HEATER (SEALED COMBUSTION)

A. Water heater shall be as specified on the plans. Heaters shall be approved and listed by the American Gas Association as self-contained, vented water heaters. The tank shall be heavy-gauge, welded steel, glass-lined, foam insulated to conform to ASHRAE 90.1B-1992. The heater shall be rated for 150 PSI and shall have a five-year warranty. The power burner shall be sealed combustion, submerged with spiral internal flue. The controls shall be electronic microprocessor based with digital display and shall include high-limit control and safety shut off. The heater shall include two (2) magnesium anodes and a pressure and temperature relief valve. The heater will be furnished with integral heat traps. Where required by local code, provide ASME certification.
B. Water heater shall be provided with R 14 insulation. Where factory insulation does not meet insulation requirements, provide aftermarket insulated jacket as required to meet requirements.
C. Where flue is run thru uninsulated, unconditioned spaces (attics, crawlspaces, etc.), insulate the flue with R8 equivalent insulation.
D. The water heaters shall be manufactured by A.O. Smith, State, Polaris, Ruud or Bradford-White.

2.06 CONDENSATE NEUTRALIZER

A. Neutralizer shall be inline type made from corrosion resistant material with replaceable neutralization media. Neutralizer shall be of appropriate size and type for appliance served.
B. Manufacturer shall be Dayton, Axiom, or equivalent.

2.07 DOMESTIC RECIRCULATING PUMP

A. Pump shall be 2800 rpm, in-line, centrifugal oil-lubricated, sleeve-bearing pump with flanged piping connections, bronze body, plastic impeller, and having mechanical seals. Motors shall be non-overloading, open drip-proof type.
B. The pump shall be furnished with an automatic timer kit.
C. Manufacturer shall be Bell and Gossett, Paco, Taco, or approved equivalent.

3.01 DOMESTIC WATER SYSTEM

A. Provide drip cocks so that the entire system may be drained. Provide manual air vents at high points in the system where air may be trapped. Provide stops for all fixtures and appliances. Provide a full size ball valve on each branch serving a hose bib.
B. Provide swing or sovel joints on connections as required to prevent noise or vibration of the piping. Provide fixture stops at all fixtures, hose bibbs, wall hydrants, and Owner-furnished fixtures. Run all piping on warm side of building insulation. Pipe insulation is not considered freeze protection. Provide water hammer arrestors where required. Locate to be accessible or provide access panel.

3.02 SOIL, WASTE, AND STORM WATER PIPING

A. Lay piping true to line and grade so that sewer will have smooth and uniform invert throughout its length. Verify elevations of existing sewer before starting work.
B. Install a clean-out at the base of each soil stack, at the base of each interior rain-water conductor, at each change in direction, at intervals not over 50 feet interior of building, and every 100 feet exterior to building and elsewhere as shown on the drawings or required by Code. Make clean-outs same size as pipe service, except they need be no larger than 4". Set tops and covers flush with floors and walls. Wall covers shall be round polished stainless steel with centered stainless steel securing screw (Josam S8710). Floor cleanouts shall be flush, cast iron, ABS plug with Nikalloy cover (Josam S6000). Provide floor clamps at each floor for uniform support of stacks.
C. The entire drain waste and vent, and storm sewer systems shall be watertight and odorproof, including sealing of floor drains and sinks, closet rings, etc.

3.03 WATER HEATER INSTALLATION

A. Install water heaters per manufacturer's instructions. Provide 24 gauge, galvanized steel drain pan, piped with minimum 3/4" drain, piped to an approved receptor with indirect waste connection per code.
B. Route the P/T relief valve full sized to approved receptor and discharge per code. Provide expansion device, tank or valve, as required by code, and allowed by the local jurisdiction.
C. Flue and combustion air ducts shall be provided by the mechanical contractor, unless otherwise noted. Where sealed combustion water heaters are used, the Plumbing Contractor shall install PVC flue and combustion air piping. This piping will be of the size and type recommended by the manufacturer, and use factory recommended discharge/intake fittings as shown on the plans.
D. Condensing water heaters shall utilize an inline condensate neutralizer. Provide PVC drain from water heater and/or flue with a minimum 1/2" drain, piped to an approved receptor with indirect waste connection per code. Verify installation details with manufacturer.

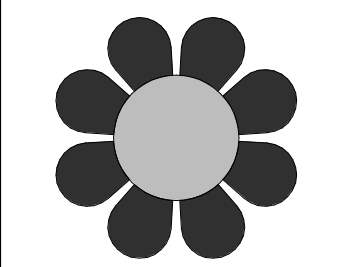
3.04 PLUMBING FIXTURES AND TRIM

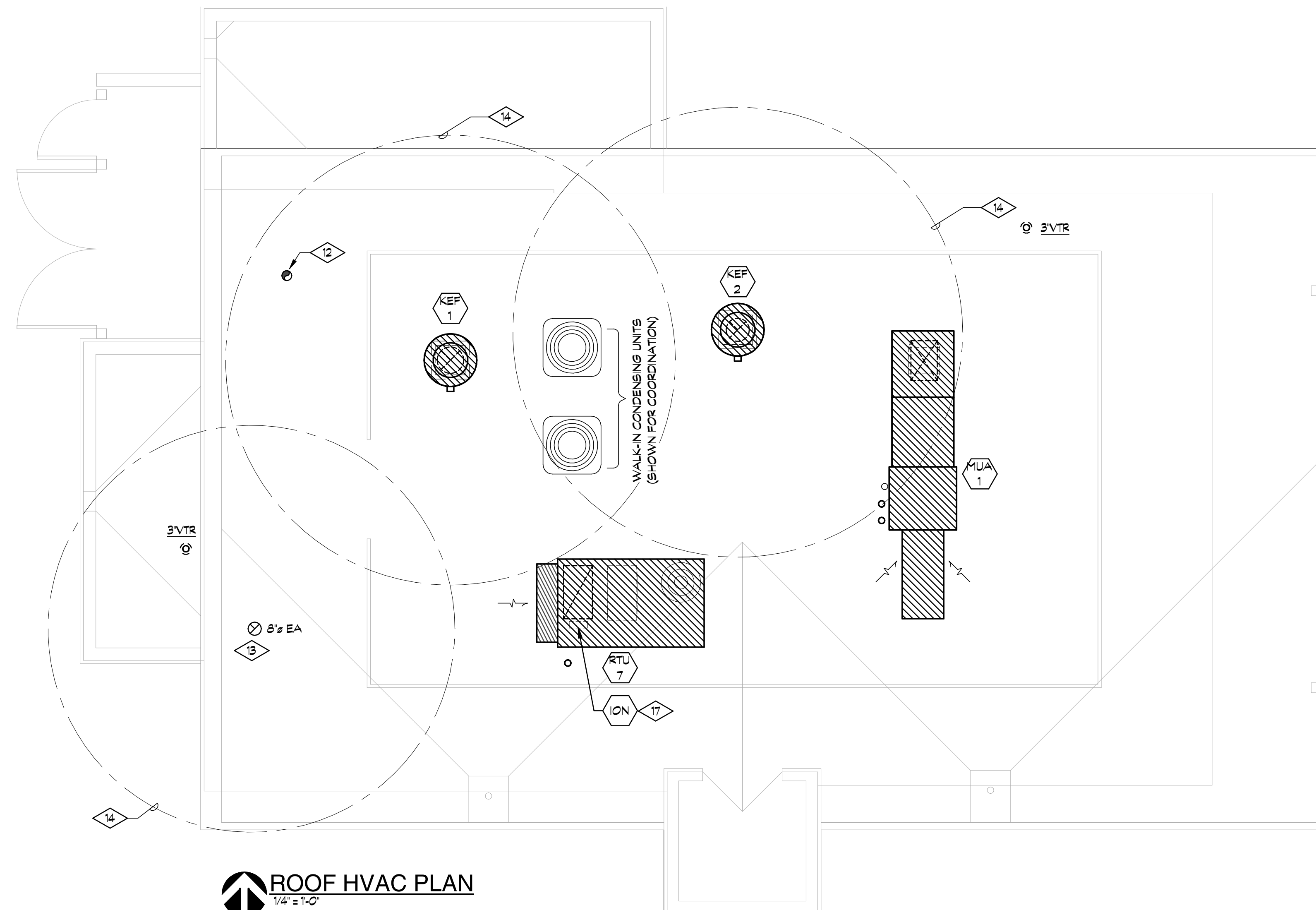
A. Furnish and install a vacuum breaker at each hot and cold water service outlet to which a hose can be attached, including janitor's faucets.
B. Provide chrome-plated rigid or flexible supplies to fixtures with stops, reducers, and escutcheons. Insulate stops and supplies at handicapped sinks with Truebro lay guard or equivalent. Bag type covers are not allowed.
C. Provide chrome plated brass P-traps with slip fittings for all exposed drains. Insulate P-traps at handicapped sinks with Truebro lay guard or equivalent. Bag type covers are not allowed.
D. Flush valve handles, and flush tank handles, on handicapped water closets shall be located on the wide side of the stall for convenient access and as required by code.
E. Provide a flexible elastomeric sheet for flashing around all shower drains, roof drains, floor drains, floor sinks, etc except manufacturer's instructions. The flashing membrane for roof drains, floor drains, etc shall be a minimum of 2x2". The flashing membrane for shower pans, service sink pans, etc shall have "pigs ear" folds in the corners, extending the membrane up at least 3" above the drain. The membranes shall be manufactured by Chloralloy or equivalent.
F. Mount fixtures the following heights above finished floor:
1. Water closet: 14"-15" to top of bowl rim; Handicapped, 18" to top of bowl rim.
2. Urinal: 24" to top of bowl rim; Handicapped, 17" to top of bowl rim.
3. Lavatory: 31" to top of basin rim; Handicapped: 32" to top of basin rim.
4. Drinking fountain: 40" to top of basin rim; Handicapped: 36" to spout.
5. Water closet flush valves: Standard, 11" minimum above bowl rim. Locate flush valves on "wide" side of handicapped toilets.
6. Floor drains: In finished areas, 1/2"- 3/4" below finished floor. In mechanical rooms and other unfinished areas, install at least 1" below floor, except where it would be a stumble hazard.
G. Rough-in fixture piping connections in accordance with the following table of minimum sizes or as required for particular fixtures.

Table with columns: HW, CW, Waste, Vent. Rows: Lavatories, Service sink, Drinking fountain, Water closet (Valve), Water Closet (tank), Urinals, Floor drains, Hose bibs, Wash Mach Unit, Kitchen equipment, Owner furnished equipment.

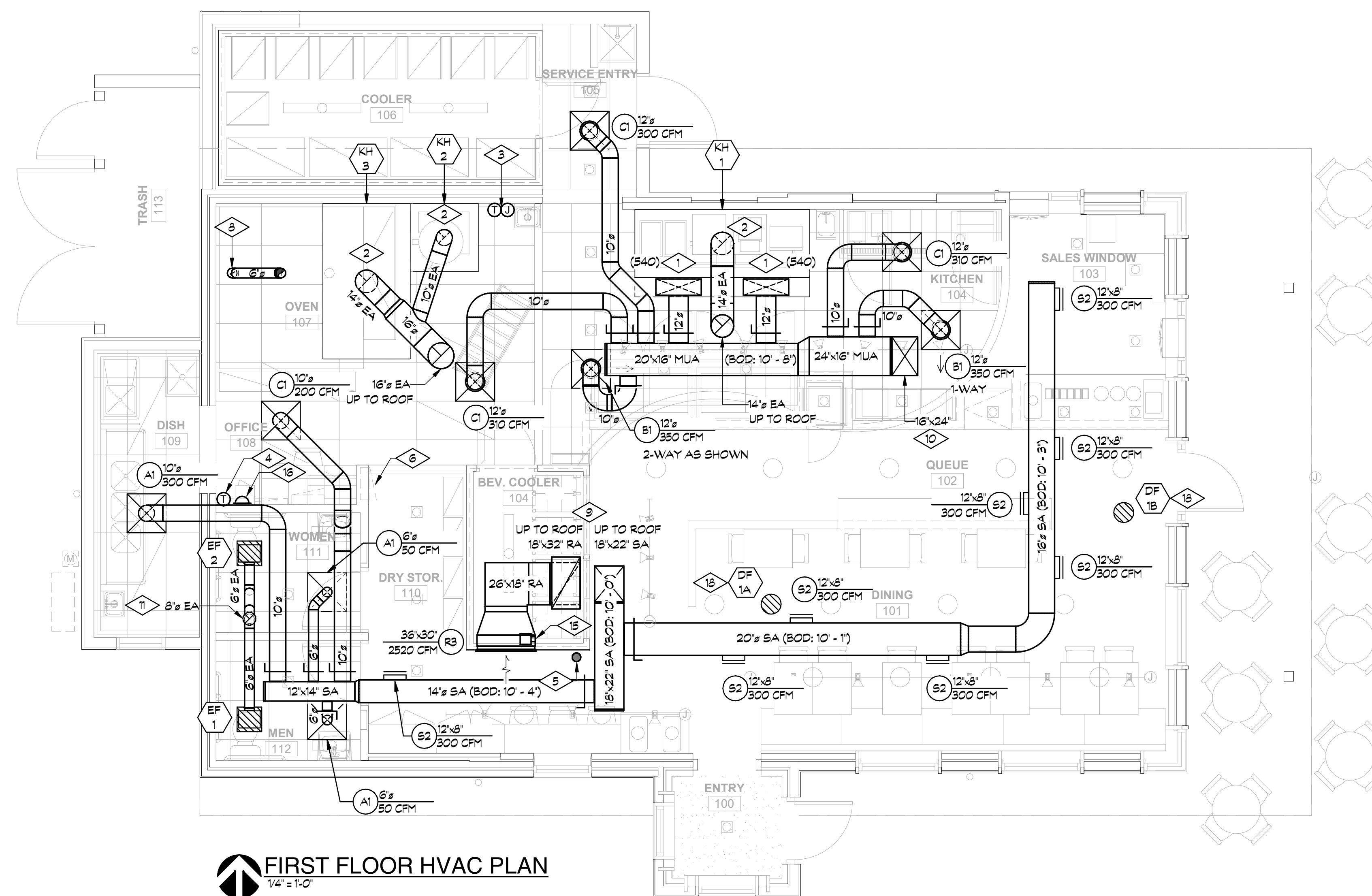
3.05 GAS PIPING

A. Gas distribution system is based on a 6" W.C. natural gas pressure except where noted on plans. Provide all gas-fired equipment with gas pressure regulators or special orifices as required to operate at 5000 ft. elevation. Provide a gas cock and drip leg at each appliance.
B. Gas piping on roof shall be secured to uv resistant Polyethylene foam block; Erico "Pipe Pier". Provide rubberized sheet under pipe support.
C. Piping exposed outside shall be painted with an exterior type latex paint which matches the adjacent roof or wall.
D. Appliance connection piping to be per plans or same as appliance size, whichever is larger. Transition downstream of all shutoffs and regulators as close to appliance as possible when plans call for larger than appliance.
3.06 KITCHEN
A. Provide final connections to all kitchen equipment in accordance with manufacturer's instructions. Provide stops or shut-off valves for hot and cold water connection; plug cocks or quick-connect couplings for gas appliances. Indirect wastes shall be DWV copper, except at soda machines where plastic pipe shall be used.





ROOF HVAC PLAN
1/4" = 1'-0"



FIRST FLOOR HVAC PLAN
1/4" = 1'-0"

GENERAL NOTES

- A. FLEX DUCT MAY NOT BE USED IN EXPOSED LOCATIONS. WHERE CONCEALED, FLEX DUCT RUNS NO LONGER THAN 2'. REFER TO SPECIFICATIONS.
- B. GRILLES, REGISTERS & DIFFUSERS & EXPOSED DUCTWORK TO MATCH ADJACENT CEILING/STRUCTURE COLOR. WHERE CEILING IS LIGHT COLOR, MAINTAIN WHITE GRDS. WHERE CEILING/STRUCTURE IS METAL FINISH OR DARK, PAINT GRDS TO MATCH. REFER TO ARCH PLANS FOR FINISHES.
- C. ROUTE DUCT MAINS TIGHT TO STRUCTURE.
- D. MECHANICAL SYSTEM IS LESS THAN 480,000 BTU/H COOLING AND 800,000 BTU/H HEATING AND IS THEREFORE NOT REQUIRED TO BE COMMISSIONED PER 2019 IECC C408.2.
- E. PROVIDE INDEPENDENT CONTROL FOR EACH KITCHEN EXHAUST FAN (KEF) AND INTERLOCK WITH VARIABLE SPEED CONTROL ON MUA-1. REFER TO HOOD DRAWINGS FOR DETAILS.
- F. ALL EXHAUST VENTS TO MAINTAIN A MINIMUM OF 10' CLEARANCE TO SOURCES OF INTAKE AIR.

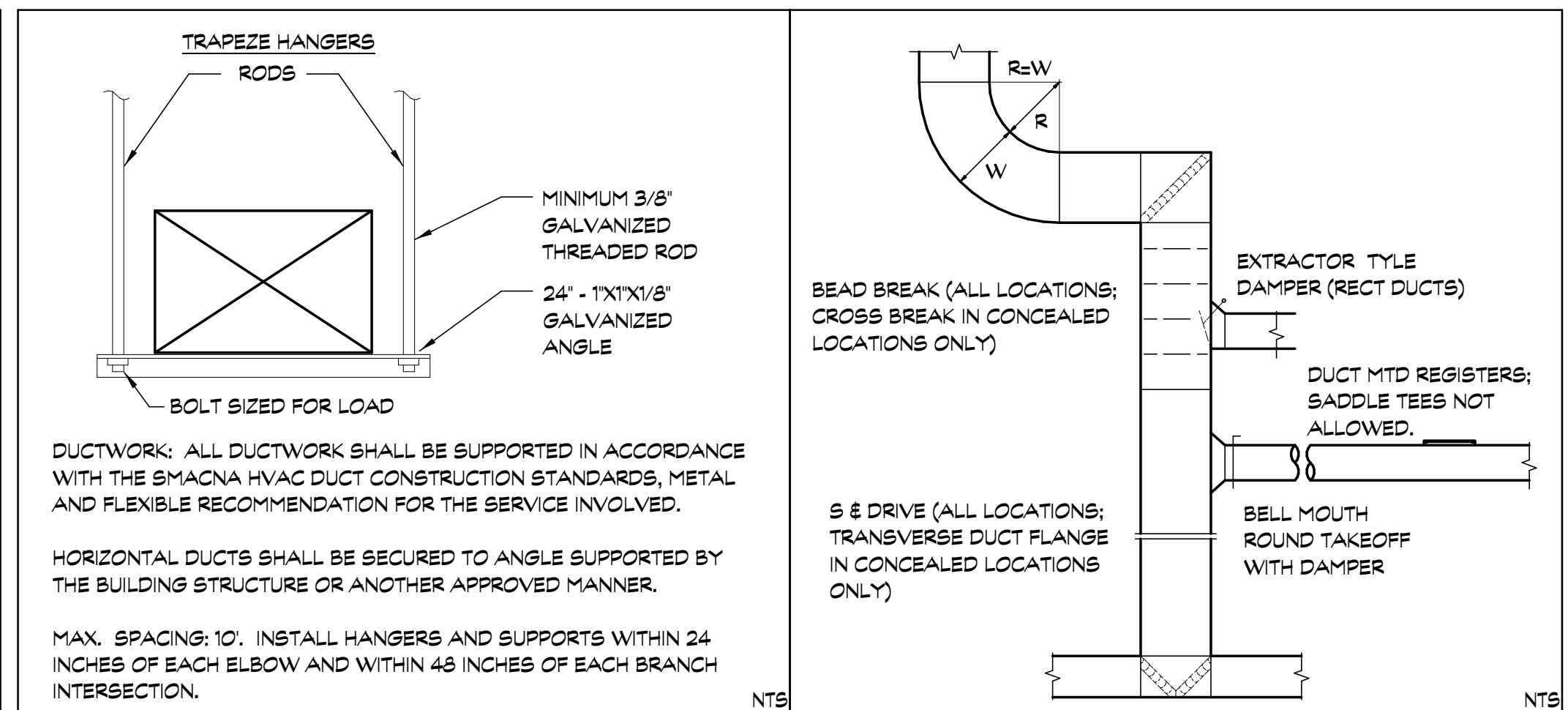
DETAIL NOTES THIS SHEET

- 1. MAKE UP AIR DUCT SIZED AS SHOWN. TRANSITION TO HOOD SUPPLY COLLAR AS NEEDED AND BALANCE TO AIR QUANTITY SHOWN.
- 2. DUCT UP FROM TYPE II HOOD TO EXHAUST FAN. ALL EXPOSED DUCTWORK TO BE STAINLESS STEEL. SLOPE DUCTWORK BACK TO HOOD AT 1/8" PER 12". DUCT TO BE WATER TIGHT PER SPECIFICATIONS. TRANSITION AS NEEDED TO TYPE II HOOD, BALANCE AS INDICATED.
- 3. MAKE UP AIR CONTROL STATION/ ROOM OVERRIDE T-STAT FOR MUA-1 AND HOOD CONTROL PANEL IN APPROXIMATE LOCATION SHOWN. COORDINATE EXACT LOCATION WITH ARCHITECT AND GENERAL CONTRACTOR.
- 4. THERMOSTAT W/ REMOTE BULB SENSOR FOR RTU-7. COORDINATE LOCATION W/ OWNER.
- 5. REMOTE BULB SENSOR FOR RTU-7 WIRED BACK TO THERMOSTAT IN OFFICE. COORDINATE LOCATION W/ OWNER.
- 6. ELECTRICAL PANEL. AVOID THIS AREA OR KEEP DUCTWORK MORE THAN 4" AFF.
- 7. 1/2" DOOR UNDERCUT.
- 8. REAR OVEN FLUE VENT TO ROOF. COORDINATE WITH KITCHEN VENDOR. INSTALL PER MANUFACTURER INSTRUCTIONS AND OFFSET AS REQUIRED TO MAINTAIN MANUFACTURER SPECIFIED CLEARANCES.
- 9. SUPPLY/RETURN AIR DUCT UP TO RTU ON ROOF ABOVE. TRANSITION IN ROOF CURB AS NEEDED.
- 10. MAKEUP AIR DUCT UP TO MUA-1 ON ROOF ABOVE. TRANSITION AS NEEDED.
- 11. COMBINED RESTROOM EXHAUST DUCT UP TO ROOF TERMINATION.
- 12. FLUE VENT FROM OVEN. MAINTAIN MANUFACTURER SPECIFIED CLEARANCES TO COMBUSTIBLES.
- 13. RESTROOM EXHAUST VENT
- 14. 10' CLEARANCE TO SOURCES OF INTAKE AIR SHOWN FOR REFERENCE.
- 15. MOUNT DUCT DETECTOR IN RETURN AIR DUCTWORK, UPSTREAM OF IONIZER. WIRE TO REMOTE INDICATING LIGHT IN OFFICE.
- 16. REMOTE INDICATING LIGHT FOR DUCT DETECTOR. COORDINATE FINAL LOCATION WITH OWNER AND GC.
- 17. ADD ALTERNATE TO PROVIDE IONIZER. MOUNT IONIZER WITHIN ROOFTOP UNIT AIRSTREAM. INSTALL PER MANUFACTURER INSTRUCTIONS.
- 18. DESTRATIFICATION FAN TO BE WIRED TO SPEED CONTROLLER IN OFFICE. COORDINATE WITH ELECTRICAL CONTRACTOR.

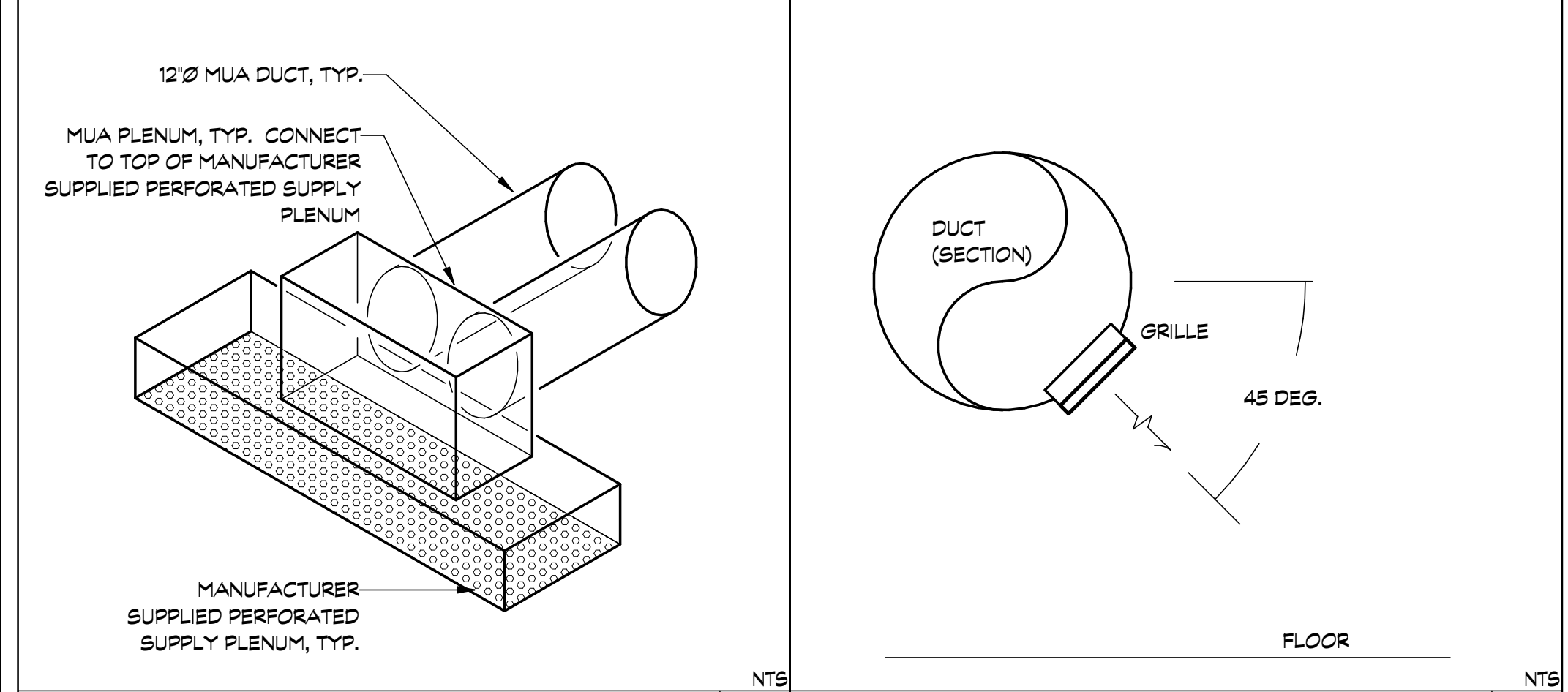


LEGEND

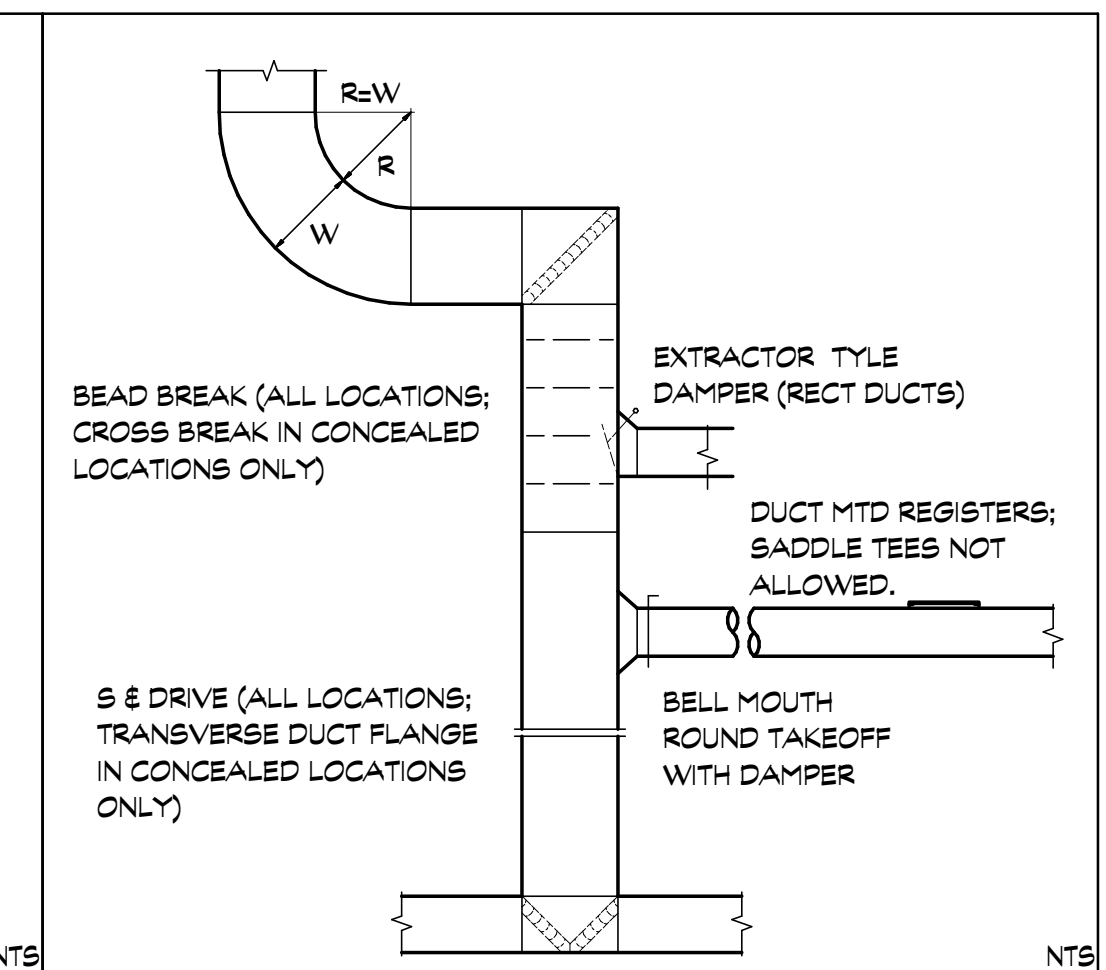
	DUCT (INSIDE DIM. SIDE SHOWN)
	SUPPLY DUCT (SECTION)
	RETURN DUCT (SECTION)
	EXHAUST DUCT (SECTION)
	ROUND DUCT, RIGID
	FLEXIBLE DUCT
	FLEXIBLE CONNECTOR
	TURNING VANES
	SUPPLY DIFFUSER (ARROWS INDICATE DISTRIBUTION)
	RETURN REGISTER / GRILLE
	MECHANICAL POINT OF CONNECTION
	FIRE DAMPER
	SMOKE AND FIRE DAMPER
	THERMOSTAT
	MANUAL BALANCING DAMPER
	MOTORIZED BALANCING DAMPER
	HWS - HOT WATER SUPPLY
	HWR - HOT WATER RETURN
	CWS - CHILLED WATER SUPPLY
	CWR - CHILLED WATER RETURN
	C - CONDENSATE
	S - STEAM
	GRILLE / REGISTER / DIFFUSER
	MECHANICAL EQUIPMENT
	DETAIL NOTE
	KITCHEN / MEDICAL EQUIPMENT
SA	SUPPLY AIR
OA	OUTSIDE AIR
MA	MIXED AIR
RA	RETURN AIR
EA	EXHAUST AIR
AD	ACCESS DOOR
OSD	OPPOSED BLADE DAMPER
RUS	ROUTE IN JOIST SPACE
(E)	EXISTING TO REMAIN
(ER)	EXISTING TO BE REPLACED
(ED)	EXISTING TO BE DEMOLISHED
	DUCT DETECTOR
	REMOTE INDICATING LIGHT



TYPE I / II DUCT HANGING DETAIL 4 **LOW PRESSURE DUCT CONNECTIONS** 2



MUA PLENUM DETAIL 3 **DUCT MOUNTED REGISTER** 1



HVAC SCHEDULE

KEY	UNIT TYPE	DESCRIPTION	HEATG	COOLG	FLOW	PRES.	WEIGHT	PWR	VOLT	MANUFACTURER/CAT. #	
RTU 7	ROOFTOP UNIT	GAS HEATING, DX COOLING, SETBACK T-STAT, ECONOMIZER / BAR, RELIEF W/MIN O.A. PER AIR BALANCE, HAIL GUARD, 12.6 EER, DUAL COMPRESSORS, STAINLESS STEEL HEAT EXCHANGER	200 MBH	7.5 TON (NOM)	3000 CFM	0.5"	1246 LBS	42 MCA	208/3	TRANE YHC-092	
ION	IONIZER	AUTO-CLEANING NEEDLE POINT BIPOLAR IONIZER, 24VAC-240VAC, 0-4800 CFM, 300,000,000 IONS/CC/SEC, UL 2998					1.5 LBS	10 W	120/1	(ADD ALTERNATE) GLOBAL FLASH-A SOLUTIONS/ GPS-FC48-AC	
MUA 1	MAKE UP UNIT	DIRECT FIRE, 12" DEEP EVAP COOLER VERTICAL DISCHARGE, MODULATING 92% EFFICIENCY BURNER, DUCT STAT WITH ROOM OVERIDE STAT, ROOF CURB, CONTROL STATION 2' FILTERS, STEP DOWN TRANSFORMER FOR EVAP COOLER PUMP, FREEZE PROTECTION DRAIN KIT, MOTORIZED DAMPER, ENERGY MANAGEMENT CONTROL PACKAGE, VARIABLE SPEED CONTROLS FOR INDEPENDENT HOOD OPERATION	180 MBH	-	2700	0.5"	980 LBS	1-1/2 HP	208/3	CAPTIVEAIRE A2-D-250-20D	
KEF 1	ROOF EXHAUSTER	SPUN ALUMINUM, DIRECT DRIVE, VERTICAL DISCHARGE, HINGED ROOF CURB, 1052 RPM, BACKDRAFT DAMPER				1725	0.5"	90 LBS	3/4 HP	120/1	CAPTIVEAIRE DUB5HFA (KH 2 & 3)
KEF 2	ROOF EXHAUSTER	SPUN ALUMINUM, DIRECT DRIVE, VERTICAL DISCHARGE, HINGED ROOF CURB, 1310 RPM, BACKDRAFT DAMPER				1350	0.35"	90 LBS	3/4 HP	120/1	CAPTIVEAIRE DUB5HFA (KH 1)
KH 1	TYPE II EXHAUST HOOD	30" TYPE II EXHAUST HOOD, 14" EXHAUST COLLAR, CONTROLS PACKAGE/INTERLOCKS/ETC FOR A COMPLETE SYSTEM, PERFORATED SUPPLY PLENUM W/ (2) 28X10 MUA RISERS	-	-	1350 CFM EA/ 1080 CFM MUA	-	405 LBS	SEE HOOD PKG	SEE HOOD PKG	120/1	CAPTIVEAIRE 4224 VHB-S-PP-F-ND (COOKLINE)
KH 2	TYPE II EXHAUST HOOD	36" TYPE II EXHAUST HOOD, 10" EXHAUST COLLAR, CONTROLS PACKAGE/INTERLOCKS/ETC FOR A COMPLETE SYSTEM	-	-	525 CFM EA	-	170 LBS	SEE HOOD PKG	SEE HOOD PKG	120/1	CAPTIVEAIRE 4224 VHB-S (KETTLE)
KH 3	TYPE II EXHAUST HOOD	30" TYPE II EXHAUST HOOD, 14" EXHAUST COLLAR, CONTROLS PACKAGE/INTERLOCKS/ETC FOR A COMPLETE SYSTEM	-	-	1200 CFM EA	-	340 LBS	SEE HOOD PKG	SEE HOOD PKG	120/1	CAPTIVEAIRE 5424 VHB-S-ND (OVEN)
EF 1 & 2	CEILING EXHAUST FAN	BACK DRAFT DAMPER, 950 RPM			75 CFM	0.25"	19 W	120/1			GREENHECK SP-AND (RESTROOM)
DF 1A-B	DESTRAT-IFICATION FAN	FREE HANGING AIR BEAR THERMAL EQUALIZER, 1170 RPM, UP TO 18' MOUNTING HEIGHT, 800 SQ FT MAX COVERAGE, FAN SPEED CONTROLLER (POT-), SHORT NOZZLE, COORD. FINISH WITH ARCHITECT			406 CFM		7 LBS	0.15 A	120/1		AIRLUS A-15-EC-5H

NOTES: * BASE ASSUMPTION IS FOR ALL KITCHEN HOOD PACKAGE TO BE PROVIDED BY M.C. M.C. TO PROVIDE DEDUCT ALTERNATE PRICE FOR KITCHEN VENDOR TO PROVIDE. COORDINATE WITH G.C./KITCHEN VENDOR
* M.C. IS RESPONSIBLE FOR ALL ANCILLARY EQUIPMENT AND DUCTWORK NEEDED TO CONNECT EQUIPMENT.
IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE ELECTRICAL CHANGES DUE TO EQUIPMENT SUBSTITUTIONS WITH EC.

GRILLE REGISTER DIFFUSER SCHEDULE

KEY	DESCRIPTION	CELLG	ACCESSORIES	MANUFACTURER/CAT.#
A1	SQUARE CEILING DIFFUSER, 2X2' FULLY LOUVERED FACE, 4 WAY, ROUND NECK, WHITE	GRID	OB DAMPER	TITUS TMS/3
B1	SQUARE CEILING DIFFUSER, 2X2' FULLY LOUVERED FACE, ROUND NECK, SEE PLANS FOR THROW, WHITE UNIFORM FACE (18X18)	GRID	OB DAMPER	TITUS TDC/3
C1	PERFORATED FACE SUPPLY GRILLE, WHITE, NO DISCHARGE PATTERN, 2X2' FACE, NECK SIZE PER PLAN	GRID	OB DAMPER	TITUS PAS/3
R3	RETURN GRILLE, 30 DEGREE FIXED BLADE, FRONT BLADES PARALLEL TO LONG DIMENSION, WHITE	GYP		TITUS 25RL
S1	DOUBLE DEFLECTION SUPPLY REGISTER, FRONT BLADES PARALLEL TO SHORT DIMENSION, WHITE	GYP/ GRID	OB DAMPER	TITUS 272
S2	DOUBLE DEFLECTION SUPPLY REGISTER, FRONT BLADES PARALLEL TO SHORT DIMENSION, MOUNTED TO SPIRAL DUCT, CLEAR ANODIZED ALUMINUM	DUCT MTD	EXTRACTOR	TITUS S300FB

NOTES: COORDINATE DIFFUSER LOCATIONS WITH LIGHTS AND OTHER CEILING ELEMENTS

VENTILATION (IMC-2018)

SPACE NAME	SPACE TYPE	SQ FT	PEOPLE	CFM/P	CFM/SF	Vsz	Es	Vsz	Vsz	Evz		
SYSTEM RTU-7												
DINING, QUEUE, ENTRY	RESTAURANT DINING ROOMS	565	40	7.5	0.18	502	0.8	1800	402	0.90		
OFFICE	OFFICE SPACE	38	1	5	0.08	9	0.8	200	7	1.14		
DRY STORAGE	STORAGE ROOMS	75	0	0	0.12	11	0.8	300	9	1.14		
* RESTROOMS	RESTROOMS (EXHAUST/PXT /TRNSF AIR)	92	0	70	0	0	0.8	100	0	-		
* KITCHEN, SALES	KITCHEN (EXHAUST /TRNSF AIR)	880	0	0	0.7	770	0.8	600	616	-		
NON-TRANSFERRED AIR TOTAL						Vsz	%OA	Vsz	Vsz	Evz		
SYSTEM TOTAL						1650	41	463	20%	2300	418	0.90
SYSTEM TOTAL						1650	41	804	20%	3000		

* KITCHEN AND RESTROOM AIR IS TRANSFERRED AND THEREFORE IS NOT INCLUDED IN THE TOTAL REQUIRED OSA QUANTITY.
NOTE: SYSTEM TOTAL IS CALCULATED USING PEAK POPULATION AND VENTILATION EFFICIENCIES AND IS THEREFORE NOT A SUM OF ALL ZONES SERVED. CALCULATION IS BASED ON ASHRAE APPENDIX A TO CALCULATE Ev FOR MULTI-ZONE.
NOTE: BALANCE AIR HANDLERS AND ROOF TOP UNITS TO 15% OUTSIDE AIR, SYSTEM MINIMUM, OR OA QUANTITY IN AIR BALANCE CALCULATION, WHICHEVER IS GREATER.
Es: ZONE AIR EFFECTIVENESS Vsz: PRIMARY SYSTEM AIR FLOW
Vsz: ZONE DESIGN SUPPLY Vsu: UNCORRECTED OA
Vsz: UNUSED OA TO BREATHING AREA Vst: MIN OA REQUIRED FOR SYSTEM
Vsz: UNUSED OA REQUIRED TO ZONE Evz: SYSTEM VENTILATION EFFICIENCY

COMcheck Software Version 4.1.4.3 Mechanical Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Moe's Broadway Bagels
Location: Longmont, Colorado
Climate Zone: 5b
Project Type: Alteration

Construction Site: 225 Main Street, Longmont, CO 80501 Owner/Agent: Designer/Contractor: Ethan Miley, Boulder Engineering, 1717 15th Street, Boulder, CO 80302, 303.444.6038, staff@boulderengineering.com

Mechanical Systems List

Quantity System Type & Description

1 RTU 7 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 200 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00% Et or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 92 kBtu/h Air-Cooled Condenser, Air Economizer Proposed Efficiency = 12.60 EER, Required Efficiency: 11.00 EER + 12.6 EER Fan System: FAN SYSTEM RTU | WHOLE BUILDING - Compliance (Motor nameplate HP method) : Passes

Fans: FAN 2 Supply, Constant Volume, 3000 CFM, 2.8 motor nameplate hp, 0.0 fan efficiency grade

1 MUA 1 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 180 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00% Et or 80% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 92 kBtu/h Air-Cooled Condenser, Air Economizer Proposed Efficiency = 12.60 EER, Required Efficiency: 11.00 EER + 12.6 EER Fan System: FAN SYSTEM MUA | KITCHEN & DINING - Compliance (Motor nameplate HP method) : Passes

Fans: FAN 1 Supply, Single-Zone VAV, 2700 CFM, 1.5 motor nameplate hp, 0.0 fan efficiency grade

1 Water Heater GWH: Gas Storage Water Heater, Capacity: 50 gallons, Input Rating: 100 kBtu/h w/ Circulation Pump Proposed Efficiency: 96.00% Et, Required Efficiency: 80.00% Et

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.4.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Ethan Miley - PE 11/17/20
Name - Title Signature Date

Project Title: Moe's Broadway Bagels Report date: 11/17/20
Data filename: I:\19\19158 Moe's Longmont\ENERGY\19158 COMcheck.cck

AIR BALANCE

	HOOD EXHAUST	HOOD OUT. AIR	SUPPLY AIR	RETURN AIR	OUTSIDE AIR
HOOD #1 (KEF-1) (KETTLE)	-825				
HOOD #2 (KEF-1) (OVEN)	-1200				
HOOD #3 (KEF-2) (COOKLINE)	-1950	1080			
TOILET EXH (EF-1) (RESTROOM)	-75				
TOILET EXH (EF-2) (RESTROOM)	-75				
MUA 1 (HOOD #3 & OTHER)					2700
	-3225	1080		0	2700
HP 7 (WHOLE BUILDING)			3000	2250	750
			3000	2250	750
TOTAL EXHAUST	-3225				
TOTAL OUTSIDE AIR		3450			
NET AIR FLOW		225			

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Moe's BROADWAY BAGEL
LONGMONT, COLORADO

PROJECT No: 19158
ISSUE DATE: 11/25/2020
REVISIONS:

SHEET TITLE:
MECHANICAL DETAILS & SCHEDULES

SHEET NUMBER:
M2.1

DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING

SECTION 23 05 00 - COMMON WORK RESULTS FOR HVAC

- 1.01 **WORK INCLUDED**
 - A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Mechanical Contractor. The general conditions of the specifications apply and are included in this part of this section.
 1. Heating, ventilating and air conditioning systems
 2. Temperature control system
 3. Kitchen supply and exhaust

- 1.02 **CODES AND REGULATIONS**
 - A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:
 1. Building Code: 2018 International Building Code
 2. Plumbing Code: 2018 International Plumbing Code
 3. Mechanical Code: 2018 International Mechanical Code
 4. Fire Code: 2018 International Fire Code
 5. Gas Code: 2018 International Fuel Gas Code
 6. Energy Code: 2018 International Energy Code
 7. Electrical Code: 2017 National Electrical Code

- 1.03 **EQUIPMENT AND MATERIALS STANDARDS**
 - A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.

- 1.04 **CONTRACT DRAWINGS**
 - A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected ceiling plans.

- 1.05 **SHOP DRAWINGS**
 - A. Submit products data and/or shop drawings as required by the Architect for the following:
 1. Insulation
 2. Air handling equipment
 3. Grilles, registers, diffusers, louvers
 4. Fire dampers
 5. Temperature controls, systems, and components
 - B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any substitution shall be accomplished at no additional expense to the Owner.
 - C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to bid date.

- 1.06 **WARRANTY**
 - A. The Contractor shall be responsible for the successful operation of mechanical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner. Provide four complete service and maintenance calls spaced at equal intervals during the warranty period.

- 1.07 **PRODUCT HANDLING AND CLEAN UP**
 - A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence.
 - B. HVAC equipment shall not be used during construction as a means to heat or cool the space, unless specific approval is given by the owner. If such equipment is used, it must be completely cleaned and repaired as necessary. Cleaning involves replacing all filters; cleaning all coils and heat exchangers; inspecting fans, plenums, and ductwork and cleaning as directed by the owner.

- 1.08 **CUTTING AND REPAIRING**
 - A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

- 1.09 **OPERATING AND MAINTENANCE DATA**
 - A. Provide the Owner with operating and maintenance instructions (four copies) required for operation of all mechanical systems. Bind the written instructions in a notebook. The General Conditions take precedence. The manuals shall include the following items:
 1. Operating manual and spare parts list for each piece of equipment.
 2. Preventive maintenance schedule for lubricating and checking each piece of equipment.
 3. Instructions on who to call for service during the warranty period.

- 1.10 **PERMITS**
 - A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.
- 1.11 **TEMPORARY SERVICES**
 - A. Provide temporary water service for construction, as required by the General Contractor.

- 1.12 **COORDINATION**
 - A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering equipment.
 - B. Electrical work performed by this contractor will conform to the standards of Division 26-28. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified. MC = Division 21-23 EC = Division 26-28

Item	Furn		Set		Power		Control	
	By	By	By	By	By	By	By	By
Combustion starters	MC	EC	EC	MC	EC	EC	MC	--
Equipment motors	MC	MC	EC	MC	EC	EC	MC	--
Motor starters & O.L. relays	MC	EC	EC	MC	EC	EC	MC	--
Disconnect switches	EC	EC	EC	MC	EC	EC	MC	--
Thermal overload heaters (1)	EC	EC	EC	MC	EC	EC	MC	--
Variable Speed Drives	MC	EC	EC	MC	EC	EC	MC	--
Control relays/transformers	MC	MC	EC	MC	EC	EC	MC	--
Temperature control panels	MC	MC	EC	MC	EC	EC	MC	--
Temp. Controls conduit/wiring	MC	MC	--	MC	EC	EC	MC	--
Actuator and solenoid wiring	MC	MC	--	MC	EC	EC	MC	--
Pushbuttons & pilot lights	MC	MC	--	MC	EC	EC	MC	--
Room thermostats	MC	MC	--	MC	EC	EC	MC	--
Thermostats: line voltage	EC	EC	EC	--	EC	EC	MC	--

- C. The general guideline for the division between control (by MC) wiring and power wiring (by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.
- D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion of the project.

- 1.13 **DELIVERY, STORAGE, HANDLING**
 - A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after installation.

- 1.14 **AS-BUILT DRAWINGS**
 - A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

- 1.15 **PROJECT SITE CONDITIONS**
 - A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

- 1.16 **PLAN VERIFICATION**
 - A. After completion of the bidding and selection process, prior to awarding the contract, the contractor must review and verify the contract documents in their entirety, including those of other trades. At this time, discrepancies, conflicts, omissions, etc in the contract documents must be documented. Alterations to the contract will be made at that time to include such items, as well other modifications which might be made by the Owner. After award of the contract, change orders caused by discrepancies, conflicts, omissions in the contract documents will not be allowed.

- 2.01 **EXPANSION JOINTS, GUIDES, AND ANCHORS**
 - A. Provide expansion joints or loops, guides, and anchors in piping to allow for expansion and contractions. Expansion joints shall be bellows type.

- 2.02 **ELECTRICAL**
 - A. Lugs: Lugs for wiring connections shall be rated for copper and aluminum, nad shall have a minimum rating of 75C.
 - B. Electric motors shall be rated for the appropriate application: wet location (TEFC); submersible; explosion proof, VFDs, etc.

- 2.03 **ACCESS PANELS**
 - A. The Mechanical Contractor shall furnish and General Contractor shall install access panels where required for access to equipment. The Mechanical Contractor shall include the cost of installation in his bid. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.

- 3.01 **START-UP PROCEDURES**
 - A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.

- 3.02 **HANGERS AND SUPPORTS**
 - A. Support equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel, except copper hangers will be used with copper piping. Hangers supporting vibrating equipment shall be provided with spring isolators. Chain, perforated iron or wire hangers are not permitted. Hangers will be of a type acceptable to the Engineer, and shall have a capacity and spacing as required by code.

- 3.03 **LOW EMITTING MATERIALS**
 - A. All sealants & adhesives required for the installation of mechanical & plumbing system within the building envelope shall meet the requirements for low emitting materials as set for in the South Coast Air Quality Management District (SCAQMD) Rule #1168 (or LEED new construction requirements), which includes but is not limited to:
 1. Metal to Metal adhesive: VOC limit of 30g/L.
 2. Fiberglass adhesive: VOC limit of 80g/L.
 3. Multipurpose construction adhesive: VOC limit of 70 g/L.

- SECTION 23 05 93-TESTING, ADJUSTING, AND BALANCING**
 - 1.01 **GENERAL**
 - A. Balancing shall be done by an independent firm specializing solely in the discipline of balancing air and water systems, and a member of NEBB. Firms desiring to furnish services for this project shall submit for written approval during bidding. All air and hydronic systems shall be balanced using applicable proportionate procedure.

- 2.01 **TESTING CONDITIONS**
 - A. (Air) Before adjustments are made, check the system for such items as dirty filters, duct and damper leakage, vibrations, etc. All diffusers, duct sections, etc shall be adjusted to deliver design quantities within 5%. Air quantities shall be tested simulating filters being 50% loaded. Adjust/replace sheaves and belts as required to achieve design air quantities. Replace thermal motor overloads as required.

- 2.02 **REPORT**
 - A. After all adjustments are made, a detail written report shall be prepared and submitted for approval. Final acceptance of the project will not be made until a satisfactory report is received and field verified. The report shall detail the test equipment and balancing procedures being used; the general status of the system being tested including equipment details; provide data sheets indicating the required and actual CFM of all outlets and inlets.

- SECTION 23 07 00 - INSULATION**
 - 1.01 **QUALITY ASSURANCE**
 - A. All insulation shall have a composite rating (insulation, jacket and adhesives) not exceeding flame spread 25 and smoke developed 50.
 - 2.01 **PIPE INSULATION FOR PIPING ABOVE GRADE**
 - A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as follows:

Pipe Sizes	1/2" - 1-1/2"	>1-1/2"
Refrigeration (Suction Lines)	1"	1"

- B. Insulation shall be Armaflex "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.
- C. Exterior piping insulation will be painted with a white solvent based alkyl finish (Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturer's instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturer's instructions.
- D. All interior underground water(domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

- 2.02 **REFRIGERANT PIPE INSULATION**
 - A. Insulation shall be 1" thick, closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean;
 - B. Exterior piping insulation will be painted with a white solvent based alkyl finish(Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturer's instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturer's instructions.
 - C. Insulation shall be Armaflex "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

- 2.03 **DUCT INSULATION, WRAP**
 - A. Duct wrap insulation shall be flexible fiberglass insulation, 1 pcf, with factory-applied, reinforced, aluminum foil vapor barrier. Insulation shall have a K-factor of .25 at 75 °F mean.
 - B. Duct wrap shall be installed as follows or as shown on the plans:
 1. Supply air ducts(heated space): 1-1/2"
 2. Supply air ducts(unheated space): 2"
 - C. Wrap shall be Johns-Manville "Microtite" or equivalent by Owens-Corning, Certaineed or Knauf.
 - D. At the contractor's option, the above specified duct wrap may be replaced with duct liner or equal or greater thickness.

- 2.04 **DUCT LINER**
 - A. Duct liner shall be 1-1/2 lb density (3.0lb for exterior ducts), constructed of glass fiber liner. The air stream surface is coated with black-coated mat surface. Liner shall have a "k" value of 0.24/inch at 75F mean.
 - B. Duct liner shall be installed as follows or as shown on the plans:
 1. Exterior supply, return, or make up air ducts: 2" 3"
 2. Return air ducts(within 15' of fan): 1/2"
 3. Outside air intakes within space: 1"
 4. Treated make up air within space: (not insulated)
 - C. Liner shall be Johns-Manville "Limaoustic" or equivalent by Owens-Corning, Certaineed or Knauf.

- 3.01 **PIPE/ELASTOMERIC**
 - A. Insulation shall be solid slip-on installed prior to connection. Butt joints shall be sealed with manufacturer's adhesive. Where slit seams must be installed, seal the seam with manufacturer's adhesive. Fittings shall be insulated with meter-cut pieces of insulation according to manufacturer's instructions, or insulated with similar sheet insulation installed according to manufacturer's instructions.
 - B. Provide wood blocks and metal hanger shields at support strap locations on horizontal pipe runs. Insulation will not be interrupted for supports, etc.

- 3.02 **DUCT WRAP**
 - A. Wrap the fiberglass blanket around the ductwork with 2" overlapping flanges stapled at 6" on center. Strip the lap of insulation and staple the facing directly to the overlapped foil. Secure the insulation to the ductwork with 18-gauge galvanized wire at 12" on center. On ducts larger than 48", use mechanical fasteners on the bottom of the duct.
 - B. Tape all joints with 3" wide foil reinforced kraft tape. Tape all pin penetrations or punctures in the facing.

- 3.03 **ACOUSITC DUCT LINER**
 - A. Liner shall be secured to all duct surfaces by pressing into wet adhesive, applied to 100% of the duct surface. In addition, liner shall be held in place with insulpins welded to duct and clips slipped over the pins. Insulpins shall be located per SMACNA Standards. Liner shall be lapped and compressed in all four corners of the duct. Both upstream and downstream transverse edges shall be coated with adhesive, coated a minimum of 1" over the edge in all places.

SECTION 23 09 00 - AUTOMATIC TEMPERATURE CONTROLS

- 1.01 **SCOPE**
 - A. Furnish, install, and place in operation a complete system of automatic temperature controls. The temperature control contractor may be the mechanical contractor or approved sub-contractor.
 - B. Acceptable automatic temperature control equipment manufacturer's shall be Honeywell, Johnson Controls, or controls furnished by the specific equipment manufacturer.
 - C. The control system shall include all components and appurtenances necessary to provide a complete system. All wiring for automatic temperature controls, regardless of voltage shall be the responsibility of the ATC Contractor. 120VAC work shall be installed in conformance with requirements of Division 16. The Temperature Control Contractor shall coordinate all electrical work associated with his installation with the Electrical Contractor. Power wiring for all equipment, shall be the responsibility of the Electrical Contractor.

- 1.02 **QUALITY ASSURANCE**
 - A. Upon completion of the work, instruct the building operating personnel and provide two (2) complete sets of operating and maintenance instruction booklets.
 - B. Submit copies of complete temperature control diagrams with written "sequence of control" and factory-printed specification data sheets covering each control device proposed to be used, prior to installation of any equipment or part or system.

- 1.03 **SERVICE AND GUARANTEE**
 - A. The Contractor shall guarantee the control system installed under this section of the specification to be free from defects in workmanship and material under normal use, and agrees to provide service for one (1) year after acceptance by the Engineer or of beneficial occupancy of the building. Any defects in workmanship or material during this time shall be corrected at no charge to the Owner.

- 2.01 **THERMOSTATS**
 - A. HVAC unit thermostats shall be low-voltage, programmable, heating/cooling type with fan on-auto switch. Units shall be Honeywell TH8000 or equivalent .

- 3.01 **SEQUENCE OF OPERATION**
 - A. HVAC units shall each be controlled by a heating/cooling thermostat.
 - B. Toilet exhaust fans shall be controlled with associated lights.
 - C. Kitchen hood exhaust fans shall operate independently from each other, both being interlocked with MUA unit for simultaneous operation. Provide fire alarm interlock as required by local inspector and/or fire chief. Unless otherwise required as mentioned above, all will be de-energized by a signal from any hood fire protection system. Kitchen hood exhaust fans shall be automatically activated when cooking commences (via thermostat in hood collar by hood vendor).
 - D. Activation of a duct detector shall shut down its respective HVAC unit.

SECTION 23 30 00 - HVAC AIR DISTRIBUTION SYSTEMS

- 1.01 **DUCTWORK**
 - A. General. All ductwork shall be constructed strictly according to the latest ASHRAE, SMACNA, and IMC standards. Duct sizes shown are inside clear dimensions; maintain sizes inside lining for lined ducts.
 - B. Sheet Metal:
 1. Sheet metal shall be constructed of coated galvanized steel of lock-forming grade conforming to ASTM Standards A-525 and A-527. Reinforcement shall be constructed of galvanized steel.

- 2. Duct thickness shall conform to the above standards. Where there is a discrepancy, the greater thickness shall apply. Reinforcement, joint type, spacing and thicknesses may be varied at the contractor's discretion, in conformance with the above standards, except where specifically noted. Transfer ducts across rated corridors shall be 26 gauge, or as required by Code.
- 3. Round ductwork exposed to the public will be galvanized steel, spiral wound, maintaining in a clean, shiny appearance, and not utilizing visible sealing material. Concealed round ductwork may spiral wound, or snap lock type galvanized steel ductwork.
- 4. Sealing: Ductwork shall be sealed with Mon-Eco Industries Eco Duct Seal 44-50 or equivalent as follows:
 - a. Main supply ductwork shall be sealed to SMACNA Class B Standards.
 - b. Return, exhaust, and supply ductwork shall be sealed to SMACNA Class B Standards
 - c. Return, exhaust, and supply ductwork downstream of coils and VAV boxes shall be sealed to SMACNA Class C.
- 5. Location: Sheet metal may be used throughout the project.
- C. Flexible Ductwork (Polymer Liner):
 1. Flexible ductwork shall be constructed of a spring steel helix sheathing in a plastic core. It shall be insulated with 1" fiberglass having a density of 1 lb./cu.ft. The insulation is supported in an copolymer vapor barrier jacket.
 2. The duct shall be rated at 10" w.g., and a maximum velocity of 4000 fpm. The duct shall be listed in conformance with UL Standard 181, Class 1.
 3. Flexible duct shall be limited to a maximum length of 2', as a means of connecting boxes, diffusers, etc. to the duct system. Uninsulated flexduct may be used where the adjacent ductwork is uninsulated or unlined.
 4. Flexduct shall be manufactured by Hart & Cooley, Clevalflex or equivalent.

- 1.02 **SPECIAL DUCT SYSTEMS**
 - A. Kitchen hood exhaust.
 1. Duct shall be constructed strictly according to the latest ASHRAE and SMACNA standards. All duct work shall be constructed of 16-gauge steel or 304 stainless steel, 18-gauge minimum. All duct, and duct to hood joints, with longitudinal seams and transverse joints continuously butt welded. Spoke exhaust duct at not less than 1/2", except where other code requirements require a steeper slope. Duct connections to fans shall be flanged and gasketed to the grease tight.
 2. Ducts shall be wrapped with two layers of foil encapsulated, alumina/silica fibrous blanket, in strict accordance with the manufacturer's instructions, and in conformance with ASTM std 2336. Joints shall be butt joints with overlaps. The blanket shall be firmly secured to the duct using carbon steel bands. Blanket shall be 3M Firemaster, Ductwrap or Firewrap, or equivalent.
 3. Exterior ducts shall be painted with paint rated for 150F, color as selected by the Architect. The duct will be cleaned and primed prior to painting.
 - B. Flue Piping:
 1. All parts of flue vent system shall be Underwriter's Laboratories-listed, type B, double-wall, gas vent piping. The outer wall shall be galvanized steel; inner wall shall be 1100 alloy aluminum with built-in 1" air space. All flues shall terminate in a roof cap, as required by code.
 2. The flue vent piping shall be manufactured by Metalbestos. Approved equivalents are Heat-fab, Selkirk, or Hart and Cooley.

- 1.03 **DUCT ACCESS DOORS**
 - A. Where motorized dampers, fire dampers, control equipment, etc. are installed in ducts, and for cleaning ductwork, access doors shall be provided in the ducts, made air-tight with gasketed edges. Use Ventlok, or equal, sponge rubber or felt gasketing material. The doors shall be double-wall construction with 1" of rigid insulation fill and shall be attached to the duct with cam latches. Omit access door insulation and double-wall construction if ducts are not specified to be insulated. Access doors shall be constructed of the same materials as the ductwork.
 - B. Provide access panels where required for access to the "Duct Access Doors." If these access panels are placed in fire-rated walls or ceiling or floor, then the access panel shall have the same rating.

- 1.04 **FLEXIBLE CONNECTIONS**
 - A. All supply and exhaust fans and other air handling units with inlet and outlet duct or casing connections shall have a flexible connector in each connection. Connector shall be made of at least one layer of Ventglas, two-side, neoprene-coated, heavy glass fabric, Underwriters' approved and labeled as manufactured by Ventfabrics, Inc.

- 2.01 **GRILLES, REGISTERS, AND DIFFUSERS**
 - A. Provide grilles, registers, and diffusers of the size and type shown on the plans. Grilles, registers, and diffusers shall be made of steel with a baked white enamel finish, or extruded aluminum with clear finish, as indicated for each grille, register, or diffuser. Secure GRD's to structure where connected by flex ductwork, or where required by local code. Paint ductwork visible behind GRD's flat black. G R D's shall be manufactured by Titus, Price, Metallaire, or equivalent.
- 2.02 **DUCT DETECTORS**
 - A. Duct smoke detectors shall be solid state photo-electric type. Detector shall include air sampling chamber with sampling tubes extending through the width of the air duct. LED Alarm status indicating lights shall be visible on the front of the detector. Key controller test and reset switches plus an easily accessible test jack shall be provided. They shall include alarm relay contacts (DPDT) capable of handling loads of up to five (5) amperes at 210 VAC or 28 VDC resistive. Unit shall have self-contained power supply requiring 120/240V power. Detector shall include a remote indicating light/sight switch (this may be deleted if the unit is clearly visible and readily accessible). Provide necessary interlocks with air handlers, smoke dampers, etc as required by the local fire department, including relays, transformers, etc. Detectors shall be listed by Underwriters' Laboratories for use in air conditioning and ventilating duct systems in compliance with the National Fire Protection Association and Underwriters' Laboratories, Standard UL 167.

- 2.03 **EXHAUST FAN CEILING**
 - A. The ceiling exhaust fan shall have a steel housing with a galvanized or baked enamel finish. An automatic back-draft damper shall be located within the duct connector and have cushioned stops. The fan wheels shall be balanced centrifugal and shall operate at less than 1200 rpm. Fans shall bear the AMCA certified rating seal and the U.L. label. The entire fan, motor, and wheel assembly without disturbing the housing. Fan motors shall be grounded and mounted on vibration isolators. Fans shall be Penn Zephyr, Greenheck, Cook Gemini, or approved equivalent.

- 2.04 **EXHAUST FAN, ROOF (UPBLAST)**
 - A. The roof-mounted exhaust fans shall have a spun aluminum housing with up-discharge outlet. The fan wheels shall be dynamically balanced, aluminum, centrifugal BI. The motor shall be belt-drive, open drip-proof type, mounted internally on vibration isolators. Fans shall bear the AMCA certified ratings seal and the U.L. labels for rating under L.L. Std. 762. Fans shall be controlled as scheduled in Section 23 09 00 Controls. Provide grease trough where shown. Fans shall be Greenheck, Penn, Cook, Acme, Ilg, Carnes, or approved equivalent.

- 2.05 **EXHAUST FAN, ROOF**
 - A. The roof-mounted exhaust fans shall have a spun-aluminum housing. The fan wheels shall be dynamically balanced, aluminum, centrifugal BI. The motor shall be belt-drive, open drip-proof type, mounted internally on vibration isolators. Fans shall bear the AMCA certified ratings seal and the U.L. labels for rating under U.L. Std. 762. Fans shall be controlled as scheduled in Section 23 09 00 Controls. Fans shall be Greenheck, Penn, Cook, Acme, Ilg, Carnes, or approved equivalent.

- 2.06 **AIR INTAKE AND DISCHARGE LOUVERS**
 - A. Exterior stationary louvers shall be galvanized steel 4" blades on 2-7/8" centers at 30 deg with return bends. Louvers shall be weatherproof. Set in frame, secure, and caulk into opening. Provide galvanized steel 1/2", 19-gauge wire mesh behind louver. Size per the plans.
 - B. Approved manufacturer's shall be Louvers and Dampers, Airstream, Dowco, Ruskin, or Titus.

- 2.07 **AIR FILTERS**
 - A. Provide air filters where shown on the drawings. Filters shall be rigid, throw-away type, constructed of pleated fiber materials with metal mesh support maze across both faces of the media. Thickness will be 2", unless 1" is the maximum thickness allowable. Filters shall have a UL listing of Class II and an average 30% efficiency rating of ASHRAE Std. 52-76. Filters shall be Farr 30-30 or approved equivalent by Air Filters, Inc., Eco-Air, Cambridge, or American Air Filter.

- 2.08 **MAKE-UP AIR UNIT (DIRECT FIRED)**
 - A. Provide a roof-mounted, natural gas, down discharge, direct fired make-up air unit, as shown on the plans. Housing shall be aluminumized steel with painted enamel, and down discharge plenum.
 - B. Blower shall be centrifugal type with forward curved DWDI wheel, dynamically balanced. The drive sheave shall be adjustable. Motor shall be 1800 RPM, open drip-proof type. Bearings shall be permanently lubricated.
 - C. The burner shall be a cast iron burner with stainless steel mixing plate, and shall use a self contained or motorized modulating gas valve with a turn down ratio of 25:1. Burner shall limit the products of combustion to a maximum of 5 ppm carbon monoxide, and 0.5 ppm nitrogen dioxide. Provide an observation in the burner cabinet. Profile plates shall control proper air velocity across the burner. Unit shall have spark ignition.
 - D. Unit will have a factory furnished curb.
 - E. Unit will have a free-standing evaporative cooling section with 12" thick "munters fill" media, pump, float, fill/drain kit, and mesh intake screen. Intake section shall have a birdscreen and extended surface 2" filter. Unit intake will be a factory provided intake cowling.
 - F. Provide a remote control module, recessed mounted. The module will contain "burner on" and "blower on" indicating lamps. It will also contain a "heat-vent-cool" mode switch. The leaving air temperature control dial shall be mounted on the control module. The room override thermostat shall be mounted as shown on the drawings.
 - G. Provide a fill and drain kit, complete with all valves, sensors and controls.
 - H. Make-up air unit shall be ADF series, manufactured by Reznor or equivalent by Modine, Greenheck, or Captive Air.

- 2.09 **HVAC UNITS**
 - A. Furnish and install gas heating, DX cooling rooftop units as shown on the drawings. The cabinet shall be 20 gauge galvanized with 1" thick, 1-1/2 lb. density insulation, baked acrylic enamel finish. Evaporator coil will have a condensate drain pan with PVC trap. Unit will use 2" thick throw-away filters.
 - B. The cooling section shall consist of a hermetic scroll compressor(s) with five year warranty, condenser fan and motor, evaporator coil. Units with multiple compressors will have separate refrigeration circuits. The unit shall be furnished with an R-410 operating charge, thermal expansion valve, Hi-Low pressure control, accumulator dryer and all necessary relays and starters. Provide a float in the condensate pan, interlocked with the blower, where required by the local jurisdiction.
 - C. The heating section shall be furnished with an aluminumized steel gas furnace, condensate drain, and 20 gauge weatherproof insulated cabinet, and limit controls. Furnace shall have a minimum efficiency of 80%, and shall be configured for use at altitudes above 5,000'.
 - D. The blower shall be a belt driven, forward curved, centrifugal fan, with oversize motor and drive kit. Blower controls shall be through a time delay blower relay. Single stage heating and cooling shall be available by means of the necessary controls, valves, and relays.
 - E. Provide economizer package as shown and specified on the drawings. Economizer shall have barometric relief
 - F. Provide a factory furnished hail guard.
 - G. Provide a 14" high, galvanized steel factory roof curb; mount unit perfectly level. Provide an automatic setback thermostat with fan on/auto switch as specified in Section 23 09 00.
 - H. The roof opening beneath the unit will be closed up and sealed tight; caulk or silicone duct penetrations.

- I. Unit shall be manufactured by Lennox, Trane, or York. Alternate manufacturer's will be accepted if heating and cooling efficiencies meet or exceed that of the specified product.

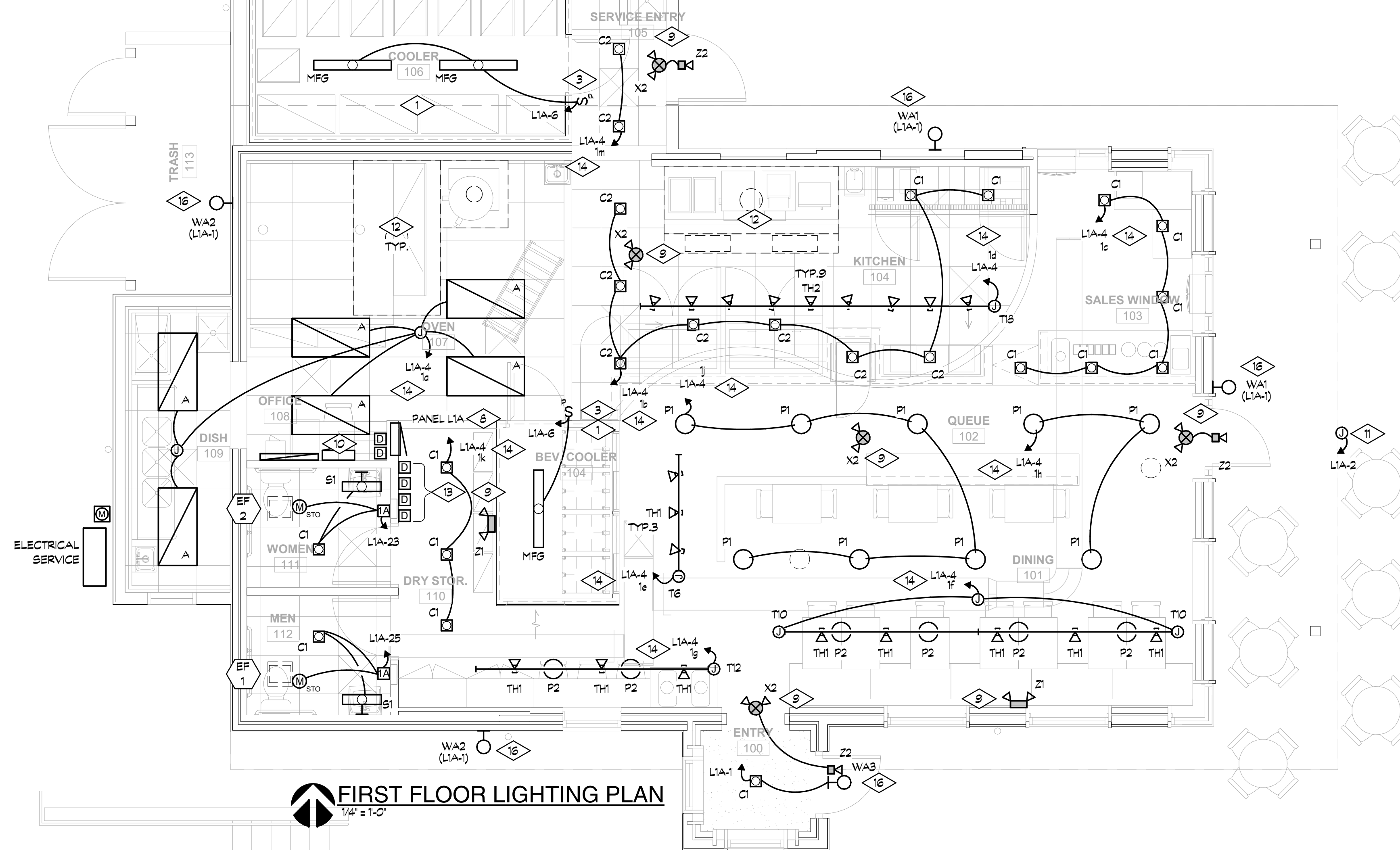
- 3.01 **DUCTWORK**
 - A. Provide duct system, connections, dampers, duct turns, housing, hinged sheet metal doors, and necessary removable access doors for the complete supply, return, and exhaust systems. Provide access doors in ductwork wherever required for observation and maintenance of dampers.
 - B. Duct workmanship. Ductwork shall be constructed and erected in a workmanlike manner. Ducts shall be straight and smooth on the inside with neatly finished joints, air-tight, and free from vibration. The internal ends of slip joints shall be made in the direction of the air flow. The ducts shall be securely attached to the building construction in an approved manner. Changes in dimensions and shape of the ducts shall be gradual. Duct sizes fall within the limiting dimensions indicated on the drawings unless otherwise approved.
 - C. Duct turns. 90s elbows up to 18" wide and 45o elbows shall consist of an inside radius of not less than half the width of the duct, or be furnished with air foil type duct vanes with 2-1/4" blade spacing. Shop fabricated duct vanes shall conform to details of the Sheet Metal and Air Conditioning Contractors National Association manual.
 - D. All dimensions shown on drawing are inside dimensions. Contractor shall make allowances for internal lining where called for on drawings or elsewhere in this specification.
 - E. All junctions, bends, turns, or elbows in all ducts shall have a large radius (centerline radius equal to 1-1/2 times duct width) in the throat in order to minimize the frictional resistance. No short radius turn or junction will be allowed unless turning blades of approved design are provided. Single vane-turning vanes shall be provided for all square turns.
 - F. Galvanized or aluminum angle iron strips shall be installed at points where ducts penetrate walls to close off the space between the wall opening and the duct.
 - G. All fittings shall be tack welded on 3" centers and sealed with neoprene sealer to ensure that they do not leak more than 1% when transverse joints are sealed. Areas where galvanize has been burned off shall be painted. Branch takeoffs of the duct, or be furnished with 45 degree "wye" type where possible. Conical takeoffs allowed where "wye" won't fit. Paint the inside of ducts flat black, where visible through grilles, registers or diffusers.
 - H. Fittings for round or oval spiral wound ductwork shall be installed per the manufacturer's instructions.

- 3.02 **ROOFTOP UNITS(HVAC, MUA, COND, ETC)**
 - A. Mount rooftop units on 14" H curbs or as noted. Units will be mounted level. Where unit does not completely cover curb, provide galvanized metal cap for weatherproof seal.
 - B. For units with compressors (including HVAC units, condensing units, kitchen condensing units, etc) install at least two layers of 1/2" gypboard layered with R13 batt insulation for sound attenuation within the roofcurb, beneath the compressor section. Where drawings have been provided for concrete pads, this is not required.
 - C. For units with condensate drains, provide full size PVC traps. Route discharge so condensate freely drains away from unit.
 - D. For units with water and/or drain connections, route up within unit or curb where possible.
 - E. The roof opening beneath the unit will be closed up and sealed tight; caulk or silicone duct penetrations.
 - F. Provide flat working surface adjacent to unit, as required by code, including handrails, access doors, etc.
 - G. Label all units per the plans, or as directed by the Owner, using spray paint and 3" high stencils, or as directed by the building owner.

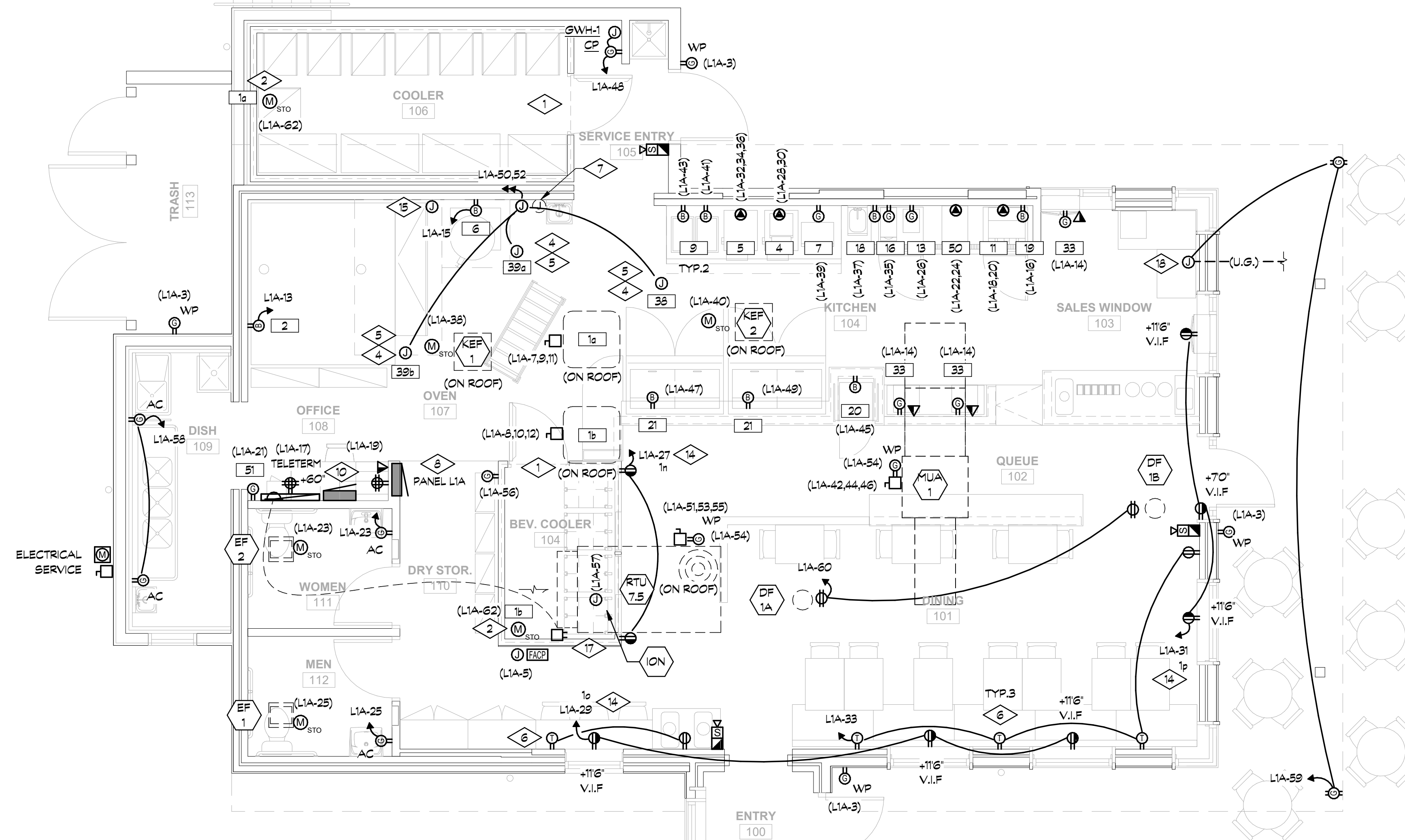
- 3.03 **AIR FILTERS**
 - A. Provide three complete sets of pleated, 30% efficient filters: construction phase, replacement just prior to balancing, and replacement set to the Owner.
 - B. Air handlers are not intended to be used during construction for heating or cooling. The construction set is intended to protect the equipment during initial startup and preliminary testing.
 - C. Filters shall be installed in factory-assembled filter banks. Enclosure shall be provided with access doors, gaskets to provide air-tight seal, and duct or equipment connections.
 - D. Filters shall be manufactured by Farr or American Air Filter.

- 3.04 **CONDENSATE DRAIN**
 - A. Provide condensate drain & overflow piping or provide condensate drain piping & overflow float in condensate pan, interlocked with the blower. Size condensate piping as noted on plans, or to match equipment drain outlet size, whichever is larger.

- 3.05 **REUSE OF EXISTING EQUIPMENT**
 - A. Existing HVAC rooftop equipment which is being reused as shown on the drawings must be inspected, tested, and cleaned. The inspecting and testing shall consist of:
 1. Clean inside of units, including all condensing and evaporator coils, and dirt and dust accumulated in return area and on dampers. This includes removing debris throughout.
 2. Test economizer for proper operation including complete range of motion.
 3. Check blower(s) mounting, belts, and bearings. Lubricate bearings and replace belts as required.
 4. Check refrigeration levels and replace as necessary. Repair any leaks to refrigeration system.
 5. Check furnace for cracks and rust. Check operating, high limit protection, fan interlock.
 6. Check wiring, relays



FIRST FLOOR LIGHTING PLAN
1/4" = 1'-0"



FIRST FLOOR POWER PLAN
1/4" = 1'-0"

GENERAL NOTES

- A. ELECTRICAL CONDUITS, WATER, SEWER AND GAS LINES MUST FIT WITHIN KITCHEN WALLS. CONFLICTS WITH OTHER TRADES MUST BE COORDINATED OR WORK WILL BE REDONE.
- B. GFCI PROTECTION:
120V RECEPTACLES MARKED 'G' = GFCI RECEPTACLE
120V RECEPTACLES MARKED 'B' = GFCI BREAKER

NOTE: WHERE POSSIBLE AND WHERE PERMITTED BY CODE THE ELECTRICIAN SHALL PROVIDE DOWNSTREAM GFCI PROTECTION OF DEVICES WITH A SINGLE GFCI RECEPTACLE. (DEDICATED NEUTRAL SHALL BE PROVIDED FOR GFCI BREAKERS)
- C. COORDINATE ALL DEVICE AND FIXTURE LOCATIONS WITH FURNITURE, EQUIPMENT, MILLWORK AND MECHANICAL SYSTEM (DUCTWORK) LAYOUT PRIOR TO ROUGH-IN.
- D. ALL EXTERIOR ELECTRICAL COMPONENTS SHALL MEET ALL NEC INSTALLATION AND LABELING REQUIREMENTS FOR WET LOCATIONS.
- E. ALL RECEPTACLES TO BE LABELED WITH PANEL CIRCUIT ID.
- F. DEVICE MOUNTING LOCATIONS AT COUNTERS: IN 'FRONT OF HOUSE AREAS' MOUNT DEVICES BELOW COUNTERS WITH HOLES AND GROMMETS UNLESS NOTED OTHERWISE. IN 'BACK OF HOUSE AREAS' MOUNT DEVICES ABOVE COUNTERS.
- G. THE E.C. SHALL USE THE KITCHEN EQUIPMENT / FOOD SERVICE PLANS TO DIMENSION ROUGH-IN LOCATIONS. THESE PLANS ARE SCHEMATIC AND MAY SHOW DEVICES OFFSET FOR GRAPHIC PURPOSES. DO NOT TAKE DIMENSIONS FROM THESE PLANS TO DETERMINE ROUGH-IN LOCATIONS.
- H. LIGHTING SYSTEM FUNCTIONALITY TESTING/COMMISSIONING SHALL BE PERFORMED IN ACCORDANCE WITH IECG 407.3, ADDITIONAL LOCAL JURISDICTIONAL REQUIREMENTS TO BE CONFIRMED WITH BUILDING OFFICIAL PRIOR TO COMPLETION OF PROJECT.

DETAIL NOTES THIS SHEET

- 1. PROVIDE EXPANSION JOINTS AND INTERIOR AND EXTERIOR MOISTURE SEALS FOR ALL CONDUITS ENTERING WALK-IN COOLERS AND FREEZER PER NEC 300.7 AND MANUFACTURER'S RECOMMENDATIONS.
- 2. PROVIDE (5-1/2")/2" (OR INTER-WIRING AS REQUIRED) FROM EVAP COIL TO REMOTE CONDENSER. VERIFY AND COORDINATE EXACT REQUIREMENTS AND CONNECTION DETAILS W/ REFRIGERATION EQUIPMENT MFG'S SPECIFICATIONS.
- 3. EXTEND CIRCUIT TO WALK-IN COOLER / FREEZER LIGHTS VIA TOGGLE SWITCH WITH PILOT LIGHT MOUNTED ON LATCH SIDE OF DOOR. SEE THE FIRST FLOOR LIGHTING PLAN ON SHEET EXX FOR FIXTURE TYPE AND LOCATION.
- 4. PRE-WIRED EXHAUST HOOD CABINET; PROVIDE CIRCUITS, CONNECTION AND INTER-WIRING FOR HOOD CONTROLS, HOOD LIGHTS, ETC. THE E.C. IS TO COORDINATE THE EXACT LOCATION AND CONNECTION REQUIREMENTS W/ HOOD MANUFACTURER AND KITCHEN DESIGNER INSTALLATION SPECIFICATIONS AND DRAWINGS. ALL MOTOR STARTERS TO BE PROVIDED BY EC.
- 5. EXTEND CIRCUITS FROM PRE-WIRED HOOD TERMINAL BOX UP TO EF AND MUA AS SHOWN OR AS REQUIRED. FIELD VERIFY AND COORDINATE ALL FAN, FIRE SYSTEM AND SHUTDOWN CONTROL CONNECTION REQUIREMENTS.
- 6. COMBINATION USB CHARGER WITH TAMPER RESISTANT 125V, 20 AMP DUPLEX RECEPTACLE MOUNTED ABOVE THE TABLE TOP, MOUNTED HORIZONTALLY, CENTERED ON THE LOCATION, ROUGH-IN HEIGHT, MOUNTING METHOD AND CONCEALED CONDUIT RUNS WITH MILLWORK (COOPER TR7746 OR EQUAL, COORDINATE COLOR W/ ARCHITECT).
- 7. MAKE UP AIR CONTROL STATION. COORDINATE EXACT LOCATION WITH M.C.
- 8. MAINTAIN MINIMUM WORKING SPACE IN FRONT AND ABOVE ALL ELECTRICAL PANELS PER NEC 110.26 AS REQUIRED.
- 9. EXTEND POWER FOR EMERGENCY LIGHT TO UN-SWITCHED LIGHTING CIRCUIT SERVING THIS AREA.
- 10. PROPOSED LOCATION FOR TIMECLOCK, RE: ONE LINE FOR ADDITIONAL INFORMATION.
- 11. EXTERIOR SIGNAGE; USE J-BOX INSTALLED UNDER SHELL AND CONNECT TO CIRCUIT SHOWN; FIELD VERIFY AND COORDINATE LOCATION OF EXTERIOR SIGNAGE W/ SHELL. UPON FINAL CONNECTION PROVIDE DISCONNECTING MEANS PER NEC 800.6 COORDINATE THE CONNECTION REQUIREMENTS WITH SIGNAGE VENDOR / MANUFACTURER PRIOR TO ROUGH-IN. HOMERUN VIA LIGHTING CONTRACTOR. SEE ONE LINE DIAGRAM FOR CONTROL DETAIL.
- 12. KITCHEN EQUIPMENT VENDOR TO PROVIDE AND INSTALL 42W E26 CFL LAMPS, 2700K FOR HOOD LIGHTING.
- 13. MANUAL DIMMING STATION, FIELD VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION, RE: DIMMING SCHEDULE FOR ADDITIONAL INFORMATION.
- 14. HOME RUN VIA DIMMING STATION; RE: LIGHTING CONTROL DETAIL.
- 15. PROVIDE MECHANICAL TIMECLOCK (INTERMATIC T10) FOR EARLY AM OVEN AND KETTLE WARM UP. WIRE APPLIANCES THRU TIMECLOCK, COORDINATE EXACT LOCATION AND TIME CLOCK MODEL WITH OWNER PRIOR TO ORDERING.
- 16. EXTERIOR LIGHTING CONTROLLED VIA TIMECLOCK, RE: MEP SITE PHOTOMETRIC PLAN AND ELECTRICAL ONE LINE DIAGRAM
- 17. COORDINATE WIRING OF DUCT DETECTOR AND REMOTE INDICATING LIGHT WITH FIRE ALARM AND MECHANICAL CONTRACTOR.
- 18. PROVIDE JBOX WITH UNDERGROUND CONDUIT TO MONUMENT SIGN, RE: SITE PLAN FOR ADDITIONAL INFORMATION.



PROJECT No:	19158
ISSUE DATE:	11.25.2020
REVISIONS:	
SHEET TITLE:	FIRST FLOOR ELECTRICAL PLAN

LEGEND	
[Symbol]	MAIN DISTRIBUTION CENTER
[Symbol]	PANELBOARD
[Symbol]	ELECTRIC SERVICE METER
[Symbol]	CURRENT TRANSFORMER
[Symbol]	TRANSFORMER
[Symbol]	CONCEALED CIRCUIT
[Symbol]	UNDERFLOOR / UNDERGROUND CIRCUIT
[Symbol]	EXPOSED CIRCUIT
[Symbol]	WIREMOLD (SURFACE WIREWAY)
[Symbol]	PLUGMOLD
[Symbol]	HOMERUN TO PANELBOARD (ONE ARROW / CKT, PNL & CKT #S SHOWN)
[Symbol]	CIRCUIT NUMBER(S) FOR SPECIFIED PANEL
[Symbol]	CONDUIT TURNS UP
[Symbol]	CONDUIT TURNS DOWN
[Symbol]	JUNCTION BOX
[Symbol]	PORCELAIN LAMP HOLDER (FC PULL CHAIN)
[Symbol]	LIGHT FIXTURE: SURFACE MOUNTED
[Symbol]	RECESSED LIGHT FIXTURE
[Symbol]	WALL MOUNTED LIGHT FIXTURE
[Symbol]	EXIT LIGHT; DIRECTIONAL ARROW
[Symbol]	BATTERY PACK
[Symbol]	SURFACE FLUORESCENT FIXTURE
[Symbol]	RECESSED FLUORESCENT FIXTURE
[Symbol]	SINGLE OUTLET: C-CLOCK (-70°)
[Symbol]	DUPLEX RECEPTACLE
[Symbol]	IS: ISOLATED GROUND
[Symbol]	S: SAFETY
[Symbol]	DUPLEX RECEPTACLE - GFCI
[Symbol]	SPLIT WIRE DUPLEX
[Symbol]	QUADRUPLEX (DOUBLE DUPLEX)
[Symbol]	COMB. SWITCH / RECEPTACLE
[Symbol]	FLOOR MOUNTED RECEPTACLE
[Symbol]	SPECIAL PURPOSE (AS NOTED)
[Symbol]	TELEVISION OUTLET
[Symbol]	MOTOR OUTLET
[Symbol]	90° - switched thermal overload
[Symbol]	TELEPHONE TERMINAL
[Symbol]	TELEPHONE OUTLET
[Symbol]	FLOOR MTD. TELEPHONE OUTLET
[Symbol]	COMPUTER OUTLET
[Symbol]	COMB. TELE/COMPUTER OUTLET
[Symbol]	TOGGLE SWITCH
[Symbol]	2-switching pilot light
[Symbol]	2-2 pole 4-wayed
[Symbol]	3-3 way to-thermal overload
[Symbol]	4-4 way timer
[Symbol]	MOTION DETECTOR
[Symbol]	DIMMER
[Symbol]	THERMOSTAT
[Symbol]	TIME SWITCH
[Symbol]	PHOTOCELL
[Symbol]	PUSH-BUTTON STATION
[Symbol]	SAFETY SWITCH
[Symbol]	MOTOR STARTER / LIGHTING CONTACTOR
[Symbol]	COMBINATION MOTOR STARTER
[Symbol]	RELAY
[Symbol]	FIRE ALARM CONTROL PANEL
[Symbol]	ANNUNCIATOR
[Symbol]	PULL STATION
[Symbol]	HORN
[Symbol]	HORN / LIGHT COMBINATION
[Symbol]	HORN / STROBE
[Symbol]	STROBE
[Symbol]	BELL
[Symbol]	OS & Y VALVE
[Symbol]	FLOW SWITCH
[Symbol]	ROOM DETECTOR (SMOKE)
[Symbol]	ROOM DETECTOR (THERMAL)
[Symbol]	DUCT DETECTOR
[Symbol]	REMOTE INDICATING LIGHT / TEST SWITCH
[Symbol]	DOOR HOLDER
[Symbol]	CHIME
[Symbol]	FUSED SWITCH
[Symbol]	CIRCUIT BREAKER
[Symbol]	GROUND CONNECTOR
[Symbol]	MECHANICAL EQUIPMENT
[Symbol]	DETAIL NOTE
[Symbol]	KITCHEN / MEDICAL EQUIPMENT
[Symbol]	(E) EXISTING TO REMAIN
[Symbol]	(ER) EXISTING TO BE REPLACED
[Symbol]	(ED) EXISTING TO BE DEMOLISHED

COMcheck Software Version 4.1.4.1 Interior Lighting Compliance Certificate

Project Information
 Energy Code: 2018 IECC
 Project Title: Moe's Broadway Bagels
 Project Type: New Construction

Construction Site: 225 Main Street, Longmont, CO 80501
 Owner/Agent: [Blank]
 Designer/Contractor: Ethan Miley, Boulder Engineering, 1717 15th Street, Boulder, CO 80302, 303.444.6038, staff@boulderengineering.com

High efficiency HVAC. Systems that do not meet the performance requirement will be identified in the mechanical requirements checklist report.

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts (B X C)
1-Dining (Common Space Types:Dining Area - Family Restaurant)	525	0.71	373
2-Dry Storage (Common Space Types:Corridor/Transition <8 ft wide)	73	0.66	48
3-Restrooms (Common Space Types:Restrooms)	100	0.85	85
4-Dish (Common Space Types:Food Preparation)	100	1.06	106
5-Kitchen (Common Space Types:Food Preparation)	620	1.06	657
6-Service Entry (Common Space Types:Corridor/Transition <8 ft wide)	43	0.66	28
7-Cooler (Common Space Types:Food Preparation)	165	1.06	175
Total Allowed Watts =			1472

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps / Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Dining (Common Space Types:Dining Area - Family Restaurant)				
T6: T6: Track Lighting: Other:	1	1	120	120
T10: T10: Track Lighting: Other:	1	2	120	240
T12: T12: Track Lighting: Other:	1	1	120	120
P1: P1: Decorative Pendant: Other:	1	9	10	90
2-Dry Storage (Common Space Types:Corridor/Transition <8 ft wide)				
C1: C1: Downlight: Other:	1	3	13	39
3-Restrooms (Common Space Types:Restrooms)				
S1: S1: Vanity: Other:	1	2	8	16
C1: C1: Downlight: Other:	1	2	13	26
4-Dish (Common Space Types:Food Preparation)				
A1: A1: 2X4 Troffer: Other:	1	2	29	58
5-Kitchen (Common Space Types:Food Preparation)				

Project Title: Moe's Broadway Bagels
 Data filename: I:\1919158 Moes Longmont\ENERGY\19158 COMcheck LTG.cck
 Report date: 11/25/20
 Page 1 of 7

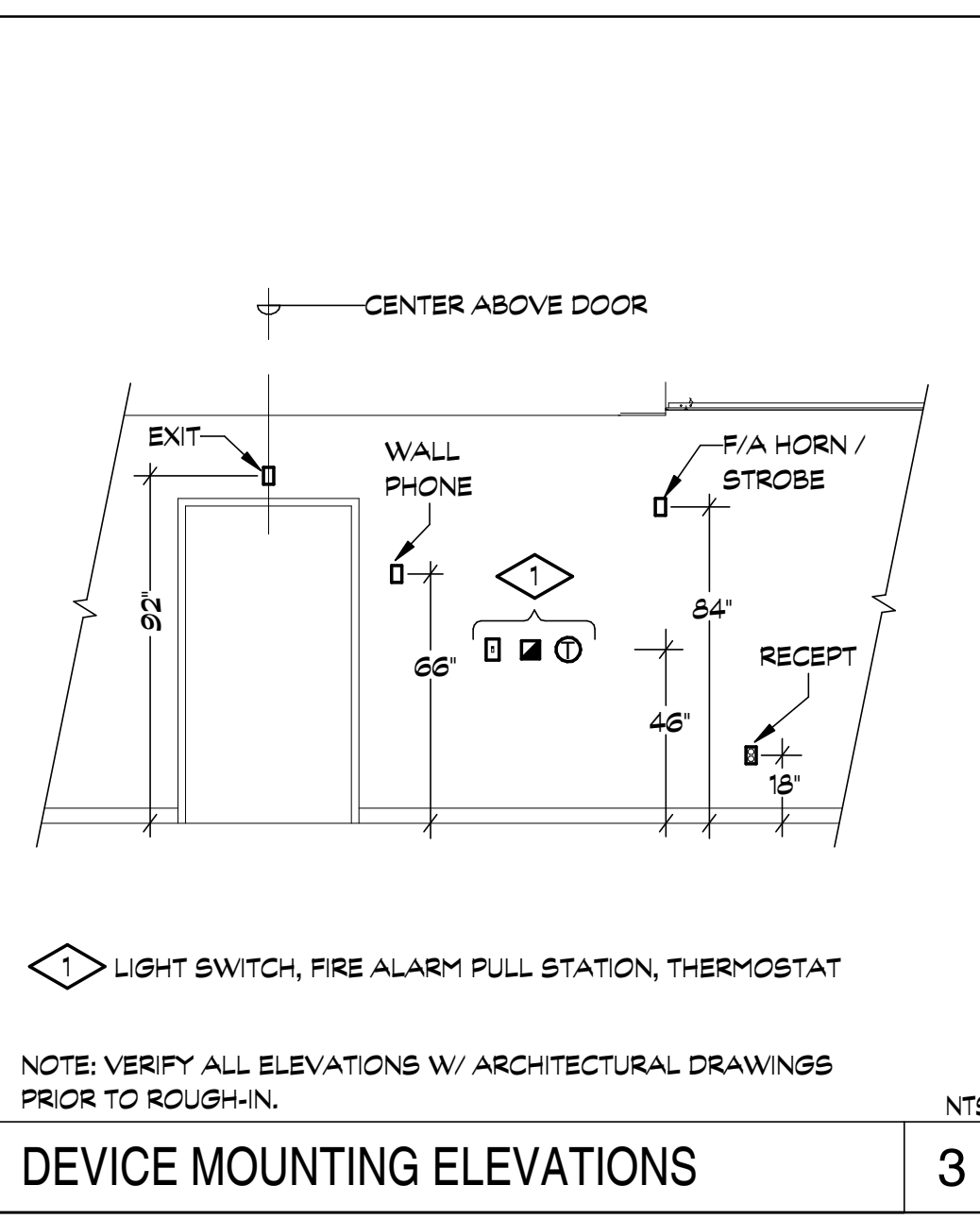
A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps / Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
A1: A1: 2X4 Troffer: Other:	1	4	29	116
C2: C2: Downlight: Other:	1	7	22	158
T18: T18: Track Lighting: Other:	1	1	120	120
C1: C1: Downlight: Other:	1	8	13	104
6-Service Entry (Common Space Types:Corridor/Transition <8 ft wide)				
C2: C2: Downlight: Other:	1	2	22	45
7-Cooler (Common Space Types:Food Preparation)				
MFG Provided Cooler Lighting: MFG: Cooler Lighting: Other:	1	3	50	150
Total Proposed Watts =				1402

Interior Lighting PASSES: Design 5% better than code

Interior Lighting Compliance Statement
 Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.4.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Ethan Miley, PE
 Name - Title: Ethan Miley, PE
 Signature: [Signature]
 Date: 11.25.2020

Project Title: Moe's Broadway Bagels
 Data filename: I:\1919158 Moes Longmont\ENERGY\19158 COMcheck LTG.cck
 Report date: 11/25/20
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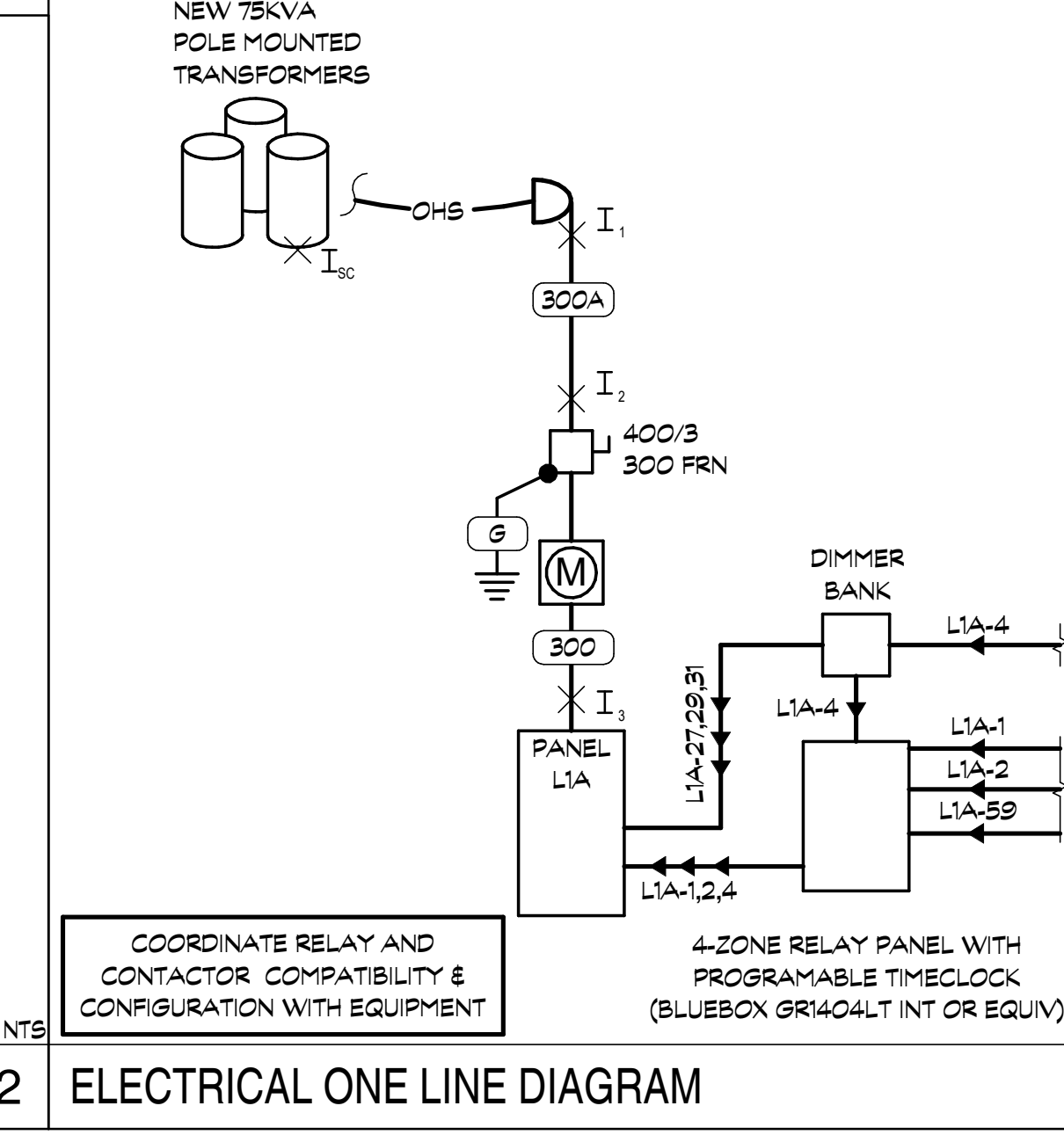
DEVICE MOUNTING ELEVATIONS 3

LIGHTING CONTROL NOTES

- LIGHTING DESIGN, LAYOUT AND FIXTURE PLACEMENTS IS FOR SCHEMATIC PURPOSES ONLY; E.G. SHALL FIELD VERIFY AND COORDINATE THE EXACT LOCATION, LAYOUT, CONFIGURATION, CONNECTION REQUIREMENTS AND LABELING OF ALL FIXTURES AND CONTROLS PRIOR TO ROUGH-IN.
- LIGHTING CONTROL SYSTEM TO BE SLIDE DIMMERS (EC TO COORDINATE WITH ARCHITECT WALL SPACE REQUIREMENTS).
 - DIMMER AND SWITCHES SHALL BE LUTRON SLIDE TYPE (NOVA SERIES). DIMMERS SHALL ALL BE 0-10 VOLT TYPE OR RESISTIVE (WATTAGE AS SHOWN). DO NOT REMOVE FINS, USE AT FULL CAPACITY.
 - COORDINATE LOW VOLTAGE DIMMER TYPE AND CAPACITY WITH LIGHTING MANUFACTURER (WHERE APPLICABLE).
 - EACH DIMMER SHALL HAVE ITS OWN BOX, KEEP MINIMUM SEPARATIONS OF 1/2" HORIZONTAL & 4 1/2" VERTICAL TO PREVENT OVERHEATING.
 - WIRING DIAGRAMS ARE FOR LAYOUT AND CONTROL SCHEMATIC REFERENCE ONLY; INSTALL ALL CONTROLS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS. FIELD VERIFY CIRCUIT NUMBERS, SWITCH LEGS AND FIXTURE AND DEVICE LOCATIONS PRIOR TO ROUGH-IN.
 - EACH DIMMER SHALL BE PROVIDED WITH AN ENGRAVED NAMEPLATE. THE DIMMER NAMES SHALL BE DETERMINED BY THE RESTAURANT MANAGER, APPROX ONE WEEK AFTER TURNOVER.
- THE E.G. SHALL VERIFY THE COMPATIBILITY OF DIMMING DEVICES AND FIXTURES WITH THE FIXTURE MANUFACTURER.
- INSTALLATION AND OPERATION OF DIMMING DEVICES AND FIXTURES SHALL CARRY A FIVE YEAR WARRANTY.
- COORDINATE NEON SIGNAGE AND LIGHTING SWITCHING WITH OWNER BEFORE INSTALLATION. SWITCHES AND WIRING PROVIDED BY EC.
- FINAL DIMMER CONFIGURATION TO BE COORDINATED WITH SPACE AVAILABLE.
- RESTROOM SWITCH '1A' SHALL BE 2-POLE OCCUPANCY/FAN CONTROL (ACUTY W5X POT 2P FAN OR EQUIV.)

DIMMER SCHEDULE

SW LEG	DIMMER	CIRCUIT
1a	0-10	L1A-4
1b	0-10	L1A-4
1c	300	L1A-4
1d	300	L1A-4
1e	300	L1A-4
1f	300	L1A-4
1g	300	L1A-4
1h	300	L1A-4
1j	300	L1A-4
1k	300	L1A-4
1m	0-10	L1A-4
1n	SW	L1A-27
1o	SW	L1A-29
1p	SW	L1A-31



ELECTRICAL ONE LINE DIAGRAM 2

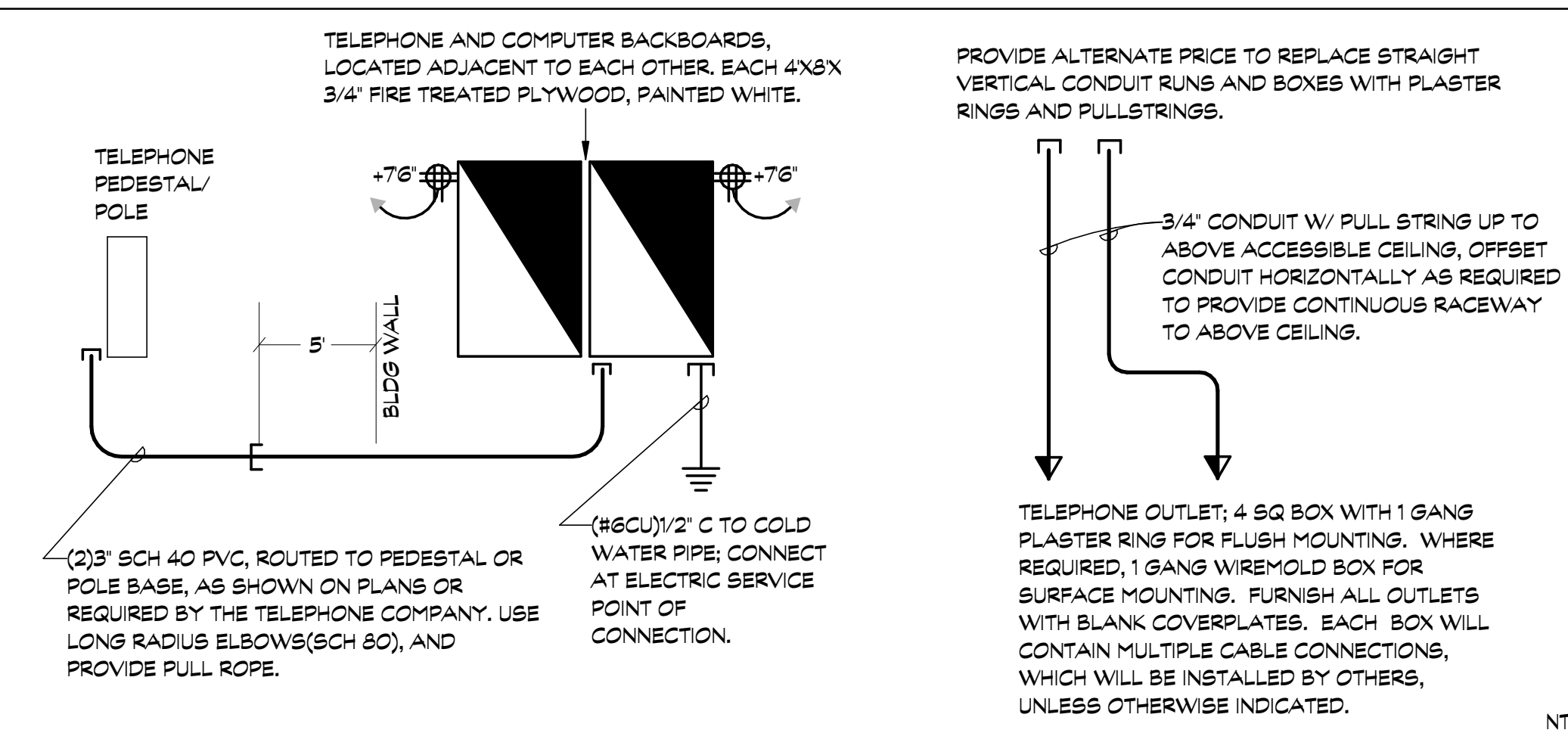
BUILDING LOAD SUMMARY

VOLTS: 120/208 Vwv PHASE: 3 WIRES: 4
 NOTE: ALL EXISTING METER CALCULATED AT 125% PER NEC 220.97

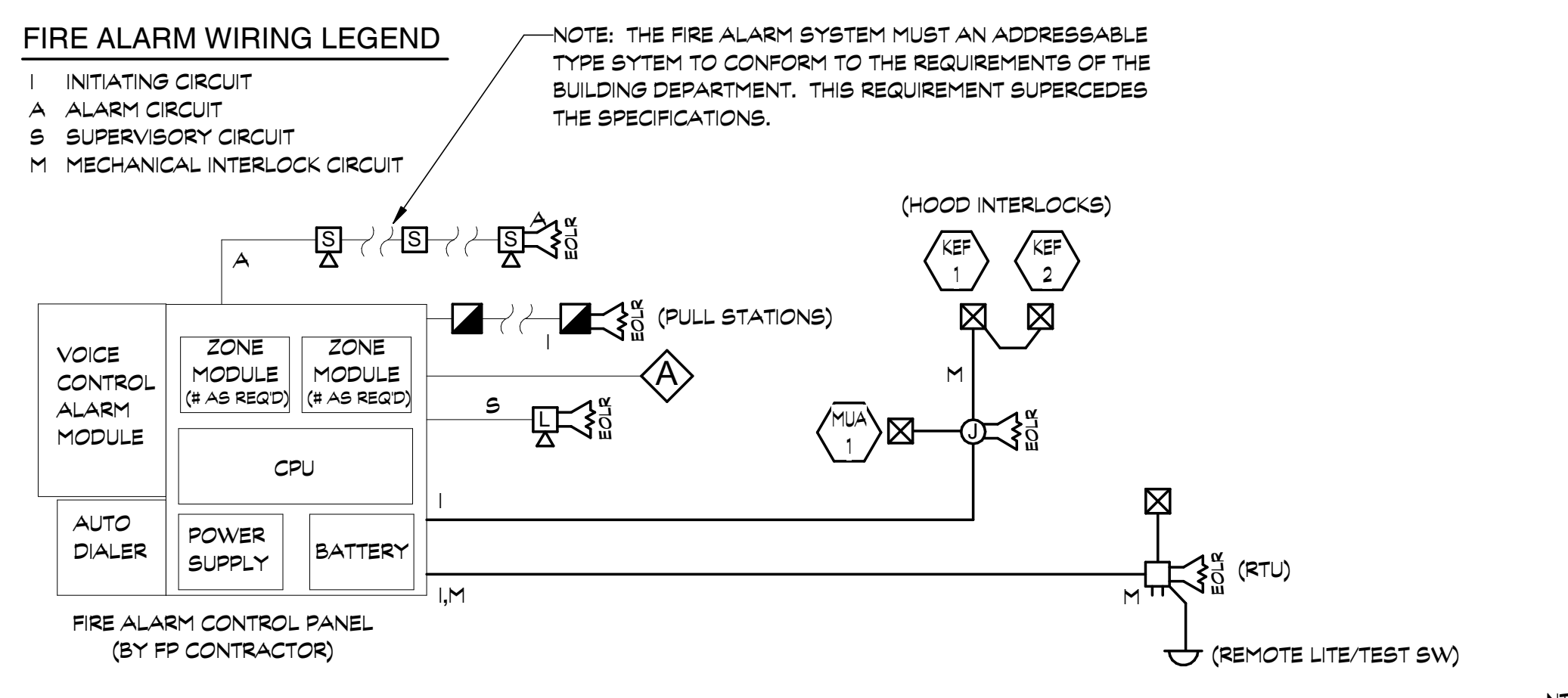
CKT CIRCUIT DESCRIPTION	Load	AMPS
1 PANEL L1A	70.8 kVA	196.5 A
2 N/A	0.0 kVA	--
3 N/A	0.0 kVA	--
4 N/A	0.0 kVA	--
TOTAL CONNECTED:	70.8 kVA	

LOAD TYPE	CONN. LOAD	DEMAND FACT.	EST. DEMAND
LIGHTING - L	3.72 kVA	125%	4.65 kVA
RECEPTACLE - R	6.5 kVA	100%	6.5 kVA
MOTOR - M	17.9 kVA	117%	20.93 kVA
KITCHEN - K	39.27 kVA	65%	25.53 kVA
OTHER - O	3.41 kVA	100%	3.41 kVA
EXISTING - E	0 kVA	0%	0 kVA
NEC-220.84 - NC	0 kVA	0%	0 kVA
TOTAL DEMAND:			61.01 kVA/168 A

3



TELEPHONE ONE LINE 4



FIRE ALARM ONE LINE DIAGRAM 3

SHORT CIRCUIT CALCULATION

LOCATION	SECONDARY VOLTAGE	Ø	kVA	%Z*	sec AVAIL.	"M"	sec FAULT
TRANS	208	3	75	1.4	208	71.4	14900
WEATHERHOOD	1 208	3 AL	NON	500	1 50	21390	14900 0.280 0.775 11550
MAIN DISC.	1 208	3 AL	NON	500	1 10	21390	11550 0.045 0.957 11053
L1A	1 3 208	3 AL	MIET	500	1 25	18755	11053 0.123 0.691 9545

NOTES: SWITCHBOARDS, PANELBOARDS AND LOAD CENTERS ARE TO BE FULLY RATED AS SHOWN. PROVIDE A DEDUCT PRICE TO USE SERIES RATED EQUIPMENT AND PROVIDE THE TESTED OCPD COMBINATION USED TO OBTAIN THE SERIES RATING. ALL EQUIPMENT TO HAVE PERMANENTLY ATTACHED LABELING PROVIDED BY THE EQUIPMENT MANUFACTURER AND INSTALLER PER NEC 110.22 AND 240.86 (B). PROVIDE MARKING ON ALL SERVICE EQUIPMENT WITH MAXIMUM CALCULATED FAULT CURRENT PER NEC 110.24 *AVAILABLE FAULT CURRENT AT TRANSFORMER CALCULATED BASED ON %Z FROM UTILITY COMPANY DESIGN STANDARDS. IF TRANSFORMER SIZE IS OTHER THAN SHOWN, NOTIFY ENGINEER.

WIRING LEGEND

300A (4-500MCM AL)4/C
 300 (4-500MCM AL, #4 CU)4/C
 (#2 CU)3/4"C TO BLDG STEEL, COLD WATER PIPE, CONCRETE ENCASED
 G ELECTRODE, 2(#6CU)1/2"C TO DRIVEN; GROUND RODS NOT LESS THAN 60 APART



PANEL L1A																
SUPPLY FROM: SERVICE DISC.				VOLTS: 120/208 Wye				A.I.C. RATING: 10,000								
MOUNTING: RECESSED				PHASES: 3				MAINS TYPE: MLO								
ENCLOSURE: NEMA 1				WIRES: 4				MAINS RATINGS: 300 A								
CIRCUIT DESCRIPTION	LT	TRIP	P	BT	A	B	C	BT	P	TRIP	LT	CIRCUIT DESCRIPTION				
EXTERIOR LIGHTING	L	20	1	S	213	10		2	S	1	20	L	EXTERIOR SIGNAGE			
EXTERIOR RECEPPTS	R	20	1	S		720	1334	4	S	1	20	L	INTERIOR LIGHTING			
FIRE ALARM PANEL	R	20	1	L	5		1200	6	S	1	20	L	WALK-IN COOLER LIGHTS			
1/2 - WALK-IN COOLER	K	20	3	S	7	554	554	5	S	3	20	K	1/2 - WALK-IN BEV COOLER			
#2 - BAGEL OVEN	K	20	1	G	13	1200	720	14	S	1	20	K	#33 - POS			
#6 - GAS KETTLE	K	20	1	G	15		1200	636	6	S	1	K	#19 - U.C. FREEZER			
TELETERM	R	20	1	S	17			800	2683	19	G	2	35	K	#11 - COFFEE BREWER	
OFFICE QUAD	R	20	1	S	19	360	2683	20	G	2	35	K	#11 - COFFEE BREWER			
#51 - STEREO RACK	K	20	1	S	21		1920	2392	22	G	2	30	K	#50 - ESPRESSO MACHINE		
MENS RESTROOM	R...	20	1	S	23			230	2392	24	G	2	30	K	#13 - COFFEE GRINDER	
WOMENS RESTROOM	R...	20	1	S	25	230	980	26	S	1	20	K	#13 - COFFEE GRINDER			
COOLER SIGNAGE	R	20	1	S	27			29	G	2	20	K	#4 - CONVEYOR TOASTER			
WINDOW SIGNAGE	R	20	1	S	29		360	1654	30	G	2	20	K	#4 - CONVEYOR TOASTER		
WINDOW SIGNAGE	R	20	1	S	31	540	2282	32	G	3	25	K	#5 - THERMO FINISHER			
FRONT OF HOUSE RECEPPTS	R	20	1	S	33		720	2282	34	G	3	25	K	#5 - THERMO FINISHER		
#16 - ICE TEA BREWER	K	20	1	G	35			1656	2282	36	S	1	20	M	KEF 1 - EXHAUST FAN	
#18 - U.C. FRIDGE	K	20	1	G	37	396	1656	40	S	1	20	M	KEF 2 - EXHAUST FAN			
#7 - MICROWAVE	K	20	1	S	39		1800	1656	40	S	1	20	M	KEF 2 - EXHAUST FAN		
#9 - STEAM TABLE	K	20	1	G	41			1000	797	42	S	3	20	M	MUA 1 - MAKE UP AIR UNIT	
#9 - STEAM TABLE	K	20	1	G	43	1000	797	44	S	3	20	M	MUA 1 - MAKE UP AIR UNIT			
#20 - U.C. DISPLAY FRIDGE	K	20	1	G	45		276	797	46	S	1	20	O	WATER HEATER & CIRC PUMP		
#21 - SANDWICH TABLE	K	20	1	G	47			1440	660	48	S	1	20	O	HOOD CONTROL PANEL	
#21 - SANDWICH TABLE	K	20	1	G	49	1440	2712	50	S	1	20	L	HOOD LIGHTS			
RTU 7	M	48	3	S	53			4035	360	54	S	1	20	R	ROOF RECEPPTS	
RTU IONIZER	O	20	1	S	57		10	360	56	S	1	20	O	CONDENSATE PUMP		
EXT. SOFFIT RECEPPTS	R...	20	1	S	59			540	36	60	S	1	20	M	DISH RECEPPTS	
SPACE	--	--	--	--	61	0	0			62	S	1	20	--	WALK-IN EVAP (IF REQ'D)	
SPACE	--	--	--	--	63					64	--	--	--	--	SPACE	
SPACE	--	--	--	--	65		0	0		66	S	1	20	--	SPACE	
SPACE	--	--	--	--	67	0	0			68	S	1	20	--	SPACE	
SPACE	--	--	--	--	69		0	0		70	S	1	20	--	SPACE	
SPACE	--	--	--	--	71			0	0	72	S	1	20	--	SPACE	
TOTAL LOAD:					22.39 kVA	25.06 kVA	23.35 kVA									
TOTAL AMP:					157 A	210 A	196 A									
LOAD TYPE														PANEL TOTALS		
LIGHTING - L	3.72 kVA	125%	4.65 kVA	SHUNT TRIP - ST												
RECEPTACLE - R	6.5 kVA	100%	6.5 kVA	GFCI - G												
MOTOR - M	17.9 kVA	117%	20.33 kVA	HANDLE BLOCK - H												
KITCHEN - K	39.27 kVA	65%	25.53 kVA	HANDLE TIE - T												
OTHER - O	3.41 kVA	100%	3.41 kVA	AFCI - A												
EXISTING - E	0 kVA	0%	0 kVA	STANDARD - S												
NEC-220.64				LOCKOUT - L												
					TOTAL CONN. LOAD: 70.8 kVA											
					TOTAL EST. DEMAND: 61.01 kVA											
					TOTAL CONN.: 197 A											
					TOTAL EST. DEMAND: 169 A											

KITCHEN EQUIPMENT						
KEY	DESCRIPTION	LOAD	VOLT	CIRCUIT	CONNECTION	REMARKS
1a	WALK-IN COOLER	1 HP	208/3	(3-#12,#12) 1/2"	30/3; 6 FRN	PROVIDE 20MCA CIRCUIT IF EVAP COIL IS NOT INTERWIRED THRU COMPRESSOR
1b	WALK-IN BEVERAGE COOLER	1 HP	208/3	(3-#12,#12) 1/2"	30/3; 6 FRN	PROVIDE 20MCA CIRCUIT IF EVAP COIL IS NOT INTERWIRED THRU COMPRESSOR
2	BAGEL OVEN	10 A	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
4	CONVEYOR TOASTER	15.9 A	208/1	(2-#12,#12) 1/2"	SPEC. PURPOSE	6P-20; VERIFY IN FIELD
5	THERMO FINISHER	19 A	208/3	(3-#10,#10) 1/2"	SPEC. PURPOSE	L15-30P; VERIFY IN FIELD
6	GAS KETTLE	10 A	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
7	MICROWAVE	15 A	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
9	STEAM TABLE	1000 W	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
11	COFFEE BREWER	25.8 A	208/1	(2-#8,#10) 3/4"	SPEC. PURPOSE	TERMINAL BLOCK; VERIFY CORD/PLUG CONFIGURATION
13	COFFEE GRINDER	8 A	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
16	ICE TEA BREWER	13.8 A	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
18	UNDERCOUNTER REFRIGERATOR	3.3 A	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
19	UNDERCOUNTER FREEZER	3.3 A	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
20	UNDERCOUNTER DISPLAY REFRIGERATOR	2.3 A	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
21	SANDWICH TABLE	12 A	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
33	POINT OF SALE (POS) / CASH DRAWER	240 W	120/1	(2-#12,#12) 1/2"	SPEC. PURPOSE	5-15R DUPLEX W/ISOLATED GROUND (2P3W, 15A, 125V, ORANGE NYLON, HUBBELL (85281)
35	TYPE 2 EXHAUST HOOD (COOKLINE)	RE: HOOD DWGS	120/1	(2-#12,#12) 1/2"	J-BOX	COORD. WIRING WITH HOOD CONTROL PANEL
39a	TYPE 2 EXHAUST HOOD (KETTLE)	RE: HOOD DWGS	120/1	(2-#12,#12) 1/2"	J-BOX	COORD. WIRING WITH HOOD CONTROL PANEL
39b	TYPE 2 EXHAUST HOOD (OVEN)	RE: HOOD DWGS	120/1	(2-#12,#12) 1/2"	J-BOX	COORD. WIRING WITH HOOD CONTROL PANEL
50	ESPRESSO MACHINE	23 A	208/1	(2-#10,#10) 1/2"	SPEC. PURPOSE	L6-30P; VERIFY CORD/PLUG CONFIGURATION
51	STEREO RACK	20 MCA	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION

NOTES: *TEMPERATURE RATING OF ALL DEVICES COULD NOT BE VERIFIED, THEREFORE WIRE IS SIZED BASED ON 60C PER NEC 10.14(C)(1)(a)
 ** LISTED EQUIPMENT FURNISHED WITH CORD AND PLUG; VERIFY CONFIGURATION
 *COORDINATE ALL ROUGH-IN HEIGHTS AND LOCATIONS WITH KITCHEN VENDOR AND/OR OWNER.

MECHANICAL EQUIPMENT						
KEY	DESCRIPTION	LOAD	VOLT	CIRCUIT	CONNECTION	REMARKS
EF 1 & 2	CEILING EXHAUST FAN	19 W	120/1	(2-#12,#12) 1/2"	THERMAL O.L.	COORD. LOCATION/WIRING WITH M.C.
KEF 1	ROOF EXHAUSTER	3/4 HP	120/1	(2-#12,#12) 1/2"	THERMAL O.L.	WIRE THRU HOOD CONTROL PANEL, RE: HOOD DRAWINGS
KEF 2	ROOF EXHAUSTER	3/4 HP	120/1	(2-#12,#12) 1/2"	THERMAL O.L.	WIRE THRU HOOD CONTROL PANEL, RE: HOOD DRAWINGS
KH 1	TYPE II KITCHEN HOOD (KETTLE)	RE: HOOD DRAWINGS	120/1	(2-#12,#12) 1/2"	J-BOX	WIRE THRU HOOD CONTROL PANEL, RE: HOOD DRAWINGS
KH 2	TYPE II KITCHEN HOOD (OVEN)	RE: HOOD DRAWINGS	120/1	(2-#12,#12) 1/2"	J-BOX	WIRE THRU HOOD CONTROL PANEL, RE: HOOD DRAWINGS
KH 3	TYPE II KITCHEN HOOD (COOKLINE)	RE: HOOD DRAWINGS	120/1	(2-#12,#12) 1/2"	J-BOX	WIRE THRU HOOD CONTROL PANEL, RE: HOOD DRAWINGS
MUA 1	MAKE UP AIR UNIT	1-1/2 HP	208/3	(3-#12,#12) 1/2"	30/3; 10 FRN	WIRE THRU HOOD CONTROL PANEL, RE: HOOD DRAWINGS
RTU 7	ROOFTOP UNIT, 7.5 TON	42 MCA	208/3	(3-#8,#10) 3/4"	60/3; 45 FRN	
ION	IONIZER, MOUNTED IN RTU	10 W	120/1	(2-#12,#12) 1/2"	J-BOX	COORDINATE LOCATION/WIRING WITH M.C.
GWH	GAS FIRED WATER HEATER	5 A	120/1	(2-#12,#12) 1/2"	J-BOX	
CP	DOMESTIC HOT WATER RECIRC PUMP	60 W	120/1	(2-#12,#12) 1/2"	5-2OR	VERIFY CORD/PLUG CONFIGURATION
DF 1A	DESTRATIFICATION FAN	0.15 A	120/1	(2-#12,#12) 1/2"	5-2OR	COORDINATE LOW VOLTAGE SPEED CONTROL WIRING WITH M.C. RE: PLANS FOR LOCATION OF SPEED CONTROLLER
DF 1B	DESTRATIFICATION FAN	0.15 A	120/1	(2-#12,#12) 1/2"	5-2OR	COORDINATE LOW VOLTAGE SPEED CONTROL WIRING WITH M.C. RE: PLANS FOR LOCATION OF SPEED CONTROLLER

NOTES: *TEMPERATURE RATING OF ALL DEVICES COULD NOT BE VERIFIED, THEREFORE WIRE IS SIZED BASED ON 60C PER NEC 10.14(C)(1)(a)
 *COORDINATE ALL ROUGH-IN HEIGHTS AND LOCATIONS WITH KITCHEN VENDOR AND/OR OWNER.

LUMINAIRE SCHEDULE						
KEY	LAMP	DESCRIPTION	CEILING (DEPTH)	MANUFACTURER/#	VOLT	
A	29W LED 3000K 3000 LUM	2x4' FLAT PANEL LED TROFFER, 0-10V DIMMING TO 1%	GRID (2-1/4')	LITHONIA LIGHTING / EPANL 24 30L 30K MINI ZT MVOT	120	
C1	19W LED, 2700K	LED CAN DOWNLIGHT	GYP	LITHONIA 658EMW-LED-27K-L7NLED-T24	120	
C2	22.5W LED, 2000 LUM, 2700K	4' LED CAN DOWNLIGHT, 0-10V DIMMING TO 1%	GYP	LITHONIA LDN4 27 20 LO4 AR LD MVOLT G21	120	
P1	10W LED, TYPE A MED BASE, 2700K	CEILING PENDANT	PENDANT	GOLDEN LIGHTING DUNCAN PW 3604-L PW-PV	120	
P2	4.5W LED, E26 BASE, 210 LUM, 2200K	PENDANT, LINE VOLTAGE TRACK ADAPTER (BLACK), MOUNTED, BRUSHED NICKEL FINISH, 16 FT BLACK CORD	TRACK	CONTECH LIGHTING RLM30-6-8-16-MLB122-AN	120	
S1	9W LED, E26 BASE, 600 LUM, 2700K	TOLEDO WALL SCANCE	WALL	TROY B2771-OS-W/LB60 PHILLIPS ST9 E26 LED 60W EQUIV.	120	
TX	120W CURRENT LIMITER	H TRACK SYSTEM, X = LF SHOWN ON PLANS; BLACK; PROVIDE WITH END FEED, AND CURRENT LIMITER ON EACH SECTION	SURFACE	CONTECH LT X-B CONTECH LA-23T-RN -B / REG 1 - B	120	
TH1	9.4W LED PAR30, 650 LUMENS, 3000K	BLACK TRACK HEAD, PAR 30 GIMBLE RING, 9.4W PAR 30 LED LAMP, 25° BEAM ANGLE, DIMMABLE	TRACK	CONTECH CTL2630-B PHILLIPS 9.4PAR30S	120	
TH2	9.4W LED PAR30, 650 LUMENS, 3000K	WHITE TRACK HEAD, PAR 30 GIMBLE RING, 9.4W PAR 30 LED LAMP, 25° BEAM ANGLE, DIMMABLE	TRACK	CONTECH CTL2630-P PHILLIPS 9.4PAR30S	120	
X2	FURN	EXIT SIGN W/ DOUBLE FROG EYE, GREEN LED STENCIL FACE, 90 MIN BATTERY PACK, FINISH BY ARCHITECT	UNIVERSAL	LITHONIA LHQM LED * (= FINISH BY ARCH)	120	
Z1	FURN	DOUBLE FROG EYE EMERGENCY LIGHT, 90 MIN BATTERY PACK, +10 MNT 60 SPACINGS, FINISH BY ARCHITECT	WALL	LITHONIA ELM4L * (= FINISH BY ARCH)	120	
Z2	FURN	DIE CAST ARCHITECTURAL EMERGENCY LIGHT, WET LOCATION LISTED, 90 MINUTE COLD WEATHER (0'F TO 122'F) BATTERY PACK	WALL	LITHONIA ARN * EXT * (= FINISH BY ARCH)	120	

NOTES: *NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN MODEL NUMBERS AND DESCRIPTIONS PRIOR TO ORDERING
 *VERIFY CEILING INSULATION W/ GC AND NOTIFY ENGINEER OF ANY IC RATING CONFLICTS PRIOR TO ORDERING

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Moe's BROADWAY BAGEL
 LONGMONT, COLORADO

PROJECT No: 19158
 ISSUE DATE: 11.25.2020
 REVISIONS:
 SHEET TITLE:
 ELECTRICAL SCHEDULES
 SHEET NUMBER:
E2.2

DIVISION 26 - ELECTRICAL

SECTION 26 01 00 - GENERAL PROVISIONS

1.01 WORK INCLUDED:

- A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Electrical Contractor. The general conditions of the specifications apply and are included in this part of this section.
 - Power Distribution System
 - Interior and Exterior Lighting System
 - Telephone Raceway System
 - Data Raceway System
 - Fire Alarm System
 - Emergency Lighting System
 - Electric Heating System

1.02 CODES AND REGULATIONS:

- A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:
 - Building Code: 2018 International Building Code
 - Plumbing Code: 2018 International Plumbing Code
 - Mechanical Code: 2018 International Mechanical Code
 - Fire Code: 2018 International Fire Code
 - Gas Code: 2018 International Fuel Gas Code
 - Energy Code: 2018 International Energy Code
 - Electrical Code: 2017 National Electrical Code

1.03 EQUIPMENT AND MATERIALS STANDARDS:

- A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.

1.04 CONTRACT DRAWINGS:

- A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected ceiling plans.

1.05 SHOP DRAWINGS

- A. Submit products data and/or shop drawings as required by the Architect for the following:
 - Switches, dimmers, receptacles and coverplates
 - Switchboards, Panelboards
 - Disconnect switches
 - Fuses
 - Light fixtures
 - Fire alarm system and equipment
- B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution shall be accomplished at no additional expense to the Owner
- C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to bid date.

1.06 WARRANTY:

- A. The contractor shall be responsible for the successful operation of electrical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner.

1.07 PRODUCT HANDLING AND CLEAN UP:

- A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence.

1.08 CUTTING AND REPAIRING:

- A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

1.09 OPERATING AND MAINTENANCE DATA:

- A. Provide the Owner with operating and maintenance instructions (four copies) required for operation of all electrical systems. Bind the written instructions in a notebook. The General Conditions take precedence.

1.10 PERMITS:

- A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.

1.11 TEMPORARY SERVICES:

- A. Provide temporary power and lighting as required by the General Contractor, in accordance with OSHA and N.E.C. standards.

1.12 COORDINATION

- A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering fixtures, equipment, etc.
- B. Mechanical work performed by this contractor will conform to the standards of Division 21-23. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified. MC = Division 21-23 EC = Division 26-28

Item	Furn	Set	Power	Control
	By	By	By	Wiring
Combination starters	MC	EC	EC	MC
Equipment motors	MC	MC	EC	--
Motor starters & O.L. relays	MC	EC	EC	MC
Disconnect switches	EC	EC	EC	MC
Thermal overload heaters (1)	EC	EC	EC	--
Variable Speed Drives	MC	EC	EC	MC
Control relays/transformers	MC	MC	EC	MC
Temperature control panels	MC	MC	EC	MC
Temp. Controls condit/wiring	MC	MC	--	MC
Actuator and solenoid wiring	MC	MC	--	MC
Pushbuttons & pilot lights	MC	MC	--	MC
Room thermostats	MC	MC	--	MC
Thermostats: line voltage	EC	EC	--	MC

- C. The general guideline for the division between control(MC) wiring and power wiring(EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.
- D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion of the project.

1.13 DELIVERY, STORAGE, HANDLING:

- A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after installation.

1.14 AS-BUILT DRAWINGS:

- A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

1.15 PROJECT/SITE CONDITIONS:

- A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

2.01 ACCESS PANELS:

- A. The electrical Contractor shall furnish and General Contractor shall install access panels where required for access to equipment. The electrical Contractor shall include the cost of access panels in his bid. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.

3.01 EXCAVATION AND BACKFILLING:

- A. Verify the location of underground utilities before excavation; the contractor is responsible for any damage to underground utilities. Provide excavating and backfilling for electrical work. Backfill in 12" layers, mechanically tamp to 95% proctor standards. Protect according to OSHA standards. The General Conditions take precedence.
- B. Start-up marker tape 12" above exterior underground service conduits(power, telephone, television).

3.02 START-UP PROCEDURES:

- A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.

3.03 HANGERS AND SUPPORTS:

- A. Support conduit and equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel or copper of a type, acceptable to the Engineer. Chain, perforated iron or wire hangers are not permitted.
- B. Conduit on the roof will be supported above the roof on roof pads. The pads shall be approximately 6" wide by 6" high by the length as required. They shall be made of recycled rubber, rated for 500lbs/l loading each. The pads will have galvanized steel "C" channel attached to the top, which can accommodate pipe clamps to secure the conduit. This configuration of individual piping pads may be expanded to include two pads supporting a trapeze style support where multiple conduits are racked together. The pads are C-series manufactured by Cooper B-line or approved equivalent.

3.04 SLEEVES AND PLATES

- A. Provide sleeves and inserts for all conduit. The contractor shall be responsible for the cost of cutting and patching required for piping where sleeves and inserts were not installed or where incorrectly located. Sheetrock joint compound may be used to seal openings in non-rated walls/insulation to be continuous through walls.
- B. Drill holes as required for the installation of hangers required for the mechanical work.
- C. Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be made completely water-tight.
- D. Seal all piping passing through fire-rated construction with approved material to maintain air-tight, fire-rated integrity, with a U.L. listed assembly compatible with the wall or floor assembly being penetrated.

SECTION 26 05 00 - COMMON WORK RESULTS FOR ELECTRICAL

1.01 GENERAL:

- A. Provide complete systems of conductors and raceways using conduit and/or cable assemblies appropriate to the function and location, and specifically approved in chapter three of the N.E.C..

2.01 CONDUIT:

- A. The following raceways are approved for use on this project, where approved by the N.E.C.:
 - EMT: Electrical metallic tubing, galvanized
 - GRC: Rigid steel conduit, galvanized
 - PVC: Polyvinyl chloride conduit, schedule 40
 - IMC: Intermediate metal conduit, galvanized

2.02 CABLE ASSEMBLIES:

- A. The following cable assemblies may be used in the power distribution system in concealed locations, where approved by the N.E.C.:
 - MC: Metal clad cable

2.03 BOXES:

- A. Provide galvanized steel outlet and junction boxes, except where otherwise indicated. Boxes shall be a minimum 4" square or octagonal, depth as required. Provide weather-proof type cast boxes with gasket and cast coverplate for exterior outlets or wet locations. Outlet boxes shall be of the proper type and design for the fixture or device to be installed. Through the wall boxes are not permitted. Provide plaster or tile rings for all flush outlets installed where required. Boxes shall be manufactured by Raco, Steel City, National or equivalent.
- B. Interior floor boxes shall be non-metallic or cast steel in concrete or slab on grade installations, and shall be rated for the use. Floor boxes above grade shall be non-metallic or stamped steel, rated for the use. Multi-gang boxes shall be used where specified. Coverplates shall be polished brass with "flip lids" for receptacles and connectors. Provide carpet flanges where appropriate.

2.04 CONDUCTORS:

- A. Provide a complete set of power conductors, rated 600 volts, of the quantity, size and type required for the function.
 - Conductors shall be copper, except where specifically noted. Conductors shall be solid for wire sizes No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
 - Aluminum conductors will be accepted only where specifically indicated by the Contract Documents. Aluminum conductors must be terminated according to the manufacturers instructions, including use of proper joint compound, use with aluminum rated lugs, and proper torquing of the lugs.

2.05 INSULATION:

- A. Provide wire with the following minimum insulation standards:
 - Branch circuits, panelboard feeders, service entrance conductors: THWN-2, XHHW(90C). The conductors shall be applied using the 75C rating.
 - Connections to fixture ballasts, and wiring runs in or through fixture wiring channels: Insulations listed in table 402.5 of the N.E.C., except for wiring made with asbestos.
 - Cord connections: Cords listed in table 400.4 of the N.E.C., except for wiring made with asbestos.

2.06 LUGS:

- A. Lugs for all equipment will be rated for the use. Lugs will be suitable for copper or aluminum conductors, rated for 75C.

2.07 SWITCHES AND RECEPTACLES:

- A. Provide specification grade devices throughout. Switches and duplex receptacles may be commercial grade. Devices shall be manufactured by Hubbell, Leviton, General Electric, Bryant, Slater, Pass & Seymour, Inc., Sierra, or Arrow-Hart.
- B. Except where noted, plates shall be plastic, color to match the devices with matching screws for receptacles, switches, telephone, and TV outlets. Provide blank coverplates for unused outlets. Coverplates for multi-gang boxes shall be sized for the box it covers.
- C. Devices and their coverplates shall be ivory except on dark walls in public view, they shall be black. In mechanical rooms, etc. the coverplates may be galvanized steel.
- D. In kitchens, and other back of house areas, and in areas with adjacent stainless steel equipment, they shall be brushed aluminum coverplates with ivory devices. Field verify any areas of doubt with the architect.

2.08 DIMMERS:

- A. Incandescent dimmers shall be the linear slide-type with aluminum fins. Dimmers shall be Lutron Nova series or equivalent.
- B. Fluorescent dimmers shall be the linear slide-type with aluminum fins. The dimmers shall be closely coordinated with the ballast of the specific fixture being controlled and must be field coordinated before ordering. Dimmers shall be Lutron Nova series or equivalent.
- C. LED dimmers must be selected by, or specifically approved by, the specific fixture manufacturer or supplier. Slide type dimmers are preferred where available.
- D. When switches and dimmers are located side by side, switches shall have identical appearance as dimmers. Dimmers shall in no case have heat fins removed or modified.
- E. Dimmers shall be manufactured by Lutron, Hunt, Prescolite, or equivalent

3.01 WIRING:

- A. The drawings are schematic in nature; alternative wiring paths, different conduit fill, etc. installed in conformance with the N.E.C. are allowed. Conductors must be derated per code.
 - B. Branch circuits shall use minimum No. 12 AWG wiring for branch circuits, protected by 20 ampere circuit breakers. Control wiring may be No. 14 minimum. If distance from panel to first outlet is 75 feet or greater (for 120-volt circuits) or 150 feet or greater (for 277-volt circuits), provide No. 10 AWG.
 - C. Use PVC in earth or in slabs in contact with earth. Outside the building, install a minimum of 30' below finished grade.
 - D. Where mechanical damage occur, use galvanized rigid steel or intermediate metal conduit.
 - E. Electric metallic tubing may be used in all applications, except where prohibited by code or otherwise noted.
 - F. Do not install exposed conduit in areas open to the public. Exposed conduit may be installed at surface-mounted equipment and other locations acceptable to the Architect. Run exposed conduit parallel to, and at right angles with, the building lines.
 - G. Direct burial wiring shall not be used.
 - H. Use flexible metallic conduit for connections to motors, fixtures, or other equipment where vibration is encountered. Provide sealante flexible metallic conduit in wet areas such as kitchens, equipment rooms, on roofs, etc.
 - I. Provide a ground wire in non-metallic conduit and flexible conduit. Ground wires shall be increased in size where circuit wiring is increased for voltage drop.
 - J. Circuits fed through AFCI breakers shall have separate neutrals with no cross or ground connections; wiring shall be installed per the breaker manufacturers instructions.
 - K. Multi-wire branch circuits shall utilize handle ties on breakers, or other grouped disconnecting means per NEC 210.4(B).
- 3.02 OUTLET BOXES, DEVICES AND FITTINGS:**
- A. Install receptacle and telephone outlets 18" to center-line above floor in general locations; install at switch height where shown in combination; install 42" AFF in mechanical equipment rooms.
 - B. Install receptacles vertically, ground pole down.
 - C. Install switch outlets 42" above floor on latch side of door. Verify door swing prior to installation. Use gang boxes for multiple-device installation as required.
 - D. Install outlets shown on the drawings "back-to-back" with a minimum of 6" lateral separation between them.

SECTION 26 20 00 - SERVICE AND DISTRIBUTION

1.01 SERVICE ENTRANCE:

- A. Power will be available from the secondary side of transformer(s) provided by the utility company. This service shall be 120/208 volt, 3 phase, 4 wire, 60 hertz A.C. for normal power and lighting requirements. General arrangement of the service equipment is shown on the drawings. Load balance the entire system to within 15% per phase.

1.02 GROUNDING:

- A. Provide a complete grounding system in accordance with Section 250 of the N.E.C.
- B. Supplemental electrode to be installed unless resistance of 25 ohms to earth can be documented.

2.01 PANELBOARDS:

- A. Provide circuit breaker-type panelboards as detailed on the drawings. Provide separate ground bus. Provide fronts with door and latch with locks keyed alike. Install panels 6" above finished floor to top of trim. Where panels are mounted side by side, align tops of panels. Mount a type directory, identifying each circuit, in a directory frame. Provide typed source label identifying source of power for each panel. Install trims and doors with primer coats in finished areas. Provide one spare 3/4" conduit for each 3 unused poles in flush-mounted panelboards; extend from to an accessible point above a hung ceiling, cap and identify.
- B. Breakers shall be full width, thermal magnetic, bolt-on type. Provide multi-pole breakers with common trip and single operating handle; handle ties are acceptable for multi-wire branch circuits.
 - Breakers serving restaurant kitchens and bars, or where required by code, shall be GFCI breakers. GFCI receptacles may be used only where the receptacles are not located behind equipment.
 - HACR breakers shall be used for HVAC equipment in accordance with the equipment manufacturer.
 - HID breakers shall be used where HID or fluorescent fixtures are normally panel switched.
- C. Lugs on mains and branch breakers shall be rated for 75C or 60C, copper or aluminum wiring.
- D. Panelboards(240VAC) shall be Square D type NQOD or equivalent by I.T.E., G.E., or Cutler Hammer.

2.02 SAFETY SWITCHES:

- A. Provide normal duty, enclosed, fusible and non-fusible safety switches as indicated on the plans. All lugs shall be rated for 75C or 60C copper or aluminum wiring. Provide enclosures suitable for the surrounding area and conditions. Label switches for feeder or motor supplied. The switches shall be manufactured by Square D, I.T.E., G.E., Cutler Hammer, or equivalent.

2.03 FUSES:

- A. Provide power fuses of the time-delay type unless otherwise indicated. Fuses shall be manufactured by Bussman, Gould Shawmut, or equivalent. Provide one (1) complete set of fuses for fuse-holding devices, sized according to the motor and/or conductor to be protected. Provide a hinged cover cabinet for storage of spare fuses; three spare fuses of each fuse size.

3.01 WIRING FOR EQUIPMENT:

- A. Provide branch circuits, feeders, junction boxes, disconnect switches, etc as required for a complete system; make power connections to motors and controls for heating, ventilating, air conditioning, plumbing, owner furnished and fire protection equipment as required.
- B. Kitchen equipment. Refer to the Kitchen Equipment Contractor's drawings for final sizing, locations, and rough-in heights. The Electrical Contractor shall provide final circuits and connections to kitchen electrical equipment. Sealante conduit and fittings shall be used on runs inside refrigerated bases and at dish tables.

- C. Provide connections to hood fire suppression system(s). The electrical contractor is responsible for wiring the interlock controls for hood related air handling equipment, including low voltage interlocks, and interlocks within building HVAC equipment where required.

SECTION 26 50 00 - LIGHTING

1.01 RECESSED INCANDESCENT:

- A. Recessed incandescent luminaires shall be pre-wired. Openings shall be neatly made so they are completely concealed after the trim is installed. Luminaires installed in a grid ceiling shall be supported by the framing system, but by ceiling panels. Install metal plaster frames in plaster ceilings. Fixtures shall have thermal protection where required by the N.E.C. and local codes.

1.02 RECESSED FLUORESCENT:

- A. Recessed fluorescent luminaires shall be of the proper type for the ceiling. No distortion or field modifications of the fixtures or ceilings are allowed. Luminaires shall be ready for installation individually or in continuous rows into ceiling.

1.03 EXTERIOR LIGHTING FIXTURES:

- A. Provide weather-proof luminaires for mounting as shown. Provide lamps of size and wattage as indicated on the drawings. Provide underground wiring to exterior lighting as shown on the drawings.

2.01 INTERIOR LIGHTING FIXTURES:

- A. Securely support and anchor fixtures and outlet boxes. Where lighting fixtures are installed in a lay-in grid ceiling system, secure fixtures to tees by installing earthquake clips at each corner of the fixture. Provide supports required, including structural members if needed. Provide separate junction boxes and wire to recessed fixtures in flexible conduit with Type AF wire, unless acceptable pre-wired fixtures are used. Conceal openings cut in ceilings for recessed fixtures with fixture trim installed. Coordinate installation of recessed fixtures with ceiling installer.

2.02 EXTERIOR LIGHTING FIXTURES:

- A. Exterior lighting fixtures, raceways, equipment, etc. shall be weather-proof and suitable for temperatures down to -20F.
- B. Ballast type, lamp wattage, and rated voltage shall be as indicated on the plans. Each ballast shall be of the separate-component type, capable of reliable lamp starting down to -20F, and shall have a minimum power factor of 90.

2.03 LAMPS:

- A. Incandescent lamps shall be rated at 130V. H.I.D. and fluorescent lamps shall be as specified on plans with ballasts as specified in the following specifications. Lamp codes listed are ANSI. All lamps shall be Sylvania, General Electric, or approved equivalent.
- B. In porcelain keyless fixtures, provide medium base, self ballasted, A-line shape, fluorescent lamps, GE FLE15/2/A21 or equivalent.

2.04 BALLASTS:

- A. General: Ballasts shall be U.L. listed and shall comply with all applicable state and federal efficiency standards. Ballasts shall be manufactured in the U.S.A. Ballast case temperature shall not exceed 90C.
- B. Fluorescent Ballasts:
 - Ballasts shall be high frequency electronic type, operating lamps at a frequency of 20 KHZ or higher with no detectable flicker.
 - Where required by code, the ballast shall have an integral internal disconnect device, in accordance with NEC 410.130.
 - Where electronic ballasts are not available for a particular fixture or lamp configuration, electromagnetic energy reducing ballasts may be used. Other requirements of this section still apply.
- C. Ballasts shall be equipped with UL component, recognized, non-PCB-protected capacitors, Class P protector, and class A sound rating.
- D. Ballasts shall meet all applicable ANSI and IEEE standards regarding harmonic distortion and surge protection.
- E. Ballasts shall have power factor above 90% and a lamp crest factor less than 1.6.
- F. Emergency ballasts shall be fixture-mounted, self contained type including ballast, nickel battery, charger, inverter and sensing circuitry, all mounted in a red steel enclosure. The units shall be rated for 90 minute operation, and shall provide at least 1,000 lumens for single or bi-pin fluorescent lamps, and 950 lumens for compact fluorescent lamps. Ballasts shall be U.L. listed and shall be manufactured by Bodine, or equivalent.
- G. Ballasts shall have a three-year warranty, including labor allowance.
- H. Ballasts shall be Magnetek "Triad" type for larger lamps, "Universal" type for compact lamps. Approved equivalents are General Electric, Advance or Universal.

- C. High Intensity Discharge: High-intensity discharge ballasts shall be high power factor, constant wattage, autotransformer type. Ballasts shall be manufactured by Magnetek, Universal, General Electric, or Advance.

2.05 POLES AND STANDARDS:

- A. Each pole shall contain a hand-hole at the base, with an accessible ground lug capable of accepting up to #4 AWG stranded wire. Pole shall be furnished complete with base, anchor bolts, template, and other hardware necessary for the pole/standard and/or pole/base connections.
- B. Concrete pole bases shall be provided by the General Contractor. The Electrical Contractor shall be responsible for the coordination of conduit and anchor bolts. An anchor bolt template shall be furnished to the Architect within 30 days of the signing of the Contract. Provide conduit in and out to a point 5' beyond the base.
- C. The entire assembly (base, pole, brackets, luminaires) shall be designed to withstand 100 MPH winds.

2.06 OUTDOOR LIGHTING CONTROLS:

- A. Provide combination photo-cell time switch, lighting control system as shown on drawings. Include contactors, photo-electric cells, time switches, transformers, selector switches, relays, wiring, etc. as required.
- B. Mount photo-electric cell facing north on roof in a protected area, shielded so artificial light does not affect proper operation. Set photo-electric cells to operate their relay contacts at approximately two (2) foot candles.
- C. Set time clock(s) to close contacts as scheduled hours by Owner.
- D. Time clock shall be seven day type with spring carry over. Provide (2)40A2P contacts. Time clock shall be readily adjustable

DIVISION 27 - COMMUNICATIONS

SECTION 27 20 00 - COMPUTER SYSTEM

1.01 DESCRIPTION:

- A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up walls and across inaccessible ceilings. Computer wiring may be run wild above accessible ceiling.

2.01 CONDUIT:

- A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box.

2.02 WALL OUTLETS:

- A. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be provided by the computer system installer.
- B. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall up to accessible ceiling, in lieu of conduit and boxes.

2.03 WIRING:

- A. Wiring shall be provided by the computer system installer. Wiring run wild in air plenums shall be teflon coated or similarly rated for the application.

3.01 EXECUTION:

- A. Provide pull strings in all conduit.
- B. Field verify all computer outlet locations. Final locations and heights shall be as designated by the Architect or Owner's representative.

SECTION 27 30 00 - TELEPHONE SYSTEM

1.01 DESCRIPTION:

- A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up walls and across inaccessible ceilings. Telephone wiring may be run wild above accessible ceiling.
- B. System will include exterior underground conduit routed to a point of connection(usually a pedestal or a power pole) as directed by the telephone company. Exterior conduit shall be sized and installed as directed by the telephone company.

2.01 CONDUIT:

- A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box. Exterior underground conduit shall be schedule 40 PVC with solvent joints.
- B. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be provided by the telephone system installer.
- C. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall up to accessible ceiling, in lieu of conduit and boxes.

2.02 TERMINALS:

- A. Telephone terminals shall be constructed of 1/2" thick, fire resistant, interior finish plywood, painted white, sized as shown or required. Provide power and ground connection as required or shown on the plans.

2.03 WIRING:

- A. Wiring shall be provided by the telephone system installer. Wiring run in air plenums shall be teflon coated or similarly rated for the application.

3.01 EXECUTION:

- A. Provide pull strings in all conduit.
- B. Exterior underground conduit shall use long radius, sweep ells. These elbows shall be schedule 80 PVC, or PVC coated GRC conduit.
- C. Field verify all telephone outlet locations. Final locations and heights shall be as designated by the Architect or Owner's representative.

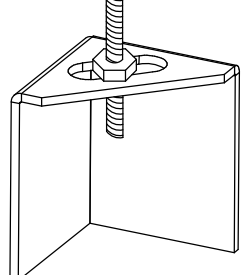
SECTION 27 40 00 - VIDEO SYSTEM

1.01 DESCRIPTION:

- A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up walls and across inaccessible ceilings. Video wiring may be run wild above accessible ceiling.

2.01 CONDUIT

1/2" DIA. ALL THREAD ROD CONNECTED TO HOOD JOIST THROUGH ANOTHER HANGING ANGLE



*ROD AND NUTS TO BE SUPPLIED BY INSTALLING CONTRACTOR HANGING ANGLE IS PRE-PUNCHED AT FACTORY

HANGING ANGLE DETAILS

HOOD STYLE / MODEL	450 DEGREES cfm/ft.	600 DEGREES cfm/ft.	700 DEGREES cfm/ft.
CANOPY ND2	150	200	250
WITH END PANELS (15% reduction)	127.5	170	212.5
SLOPED SND-2	228	294	-
ISLAND ND-2WI	269	300	350
NDI	346	422	475

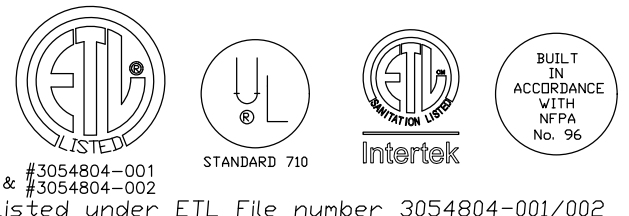
ETL HOOD LISTING DETAIL

EXHAUST CFM=LENGTH OF HOOD X CFM/LIN.FT. (LOAD)
 SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED
 TOTAL DUCT AREA=144 X CFM(4)
 DUCT LENGTH= TOTAL DUCT AREA / DUCT DEPTH

*CAPTIVE-AIRE VENTILATOR DUCT SIZES ARE CALCULATED USING AN EXHAUST VELOCITY OF 1500-1800 FPM AND A SUPPLY VELOCITY OF 1000 FPM

CALCULATIONS UTILIZED

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH



BUILDING CODES

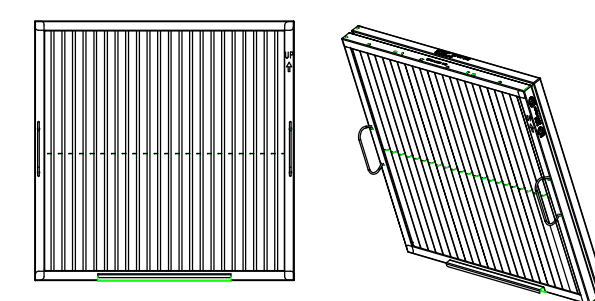
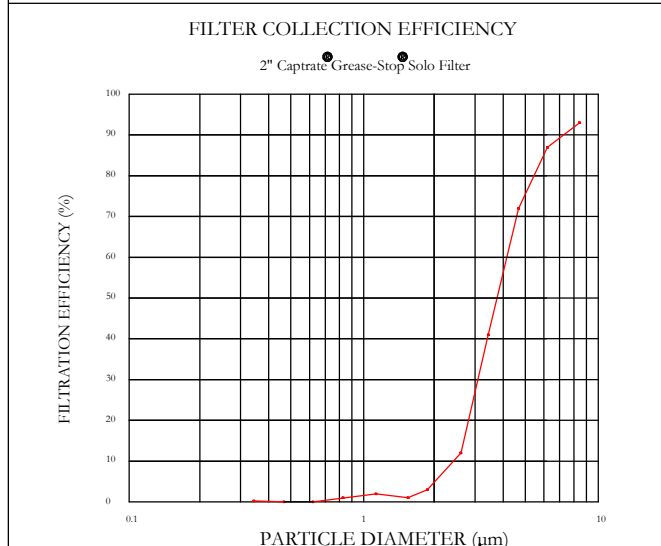
CAPTIVE-AIRE HOODS HAVE OPTIONAL CLEARANCE REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:

MATERIAL	CLEARANCE REDUCTION SYSTEM
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	3" UNINSULATED STANDOFF
COMBUSTIBLE	1" INSULATED STANDOFF

CLEARANCE TO COMBUSTIBLES

- INSTALLATION**
- ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
 - ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
 - HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
 - ALL CONNECTIONS FROM CAPTIVE-AIRE DUCT PER MECHANICAL CONTRACTORS'S PLANS.
 - COOKING EQUIPMENT TO SHUTOFF IN EVENT OF FIRE.
 - EXHAUST FANS TO TURN ON IN EVENT OF FIRE.
 - ALL LIGHTS FIXTURE SHOWN INSTALLED BY CAPTIVE-AIRE ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES BY ELECTRICAL CONTRACTORS.
 - LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
 - SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
 - INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.
- BALANCE**
- KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
 - KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DINING AREA.
 - RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.
- ADDITIONAL**
- WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
 - SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

GENERAL NOTES



CaptiveAire Captrate Solo Filter
 ETL Listed Grease Extracting Filters
 Made From 430 Stainless Steel

FILTER DETAIL

HOOD INFORMATION - JOB#4602447

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)				TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG				
										WIDTH	LENG	HEIGHT	DIA			CFM	VEL	SP	END TO END	ROW
1	38	4224 VHB-G-PSP-F-ND	CAPTIVEAIRE	9' 0"	700 DEG	II	N/A	150	1350			4'	14'	1350	1263	-0.139'	1080	430 SS 100%	ALONE	ALONE
2	39a	5424 VHB-G-ND	CAPTIVEAIRE	8' 0"	700 DEG	II	N/A	150	1200			4'	14'	1200	1123	-0.115'	0	430 SS 100%	ALONE	ALONE
3	39b	4224 VHB-G	CAPTIVEAIRE	3' 6"	700 DEG	II	N/A	150	525			4'	10'	525	963	-0.069'	0	430 SS 100%	ALONE	ALONE

HOOD INFORMATION

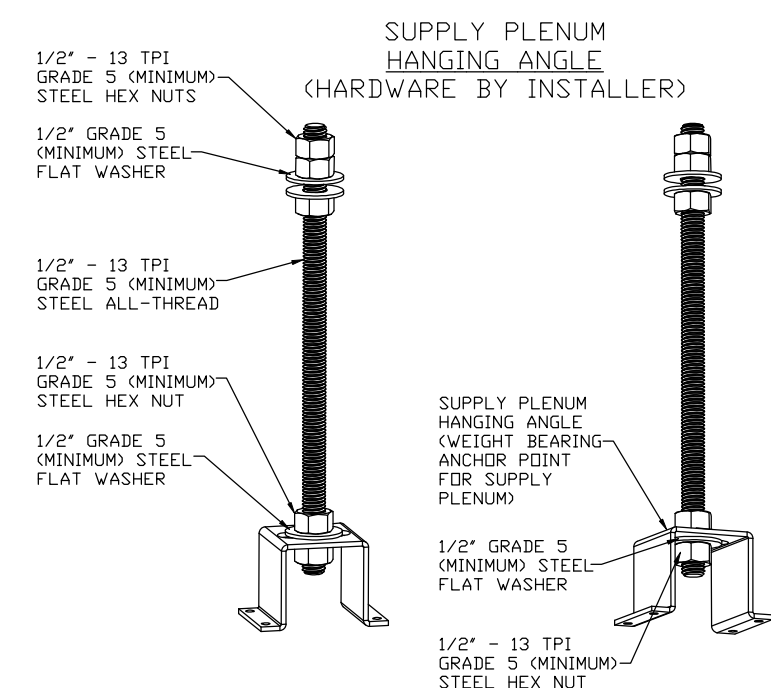
HOOD NO	TAG	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT	
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM	ELECTRICAL			SWITCHES
1	38						5	SCREW IN HALOGEN	NO						NO	404 LBS
2	39a						4	SCREW IN HALOGEN	NO						NO	336 LBS
3	39b						2	SCREW IN HALOGEN	NO						NO	172 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	38	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT. BACKSPASH 122.00" HIGH X 144.00" LONG 430 SS VERTICAL. RISER SENSOR INSTALL 3IN DBL.
2	39a	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, BACK. RIGHT SIDESPLASH 122.00" HIGH X 72.00" LONG 430 SS VERTICAL. RISER SENSOR INSTALL 3IN DBL.
3	39b	FIELD WRAPPER 18.00" HIGH FRONT, LEFT, RIGHT. BACKSPASH 122.00" HIGH X 78.00" LONG 430 SS VERTICAL. RISER SENSOR INSTALL 3IN DBL.

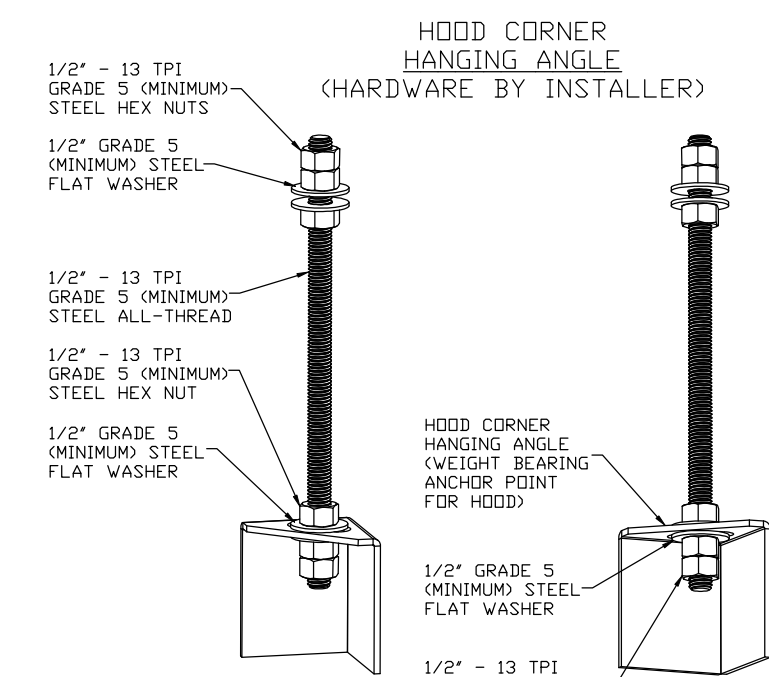
PERFORATED SUPPLY PLENUM(S)

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG	DIA	CFM	SP
1	38	Front	108"	12"	6"	MUA	10"	28"		540	0.117"
						MUA	10"	28"		540	0.117"



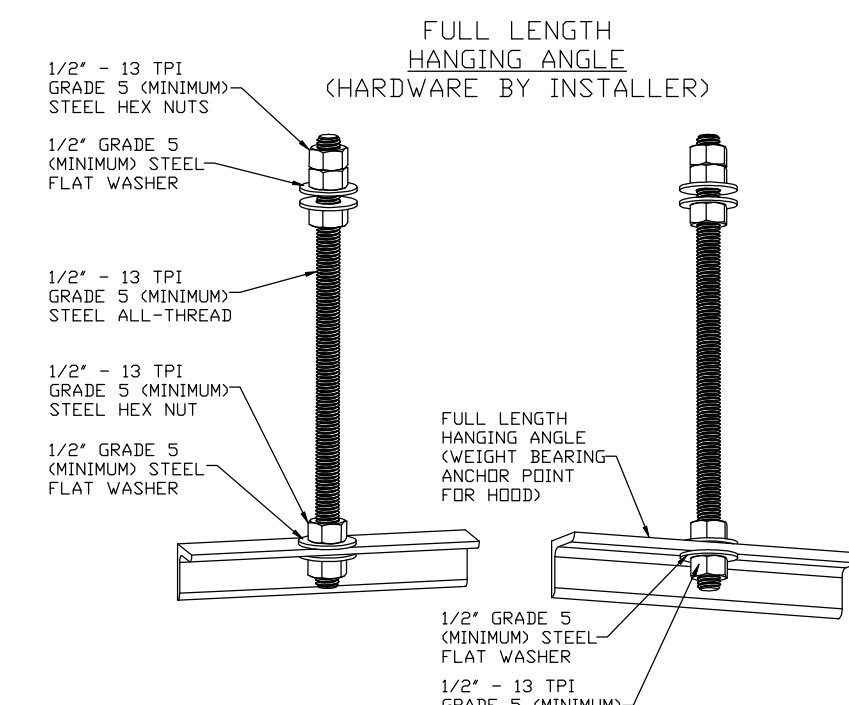
ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS. SINGLE HEX NUT BENEATH HANGING ANGLE IS ACCEPTABLE FOR PSP HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



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FOR QUESTIONS, CALL THE COLORADO REGIONAL SALES OFFICE
 7300 S. Alton Way, #5B, Centennial, CO 80112
 PHONE: (720) 570-0981
 FAX: (919) 227-5999

***** NOTE *****
 ALL WALLS AND STRUCTURES THAT COME WITHIN 18" OF HOOD MUST BE METAL STUDS AND SHEETROCK. WOOD STUDS OR ANY OTHER COMBUSTIBLE MATERIAL WITHIN 18" OF HOOD NOT ALLOWED

***** NOTE *****
 HOOD MANUFACTURER RECOMMENDS NO RETURNS OR 4-WAY DIFFUSERS WITHIN 10 FEET OF HOOD IN ALL DIRECTIONS.

***** NOTE *****
 MAKE-UP AIR SHALL BE DELIVERED INTO SPACE IN MANNER THAT WILL NOT DISRUPT HOODS ABILITY TO CAPTURE AND CONTAIN.

System Design Verification (SDV)

If ordered, CAS Service will perform a System Design Verification (SDV) once all equipment has had a complete start up per the Operation and Installation Manual. Typically, the SDV will be performed after all inspections are complete.

Any field related discrepancies that are discovered during the SDV will be brought to the attention of the general contractor and corresponding trades on site. These issues will be documented and forwarded to the appropriate sales office. If CAS Service has to resolve a discrepancy that is a field issue, the general contractor will be notified and billed for the work. Should a return trip be required due to any field related discrepancy that cannot be resolved during the SDV, there will be additional trip charges.

During the SDV, CAS Service will address any discrepancy that is the fault of the manufacturer. Should a return trip be required, the general contractor and appropriate sales office will be notified. There will be no additional charges for manufacturer discrepancies.

REVISIONS

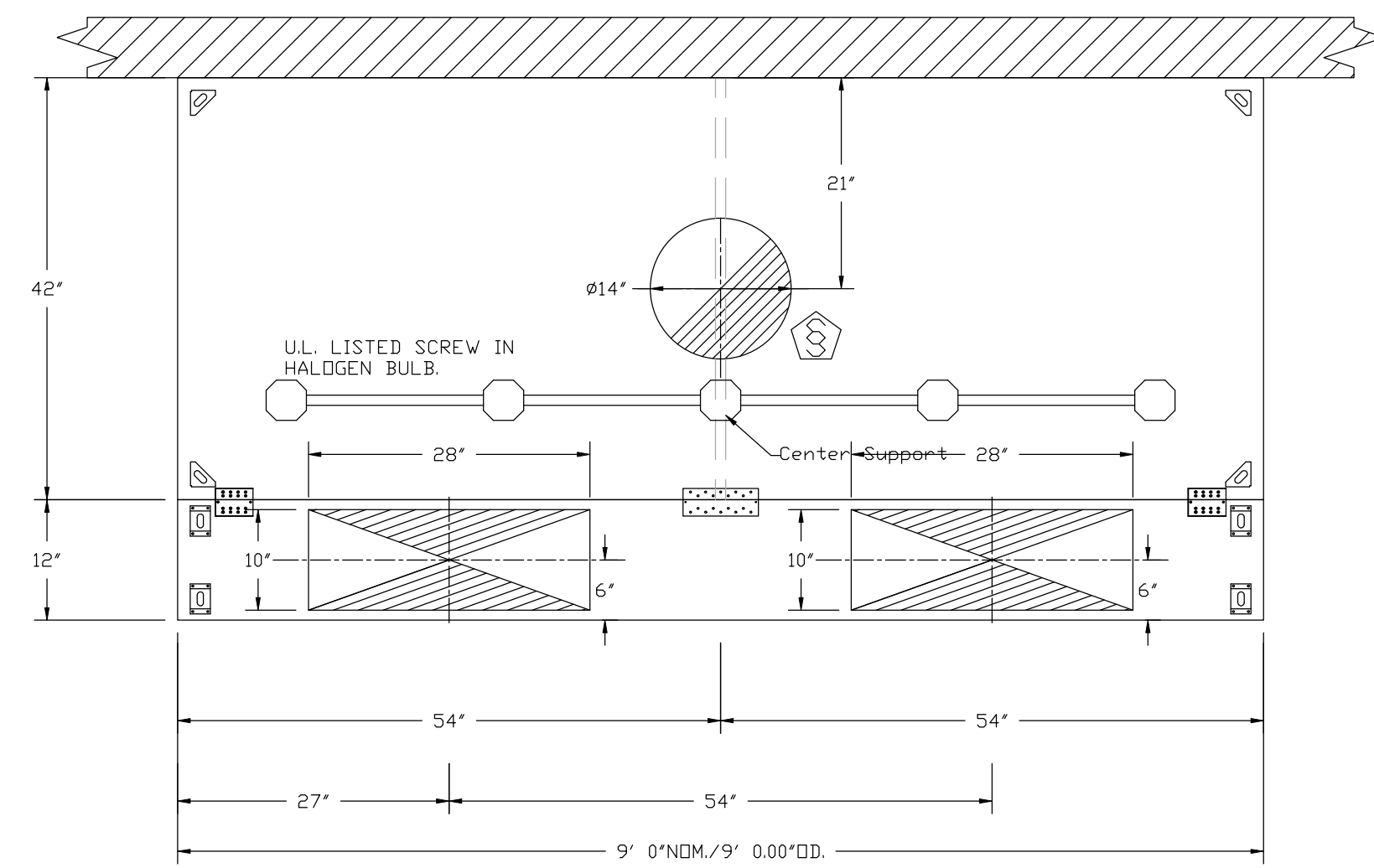
DESCRIPTION	DATE

www.captiveaire.com
Denver Office
 7300 S Alton Way Building 5, Suite B, Centennial, CO 80112 PHONE: (720) 570-0981 FAX: (919) 227-5999 EMAIL: reg42@captiveaire.com

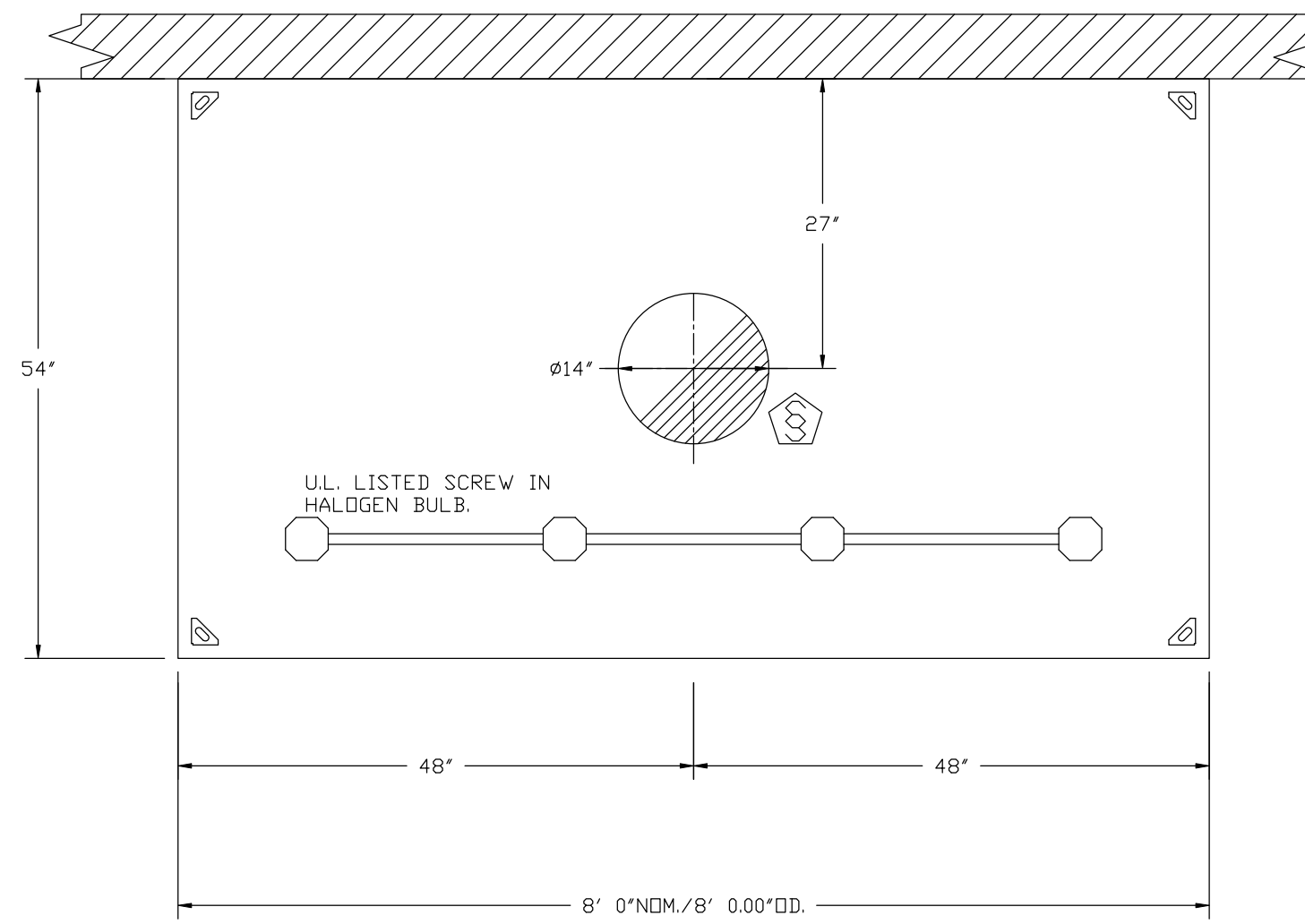
Moe's Bagels - Longmont, CO R1
LONGMONT, CO, 80501

DATE: 11/11/2020
DWG.#: 4602447
DRAWN BY: SPD-42
SCALE: 3/4" = 1'-0"
MASTER DRAWING

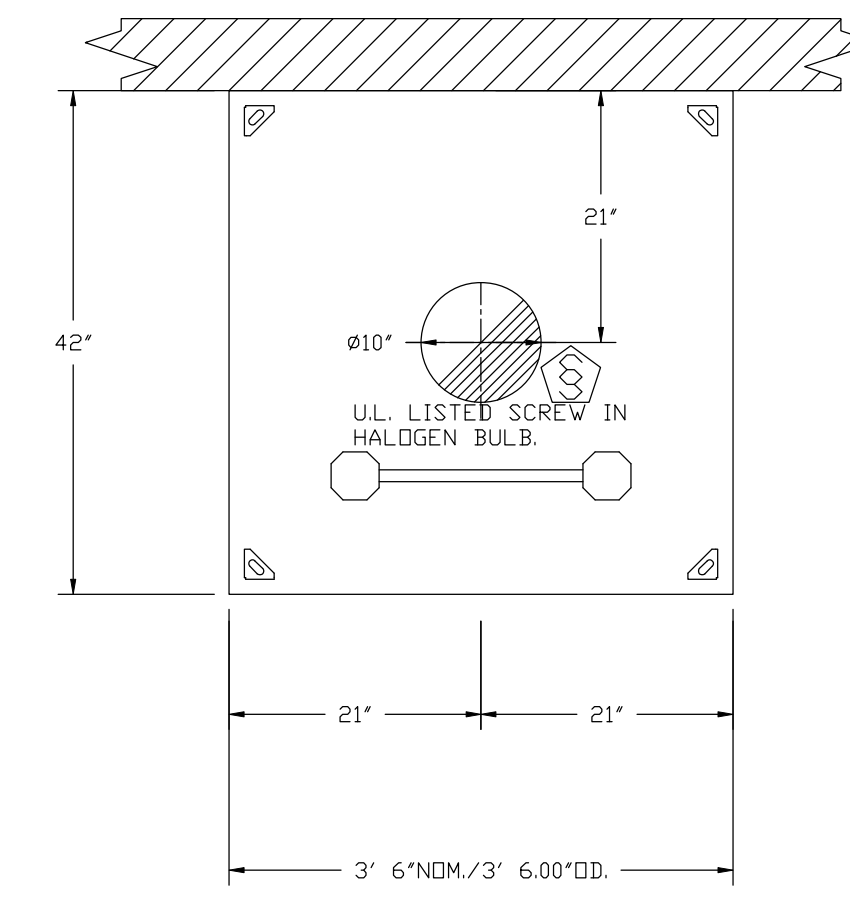
SHEET NO.
 1



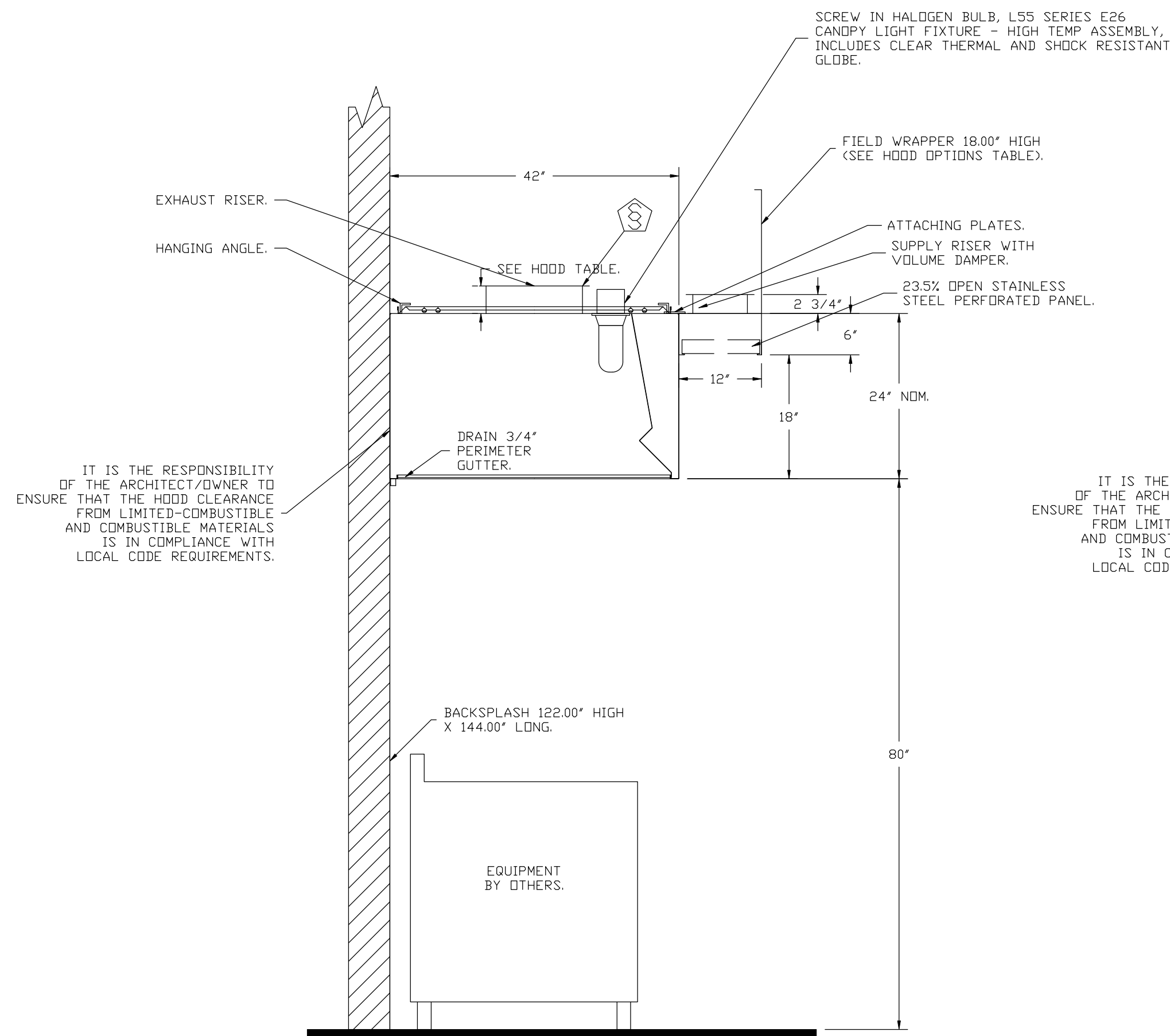
PLAN VIEW - HOOD #1 (38)
9' 0.00" LONG 4224VHB-G-PSP-F-ND



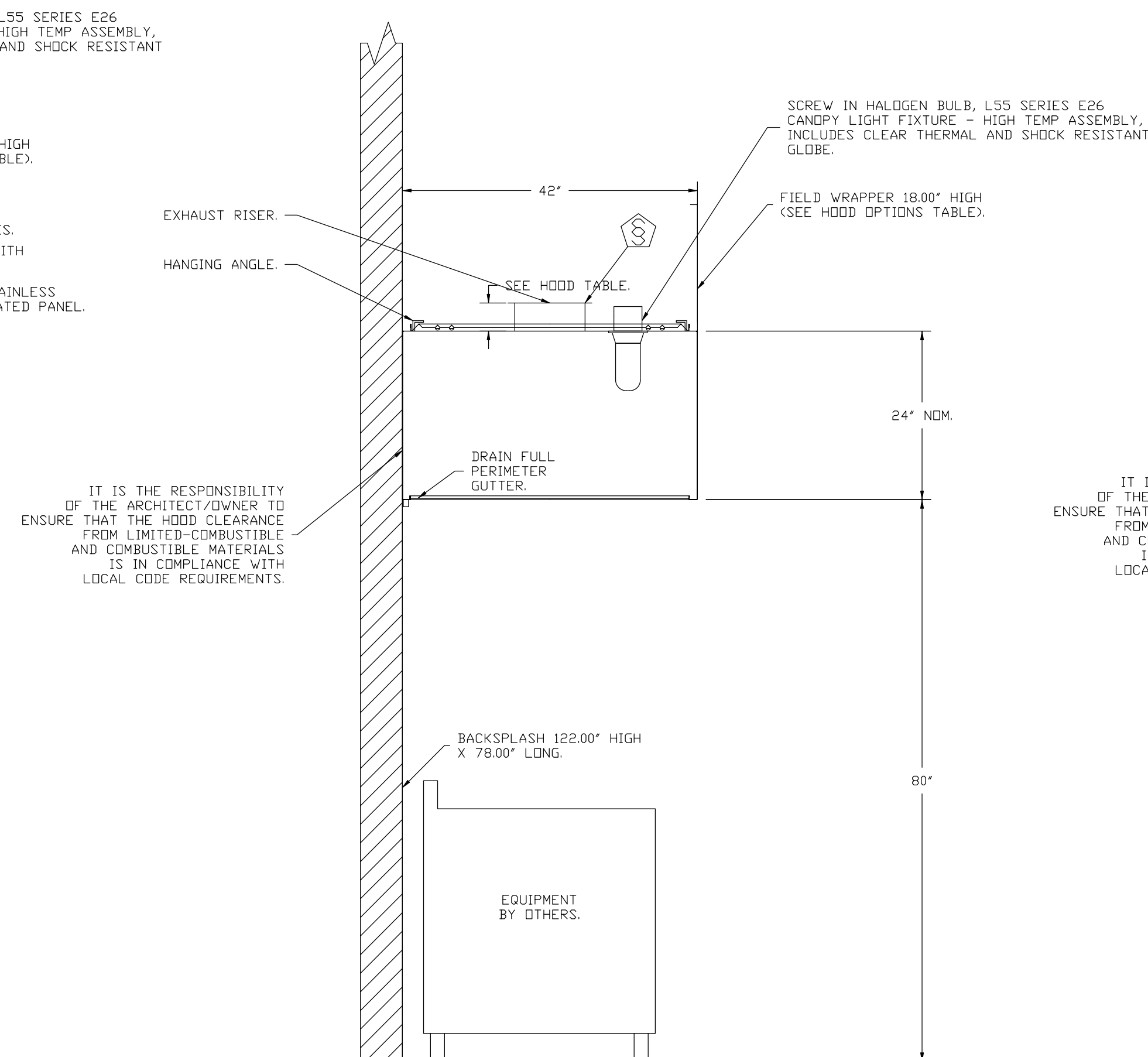
PLAN VIEW - HOOD #2 (39a)
8' 0.00" LONG 5424VHB-G-ND



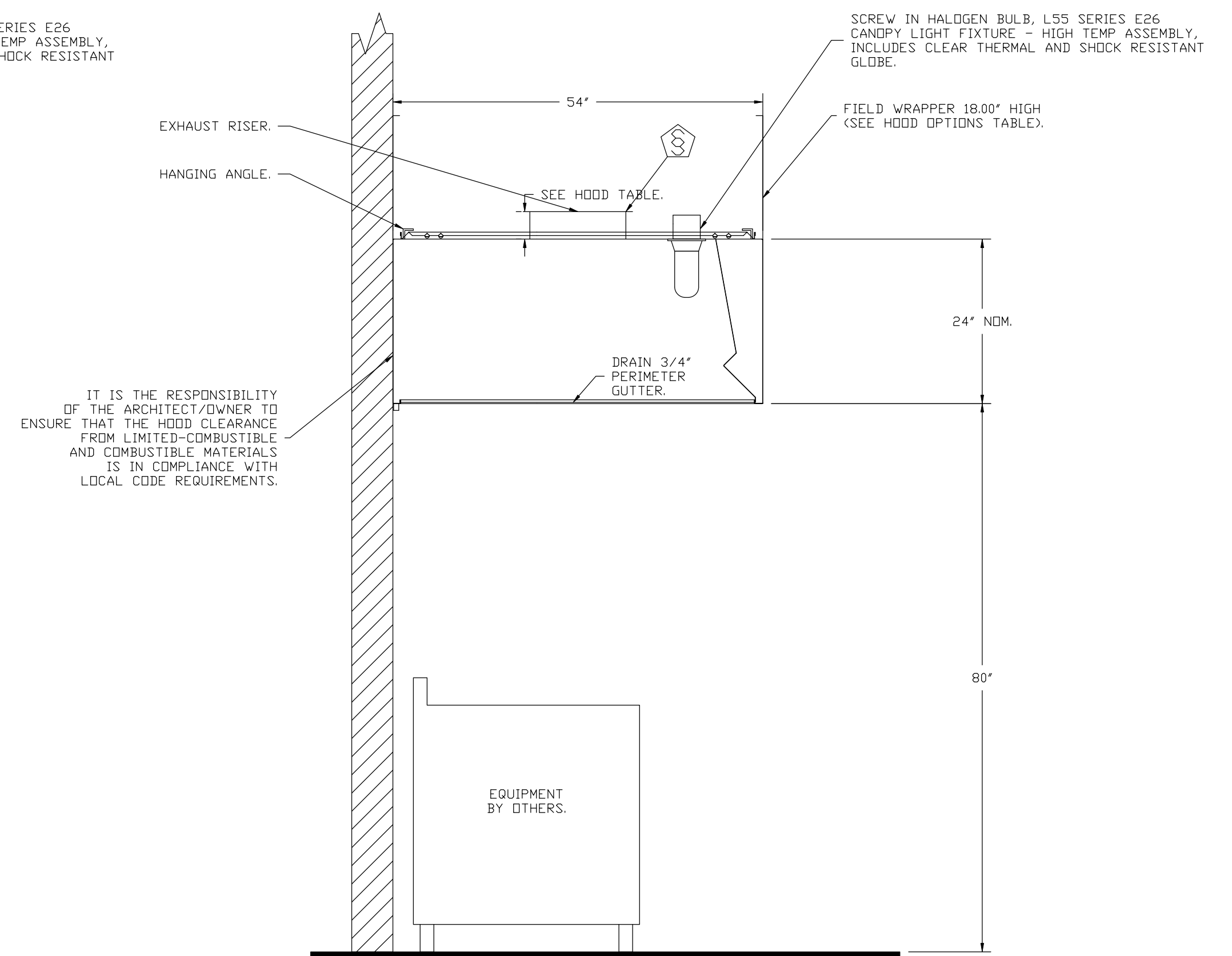
PLAN VIEW - HOOD #3 (39b)
3' 6.00" LONG 4224VHB-G



SECTION VIEW - MODEL 4224VHB-G-PSP-F-ND
HOOD - #1 (38)



SECTION VIEW - MODEL 4224VHB-G
HOOD - #3 (39b)



SECTION VIEW - MODEL 5424VHB-G-ND
HOOD - #2 (39a)

REVISIONS	
DESCRIPTION	DATE

www.captiveaire.com
Denver Office
7300 S Alton Way Building 5, Suite B, Centennial, CO 80112 PHONE: (720) 570-0981 FAX: (919) 227-5899 EMAIL: reg42@captiveaire.com

Moe's Bagels - Longmont, CO R1
LONGMONT, CO, 80501

DATE: 11/11/2020
DWG.#: 4602447
DRAWN BY: SPD-42
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 2

EXHAUST FAN INFORMATION – JOB#4602447

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	38	1	DU85HFA	CAPTIVEAIRE	1350	0.350	1052	TEAD-ECM	0.750	0.1750	1	115	8.9	427 FPM	87	9.9
2	39	1	DU85HFA	CAPTIVEAIRE	1725	0.500	1310	TEAD-ECM	0.750	0.3380	1	115	8.9	546 FPM	87	14.6

MUA FAN INFORMATION – JOB#4602447

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	MCA	MDCP	EVAP FLOW RATE (Gal/Hr)	EVAP COOLER ENTERING DB TEMP	EVAP COOLER ENTERING WB TEMP	EVAP COOLER LEAVING DB TEMP	EVAP COOLER LEAVING WB TEMP	WEIGHT (LBS)	SONES
3	MAU	1	A2-D.250-20D	20MF-2-MDD	A2-D.250	2000	2700	0.500	1272	DDP, PREMIUM	1.500	0.9420	3	208	6.6	9.5A	15A	3.88	91.0°F	60.0°F	70.0°F	60.0°F	980	11.2

*Evap Flow Rate is variable based on water pressure.

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
3	MAU	180018	165617	69°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	38	1	I 19-BDD DAMPER.
		1	SCR-15 BIRD SCREEN.
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION.
2	39	1	I 19-BDD DAMPER.
		1	SCR-15 BIRD SCREEN.
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION.
3	MAU	1	MOTORIZED BACKDRAFT DAMPER FOR A2-D HOUSING.
		1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" W.C.
		1	IBT/MUA EVAP INTERLOCK.
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED.
		1	FREEZE PROTECTION DRAIN KIT FOR IBT/MUA WITH EVAPORATIVE COOLERS.
		1	FREEZESTAT.
		1	VAV PACKAGE W/ PRESET SPEEDS (571 VFD INCLUDED).
		1	VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR TEMPERED SUPPLY FAN.
		1	SIZE 2 DIRECT FIRED HEATER LOW CFM PROFILE PACKAGE. USED ON HEATERS UNDER 2500 CFM.

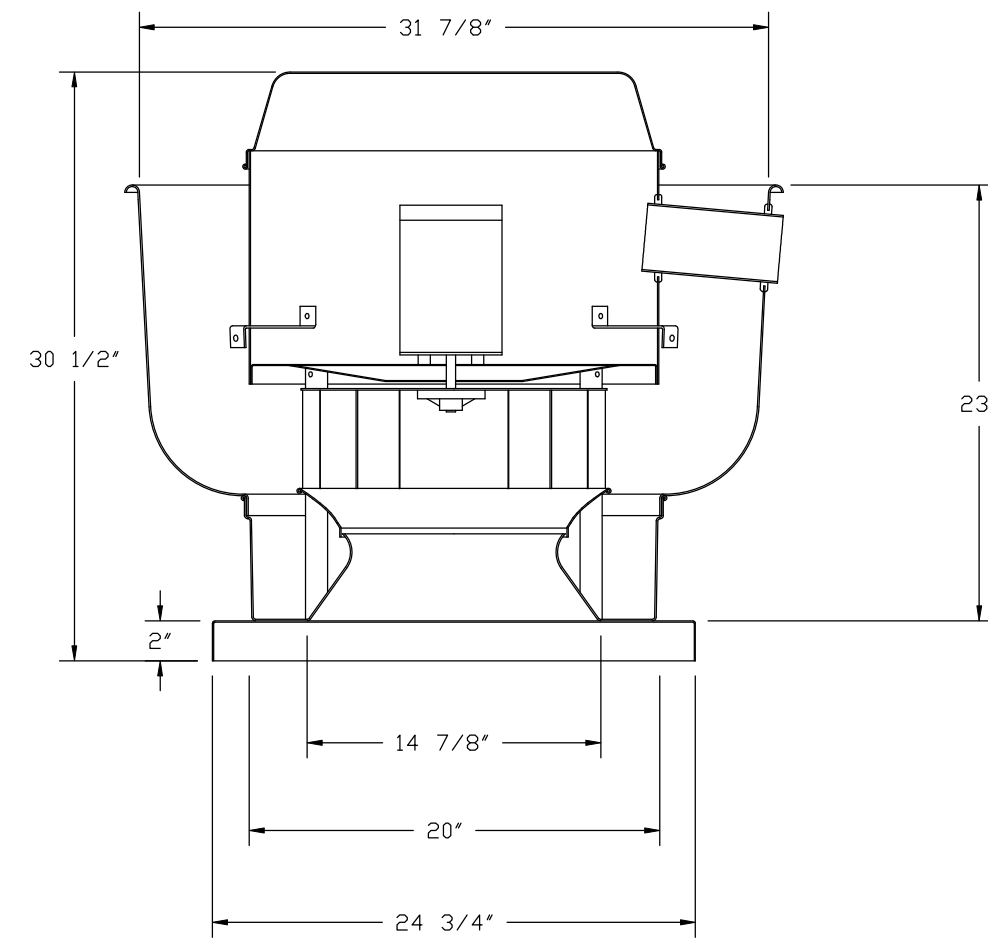
FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	38		YES					
2	39		YES					
3	MAU						YES	

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	38	32 LBS	CURB	23.000"W X 23.000"L X 20.000"H VENTED.
2	# 2	39	32 LBS	CURB	23.000"W X 23.000"L X 20.000"H VENTED.
3	# 3	MAU	90 LBS	CURB	31.000"W X 79.000"L X 20.000"H INSULATED.
	# 3			RAIL	4.000"W X 4.000"L X 36.000"H.

FANS #1 (38), #2 (39) - DU85HFA EXHAUST FAN

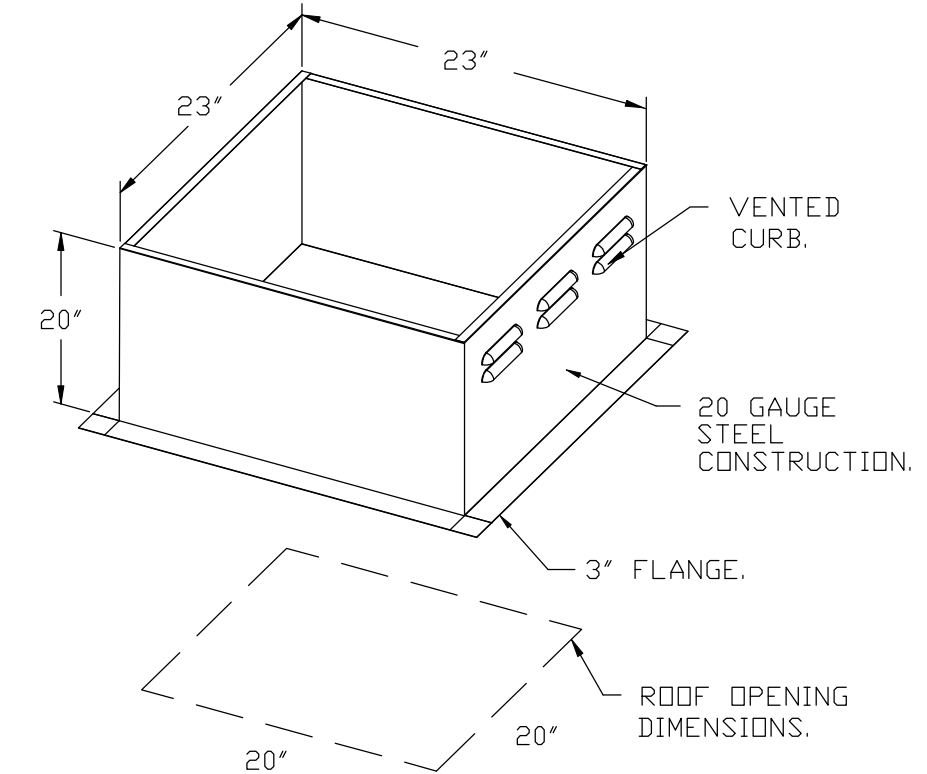


FEATURES:

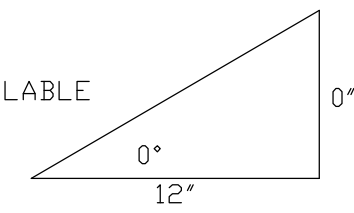
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- UL705.
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- NEMA 3R SAFETY DISCONNECT SWITCH.

OPTIONS

- I 19-BDD DAMPER.
- SCR-15 BIRD SCREEN.
- ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION.

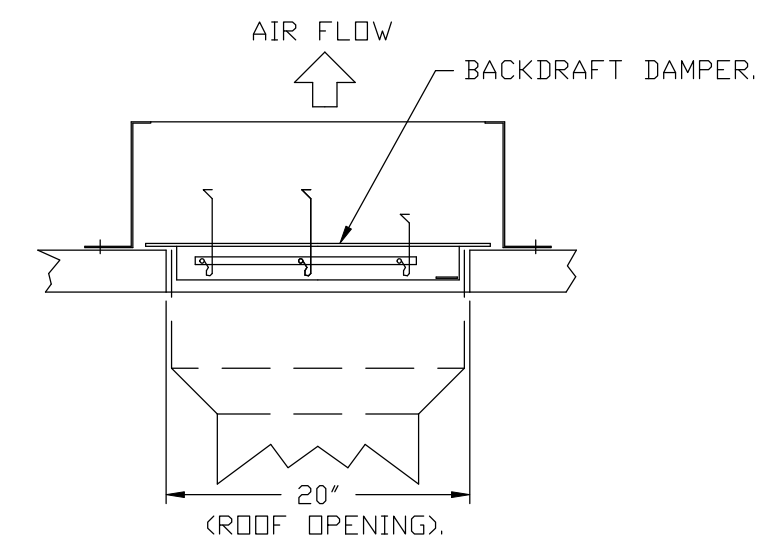


PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.



SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE.

BACKDRAFT DAMPER INSTALLATION



REVISIONS

DESCRIPTION	DATE:

Moe's Bagels - Longmont, CO R1
LONGMONT, CO, 80501

DATE: 11/11/2020

DWG.#: 4602447

DRAWN BY: SPD-42

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

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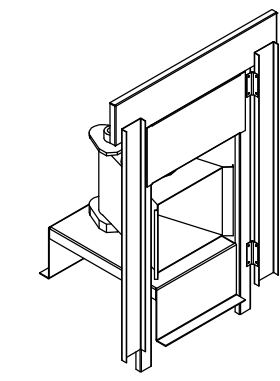
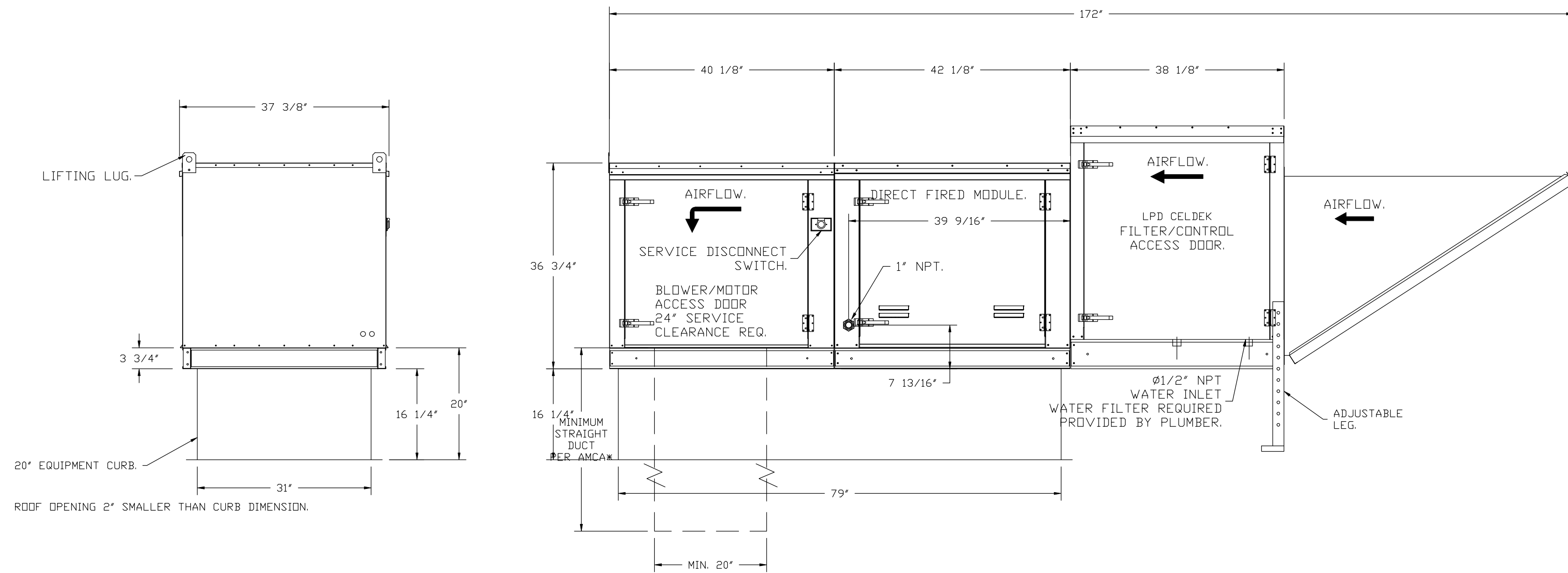
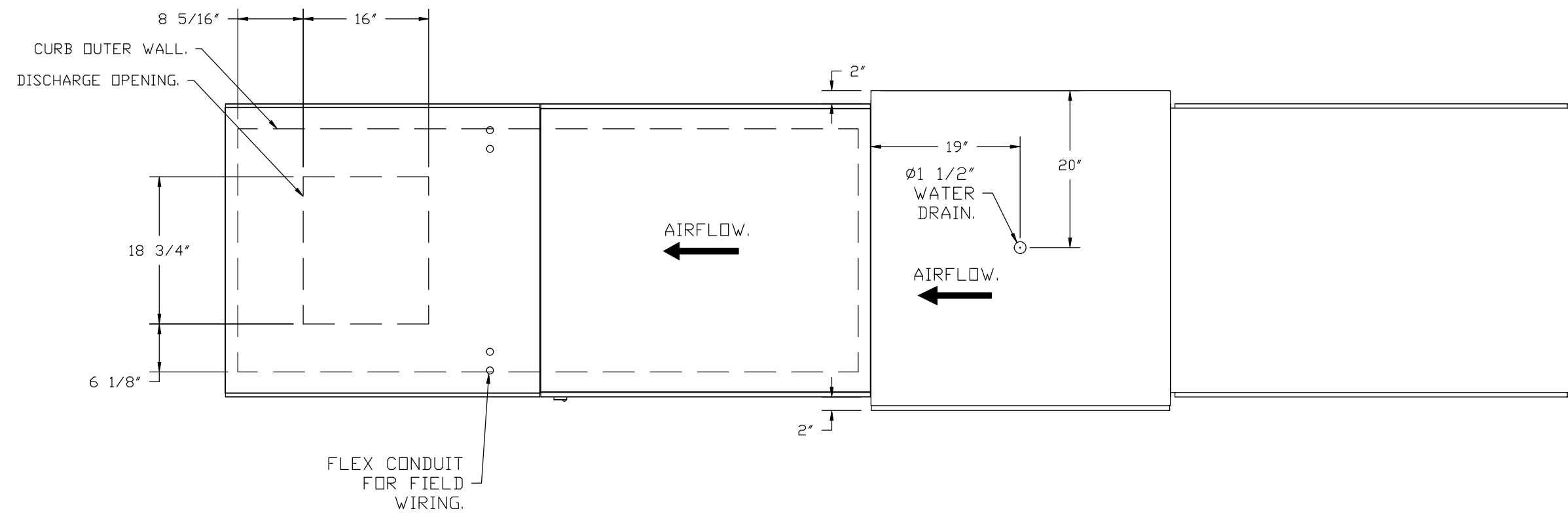
SHEET NO. 3

- FAN #3 A2-D-250-200 - HEATER (MAU)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 20" DIRECT DRIVE FAN.
 2. EVAP COOLER (LPD CELDEK) - W/INTAKE HOOD V/EZ FILTERS.
 3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
 4. MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, LF120S ACTUATOR INCLUDED.
 5. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
 6. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE.
 7. LAYER CONTROL FOR 1BT EVAP.
 8. GASLINK BUILDING MONITORING SYSTEM COMMUNICATIONS MODULE. REQUIRES INTERNET & FIELD WIRED ETHERNET CONNECTION OR 3G CELLULAR SERVICE. INCLUDES REV 3 CDM MODULE, RJ45 TO MODBUS CONVERTER, 3 FT CAT5 CABLE, AND 1 FT OF SHIELDED TWISTED PAIR.
 9. FREEZE PROTECTION DRAIN CONTROL KIT FOR EVAPORATIVE COOLERS. INCLUDES 3-WAY WATER SOLENOID VALVE 8316G064 (SHIPPED LOOSE), PRESSURE SWITCH INSTALLED UPSTREAM OF 2WAY SOLENOID IN UNIT, BRASS TEE AND 2 NPT HALF INCH NIPPLES. FIELD WIRING REQUIRED BY OTHERS FOR 3-WAY VALVE. FOR BOTH CELDEK AND STANDARD V-BANK TYPE CONFIGURATIONS.
 10. FREEZE/STAT FACTORY SET AT 35°F AND 10 MINUTES.
 11. VAV (VARIABLE-AIR-VOLUME) WIRING PACKAGE FOR COMMERCIAL FANS WITH FREQUENCY DRIVE. PRESET SPEED OR SPEED REFERENCE VARIABLE FREQUENCY DRIVE INPUT FIELD WIRED.
 12. VFD FACTORY MOUNTED AND WIRED IN UNIT CONTROL VESTIBULE.
 13. PROFILE PLATE CONFIGURATION FOR SIZE 2 DIRECT FIRED UNIT FOR LOW CFM APPLICATIONS.
 14. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER/EVAP SECTION).

*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20" x 20".

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 61°. TEMP. RISE = 69°F.
 BTUs CALCULATED OFF ACTUAL AIR DENSITY.
 OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 199032.
 INPUT BTUs AT ALTITUDE OF 0.0 FT. = 216339.
 OUTPUT BTUs AT ALTITUDE OF 4998 FT. = 165617.
 INPUT BTUs AT ALTITUDE OF 4998 FT. = 180019.



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

DIRECT FIRED PROFILE PLATE SPECIFICATIONS:
DESCRIPTION:
 DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO: US6629523B2), SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY-PRODUCT LEVELS TO A MAXIMUM OF 5PPM OF CARBON MONOXIDE (CO), AND 0.5PPM OF NITROGEN DIOXIDE (INDIRECT FIRED) UNITS SHALL BE CONFIGURED WITH THE BLOWER MOUNTED DOWNSTREAM OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW, REGARDLESS OF INLET AIR TEMPERATURE.
APPLICATION:
 SPRING-LOADED BURNER PROFILE PLATES ARE ENGINEERED TO AUTOMATICALLY REACT TO THE MOMENTUM OF A FRESH AIR STREAM, WITHOUT THE NEED FOR ANY MOTORS OR ACTUATORS TO MECHANICALLY ADJUST THEM. WITH THIS FEATURE, ALL DF UNITS ARE DESIGNED FOR DEMAND CONTROL VENTILATION (DCV) REQUIREMENTS.
CERTIFICATIONS:
 ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.18 (RECIRCULATING DF HEATERS).
GENERAL CONSTRUCTION:
 -PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
 -PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
 -PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
 -DESIGN SHALL INCORPORATE PROPERLY TORQUED, PERMANENTLY MOUNTED SPRING HINGES.
 -SPRING HINGES SHALL BE MADE FROM PLATED STEEL.

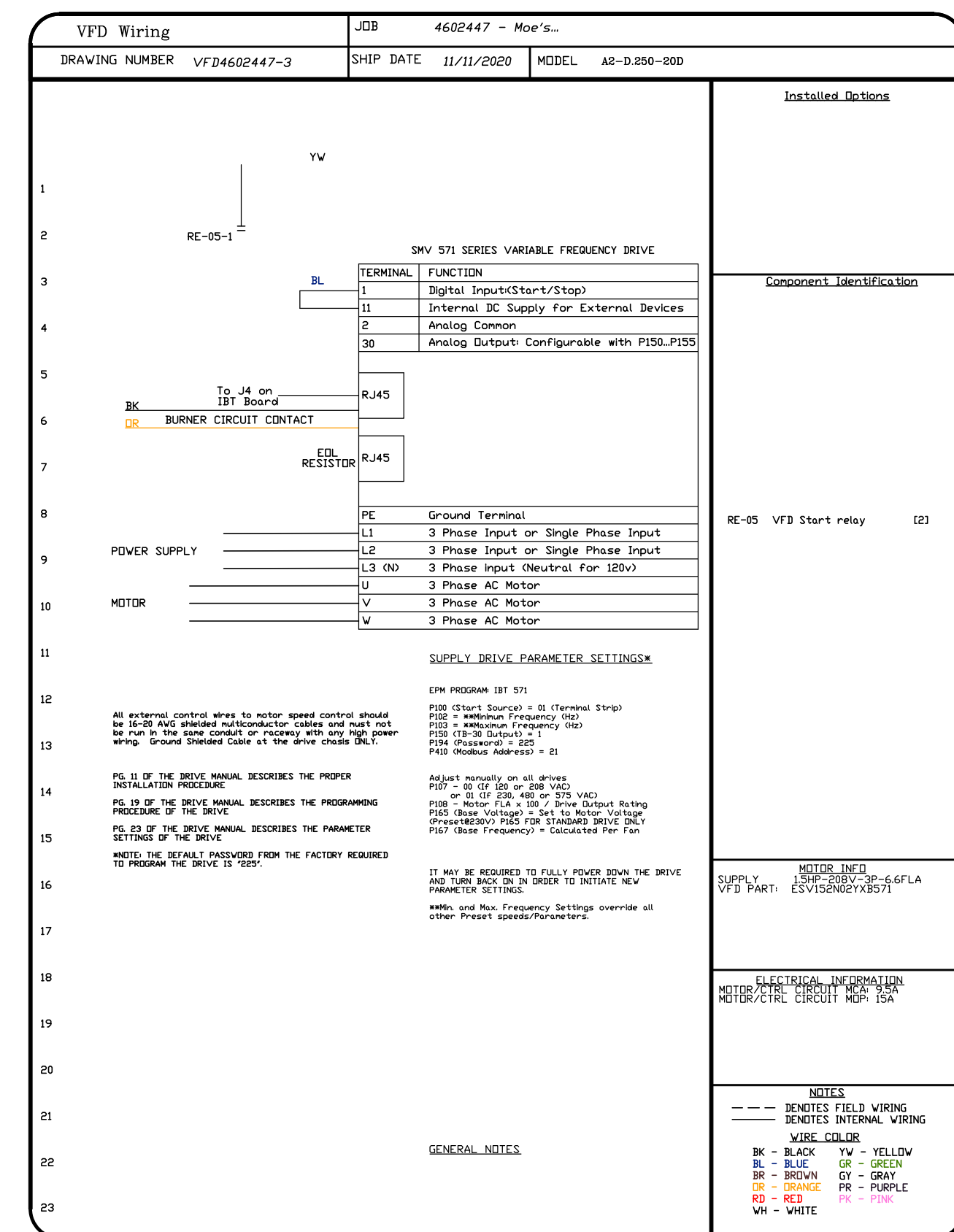
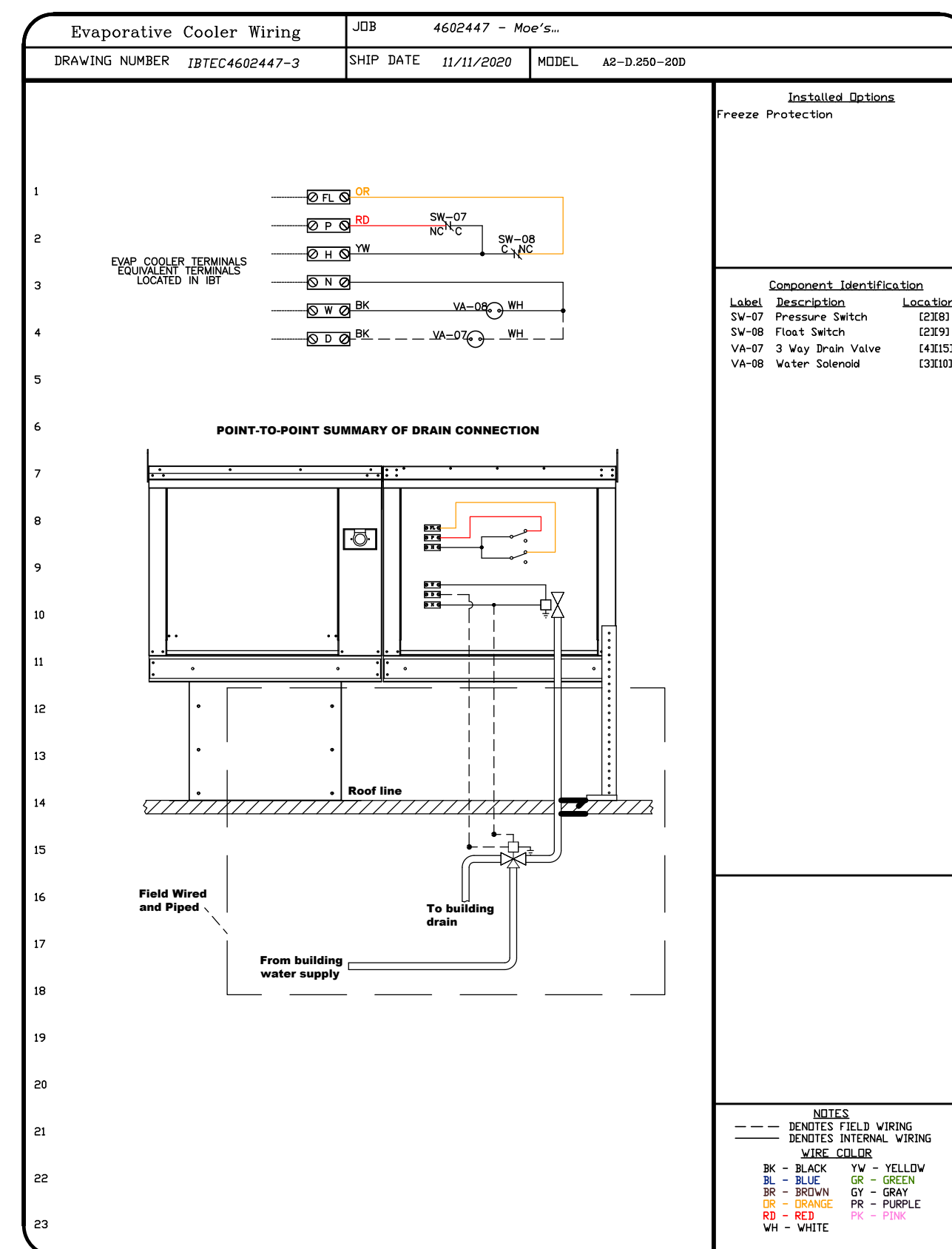
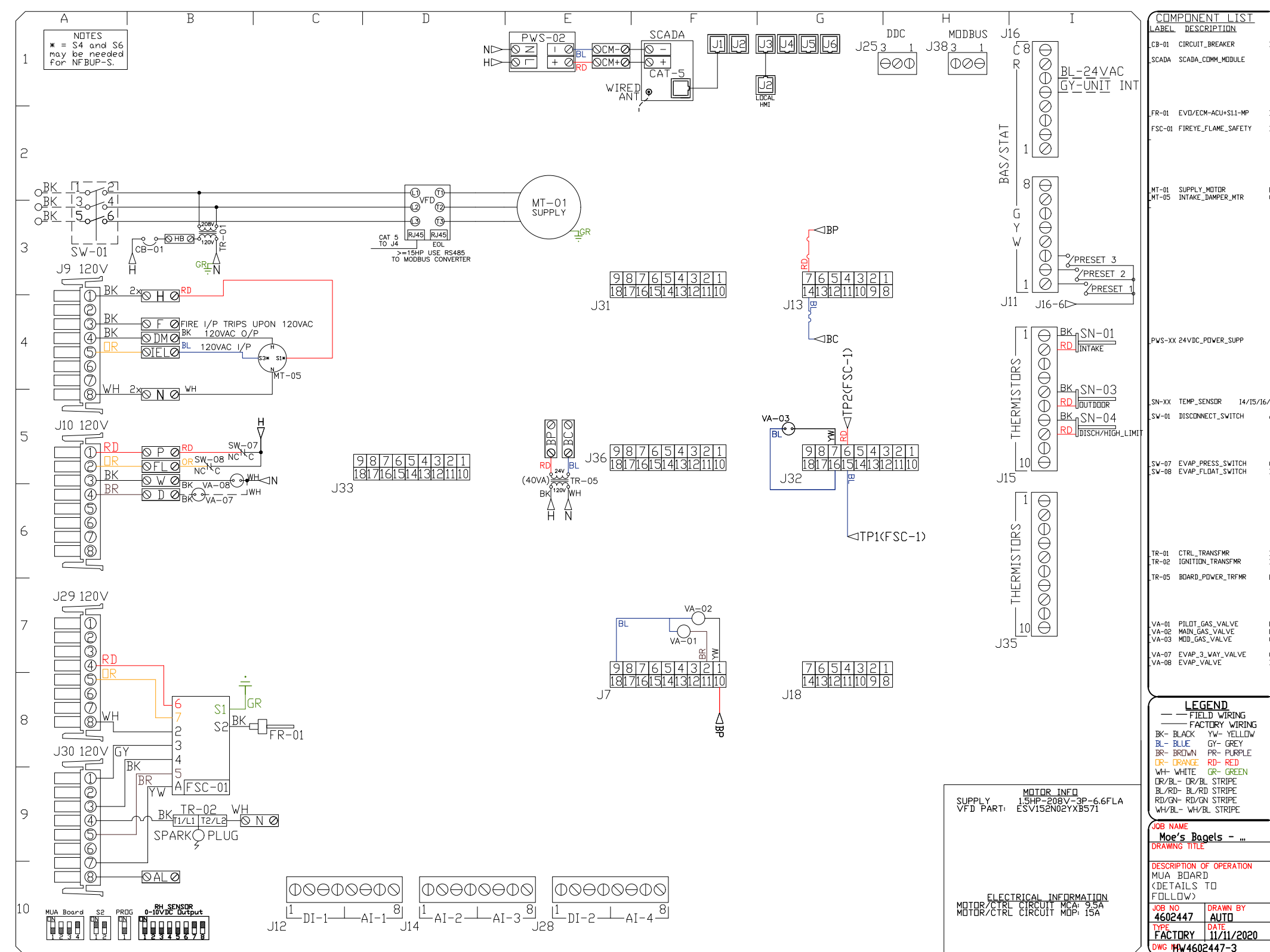
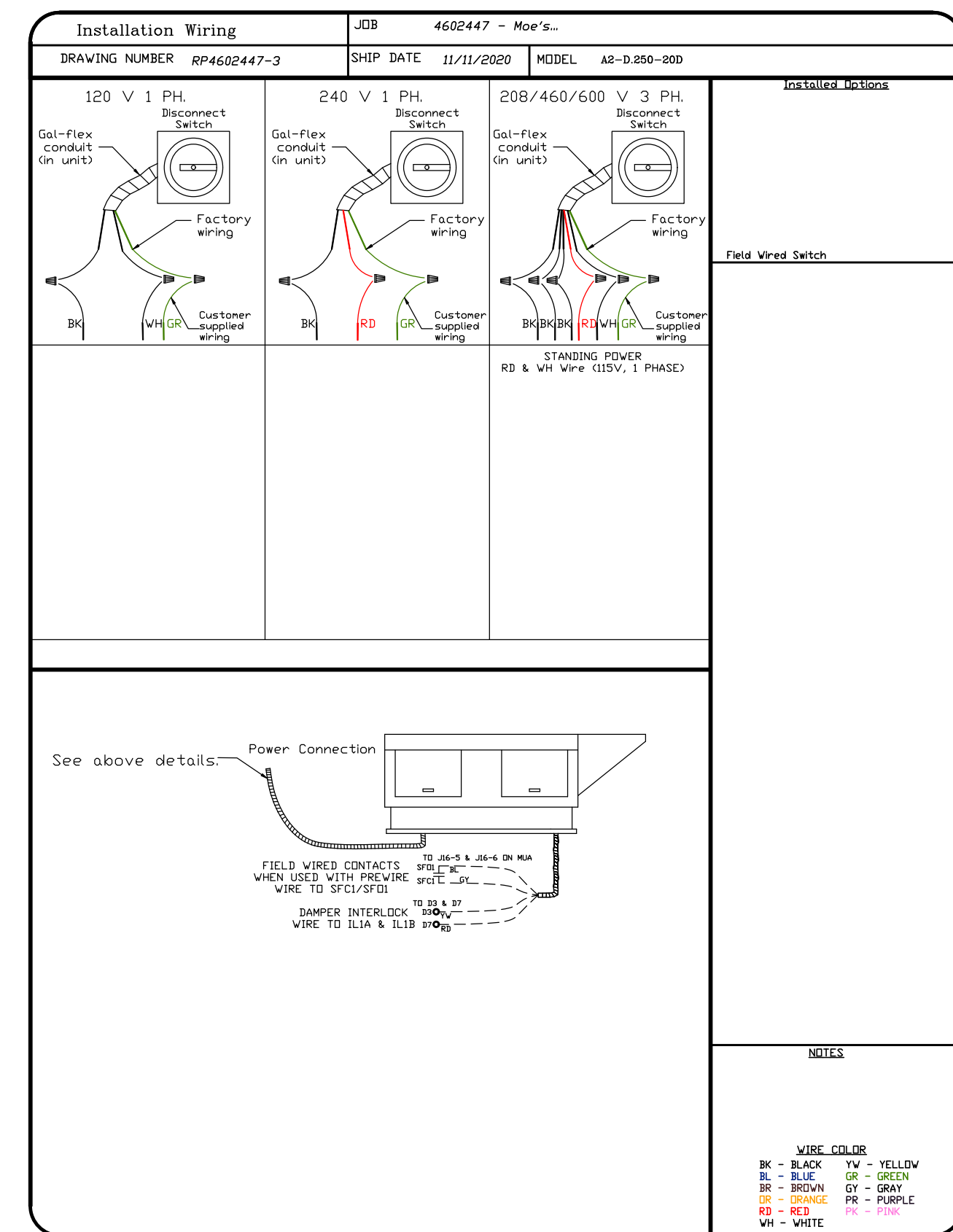
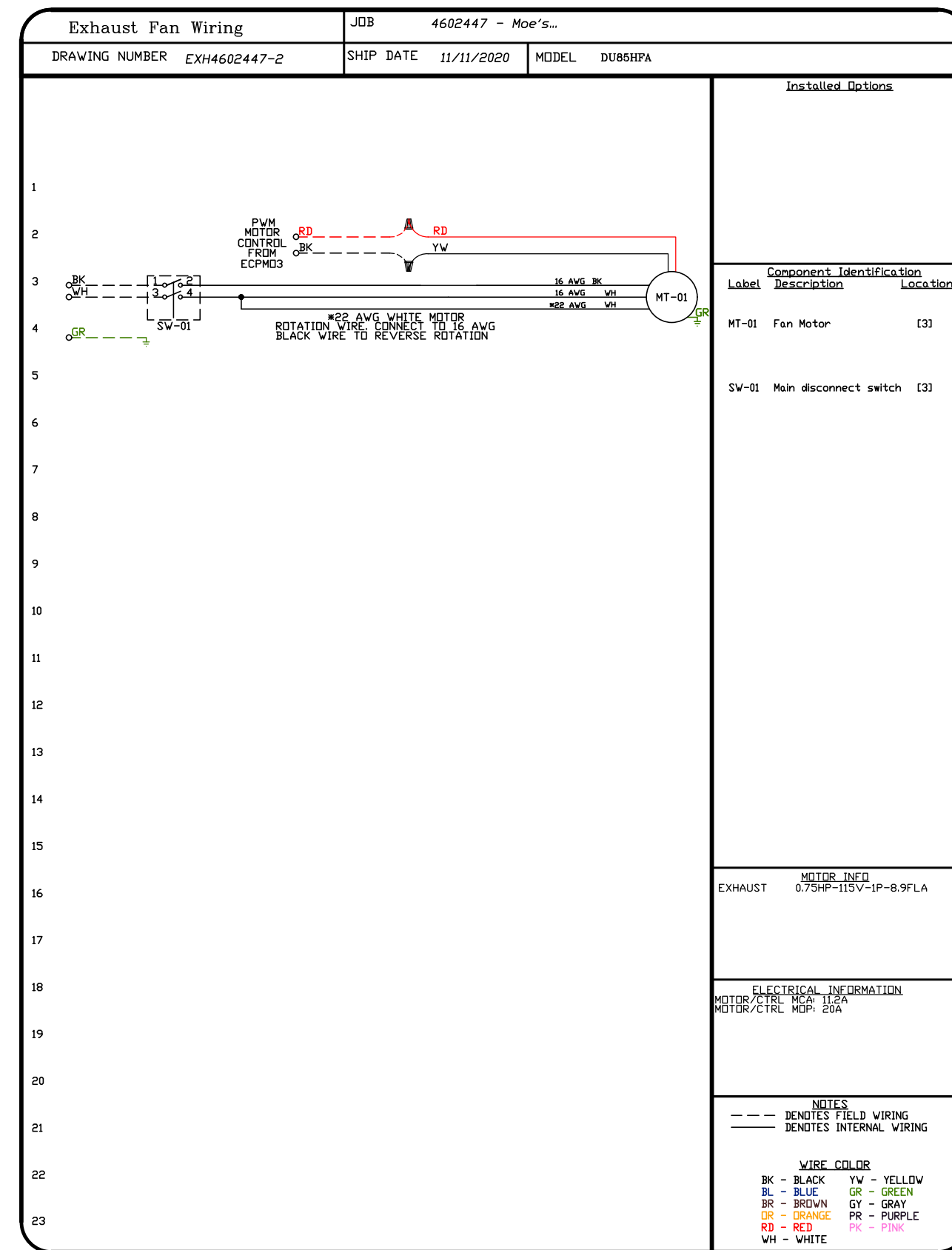
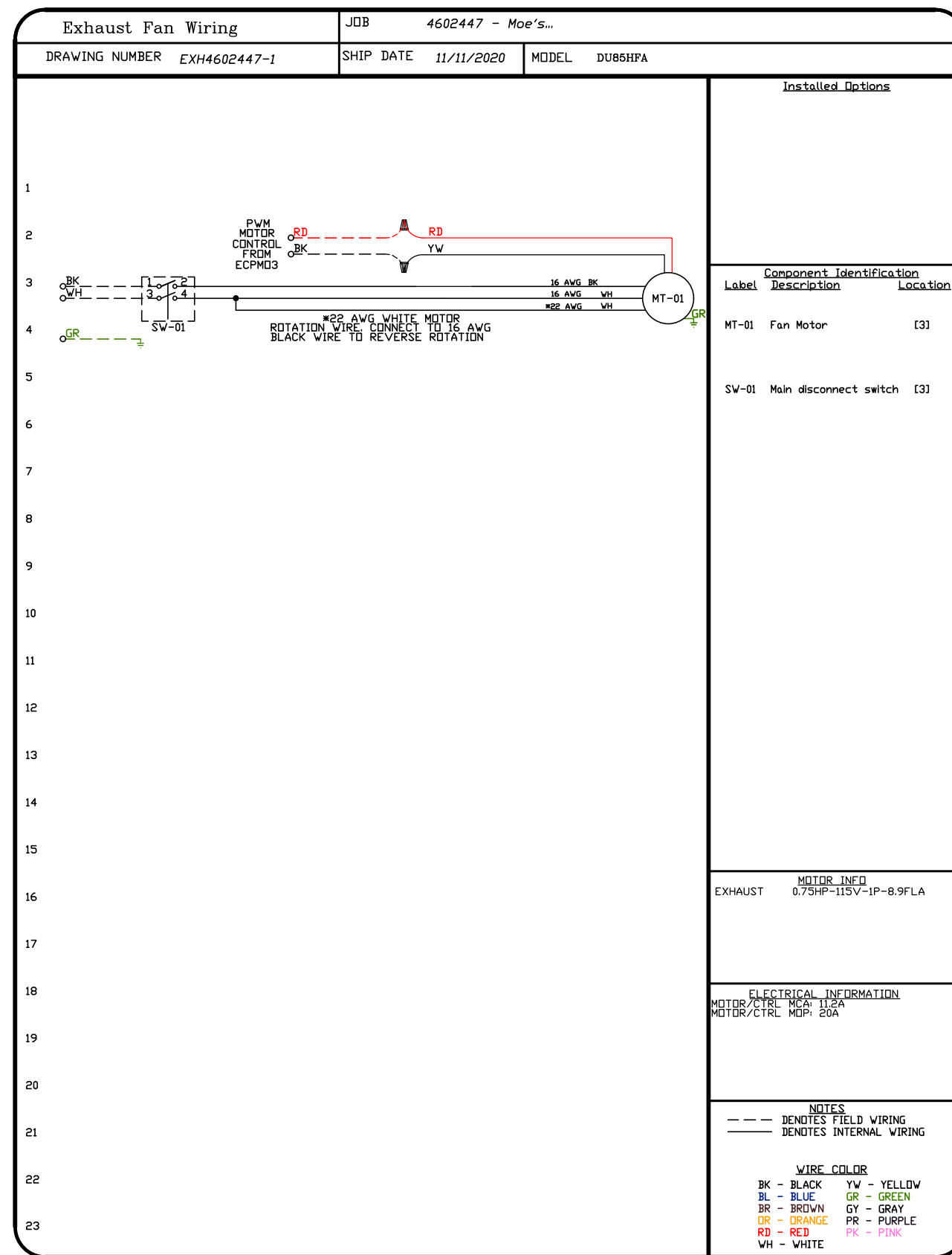
REVISIONS	
DESCRIPTION	DATE:

www.captiveaire.com
 Denver Office
 7300 S Alton Way Building 5, Suite B, Centennial, CO 80112 PHONE: (720) 570-0981 FAX: (919) 227-5699 EMAIL: reg@captivair.com

Moe's Bagels - Longmont, CO R1
 LONGMONT, CO, 80501

DATE: 11/11/2020
DWG.#: 4602447
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SHEET NO.
4



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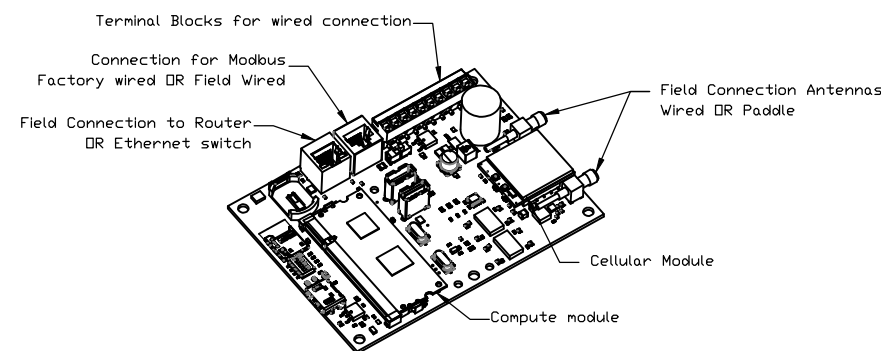
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SHEET NO. 5

ELECTRICAL PACKAGE - JOB#4602447

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	HP	VOLT	FLA	
1		SC-E012022FP	WALL MOUNT IN SS BOX	05 - SS WALL MOUNT BOX	2 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL	38	EXHAUST	1	0.750	115	8.9
					2 FAN		MAU	SUPPLY	3	1,500	208	6.6

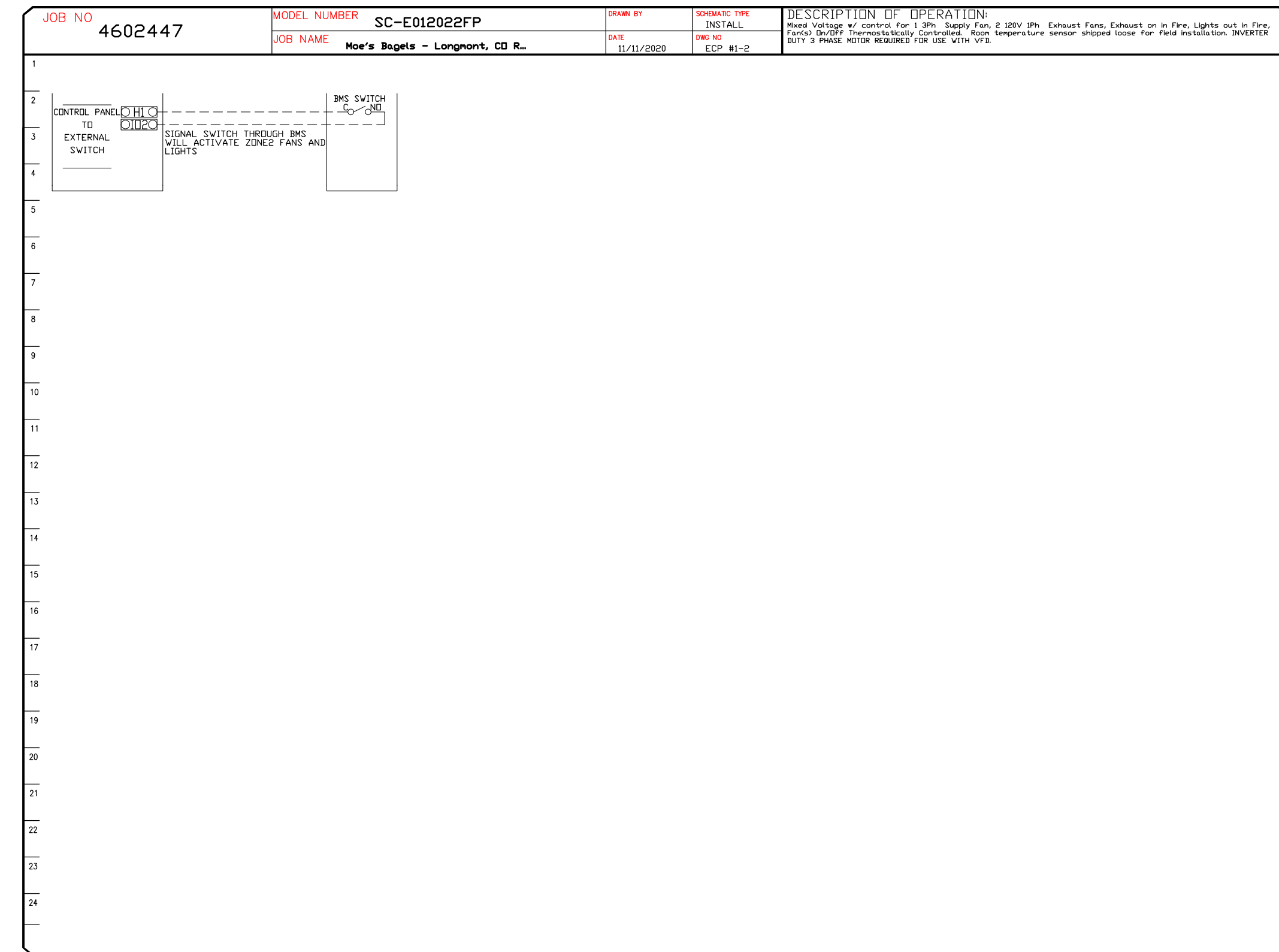
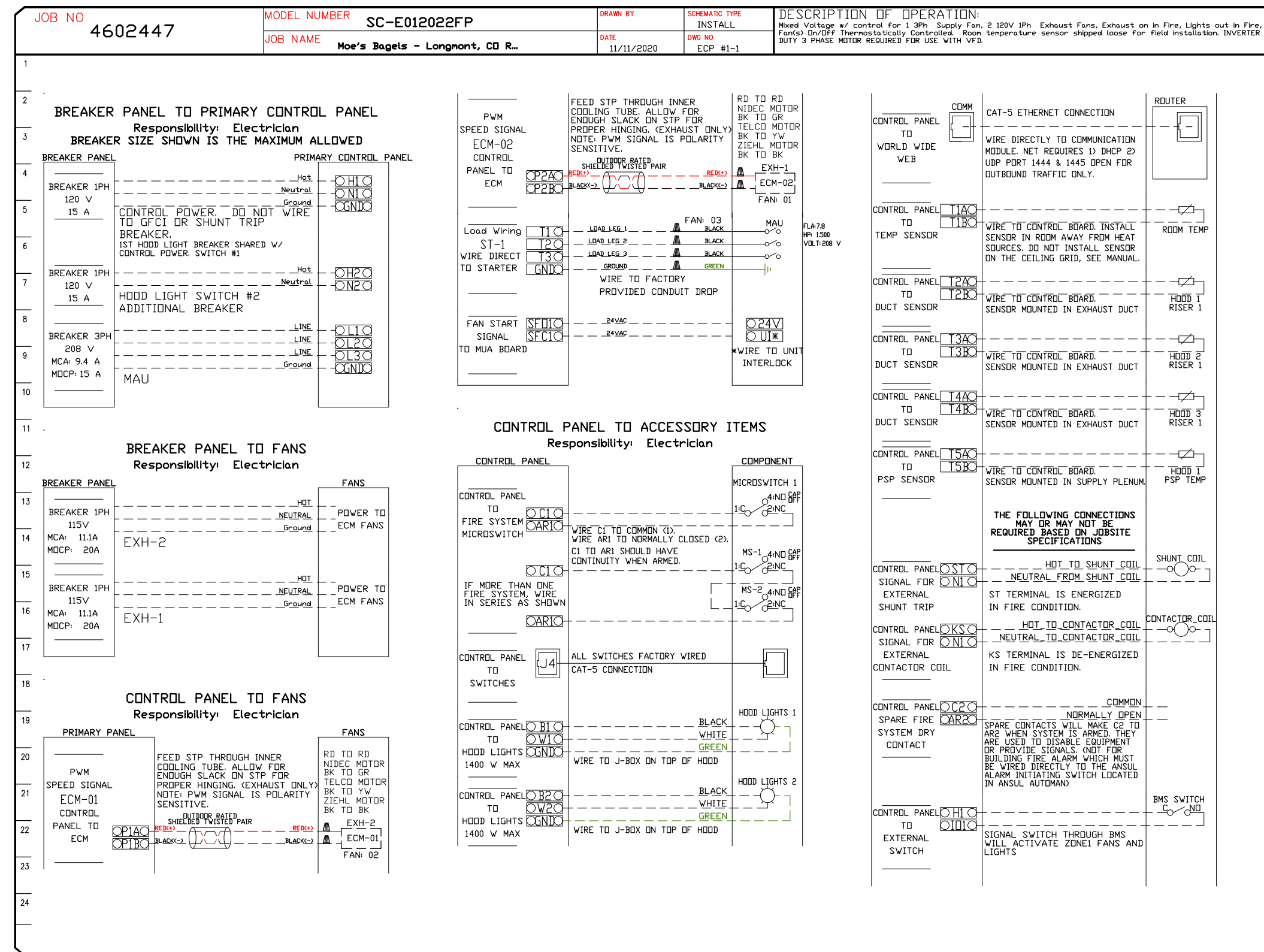


CASlink Monitor and Control

- Hood control panel to support communications to cloud-based Building Management System.
- Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.
- Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.
- Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM ECONOMIZER control strategies for fully integrated Building Management.

MONITORING AND CONTROL POINTS LIST

DCV Packages	Function	SC Packages	Function
Room Temperature	MONITOR	Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR	Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR	MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR	Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR	Controller Faults	MONITOR
Fan Amperage	MONITOR	Fan Status	MONITOR
Fan Power	MONITOR	PCU Faults	MONITOR
VFD Faults	MONITOR	PCU Filter Clog Percentages	MONITOR
Controller Faults	MONITOR	Fire Condition	MONITOR
Fan Status	MONITOR	CORE Fire System	MONITOR
PCU Faults	MONITOR	Building Pressures	MONITOR
PCU Filter Clog Percentages	MONITOR	Fans Button(s)	MONITOR & CONTROL
Fire Condition	MONITOR	Lights Button(s)	MONITOR & CONTROL
CORE Fire System	MONITOR	Wash Button	MONITOR & CONTROL
Building Pressures	MONITOR		
Prep Time Button	MONITOR & CONTROL		
Fans Button	MONITOR & CONTROL		
Lights Button	MONITOR & CONTROL		
Wash Button	MONITOR & CONTROL		



HOOD CONTROL PANEL- ON/OFF SMARTS CONTROLS WITH STARTERS

Written Specifications: The hood control panel with ON/ OFF smart controls allows for ON/OFF control of the kitchen ventilation system. This control panel includes integrated starters for the fans.
Listings: Models Electrical Control Panel are ETL Listed under file number 10175459ICDL-001 and complies with UL508A Standards and CAN/CSA C22.2, No. 14-05 Standards.

ECPM03 Circuit Board is ETL Listed under file number 100901773BOX-001 and complies with UL 61010-1 Standard and CAN/CSA C22.2, No. 61010-1 Standards.

Sequence of Operations: The hood control panel interlocks the exhaust fan with makeup air unit.

The hood control panel is capable of operating in one or more of the following states at any given time.

Automatic: The ON/OFF hood control package is designed to thermostatically activate the exhaust fans and make-up air for an exhaust hood whenever elevated temperatures are sensed in the exhaust system. This option will meet the requirements of IMC 507.1.1 and IMC 508.1 by providing a thermostat(s) mounted in the duct or hood riser to sense increased exhaust temperatures.

Once the duct temperature reaches the activation point, the exhaust fans and MAU will be activated. The controls also provide hysteresis to prevent cycling of the fans after the cooking appliances have been turned off and the heat in the exhaust system is reduced. The hysteresis is factory set 2 degrees and will keep the exhaust running until the temperature falls 2 degrees below the activation set point. A hysteresis timer also exists to keep the fans running for at least 30 min after being activated by the temperature rise.

The panel is factory configured to shut down supply fans, turn on the exhaust fans and turn off the hood lights in a fire condition.

In the event of a fire, there are two forms of activation. The mechanical remote pull may be activated or the mechanical detection link in the hood may melt. The Ansul Automan takes this mechanical activation and converts it to an electric notification signal via the microswitch and building-initiating switch. In either event, the DCV will be electrically notified via the Ansul Automan. The DCV will then turn ON the exhaust fan, turn off the make-up air unit and turn off the hood lights. The Ansul Automan will close the mechanical gas valve to close the gas line or if an electric gas valve is used, the hood control panel will send a signal to the shunted portion of the breaker panel to remove power from the cooking appliances. The building-initiating switch can be used to notify the building alarm system.

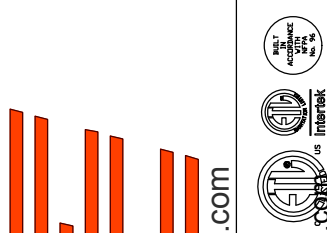
Manual: The system operates based on human input from an HMI.

Schedule: A weekly schedule can be set to run fans for a specified period throughout the day. There are three occupied times per day to allow for the user to set up a time that is suitable to their needs. Any time that is within the defined occupied time, the system will run suitable to their needs. Any time that is within the defined occupied time, the system will run at modulation mode and follow the fan procedure algorithm based on temperature during this time. During unoccupied time, the system will have an extra offset to prevent unintended activation of the system during a time where the system is not being occupied.

Other: The system operates based on the input from an external source (DDC, BMS or hard-wired interlock)

REVISIONS

NO.	DESCRIPTION	DATE:



Moe's Bagels - Longmont, CO R1
 LONGMONT, CO, 80501

DATE: 11/11/2020

DWG.#:
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SCALE:
3/4" = 1'-0"

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