Historic Preservation Services
Community Development & Neighborhood Services
281 N. College Ave.
Fort Collins, CO 80524

970.224.6078
preservation@fcgov.com
fcgov.com/historicpreservation

CERTIFICATE OF APPROPRIATENESS
ISSUED: November 20, 2024
EXPIRATION: November 20, 2025

Larimer County Historic Alliance (Historic Larimer County)
PO Box 1909
Fort Collins, CO 80522

Dear Historic Larimer County:

As you are aware, last evening the Historic Preservation Commission gave Final Design Review approval for the work you are proposing for the Emma Malaby Grocery Property at 313 N. Meldrum St.

More specifically, the Commission approved:

- Roof work:
  - Structural stabilization to include sistering of rafters, installation of additional beams and supports
  - Re-shingling using Brava synthetic shingles
  - Associated ventilation and flashing
  - Structural reinforcement of chimneys
  - Replacement of ~75% of soffit and fascia in-kind
  - K-style gutters
- Rear frame addition of 195 square feet for restroom and kitchenette
  - To include new water and sewer lines to building
  - Hipped roof also using Brava synthetic shingles
  - Single-hung windows
  - 4-panel wood accessible door
  - Wood siding with exposure different from historic building portions
- Accessible entrance with associated ramp, landings, and permeable pavement path
  - Entrances into new addition and new opening in historic addition; 4-panel wood doors
- Decorative sculpture bed (no planting) at southwest corner
- Reconstruction of basement access platform
- Rehab of façade features, including:
  - Restoration of parapet and trim details based on historic photos
  - Re-painting of historic signs based on historic photos
  - Repair or replica replacement of siding, as appropriate
  - Reroofing porch roof with Brava shingles
  - Fascia and soffit repair/replacement as needed
  - Repair of wood pilasters
  - Repair of decorative wood panels

    - Porch decking replacement to match historic
    - Stair modifications, per code
    - Replacement of wood door trim as needed using replica trim boards
    - Other repair of wood features
    - Re-grading as needed
    - Concrete path to sidewalk
- Window and door repair or replacement, depending on conditions (see window and door schedules, Sheets A1.2 and A1.3)
- Removal of non-historic siding and replacement with siding to match historic profiles
- Foundation and chimney tuckpointing
- Insulation updates as needed

Applicable Code Standard	Summary of Code Requirement and Analysis (Rehabilitation)	Standard Met (Y/N)
SOI #1	*A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships;* **The Emma Malaby Grocery Property historically had commercial use, and its current use is considered storage. It has a new proposed use as a store museum, office space, and library. This new use is compatible with the existing building, requiring minimal change to distinctive features.**	**Y**

SOI #2	*The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.* **The Emma Malaby Grocery Property was constructed in 1881 for local portrait photographer G.T. Wilkins, who operated his studio from this building when it was located on College Avenue. After it was moved to its current location, it was used as a neighborhood grocery store, owned by the Collamer family, for many years. The building is one of the oldest wood frame buildings in Fort Collins and is also a rare example of a false-front store in town. There is an L-shaped addition to the main store's north and west, which was built in 1916 and was used as Fred Collamer's "woodyard store" and as a second-hand store; it is considered a historic alteration to the building. At the rear of the property, there are three other historic structures: a frame barn, a stacked plank shed, and a stone-lined well.** **This proposed project includes the structural stabilization of the existing roof, including re-roofing with Brava synthetic shingle material, a rear addition for a bathroom and kitchenette, creating an ADA-compliant entrance, and other rehabilitation work such as façade restoration, window and door rehabilitation, replacement of non-historic siding, tuckpointing, and insulation.** **Roof: This work will necessarily include the loss of some character-defining materials (wood shingles), but the proposed substitute material, Brava synthetic shingles, approximate the appearance of the historic material well. [Please note that the plans currently state that the material proposed is CeDUR shingles; this is not accurate.] The form of the roof will not be changed due to the structural work required. Please note that the Chimney Detail drawing on plan set sheet A5.0 is not accurate; refer to note 7 under the Roof Replacement Notes table and the description on the applicant's Design Review Application form. The chimney work will include some removal of the lower portions of brick for structural reinforcement using steel angle supports as well as tuckpointing, which should result in very little change to the appearance of the chimneys.** **Addition: Because of the reasonable scale and rear location of the proposed addition, the character of the historic store would not be impacted. The addition will not be visible from public rights-of-way. It should be noted that the location of the proposed addition (see Revised Floorplan A.10A) is in relatively close proximity to the stacked-plank shed, and so care should be**	**Y**

	taken to protect this historic feature during construction. A plan of protection is required prior to building permit issuance (see condition below). Additionally, the path of the trenching necessary for extending water and sewer service to the building has not yet been identified on plans; this work should similarly be planned to avoid conflicts with historic resources on site. **ADA Improvements: ADA improvements include the installation of a Gravelpave2 permeable pavement path, concrete landings, and concrete ramp. The ADA-compliant entrance would be located in the new rear addition, with an additional entrance at the southwest corner of the building. Although the location of the proposed accessible entrance to this building is at the rear of the building rather than the front, as advised by Preservation Brief 32, this choice ensures access to the greatest extent of the building given the physical limitations of the interior at present. Additionally, the placement of a ramp on the southeast side of the building is constrained by requirements from the Fire Authority to avoid constriction of the existing driveway for fire access. These ADA improvements would have a minimal impact on the historic character of the building.** **Other Proposed Rehabilitation: The other rehabilitation elements proposed would enhance rather than detract from the historic character of this building. For example, the proposal includes replacement of non-historic siding with more historically appropriate siding and façade restoration, which will include among other elements removing the boards from the boarded over storefront windows and doors and repairing those character-defining features.**	
SOI #3	*Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.* **The applicant discussed with staff that the material choices for the addition would include siding that is differentiated from the historic siding to ensure that the addition is clearly a modern alteration; please confirm material selection with staff. No other project elements create a false sense of historical development, and no conjectural features are proposed.**	**Y**

SOI #4	*Changes to a property that have acquired historic significance in their own right will be retained and preserved.* **The el-shaped addition to the store does have significance in its own right, and it will be retained and preserved as part of this project, with minimal perforations for connections to the new addition. Again, a plan of protection must be in place prior to permit issuance to ensure that no damage befalls the stacked-plank shed near the addition site.**	**Y**
SOI #5	*Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.* **Many of the distinctive materials, features, finishes, and construction techniques represented in this historic building will be preserved and repaired as part of this project, such as through the restoration of missing façade elements, the structural stabilization of the roof, and the repair of historic windows and doors. Some materials are proposed for replacement, such as the roof's wood shingles and deteriorated materials, such as soffit and fascia board and some wood trim material. Although historic material would be lost in these cases, replacement of deteriorated materials in-kind, as proposed, is considered appropriate under the Standards, and the proposed substitute roof shingle material, Brava, reasonably replicates the appearance of cedar shingles in terms of form, texture, and color and the HPC has approved the product for use on other historic properties in Fort Collins, such as the Bouton House at 113 N. Sherwood St. Additionally, the application proposes to replace all window glazing with low-E, tempered glass, but this change is necessary to conform with building code requirements.**	

SOI #6	*Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.* **The wood-shingle roof of the store appears to be significantly deteriorated, requiring replacement. Although the roof is not proposed to be replaced in-kind, the proposed substitute material, Brava synthetic shingles, is appropriate. Brava shingles are Class 4 impact-resistant and Class A or C fire-resistant, and they approximate the color and texture of wood shingles well (see attached product specification sheet).** **Other components of the rehabilitation work proposed include repair rather than replacement of several building features, such as many of the historic doors and windows and many other carpentry elements, tuckpointing of the foundation and chimneys, and other repair. Other elements will be restored based on historic photograph evidence, such as the painted commercial signs and some of the parapet and other woodwork detailing on the façade, which is appropriate under this Standard. The existing non-historic siding will also be removed and replaced based on photo evidence. Some building features, such as the soffit and fascia board or some wood trim, will be inspected and repaired or replaced in-kind as necessary, as described on the project plans; this approach is appropriate under this Standard. Similarly, the window and door schedules describe different treatment decisions for each unit and then each component of each unit (i.e., identifying repair methodology for each sash, the frame, the glazing, etc., rather than an entire window or door unit), which conforms to this Standard.**	**Y**
SOI #7	*Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.*	**N/A**

SOI #8	*Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.* **Because this property has significance under Standard 4, Information Potential, the applicant should be advised of this standard while performing any needed excavation for the proposed addition, utility trenching, re-grading, and other site work. Should any archaeological resources be uncovered, work should cease, and Historic Preservation Services should be contacted immediately at preservation@fcgov.com and 970-224-6078.**	**Y**
SOI #9	*New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.* **The proposed addition uses an existing boarded opening in the wall of the historic addition as the only connection point (visible from the interior but not the exterior), and so the loss of historic material is minimized for this new construction. At 195 square feet, the design of the addition is subordinate to the historic structure. Its location is also set back from the south wall plane of the store, and the height is significantly below the ridgeline of the historic store; these factors make it invisible from the street. The hipped roof form of the proposed addition differs from the gable and shed roof forms of the historic building. The applicant shared with staff that in addition to the Brava shingles to match the proposed re-roofing of the main structure, other materials proposed for the new addition include wood siding with a reveal/profile different than the historic siding and wood 1/1 sash windows. These material choices are compatible with the historic store, and a siding product with a wider or narrower reveal would help identify the new addition as a modern alteration. The applicant should provide confirmation of the material choices for the addition with staff.**	**Y**

SOI #10	*New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.* **Because the removal of historic wall material for connection between the proposed addition and the historic building has been minimized, the new addition could be reasonably removed in the future, if desired, with minimal impact to the essential form and integrity of the historic property.**	**Y**

The Commission placed the following condition(s) on the approval:

1. Applicant must submit a Plan of Protection for the stacked plank shed near the addition construction site to Staff prior to building permit issuance for the rear addition. Contact Staff for a Plan of Protection template.

The Commission found that the proposed work meets the criteria and standards in Chapter 14, Article IV of the Fort Collins Municipal Code. Notice of the approved application has been forwarded to building and zoning staff to facilitate the processing of any permits that are needed for the work.

Please note that all ensuing work must conform to the approved plans. Any non-conforming alterations are subject to stop-work orders, denial of Certificate of Occupancy, and restoration requirements and penalties.

If the approved work is not completed prior to the expiration date noted above, you may apply for an extension by contacting staff at least 30 days prior to expiration. Extensions may be granted for up to 12 additional months, based on a satisfactory staff review of the extension request.

You may appeal this decision within two weeks by submitting a written notice of appeal to the City Clerk within fourteen (14) calendar days of this decision. Grounds and process for appeals are enumerated in Chapter 2, Division 3 of the Fort Collins Municipal Code.

If you have any questions regarding this approval, or if I may be of any assistance, please do not hesitate to contact staff at preservation@fcgov.com or at (970) 224-6078.

Sincerely,

Jim Rose, Chair
Historic Preservation Commission

Design Review Application
Historic Preservation Division

Fill this form out for all applications regarding designated historic buildings within the city limits of the City of Fort Collins. Review is required for these properties under Chapter 14, Article IV of the Fort Collins Municipal Code.

Applicant Information

Ron Sladek, President of Historic Larimer County	970/689-4855	same
Applicant's Name	Daytime Phone	Evening Phone
P.O. Box 1909, Fort Collins	CO	80522
Mailing Address (for receiving application-related correspondence)	State	Zip Code
tatanka@verinet.com		
Email		

Property Information (put N/A if owner is applicant)

Historic Larimer County	970/689-4855	same
Owner's Name	Daytime Phone	Evening Phone
P.O. Box 1909, Fort Collins	CO	80522
Mailing Address (for receiving application-related correspondence)	State	Zip Code
tatanka@verinet.com		
Email		

Project Description
Provide an overview of your project. Summarize work elements, schedule of completion, and other information as necessary to explain your project.

Rehabilitation of the Malaby Store. The first phase of work will involve reconstruction and stabilization of the roof in the spring-summer of 2025. Future phases over the next several years will involve rehabilitation of the historic building, including replacement of non-historic siding with period appropriate materials, facade restoration (including repainting the historic signage), and restoration of doors and windows. A new restroom-kitchenette addition and handicap ramp will be constructed behind the building in the coming years as funding allows.

The following attachments are REQUIRED:

- Complete Application for Design Review
- Detailed Scope of Work (and project plans, if available)
- Color photos of existing conditions

Reminders:
Complete application would need all of checklist items as well as both pages of this document.

Detailed scope of work should include measurements of existing and proposed.

Please note: if the proposal includes partial or full demolition of an existing building or structure, a separate demolition application may need to be approved.

Additional documentation may be required to adequately depict the project, such as plans, elevations, window study, or mortar analysis. If there is insufficient documentation on the property, the applicant may be required to submit an intensive-level survey form (at the applicant's expense).

Detail of Proposed Rehabilitation Work (*Required)
If your project includes multiple features (e.g. roof repair and foundation repair), you must describe each feature separately and provide photographs and other information on each feature.

Feature A Name:	
Describe property feature and its condition: Roof Rehabilitation - This feature has been inspected by structural engineers and found to be deficient and in need of reconstruction.	Describe proposed work on feature: Work on the roof will involve removal and shoring up the existing structure with additional beams, sistering of the rafters, and the installation of diagonal supports. Some of the lower brickwork associated with the two chimneys will be removed to reduce weight and lower the threat of collapse - this will require the placement of additional support for the remaining brickwork within the attic. The framework for the historic photography studio skylight in the attic will be retained.
Feature B Name:	
Describe property feature and its condition: Building Rehabilitation - the remainder of the building will undergo work designed to make it usable as interpretive, educational and office space for Historic Larimer County while retaining its historic character.	Describe proposed work on feature: Work completed during this phase of the project will be two-fold. The first goal will be to rehabilitate the historic building for use after it has sat for decades as a storage facility. This will include tuckpointing of the foundation and chimneys, replacement of non-historic siding with materials that are period appropriate, restoration of windows and doors, upgrading of insulation where possible, installation of a new furnace and ductwork in the basement and crawl space, upgrading the electrical system to meet current needs for outlets and period appropriate lighting, and refinishing the wood floors. The second goal will be to construct a small rear addition that will hold a restroom and kitchenette. These features are necessary for the building to be usable. This will require the installation of water and sewer lines, neither of which have ever been present on this property. A handicap ramp will be placed adjacent to the new addition to enhance access to the building.

Use Additional Worksheets as needed.

Required Additional information

The following items must be submitted with this completed application. Digital submittals preferred for photographs, and for other items where possible.

- ■ At least one current photo for each side of the building. Photo files or prints shall be named/labeled with applicant name and elevation. For example, smitheast.jpg, smithwest.jpg, etc. If submitted as prints, photos shall be labeled
- ■ Photos for each feature as described in the section "Detail of Proposed Rehabilitation Work." Photo files or prints shall be named or labeled with applicant name and feature letter. For example, smitha1.jpg, smitha2.jpg, smithb.jpg, smithc.jpg, etc.

Depending on the nature of the project, one or more of the following items shall be submitted. Your contractor should provide these items to you for attachment to this application.

- ■ Drawing with dimensions.
- ■ Product specification sheet(s).
- ■ Description of materials included in the proposed work.
- ■ Color sample(s) or chip(s) of all proposed paint colors.

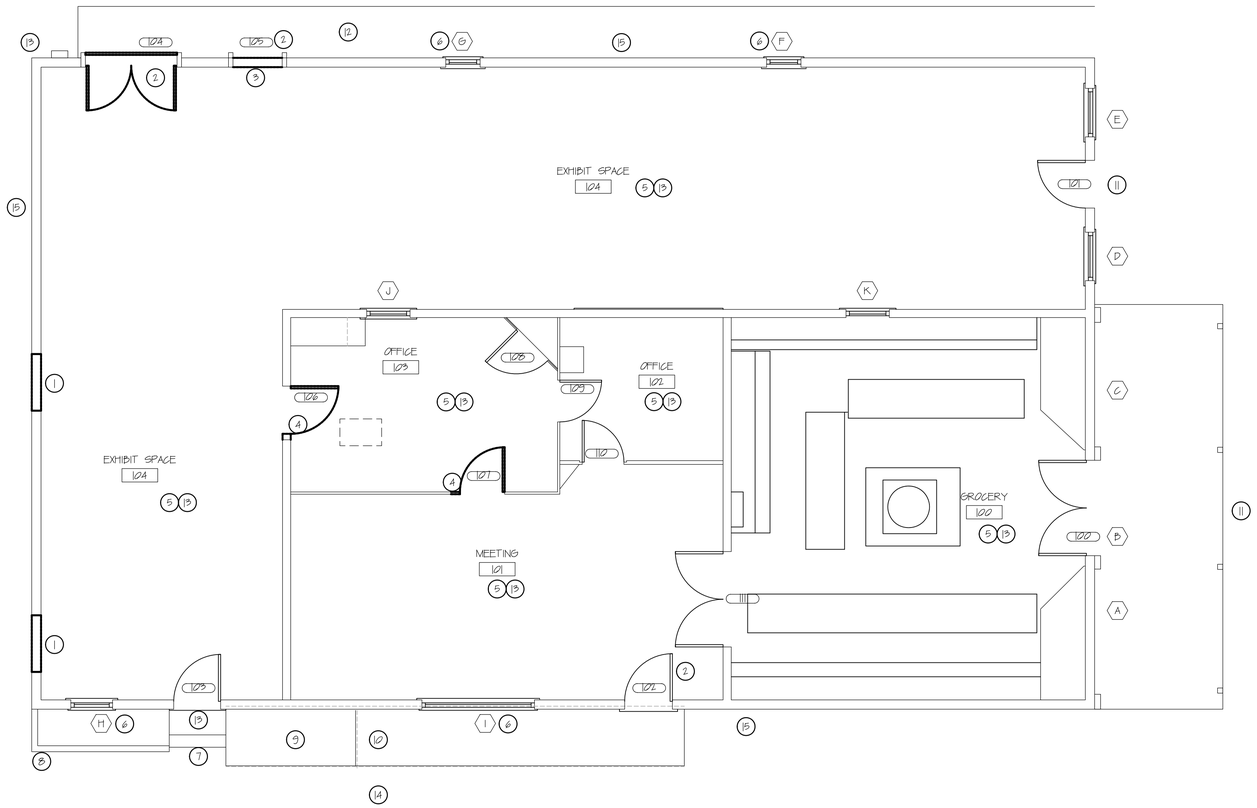
■ **Partial or full demolition** is a part of this project.
Partial demolition could include scopes such as taking off existing rear porches to create space for a new addition or removing an existing wall or demolishing a roof. If you are taking away pieces of the existing residence, you are likely undergoing some partial demolition.

R.D. SLÉ, PRES.
FOR HISTORIC LARIMER COUNTY

Signature of Owner

11/1/24

Date



DEMOLITION FLOOR PLAN

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

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DEMOLITION GENERAL NOTES

1	THESE GENERAL DEMOLITION NOTES APPLY TO DEMOLITION DRAWINGS.
2	FIELD VERIFY CONDITIONS AND CORDINATE DEMOLITION OR REMOVAL OF WORK WITH CORRESPONDING NEW CONSTRUCTION AND WITH APPROPRIATE TRADES PRIOR TO STARTING WORK. IF DISCREPANCIES ARE FOUND BETWEEN THE CONTRACT DOCUMENTS AND ACTUAL FIELD CONDITIONS, NOTIFY THE ARCHITECT IMMEDIATELY AND PRIOR TO STARTING DEMOLITION WORK.
3	OWNER WILL REMOVE LOOSE SALVAGEABLE ITEMS, IE. EQUIPMENT, FURNITURE, CABINETRY, FILE CABINETS, WALL-MOUNTED ARTWORK, PLAQUES, ETC. PRIOR TO CONTRACTOR STARTING WORK. CONTRACTOR SHALL PROTECT SUCH ITEMS DURING CONSTRUCTION.
4	DEMOLISHED MATERIALS ARE THE PROPERTY OF THE CONTRACTOR UNLESS NOTED OTHERWISE AND SHALL BE DISPOSED OF OFF-SITE.
5	ITEMS NOTED TO BE REMOVED AND TURNED OVER TO THE OWNER SHALL BE DELIVERED TO THE NEAREST EXTERIOR DOOR OF THE BUILDING EXCEPT AS OTHERWISE DIRECTED BY THE OWNER.
6	REMOVE ITEMS IN THEIR ENTIRETY UNLESS OTHERWISE INDICATED. DESCRIPTION OF PRIMARY ITEMS TO BE REMOVED IS GENERAL IN NATURE, AND REMOVAL OF SECONDARY COMPONENTS SUCH AS BLOCKING, SUPPORTS, ANCHORS, TRIM, ADHESIVE, PIPING, WIRING, ETC. RELATED TO PRIMARY ITEMS SHALL BE INCLUDED.
7	PROTECT EXISTING SURFACES TO REMAIN IN AREAS ADJACENT TO DEMOLITION.
8	REPAIR FINISHES AND SURFACES LEFT EXPOSED BY DEMOLITION OR REMOVAL OF EQUIPMENT, USING NEW MATERIALS TO MATCH THE HISTORIC. REPAIR EXISTING FLOORING, BASE, WAINSCOT, WALL AND CEILING FINISHES TO CORRECT DEFECTS CAUSED BY DEMOLITION OR EQUIPMENT REMOVAL. NEW FINISHES SHALL MATCH THE SURROUNDING FINISHES AND BE UNDETECTABLE. AREAS NOTED ON THE DRAWINGS TO BE REPAIRED OR PATCHED ARE GIVEN FOR REFERENCE AND SHALL NOT BE INTERPRETED TO LIMIT THE SCOPE OF WORK.
9	PATCH EXISTING FLOOR, WALL, CEILING AND ROOF CONSTRUCTION AT ABANDONED PENETRATION LOCATIONS WITH NEW MATERIALS TO MATCH THE EXISTING AND/OR NEW MATERIALS OR RESTORED HISTORIC FINISHES. MAINTAIN ORIGINAL FIRE RATING OF ASSEMBLY WHERE APPLICABLE.
10	PROVIDE SMOOTH TRANSITIONS BETWEEN FLOOR, WALL AND CEILING SURFACES PRIOR TO INSTALLING NEW FINISHES WHERE WALLS OR OTHER ITEMS ARE REMOVED. FILL FLOOR VOIDS WITH CONCRETE OR MATERIAL MATCHING THE ADJACENT MATERIALS AND LEVEL FLOOR SURFACES TO PROVIDE A SMOOTH TRANSITION FROM ONE SIDE OF THE THE WALL TO THE OTHER WHERE PORTIONS OF WALLS ARE REMOVED.
11	THERE MAY BE MULTIPLE LAYERS OF FLOORING UNDER THE EXISTING FLOOR FINISH. REMOVE ALL LAYERS OF EXISTING FLOOR COVERINGS TO PROVIDE APPROPRIATE SUBSTRATE FOR NEW FLOOR FINISHES. IF ASBESTOS IS THOUGHT TO BE PRESENT, STOP AND NOTIFY THE OWNER AND ARCHITECT.
12	SELECTIVE DEMOLITION FOR INSTALLATION OF NEW MECHANICAL, ELECTRICAL OR PLUMBING EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR TRADE REQUIRING THE DEMOLITION. THIS INCLUDES, BUT IS NOT LIMITED TO, FLOOR SLAB AND PAVEMENT CUTTING FOR UNDERGROUND PIPING, CORING FOR WALL AND FLOOR PENETRATIONS, ROOF PENETRATIONS, ETC. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.
13	DISCONNECT AND CAP-OFF OR REMOVE OBSOLETE EXISTING UTILITY AND SERVICE LINES PRIOR TO STARTING DEMOLITION WORK WHERE APPLICABLE.
14	REMOVE ABANDONED UNDERGROUND UTILITIES AND INSTALL ENGINEERED FILL WHERE APPLICABLE.
15	IF EXISTING ITEMS TO BE REMOVED OR DISTURBED ARE SUSPECTED OR DISCOVERED TO CONTAIN ASBESTOS OR OTHER HAZARDOUS MATERIALS, STOP DEMOLITION AND NOTIFY THE OWNER AND ARCHITECT IMMEDIATELY.
16	ALL DEMOLISHED HISTORIC ELEMENTS SHALL BE REMOVED IN A WAY TO MAINTAIN THE INTEGRITY TO THE GREATEST EXTENT POSSIBLE.
17	ALL REMOVED HISTORIC COMPONENTS SHALL BE SALVAGED AND TURNED OVER TO THE OWNER.
18	IF ANY QUESTIONS ARISE ABOUT DISPOSAL OF EXISTING MATERIALS, VERIFY WITH THE ARCHITECT AND OWNER PRIOR TO DISPOSAL.

DEMOLITION NOTES

1	REMOVE EXISTING WALL ASSEMBLY AS REQUIRED FOR NEW DOOR.
2	REMOVE EXISTING EXTERIOR WALL ASSEMBLY AND PAIR OF DOORS AS REQUIRED FOR NEW DOORS.
3	REMOVE EXISTING EXTERIOR WALL ASSEMBLY AS REQUIRED FOR NEW DOOR.
4	REMOVE EXISTING DOOR AND WALL AT STRIKE SIDE OF DOOR AS REQUIRED FOR NEW DOOR.
5	RE: FINISH SCHEDULE FOR ALL INTERIOR WORK TO BE REMOVED.
6	RE: WINDOW SCHEDULE FOR ALL WINDOWS TO BE REMOVED.
7	REMOVE EXISTING CONCRETE LANDING AND STEP.
8	REMOVE EXISTING LANDSCAPE WALL BLOCKS.
9	REMOVE EXISTING DECKING.
10	REMOVE EXISTING BASEMENT LIFT UP DECKING ACCESS PANELS.
11	REMOVE EXISTING WOOD DECK FRAMED LANDING AND STEPS.
12	REMOVE EXISTING CRACKED AND SETTLED CONCRETE SIDEWALK PAVING.
13	REMOVE EXISTING LIGHT FIXTURES AND ALL ASSOCIATED HANGERS AND WIRING- RE: ELECTRICAL.
14	REMOVE EXISTING GRASS AND ASSOCIATED SITE WORK AS REQ'D. TO INSTALL NEW HANDICAP ACCESSIBLE PAVING PER ARCHITECTURAL PLAN NOTES.
15	RE: ELEVATIONS FOR REMOVAL OF EXTERIOR SIDING.
16	RE: BUILDING SECTION FOR REMOVAL OF EXTERIOR SIDING AT NEW BUILDING ADDITION.

SCHEUBER + DARDEN architects LLC

P.O. BOX 909
PARKER, COLORADO 80134
303.915.8415

CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

DATE:	DESCRIPTION:
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

PROJECT NUMBER:

DRAWN BY: JBD CHECKED BY: JBD

COMPUTER FILE: EMMA MALABY BASE DRAWING

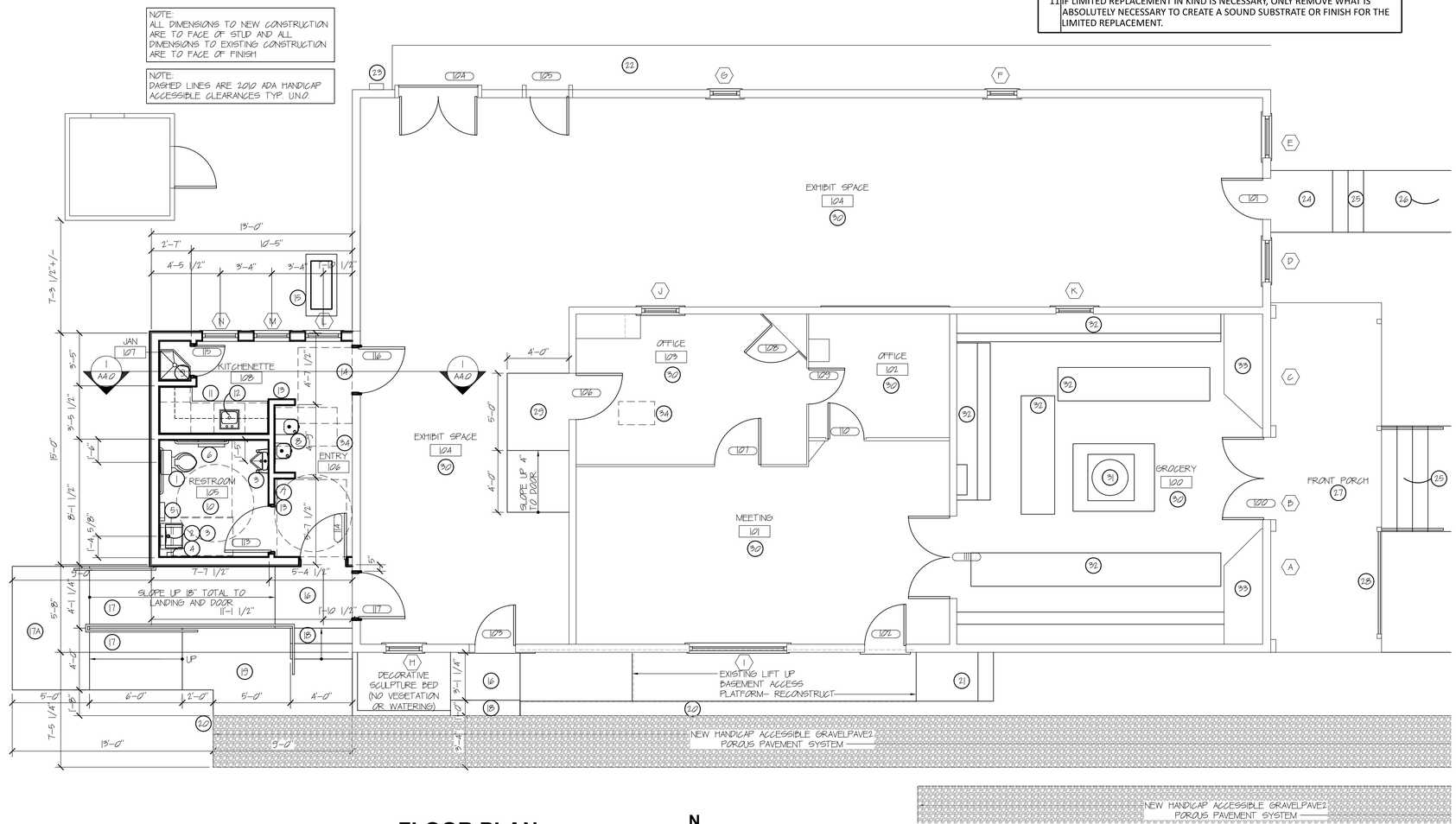
DEMO FLOOR PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

D1.0

NOTE:
ALL DIMENSIONS TO NEW CONSTRUCTION ARE TO FACE OF STUD AND ALL DIMENSIONS TO EXISTING CONSTRUCTION ARE TO FACE OF FINISH

NOTE:
DASHED LINES ARE 2010 ADA HANDICAP ACCESSIBLE CLEARANCES TYP. U.N.O.



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

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GENERAL PROJECT NOTES

1	THE FOLLOWING GENERAL NOTES APPLY TO THE CONTRACT DOCUMENTS AND ARE NOT SPECIFIC TO ANY ONE DISCIPLINE.
2	THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION AND REVIEW OF ALL WORK OF THE SUBCONTRACTORS, TRADES, AND MATERIAL SUPPLIERS. THE GC IS TO ASSURE COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS AND COORDINATION OF THE CONSTRUCTION DOCUMENTS WITH THE CONSTRUCTION TEAM PRIOR TO BEGINNING WORK.
3	THE CONSTRUCTION DOCUMENTS ESTABLISH THE MINIMUM REQUIREMENTS FOR THE REHABILITION WORK.
4	THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LAWS, CODES, REGULATIONS, AND ORDINANCES OF THE LOCATION OF THE PROJECT. NOT ALL CODE REQUIREMENTS ARE REFLECTED IN THE CONSTRUCTION DOCUMENTS.
5	EXISTING CONDITIONS ARE FROM PHOTOS, FIELD INVESTIGATIONS AND RECORD DRAWINGS. CONDITIONS MAY HAVE CHANGED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXISTING CONDITIONS AND IF DIFFERENT THAN THAT SHOWN ON THE DRAWINGS, NOTIFY THE ARCHITECT AND OWNER AS SOON AS POSSIBLE AFTER CONDITION DISCOVERY.
6	THE CONTRACTOR IS RESPONSIBLE FOR APPLYING FOR AND OBTAINING ALL REQUIRED PERMITS. THE CONTRACTOR IS TO PROVIDE COPIES OF ALL PERMITS/RELEASES TO THE OWNER AND ARCHITECT WITHIN 10 DAYS OF RECEIPT.
7	THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AND PROTECT THE EXISTING BUILDING, KEEPING WATERTIGHT AND FREE FROM DAMAGE. PROTECT THOSE ELEMENTS INDICATED TO REMAIN. ANY DAMAGE IS TO BE REPAIRED AT THE COST OF THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE OWNER AND ARCHITECT. IF REPAIRS CANNOT BE MADE, THE CONTRACTOR IS RESPONSIBLE FOR REPLACING THE DAMAGED ELEMENT WITH LIKE NEW QUALITY THAT IS ACCEPTABLE TO THE ARCHITECT AND OWNER.
8	DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS AND NOTES TAKE PRECEDENCE IN ALL CASES.
9	UNOBTRUSIVELY DATE AND WRITE CONTRACTOR NAME ON ALL NEW ELEMENTS OR STRUCTURE TO GUIDE FUTURE TREATMENT AND RESEARCH.
10	WHEN AN ELEMENT OR FEATURE OF THE BUILDING REQUIRES REPAIR OR LIMITED REPLACEMENT, MATCH THE EXISTING MATERIAL IN COMPOSITION, DESIGN, TEXTURE AND COLOR OR AS SPECIFICALLY NOTED.
11	IF LIMITED REPLACEMENT IN KIND IS NECESSARY, ONLY REMOVE WHAT IS ABSOLUTELY NECESSARY TO CREATE A SOUND SUBSTRATE OR FINISH FOR THE LIMITED REPLACEMENT.

GENERAL ARCHITECTURAL NOTES

1	THESE NOTES PERTAIN TO ARCHITECTURAL DRAWINGS.
2	WORK SHOWN ON THE DRAWINGS SHALL BE BASE BID UNLESS SPECIFICALLY NOTED TO BE BY ALTERNATE BID.
3	FIELD VERIFY EXISTING FINISH FLOOR ELEVATIONS PRIOR TO STARTING CONSTRUCTION. MATCH NEW FLOOR ELEVATIONS WITH EXISTING U.N.O.
4	DIMENSIONS TO EXISTING CONSTRUCTION ARE TO FINISH SURFACE. DIMENSIONS TO NEW CONSTRUCTION ARE TO FACE OF STRUCTURE. FIELD VERIFY ALL CONDITIONS AND DIMENSIONS PROR TO STARTING WORK AND NOTIFY ARCHITECT IMMEDIATELY IF DISCREPANCIES ARE FOUND BETWEEN THE CONTRACT DOCUMENTS AND ACTUAL FIELD CONDITIONS.
5	DO NOT SCALE DRAWINGS. REFER DIMENSION QUESTIONS TO ARCHITECT FOR INTERPRETATION.
6	LOCATE INSIDE FACE OF DOOR FRAME JAMBS 4 INCHES FROM FINISH FACE OF ADJACENT WALLS UNLESS NOTED OTHERWISE.
7	COORDINATE EQUIPMENT WORK WITH MANUFACTURERS AND SUPPLIERS TO INSURE PROPER ROUGH-IN CLEARANCES FOR INSTALLATION, USE AND MAINTENANCE.
8	PROTECT EXISTING SURFACES TO REMAIN THAT ARE NOT INCLUDED IN THE SCOPE OF WORK BUT THAT ARE WITHIN AREAS OF CONSTRUCTION ACTIVITY.
9	PATCH, REPAIR AND RESTORE EXISTING FINISHES AND SURFACES TO AS NEW CONDITION AS REQUIRED O MATCH SURROUNDING MATERIALS OR TO PROVIDE APPROPRIATE SUBSTRATE PRIOR TO INSTALLING NEW FINISHES. AREAS NOTED TO BE PATCHED OR REPAIRED ON THE DRAWINGS ARE GIVEN FOR REFERENCE AND SHALL NOT BE INTERPRETED TO LIMIT THE SCOPE OF WORK.
10	VERIFY MOUNTING HEIGHTS OF ACCESSORIES, EQUIPMENT, DOOR HARDWARE, CASEWORK, ETC. AND PROVIDE SOLID BLOCKING BEHIND ITEMS REQUIRING ANCHORAGE. PROVIDE FIRE TREATED BLOCKING OR METAL STRAPS BETWEEN FRAMING MEMBERS AS REQUIRED TO SUPPORT WEIGHT AND USE OF ITEMS TO BE SUPPORTED. WHERE MOUNTING HEIGHTS ARE NOT PROVIDED, MOUNT ITEMS IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS. COORDINATE LOCATIONS WITH MANUFACTURER OR SUPPLIER AND REFER MOUNTING HEIGHT QUESTIONS TO ARCHITECT FOR INTERPRETATION PRIOR TO INSTALLING REQUIRED BLOCKING IN WALLS.
11	STUD SPACING SHALL BE 16" O.C. MAXIMUM UNLESS OTHERWISE NOTED.
12	PROVIDE SEALANT AT PERIMETERS OF OPENINGS AND AT JOINTS BETWEEN DISSIMILAR MATERIALS SUCH AS GYPSUM BOARD AND MASONRY AND WOOD TRIM, MASONRY AND CONCRETE, CASEWORK AND WALLS, ETC. U.N.O.
13	PROVIDE FINISHED END PANELS, FILLERS, SUPPORTS, ETC. REQUIRED FOR A COMPLETE CABINETRY INSTALLATION. PROVIDE CUTOUTS, ACCESS PANELS, AND REMOVABLE COMPONENTS AS REQUIRED FOR ELECTRICAL OUTLETS, JUNCTION BOXES, CLEANOUTS, ETC. MOUNT TOP OF WALL CABINETS AT 7'-6" AFF U.N.O.

FLOOR PLAN NOTES

1	HANDICAP ACCESSIBLE WATER CLOSET - RE: MECHANICAL.
2	HANDICAP ACCESSIBLE WALL HUNG LAVATORY - RE: MECHANICAL.
3	HANDICAP ACCESSIBLE MIRROR ABOVE LAVATORY.
4	HANDICAP ACCESSIBLE WALL MOUNTED SOAP DISPENSER/DISPOSAL.
5	HANDICAP ACCESSIBLE WALL MOUNTED PAPER TOWEL DISPENSER.
6	HANDICAP ACCESSIBLE WALL MOUNTED TOILET PAPER DISPENSER. TOILET PAPER DISPENSER TO BE OWNER FURNISHED AND CONTRACTOR INSTALLED.
7	HANDICAP ACCESSIBLE RESTROOM SIGNAGE.
8	HANDICAP ACCESSIBLE HI-LOW DRINKING FOUNTAIN - RE: MECHANICAL.
9	MOP SINK - RE: MECHANICAL.
10	RESTROOM HANDICAP ACCESSIBILITY ELEVATIONS, RE: 1/A1.4
11	BUILT-IN KITCHENETTE CABINETRY, RE: 2/A1.4
12	KITCHEN SINK - RE: MECHANICAL.
13	TYPICAL - NEW INTERIOR WALLS TO BE 2x4 WOOD STUDS AT 16" O.C. MAX. W/ 5/8" GYP. BOARD BOTH SIDES WITH ACOUSTIC BATT INSULATION FILLING ALL CAVITY VOIDS. INSTALL 5/8" TILE BACKER BOARD AT ALL WALLS WITH TILE.
14	LOCATE NEW DOOR AT SOUTH EDGE OF EXISTING HISTORIC DOOR OPENING. FIELD VERIFY FINAL LOCATION OF DOOR OPENING AFTER DEMOLITION IS COMPLETE. COORDINATE WITH ARCHITECT THE LOCATION PRIOR TO PROCEEDING WITH NEW BUILDING ADDITION.
15	NEW HEAT PUMP UNIT WITH 2'x4'x4" CONCRETE SLAB ON GRADE PAD- RE: MECHANICAL.
16	4" REINFORCED CONCRETE SLAB ON GRADE LANDING SLOPED FROM EXTERIOR DOOR 1/4" PER FOOT AS REQ'D. TO PROVIDE CONCRETE STEP(S) AT CONNECTION TO EXISTING GRADE. PROVIDE 1/4" HANDICAP ACCESSIBLE OFFSET AT EXTERIOR DOOR THRESHOLD.
17	HANDICAP ACCESSIBLE 4" REINFORCED CONCRETE RAMP ON GRADE SLOPED AT 1:12 WITH 1-1/2" DIA. BLACK POWDER COATED HANDRAIL AND VERTICAL POSTS.
18	REINFORCED CONCRETE STEPS (12" TREAD AND 6" MAX. RISERS) REINFORCED WITH CONCRETE LANDING.
19	4" REINFORCED CONCRETE SIDEWALK SLAB ON GRADE.
20	HANDICAP ACCESSIBLE POROUS PAVEMENT SYSTEM- GRAVELPAVE2 OR SIMILAR ARCHITECT AND OWNER APPROVED PRODUCT.
21	2x6 WOOD DECKING ON 2x8 WOOD FRAMING AT 12" O.C. LANDING W/ 8" DIA. CAST CONCRETE PIERS AT LANDING CORNERS WITH 2x WOOD STEP TO GRADE.
22	REMOVE EXISTING CRACKED AND SETTLED CONCRETE SIDEWALK AND INSTALL NEW 4" CONCRETE SLAB ON GRADE SIDEWALK.
23	EXISTING ELECTRIC PANEL TO REMAIN- RE: ELECTRICAL.
24	2x6 WOOD DECKING ON 2x10 WOOD FRAMING AT 12" O.C. LANDING W/ 8" DIA. CAST CONCRETE PIERS AT LANDING CORNERS.
25	2x WOOD STEPS (12" TREAD AND 6" MAX. RISERS).
26	4" REINFORCED CONCRETE SLAB ON GRADE SIDEWALK SLOPED FROM WOOD STEPS AT PORCH ENTRY AS REQ'D. TO PROVIDE FLUSH CONDITION AT CONNECTION TO EXISTING CONCRETE CITY SIDEWALK.
27	REMOVE EXISTING DECKING AND INSTALL NEW WOOD DECKING TO MATCH HISTORIC PORCH DECK.
28	RESTORE EXISTING HORIZONTAL 2x WOOD RAIL/RAISED TWO 2x BOARD SEAT. SAND TO THE NEXT SOLID PAINT LAYER AND REPAINT WHITE TO MATCH THE HISTORIC COLOR.
29	NEW WOOD FLOOR TO MATCH THE EXISTING WOOD FLOOR ON 2x FRAMING SLOPED FROM EXISTING DOOR THRESHOLD AS REQ'D. TO PROVIDE FLUSH CONDITION AT CONNECTION TO EXISTING EXHIBIT SPACE FLOOR. RIP FLOOR FRAMING AS REQUIRED TO PROVIDE FLUSH CONNECTION.
30	RE: FINISH SCHEDULE FOR ALL INTERIOR WORK TO BE REPAIRED, REHABILITATED OR REPLACED.
31	EXISTING NON-FUNCTIONING STOVE- NO WORK.
32	EXISTING GROCERY DISPLAY FURNITURE- NO WORK.
33	RESTORE EXISTING DISPLAY COUNTER. REMOVE EXISTING LINOLEUM, INSTALL MISSING QUARTER ROUND MOLDING, SAND TO THE NEXT SOLID PAINT LAYER AND REPAINT THE ENTIRE CASE WHITE TO MATCH THE HISTORIC COLOR.
34	EXISTING ATTIC ACCESS TO REMAIN. SEE FINISH SCHEDULE FOR CEILING FINISH WORK.

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FOR

EMMA MALABY GROCERY

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FT. COLLINS, COLORADO 80521

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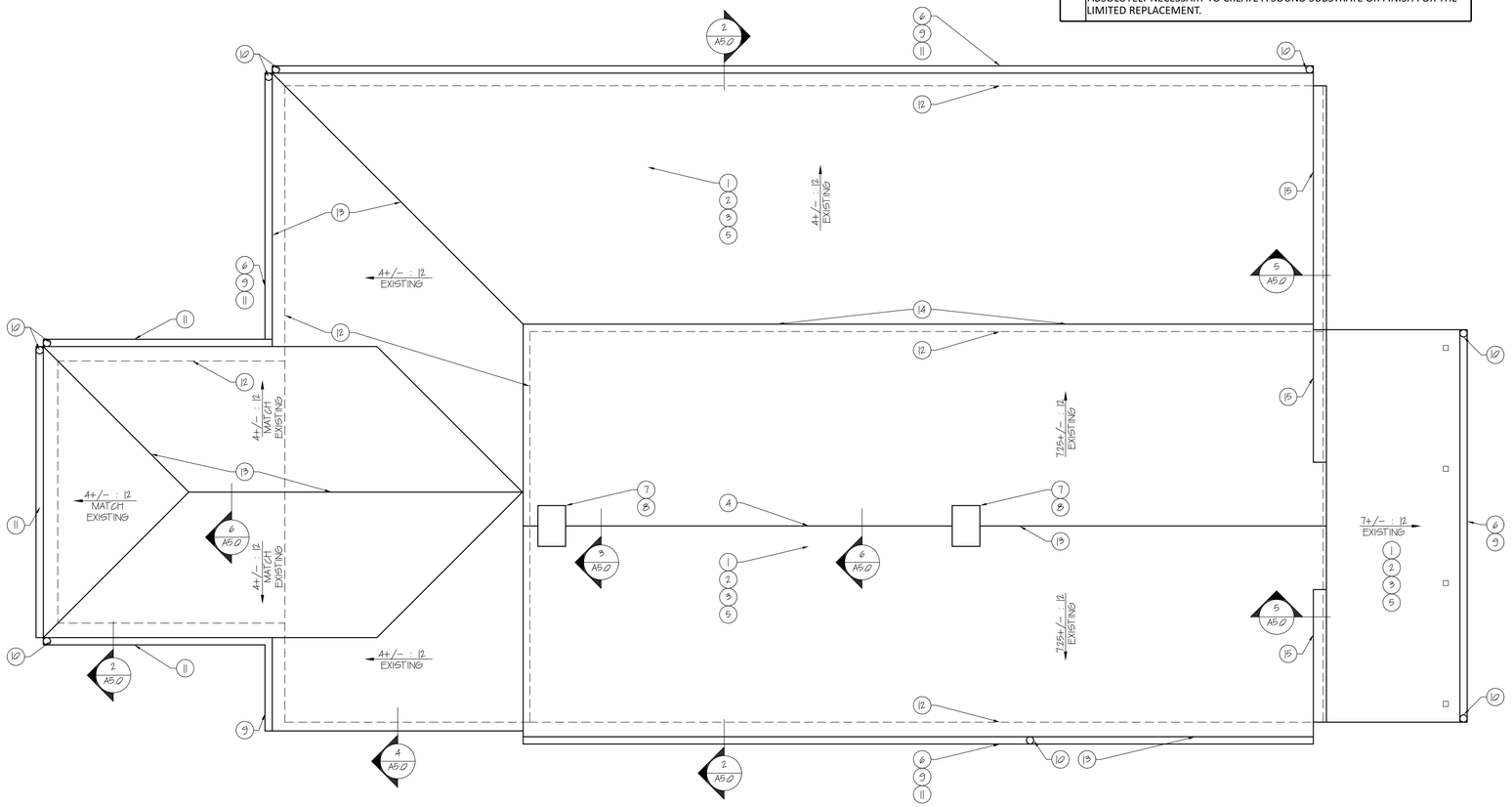
FIRST FLOOR PLAN

A1.0

GENERAL PROJECT NOTES

1	THE FOLLOWING GENERAL NOTES APPLY TO THE CONTRACT DOCUMENTS AND ARE NOT SPECIFIC TO ANY ONE DISCIPLINE.
2	THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION AND REVIEW OF ALL WORK OF THE SUBCONTRACTORS, TRADES, AND MATERIAL SUPPLIERS. THE GC IS TO ASSURE COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS AND COORDINATION OF THE CONSTRUCTION DOCUMENTS WITH THE CONSTRUCTION TEAM PRIOR TO BEGINNING WORK.
3	THE CONSTRUCTION DOCUMENTS ESTABLISH THE MINIMUM REQUIREMENTS FOR THE REHABILITION WORK.
4	THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LAWS, CODES, REGULATIONS, AND ORDINANCES OF THE LOCATION OF THE PROJECT. NOT ALL CODE REQUIREMENTS ARE REFLECTED IN THE CONSTRUCTION DOCUMENTS.
5	EXISTING CONDITIONS ARE FROM PHOTOS, FIELD INVESTIGATIONS AND RECORD DRAWINGS. CONDITIONS MAY HAVE CHANGED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXISTING CONDITIONS AND IF DIFFERENT THAN THAT SHOWN ON THE DRAWINGS, NOTIFY THE ARCHITECT AND OWNER AS SOON AS POSSIBLE AFTER CONDITION DISCOVERY.
6	THE CONTRACTOR IS RESPONSIBLE FOR APPLYING FOR AND OBTAINING ALL REQUIRED PERMITS. THE CONTRACTOR IS TO PROVIDE COPIES OF ALL PERMITS/RELEASES TO THE OWNER AND ARCHITECT WITHIN 10 DAYS OF RECEIPT.
7	THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AND PROTECT THE EXISTING BUILDING, KEEPING WATERTIGHT AND FREE FROM DAMAGE. PROTECT THOSE ELEMENTS INDICATED TO REMAIN. ANY DAMAGE IS TO BE REPAIRED AT THE COST OF THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE OWNER AND ARCHITECT. IF REPAIRS CANNOT BE MADE, THE CONTRACTOR IS RESPONSIBLE FOR REPLACING THE DAMAGED ELEMENT WITH LIKE NEW QUALITY THAT IS ACCEPTABLE TO THE ARCHITECT AND OWNER.
8	DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS AND NOTES TAKE PRECEDENCE IN ALL CASES.
9	UNOBTRUSIVELY DATE AND WRITE CONTRACTOR NAME ON ALL NEW ELEMENTS OR STRUCTURE TO GUIDE FUTURE TREATMENT AND RESEARCH.
10	WHEN AN ELEMENT OR FEATURE OF THE BUILDING REQUIRES REPAIR OR LIMITED REPLACEMENT, MATCH THE EXISTING MATERIAL IN COMPOSITION, DESIGN, TEXTURE AND COLOR OR AS SPECIFICALLY NOTED.
11	IF LIMITED REPLACEMENT IN KIND IS NECESSARY, ONLY REMOVE WHAT IS ABSOLUTELY NECESSARY TO CREATE A SOUND SUBSTRATE OR FINISH FOR THE LIMITED REPLACEMENT.



1 A1.1 **ROOF PLAN**
SCALE: 1/4" = 1'-0"

N

GENERAL ROOFING NOTES

A	INSTALL MANUFACTURER'S REQUIRED SELF-ADHERING ICE AND WATER SHIELD AT ALL LOCATIONS WHERE ICE DAMMING IS A POTENTIAL, INCLUDING DOWNSLOPE EAVES, VALLEYS, CRICKETS, AROUND PENETRATIONS AND AT RAKE EDGES. ICE AND WATER SHIELD TO BE INSTALLED A MINIMUM OF 2' INSIDE EXTERIOR WALL LINE AS REQUIRED BY BUILDING CODE AND MANUFACTURER.
B	PROVIDE SHOP DRAWINGS OF THE MANUFACTURER'S DETAILS THAT PERTAIN SPECIFICALLY TO THE ROOFING INSTALLATION FOR THIS BUILDING AND THIS ROOF SYSTEM PRIOR TO START OF ROOFING WORK.
C	RESTORE ROOF TO A WEATHERTIGHT CONDITION AT THE CONCLUSION OF EACH DAY'S ROOF REMOVAL AND RE-ROOFING ACTIVITIES.
D	ROOFING CONTRACTOR TO INSTALL ROOF TO MEET APPLICABLE WIND UPLIFT CODE REQUIREMENTS.
E	ROOFING MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE FINAL INSPECTION AFTER COMPLETION OF THE ROOF INSTALLATION. A COMPLETED PUNCH LIST SHALL BE PROVIDED TO THE GENERAL CONTRACTOR.
F	SHEET METAL STEP AND APRON FLASHINGS ARE TO BE A MINIMUM 26-GAUGE PRE-FINISHED GALVANIZED STEEL OR AN EQUIVALENT LONGEVITY NON-CORROSIVE METAL AS REQUIRED BY MANUFACTURER. SUBMIT PRODUCT DOCUMENTATION FOR APPROVAL.
G	THE VERTICAL FLANGE OF ALL STEP FLASHING SHALL BE LAPPED A MIN. OF 5". SHEET METAL COUNTERFLASHING MAY BE INSTALLED WHERE WALL CLADDING OR SIDING OVERLAPS STEP FLASHING. INSTALL ALL FLASHING AS REQ'D. BY MFR.
H	IF A SOLID WOOD NAILING SURFACE IS NOT PRESENT AT THE PERIMETER OF THE ROOF DECK, INSTALL TO PROVIDE A SOLID NAILING SURFACE FOR THE METAL DRIP EDGE FLASHING.
I	INSTALL DRIP-EDGE FLASHING IN SUCH A MANNER TO PERMIT WATER TO DRIP OFF THE ROOF AND INTO THE GUTTER WITHOUT AFFECTING THE UNDERLYING CONSTRUCTION DURING TIMES OF NO WIND.
J	INSTALL THE HORIZONAL FLANGE OF THE SHEET METAL DRIP-EDGE FLASHING APPROXIMATELY 4" MINIMUM ONTO THE ROOF DECK.
K	INSTALL AN ISOLATER SHEET (STRIP OF ASPHALT-SATURATED FELT) BETWEEN THE WOOD ROOF DECK AND SHEET METAL FLASHING TO MINIMIZE POTENTIAL FOR CONDENSATION AND RESULTING DECAY.
L	CONTRACTOR TO PROVIDE ROOFING SAMPLES FOR APPROVAL PRIOR TO ORDERING SHINGLES.
M	GUTTER CONTRACTOR TO CALCULATE GUTTER AND DOWNSPOUT SIZING REQUIREMENTS AND COORDINATE WITH ARCHITECT, OWNER AND SHF. GUTTER COLOR TO MATCH FASCIA.
N	IF DOWNSPOUTS ARE LOCATED DIFFERENTLY THAN SHOWN ON DRAWINGS, COORDINATE LOCATIONS WITH ARCHITECT, OWNER AND SHF. DOWNSPOUT COLOR TO MATCH SURFACE COLOR BEHIND DOWNSPOUT AT ALL LOCATIONS.
O	COMPLETE MOCKUP OF RIDGE VENT/SHINGLE RIDGE CAP PRIOR TO INSTALLING.
P	VERIFY SIZE, LOCATION AND NUMBER OF ROOF PENETRATIONS, INCLUDING CHIMNEYS, VENTS, PIPES, CURBS, ROOF DRAINS, CONDUITS, ETC. PROVIDE NEW FLASHING AND SEAL ALL PENETRATIONS WHETHER OR NOT INDICATED ON THE DRAWINGS.
Q	REPAIR AND REPLACE THE ROOFING SYSTEM OR STRUCTURE DAMAGED BY IMPROPER STORAGE, CONSTRUCTION ACTIVITIES OR LACK OF ADEQUATE TEMPORARY PROTECTION. THIS INCLUDES INTERIOR DAMAGE TO FINISHES, EQUIPMENT, FURNISHINGS, ETC. RESULTING FROM LEAKS.
R	NEW BLOCKING SHALL BE PRESERVATIVE TREATED WOOD.
S	ALL NEW EXPOSED ROOF VENTS AND PLUMBING STACKS ARE TO BE EXTENDED NO MORE THAN THE LOWEST CODE MINIMUM REQUIRED DISTANCE ABOVE THE ROOF, AND ARE TO BE PAINTED TO MATCH THE ROOF SHINGLES. PROVIDE NEW FLASHING AND SEAL PENETRATIONS.

ROOF REPLACEMENT NOTES

1	INSTALL SYNTHETIC SHAKE SHINGLE ROOFING AND ASSOCIATED ROOFING MATERIALS INCLUDING BUT NOT LIMITED TO SHINGLES, UNDERLAYMENT, FLASHING, GUTTERS AND DOWNSPOUTS. SHINGLES TO BE CeDUR SOLID POLYURETHANE PRODUCT INSTALLED IN A STRAIGHT COURSE INSTALLATION.
2	REMOVE EXISTING CEDAR ROOFING MATERIALS INCLUDING BUT NOT LIMITED TO SHINGLES, UNDERLAYMENT, FLASHING, GUTTERS AND DOWNSPOUTS TO THE EXISTING STRUCTURAL ROOF DECK.
3	INSPECT STRUCTURAL ROOF DECK AND REPLACE ANY BOARD DECKING THAT IS TOO DETERIORATED TO REUSE. REATTACH ANY LOOSE DECKING AS REQUIRED FOR NEW ROOFING INSTALLATION.
4	REMOVE BOARD DECKING AND PLYWOOD DECKING AT ROOF RIDGE TO PROVIDE VENTILATION SYSTEM AT RIDGE, EXPOSING ROOF JOISTS. REMOVAL OF DECKING SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. SUBMIT PRODUCT LITERATURE FOR APPROVAL SO THAT SOFFIT VENTING COORDINATION CAN OCCUR. COORDINATE WITH MANUFACTURER TO INSTALL NEW RIDGE VENTING SYSTEM TO MINIMIZE IMPACT ON HISTORIC APPEARANCE AND BE INSTALLED UNDER NEW MANUFACTURER'S FIELD ASSEMBLED RIDGE. INSTALL RIDGE VENTS, SIMILAR TO CORAVENT V-600E. RE: 6/A5.0
	A. MAIN ROOF RIDGE VENT LENGTH - 32'
	B. NEW ADDITION ROOF RIDGE VENT LENGTH - 16'
5	INSTALL 2 LAYERS OF MANUFACTURER'S REQUIREDED SYNTHETIC OR NO. 30 FELTS UNDERLAYMENT. INSTALL PER MANUFACTURER'S REQUIREMENTS.
6	REMOVE EXISTING FASCIA AND SOFFIT BOARDS AND INSTALL NEW REPLICA FASCIA AND SOFFIT BOARDS. ANTICIPATE 75% REPLACEMENT. INSTALL NEW POWDER COATED GALVANIZED METAL DRIP EDGE FLASHING (COLOR TO MATCH ADJACENT SURFACE).
7	INSTALL STEEL ANGLE SUPPORTS FOR EXISTING MASONRY CHIMNEYS PER STRUCTURAL DWGS. INSTALL NEW POWDER COATED GALVANIZED METAL STEP FLASHING (TO MATCH ADJACENT BRICK SURFACE) BETWEEN CHIMNEY AND ROOF. RE: 3/A5.0.
8	INSTALL NEW ROOFING MANUFACTURER'S REQUIRED FLASHING AT ALL ROOF PENETRATIONS.
9	REMOVE EXISTING GUTTERS AND DOWNSPOUTS AND INSTALL NEW 'K' STYLE GUTTERS WITH RECTANGULAR DOWNSPOUTS AND EXTENSIONS. SIZE PER ROOFING GENERAL NOTES. GUTTERS TO MATCH COLOR OF FASCIA. DOWNSPOUTS TO MATCH SURFACE DIRECTLY BEHIND DOWNSPOUT- ANTICIPATE 2 COLORS.
10	DOWNSPOUTS TO EXTEND BEYOND THE FACE OF THE BUILDING A MINIMUM OF 2'. INSTALL CONCRETE SPLASHBLOCK AT OUTLET AND SLOPE AWAY FROM THE BUILDING.
11	INSTALL SOFFIT VENTS, SIMILAR TO CORAVENT S-400. COORDINATE LOCATIONS WITH ARCHITECT, OWNER AND SHF.
	A. MAIN ROOF SOFFIT VENTS - 64'.
	B. NEW ADDITION ROOF SOFFIT VENTS - 32'.
	C. COORDINATE LOCATIONS WITH ARCHITECT, OWNER AND SHF.
12	OUTLINE OF BUILDING BELOW.
13	LINE OF ROOF FASCIA, RAKE, RIDGE OR HIP.
14	LINE OF ROOF SLOPE CHANGE IN PITCH. INSTALL FLASHING PER REQUIREMENTS OF ROOFING MANUFACTURER.
15	LINE OF PARAPET.

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ROOF PLAN

A1.1

WINDOW SCHEDULE

					REPAIR CLASSIFICATION BY FEATURE - REFER TO SPECIFICATIONS FOR DESCRIPTION OF CLASSIFICATIONS												
MARK	TYPE	SIZE (WxH)	SILL HEIGHT	LITE	FIXED SASH	TOP SASH	BOTTOM SASH	FRAME	SILL	STOOL / INSIDE	GLAZING	INTERIOR CASING	EXTERIOR TRIM	HARDWARE	SCREENS	STORM WINDOWS	NOTES
FIRST FLOOR																	
A	STOREFRONT	6'-11" X 9'-2"	19"	4	I	N/A	N/A	I,II	II	I	LOW E TEMPERED GLASS TO BE REGLAZED	I	I	RESTORE STEEL ROD AT HORIZONTAL MUNTIN	NONE	INTERIOR STORM	
B	STOREFRONT TRANSOM	5'-4" X 3'-0"	7'-11"	2	I	N/A	N/A	I,II	II	I	LOW E TEMPERED GLASS TO BE REGLAZED	I	I	STRIP PAINT AND RESTORE HINGES, REPLACE LATCH LOCK W/ CASEMENT LATCH W/ LEVER HANDLE, REPLACE BROKEN TRANSOM OPERATOR W/ CLASSIC TRANSOM WINDOW OPERATOR	NONE		
C	STOREFRONT	6'-11 1/2" X 9'-2"	19"	4	I	N/A	N/A	I,II	II	I	LOW-E TEMPERED GLASS TO BE REGLAZED	I	I	RESTORE STEEL ROD AT HORIZONTAL MUNTIN	NONE	INTERIOR STORM	
D	FIXED GLASS	2'-8 1/2" X 3'-3"	21"	1	EXTERIOR ONLY - I, II	N/A	N/A	EXTERIOR ONLY - I	I,II	NO WORK	PLEXIGLASS TO BE REPLACED WITH LOW-E, LAMINATED GLASS	NO WORK	I	NONE	NONE	INTERIOR STORMS	
E	FIXED GLASS	2'-8 1/2" X 3'-3"	21"	1	EXTERIOR ONLY - I, II	N/A	N/A	EXTERIOR ONLY - I	I, II	NO WORK	PLEXIGLASS TO BE REPLACED WITH LOW-E, LAMINATED GLASS	NO WORK	I	NONE	NONE	INTERIOR STORMS	
F	FIXED GLASS	1'-11" X 2'-7"	39"	1	NEW/REPLICA	N/A	N/A	NEW/REPLICA	I	NEW REPLICA	LOW-E LAMINATED GLAZING	NEW REPLICA	I	NONE	NONE	INTERIOR STORM	REMOVE EXISTING HANGING DISPLAY CASE AND RETURN TO OWNER.
G	FIXED GLASS	1'-11" X 2'-7"	32 1/2"	1	NEW/REPLICA	N/A	N/A	NEW/REPLICA	I	NEW REPLICA	LOW-E LAMINATED GLAZING	NO WORK	I	NONE	NONE	INTERIOR STORM	
H	DOUBLE HUNG	2'-4" X 3'-10"	17"	1/1	N/A	NEW REPLICA	NEW REPLICA	NEW/REPLICA	I,II	NEW REPLICA	LOW-E LAMINATED GLAZING	NO WORK	I	SASH LOCK - HOUSE OF ANTIQUE HARDWARE R-09BM-8708-AB- VERIFY ANTIQUE BRASS FINISH MATCHES HISTORIC HARDWARE	NONE	INTERIOR STORM	
I	FIXED GLASS	6'-3 1/2" X 2'-10"	39"	12	I	N/A	N/A	I	III	I	REPLACE AND REGLAZE AS REQ'D. BY MUNTIN REPLACEMENT	I	I,III	NONE	NONE	INTERIOR STORM	REPLACE MODERN T&G SILL WITH CONTINUOUS HISTORIC SILL. REPLACE MODERN NON-HISTORIC MUNTINS WITH HISTORIC MUNTINS. PRIOR TO WINDOW RESTORATION, DURING RESTORATION OF WOOD SIDING, DETERMINE IF THE HISTORIC WINDOW SIZE CAN BE DETERMINED- IF SO, FABRICATE NEW REPLICA WOOD WINDOW FOR HISTORIC OPENING.
J	DOUBLE HUNG	2'-5" X 5'-9"	27"	4/4	N/A	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NONE		
K	DOUBLE HUNG	2'-5" X 5'-9"	27"	4/4	N/A	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NO WORK	NONE		REMOVE HANGING DISPLAY CASE AND RETURN TO OWNER.
L	SINGLE HUNG	2'-4" X 4'-0"	32"	1/1	N/A	NEW	NEW	NEW	NEW	NEW	LOW-E LAMINATED GLAZING	NEW	NEW 1X4 JAMB TRIM, 1X4 HEAD TRIM W/ 1X2 DRIP CAP & 2X4 SILL	WINDOW MANUFACTURER'S STANDARD SASH LOCK	NONE		
M	SINGLE HUNG	2'-4" X 4'-0"	32"	1/1	N/A	NEW	NEW	NEW	NEW	NEW	LOW-E LAMINATED GLAZING	NEW	NEW 1X4 JAMB TRIM, 1X4 HEAD TRIM W/ 1X2 DRIP CAP & 2X4 SILL	WINDOW MANUFACTURER'S STANDARD SASH LOCK	NONE		
N	SINGLE HUNG	2'-4" X 4'-0"	32"	1/1	N/A	NEW	NEW	NEW	NEW	NEW	LOW-E LAMINATED GLAZING	NEW	NEW 1X4 JAMB TRIM, 1X4 HEAD TRIM W/ 1X2 DRIP CAP & 2X4 SILL	WINDOW MANUFACTURER'S STANDARD SASH LOCK	NONE		

NOTE: ALL EXTERIOR WINDOWS TO HAVE WEATHERSTRIPPING ADDED AROUND OPENING.
ALL EXTERIOR WINDOWS TO HAVE GALVANIZED METAL HEAD FLASHING INSTALLED BEHIND SIDING ABOVE WINDOW.
ALL WINDOWS INDICATED TO HAVE STORMS SHALL HAVE ALUMINUM EXTERIOR REMOVABLE PANELS WITH INVISIBLE CLIPS STORM WINDOWS WITH INTERCHANGEABLE SCREEN IN CUSTOM COLOR TO MATCH WINDOWS.

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WINDOW SCHEDULE

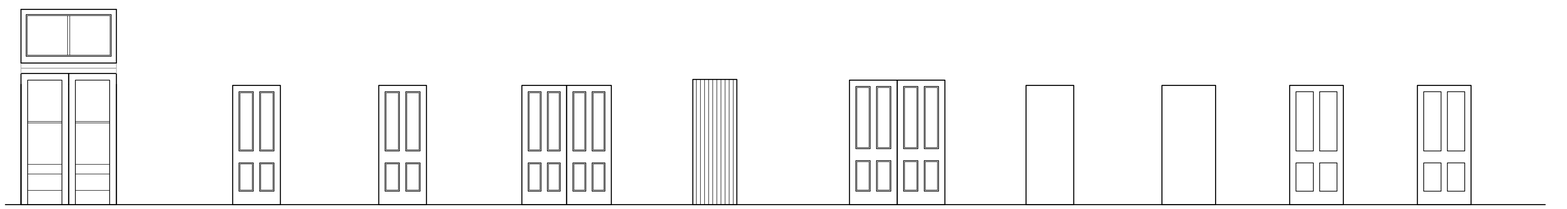
PRELIMINARY - NOT FOR CONSTRUCTION

A1.2

DOOR SCHEDULE

				REPAIR CLASSIFICATION BY FEATURE - REFER TO SPECIFICATIONS FOR DESCRIPTION OF CLASSIFICATIONS										
MARK	DOOR TYPE	TYPE/MATERIAL	SIZE (WxHxT)	DOOR	TRANSOM	GLAZING	HEAD	JAMB	THRESHOLD	INTERIOR CASING	EXTERIOR TRIM	HARDWARE GROUP	SCREENS	NOTES
100	A	HISTORIC TWO 3-PANEL (1 WOOD & 2 LITE PANELS) WOOD WITH WOOD OPERABLE TRANSOM STOREFRONT WINDOW ABOVE	5'-4" X 7'-4" WITH A 2-LITE TRANSOM STOREFRONT WINDOW ABOVE- SEE WINDOW SCHEDULE	I,III	SEE WINDOW SCHEDULE	TEMPERED GLASS TO BE REGLAZED	I	I	WOOD - I,II,III	I	I	STRIP PAINT AND RESTORE HINGES, STRIP AND RESTORE TOP & BOTTOM FLUSH MANUAL FLUSH BOLTS, RESTORE EXTERIOR HANDLE WITH NEW REPLICA HANDLE WITH BACKPLATE, NEW DEADBOLT TO BE INSTALLED IN HISTORIC DEADBOLT LOCATION AND MATCH FINISH OF EXISTING HARDWARE- HOUSE OF ANTIQUE HARDWARE RS-01NW-702347X	NONE	NEW WOOD PANELS REQ'D. IN BOTH DOORS (22" X 11"). FILL AND PATCH HOLES IN LATCH STILE FRAME AND LATCH STILE WHERE MULTIPLE LOCKS EXISTED. HINGE STILES NEED TYPE II WORK AT CURTAIN ROD HOLDERS.
101	B	HISTORIC 4-PANEL WOOD	2'-8" X 6'-8"	I, II, III	NONE	NONE	I	I	WOOD - I,II,III	INSTALL NEW 1X INTERIOR CASING TO MATCH HISTORIC	I,II	REMOVE PAINT FROM HARDWARE (KNOB AND ESCUTCHEON, RIM LOCK AND HINGES). INSTALL NEW DEADBOLT. HOUSE OF ANTIQUE HARDWARE RS-01NW-702347. MATCH FINISH OF HISTORIC HARDWARE	NONE	ALL 4 PANELS NEED REPLACEMENT.
102	C	NEW SOLID WOOD DOOR, REPLICA 4-PANEL DOOR	2'-8" X 6'-7"	PAINT	NONE	NONE	I	I	WOOD- I,II,III	I	I,II	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND53 ENTRANCE LOCK W/ INTERCONNECTED B60 DEADBOLT, PEMKO 411-NBL DOOR BOTTOM, RESTORE HINGES	NONE	
103	B	HISTORIC 4-PANEL WOOD	2'-8" X 6'-8"	I,II	NONE	NONE	I	I	WOOD- I,II	INSTALL NEW 1X INTERIOR CASING TO MATCH HISTORIC	I,II	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND53 ENTRANCE LOCK W/ INTERCONNECTED B60 DEADBOLT, PEMKO 411-NBL DOOR BOTTOM, RESTORE HINGES	NONE	
104	D	NEW SOLID WOOD DOOR, REPLICA 4-PANEL DOOR	PR) 2'-6" X 6'-8"	PAINT	NONE	NONE	I	I	NEW WOOD	INSTALL NEW 1X INTERIOR CASING TO MATCH HISTORIC	I,II,III	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND25 X 80 STOREROOM EXIT LOCK, DUMMY LEVER TRIM, 1-3/4" WIDE 14 GA. PAINTED STEEL ASTRAGAL, PEMKO 411-PKL DOOR BOTTOMS; RESTORE HINGES	NONE	
105	C	NEW SOLID WOOD DOOR, REPLICA 4-PANEL DOOR	2'-8" X 6'-8"	PAINT	NONE	NONE	I	I	WOOD- I,II,III	INSTALL NEW 1X INTERIOR CASING TO MATCH HISTORIC	I,II,III	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND80 STOREROOM LOCK, PEMKO 411-NBL DOOR BOTTOM	NONE	NEED PLYWOOD REMOVED TO ASSESS FULL CONDITION OF DOOR OPENING
106	C	NEW SOLID WOOD DOOR, REPLICA 4-PANEL DOOR	3'-0"x6'-8"	PAINT	NONE	NONE	CUT OPENING AS REQ'D. FOR 6'-8" DOOR	CUT STRIKE JAMB AS REQ'D. FOR 3'-0" DOOR	NONE	INSTALL NEW 1X INTERIOR CASING TO MATCH HISTORIC	NO WORK	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND10 PASSAGE LATCH	NONE	
107	C	NEW SOLID WOOD DOOR, REPLICA 4-PANEL DOOR	3'-0"x6'-8"	PAINT	NONE	NONE	CUT OPENING AS REQ'D. FOR 6'-8" DOOR	CUT STRIKE JAMB AS REQ'D. FOR 3'-0" DOOR	NONE	INSTALL NEW 1X INTERIOR CASING TO MATCH HISTORIC	NONE	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND10 PASSAGE LATCH	NONE	
108	E	VERTICAL T&G WOOD PANELED CABINET DOOR	2'-5 1/2" X 7'-0"	I	NONE	NONE	I	I	NONE	I	NONE	REMOVE PAINT FROM LATCH AND HINGES AND REINSTALL	NONE	
109	B	HISTORIC 4-PANEL WOOD	2'-4" X 6'-3"	I	NONE	NONE	I	I	NONE	I	NONE	REMOVE PAINT FROM HARDWARE AND REINSTALL	NONE	AFTER REMOVAL OF FURRED WALLS IN OFFICE 102, RECONSTRUCT DOOR FRAME AND TRIM TO MATCH HISTORIC.
110	B	HISTORIC 4-PANEL WOOD	2'-4" X 6'-3"	I	NONE	NONE	I	I	NONE	I	NONE	REMOVE PAINT FROM HARDWARE AND HINGES AND REINSTALL	NONE	AFTER REMOVAL OF FURRED WALLS IN OFFICE 102, RECONSTRUCT DOOR FRAME AND TRIM TO MATCH HISTORIC.
111	F	HISTORIC 4-PANEL WOOD	PR) 2'-8" X 6'-11 1/2"	I	NONE	NONE	I	I	NONE	I	NONE	REMOVE PAINT FROM HARDWARE AND HINGES AND REINSTALL	NONE	
112	G	NEW INSULATED FLUSH PANEL STEEL DOOR	2'-8" X 6'-8"	PAINT	NONE	NONE	NEW STEEL FRAME	I	NEW ALUM. THRESHOLD	NONE	NONE	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND80 STOREROOM LOCK, PEMKO 411-PKL DOOR BOTTOM	NONE	
113	H	NEW FLUSH PANEL SOLID WOOD DOOR	3'-0" X 6'-8"	PAINT	NONE	NONE	NEW	NEW	NONE	INSTALL NEW 1X4 CASING	NONE	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND40 PRIVACY LOCK	NONE	
114	J	NEW 4-PANEL SOLID WOOD DOOR	3'-0" X 6'-8"	PAINT	NONE	NONE	NEW	NEW	NEW ALUM. HANDICAP ACCESSIBLE	INSTALL NEW 1X4 CASING	NEW 1X4 JAMB TRIM & 1X4 HEAD TRIM W/ 1X2 DRIP CAP	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND53 ENTRANCE LOCK W/ INTERCONNECTED B60 DEADBOLT, PEMKO 411-NBL DOOR BOTTOM	NONE	
115	H	NEW FLUSH PANEL SOLID WOOD DOOR	2'-0" X 6'-8"	PAINT	NONE	NONE	NEW	NEW	NONE	INSTALL NEW 1X4 CASING	NONE	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND80 STOREROOM LOCK	NONE	
116	I	NEW 4-PANEL PANEL SOLID WOOD DOOR	3'-0" X 6'-8"	PAINT	NONE	NONE	NEW	NEW	NONE	INSTALL NEW 1X4 CASING	NONE	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND60 w/XN12-001 VESTIBULE LOCK WITH INTERIOR UNLOCKING ONLY	NONE	
117	J	NEW 4-PANEL SOLID WOOD DOOR	3'-0" X 6'-8"	PAINT	NONE	NONE	NEW	NEW	NEW ALUM. HANDICAP ACCESSIBLE	INSTALL NEW 1X4 CASING	NEW 1X4 JAMB TRIM & 1X4 HEAD TRIM W/ 1X2 DRIP CAP	SCHLAGE LATITUDE LEVER W/ DISK ROSETTE AND SCHLAGE ND53 ENTRANCE LOCK W/ INTERCONNECTED B60 DEADBOLT, PEMKO 411-NBL DOOR BOTTOM	NONE	

NOTE:
- ALL EXTERIOR DOORS TO HAVE WEATHERSTRIPPING ADDED AROUND OPENING. SPRING METAL PERIMETER GASKETING TO BE USED ON EXISTING BUILDING DOOR OPENINGS. ASSA ABLOY S44_W PEMKO ADHESIVE GASKETING TO BE USED ON NEW ADDITION BUILDING DOOR OPENINGS.
- ALL DOORS TO HAVE GALVANIZED METAL HEAD FLASHING INSTALLED BEHIND SIDING ABOVE DOOR.
- ALL DOOR HARDWARE TO HAVE AGED BRONZE FINISH U.N.O.
- ALL NEW DOORS TO HAVE SCHLAGE COMMERCIAL 4-1/2"x4-1/2" HEAVY DUTY SOLID BRASS, BALL BEARING HINGE, SQUARE CORNER, AGED BRONZE FINISH.
- RESTORE ALL EXISTING DOORS AND CASINGS TO THEIR HISTORIC PAINTED FINISHES, EXCEPT WHERE NOTED.



DOOR TYPE A
100
PR) STOREFRONT DOOR EXISTING – W/ TRANSOM

DOOR TYPE B
101, 103, 109, 110
WOOD DOOR EXISTING – FOUR PANEL

DOOR TYPE C
102, 105, 106, 107
WOOD DOOR NEW – REPLICA FOUR PANEL TO MATCH HISTORIC

DOOR TYPE D
104
PR) WOOD DOOR NEW – REPLICA FOUR PANEL TO MATCH HISTORIC

DOOR TYPE E
108
WOOD DOOR EXISTING – VERT. T&G

DOOR TYPE F
111
PR) WOOD DOOR EXISTING – FOUR PANEL

DOOR TYPE G
112
STEEL DOOR NEW – FLUSH PANEL

DOOR TYPE H
113, 115
WOOD DOOR NEW – FLUSH PANEL

DOOR TYPE I
116
WOOD DOOR NEW – FOUR PANEL

DOOR TYPE J
114, 117
EXTERIOR WOOD DOOR NEW – FOUR PANEL

1 / A1.3 **DOOR TYPES**

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FOR

EMMA MALABY GROCERY

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

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11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

PROJECT NUMBER:

DRAWN BY: JBD CHECKED BY: JBD

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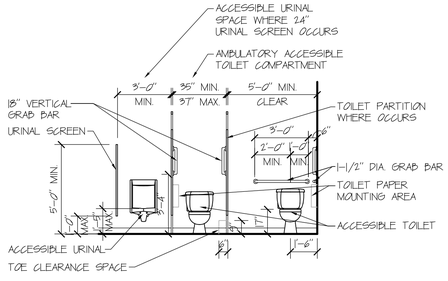
DOOR SCHEDULE

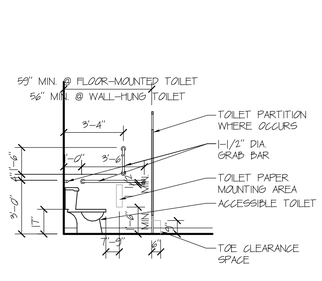
PRELIMINARY - NOT FOR CONSTRUCTION

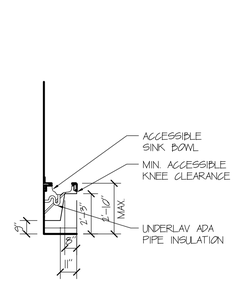
A1.3

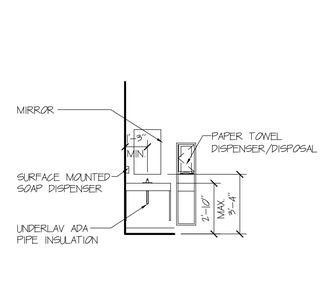
ROOM FINISH SCHEDULE

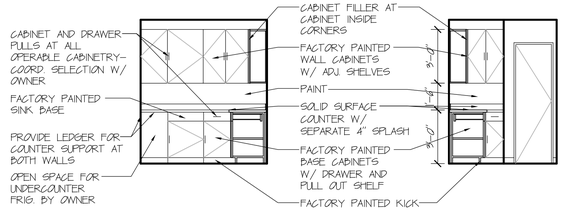
NO.	ROOM NAME	FLOOR: REFINISH HISTORIC WOOD FLOOR WITH A CLEAR MATTE FINISH	FLOOR: REMOVE CONTEMPORARY TILE AT STOVE	FLOOR: PROTECT HISTORIC PAINTED WOOD FLOOR AND PROVIDE A CLEAR MATTE FINISH ON TOP TO PROTECT IT FROM WEAR. COORDINATE WITH ARCHITECT	FLOOR: REMOVE PLYWOOD FLOORING AND RESTORE HISTORIC WOOD FLOOR	FLOOR: NO WORK	FLOOR: REMOVE PLYWOOD AND INSTALL NEW REPLICA WOOD FLOOR. CUT BACK EXISTING FLOOR TO STAGGER NEW FLOORING. AGE THE NEW WOOD TO CLOSELY MATCH THE COLOR OF THE EXISTING HISTORIC FLOORING	FLOOR: INSTALL NEW LINOLEUM SHEET FLOORING	BASE: RESTORE EXISTING WOOD BASE	BASE: INSTALL NEW QUARTER ROUND AT BASE OF WALL, PAINT	BASE: RESTORE QUARTER ROUND AT BASE OF WALL AND FLOOR, IF POSSIBLE. REPLACE ONLY IF NECESSARY, PAINT	BASE: INSTALL NEW REPLICA 1" X 8" WOOD BASE, PAINTED ON HISTORIC PLASTER WALLS (NORTH AND EAST)	BASE: INSTALL NEW REPLICA QUARTER ROUND, PAINTED, AT BASE OF WALL (SOUTH AND WEST WALLS)	BASE: NO WORK	BASE: INSTALL NEW 4" TILE SANITARY COVE BASE	BASE: INSTALL NEW 4" RUBBER COVE BASE	WALLS: REPAIR PLASTER WALLS TO MAKE SMOOTH. FILL MINOR CRACKS. PAINT	WALLS: REMOVE DRYWALL AND FURRING TO RE-EXPOSE HISTORIC PLASTER WALLS. RESTORE PLASTER. PAINT (NORTH & EAST WALLS).	WALLS: REMOVE DRYWALL AND FURRING AT SOUTH AND WEST WALLS TO RE-EXPOSE HISTORIC WOOD PANELING, PAINT	WALLS: INSTALL TILE WAINSCOTING AT TOILET WALL AND SIDEWALLS WITH SMOOTH DRYWALL FINISH ABOVE, PAINT. SEE INTERIOR ELEVATIONS	WALLS: NEW DRYWALL, SMOOTH FINISH, PAINTED	WALLS: INSTALL FULL HEIGHT FRP PANELS AT MOP SINK WALL AND SIDEWALLS WITH SMOOTH DRYWALL FINISH AT OTHER WALLS, PAINT.	WALLS: NO WORK	CEILING: HT	CEILING: REMOVE NON-HISTORIC WOOD PLANK CEILING. COORDINATE WITH ARCHITECT ON ANY HISTORIC FINISH BEHIND.	CEILING: CLEAN AND PAINT EXISTING DRYWALL CEILING	CEILING: RESTORE PLASTER CEILING, FILL MINOR CRACKS AND PAINT	CEILING: REMOVE DROPPED CEILING AND RESTORE HISTORIC PLASTER CEILING ABOVE	CEILING: NO WORK	CEILING: DRYWALL W/ SMOOTH FINISH	COMMENTS
FIRST FLOOR																													
100	GROCERY	X	X							X												X	11'-2"	X					REFER TO STRUCTURAL DRAWINGS TO STRENGTHEN BOWING CEILING
101	MEETING			X					X		X											X	11'-4"		X				
102	OFFICE	X			X							X	X					X	X				7'-5 1/2" 11'-3 1/2"				X		COORDINATE WITH ARCHITECT ON REFINISHING OF WOOD FLOOR. FLOOR HAS KNOTS THAT NEED TO BE PRESERVED.
103	OFFICE	X							X	X							X						11'-3 1/2"			X			COORDINATE WITH ARCHITECT ON REFINISHING OF WOOD FLOOR. FLOOR HAS KNOTS THAT NEED TO BE PRESERVED.
104	EXHIBIT SPACE					X	X							X								X	7'-1"				X		
105	RESTROOM							X							X					X	X		8'-0"						
106	ENTRY							X								X					X		8'-0"						
107	JANITOR							X								X					X		8'-0"						
108	KITCHENETTE							X								X					X		8'-0"						
NOTES:	INSTALL R49 HEMP INSULATION ABOVE ALL EXISTING CEILINGS U.N.O.																												
	INSTALL R45 CLOSED CELL SPRAY FOAM INSULATION W/ 1.25" (R4.5) URE-K GRAY SPRAY CELLULOSE INSULATION OVER THE SPF ON UNDERSIDE OF ROOF DECK AND ROOF FRAMING IN EXHIBIT SPACE.																												
	INSTALL R49 CLOSED CELL SPRAY FOAM INSULATION ON UNDERSIDE OF ROOF DECK AND ROOF FRAMING IN ALL OF NEW ADDITION.																												











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SCHEUBER + DARDEN architects LLC

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303.915.8415

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SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

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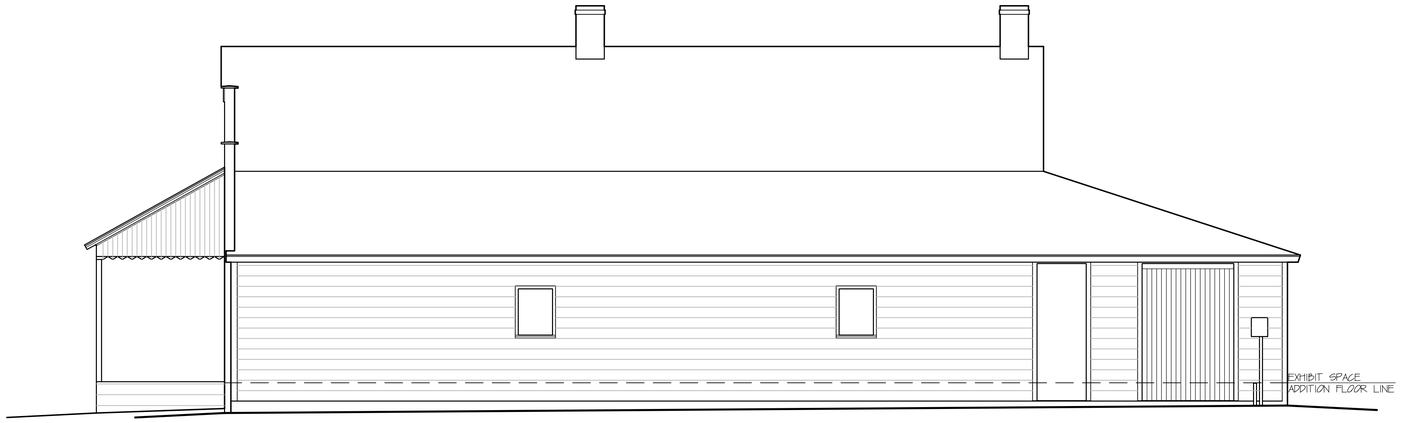
ROOM FINISH SCHEDULE

A1.4

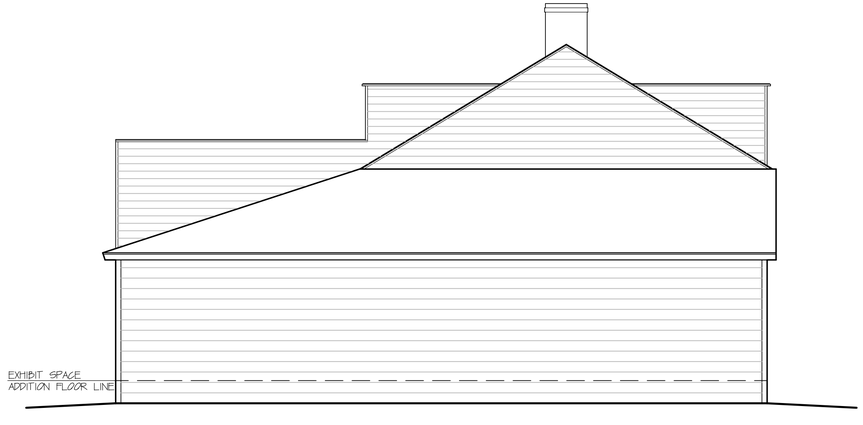
4 A2.0 **SIDE - SOUTH ELEVATION**

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



3 A2.0 **SIDE - NORTH ELEVATION**

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



2 A2.0 **WEST- REAR ELEVATION**

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

1 A2.0 **EAST- FRONT ELEVATION**

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

FRONT/EAST ELEVATION
1912

FRONT/EAST ELEVATION
1907

FRONT/EAST ELEVATION
1972

5 A2.0 **HISTORIC PHOTOS**

SCALE: NTS

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EXISTING BUILDING ELEVATIONS

A2.0

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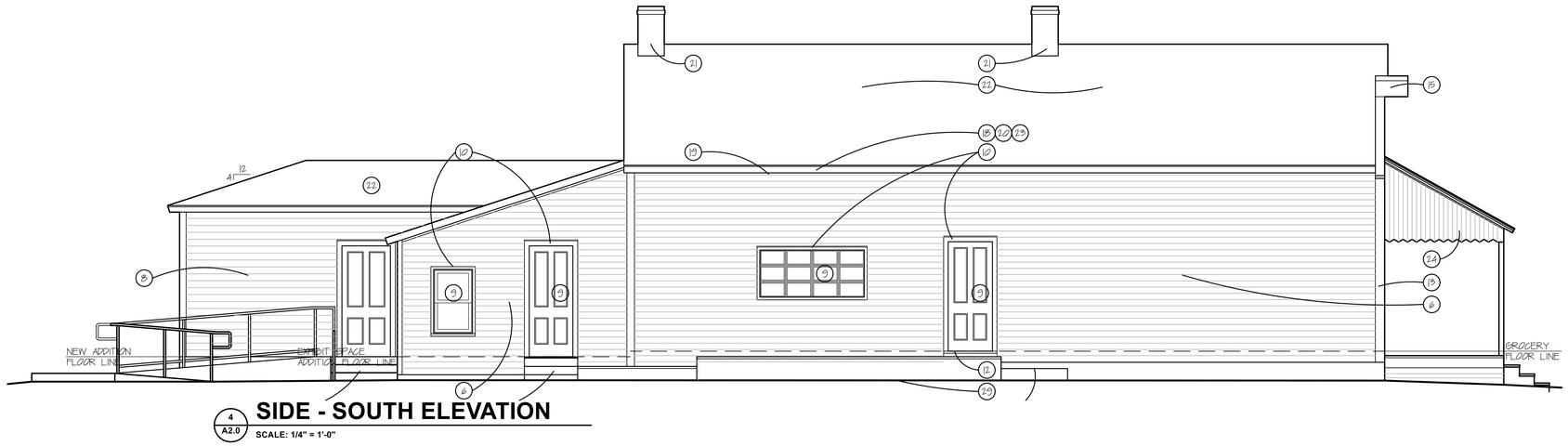
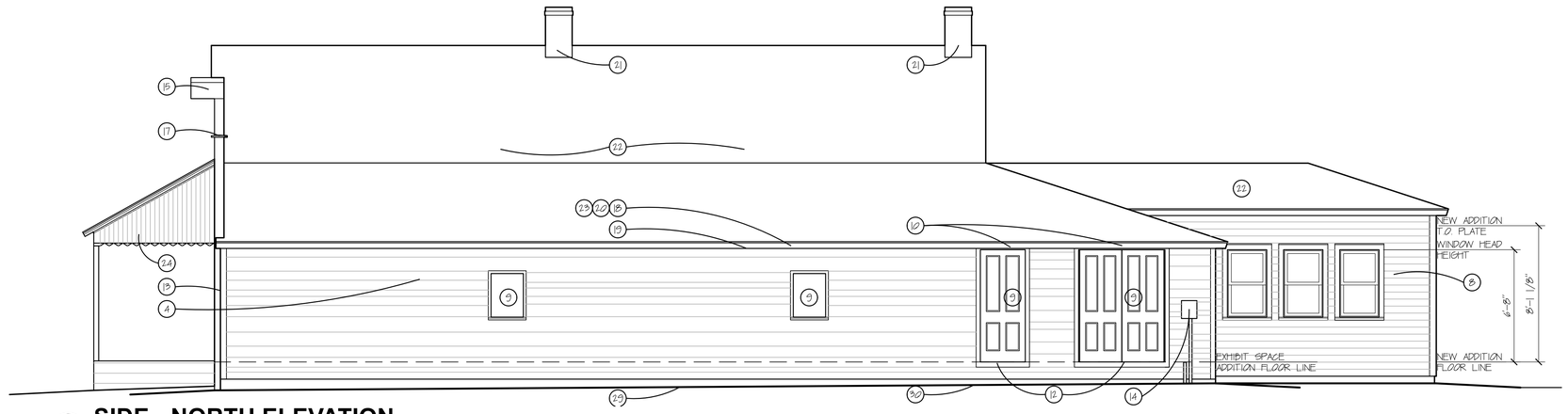


SIDE - SOUTH ELEVATION

4 A2.0

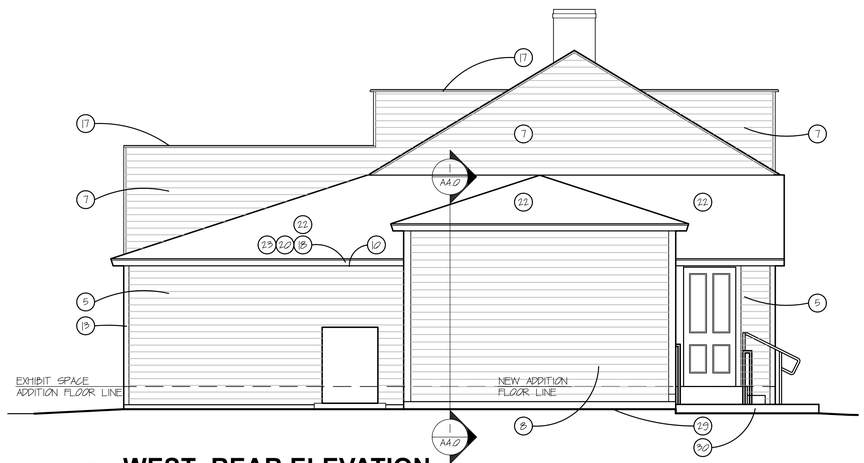
SCALE: 1/4" = 1'-0"



SIDE - NORTH ELEVATION

3 A2.0

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



WEST- REAR ELEVATION

2 A2.0

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

EAST- FRONT ELEVATION

1 A2.0

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

BUILDING ELEVATION NOTES

1	RESTORE ALL EXISTING SIDING AND TRIM THAT IS TO REMAIN IN PLACE TO THEIR (E) HISTORIC PAINTED FINISHES. SEE NOTES BELOW AND HISTORIC PHOTOS.
2	RESTORE EXISTING MULTI-SIZED WOOD SIDING. REATTACH WHERE LOOSE, EPOXY CRACKS AND SAND TO THE NEXT SOUND LAYER FOR PAINTING PREP.
3	REMOVE ALL WOOD SIDING AND INSTALL REPLICA MULTI-SIZED WOOD SIDING WITH MATCHING WOOD GRAINING TO MATCH HISTORIC SIDING AT ADJACENT HISTORIC NORTH ADDITION. INSTALL NEW WEATHER RESISTANT MEMBRANE OVER EXISTING WALL SHEATHING.
4	REMOVE ALL WOOD SIDING AND INSTALL REPLICA MULTI-SIZED WOOD SIDING WITH MATCHING WOOD GRAINING TO MATCH HISTORIC SIDING AT FRONT WALL OF HISTORIC NORTH ADDITION. DRILL HOLES IN EXISTING WALL SHEATHING BETWEEN STUDS AS REQUIRED TO INSTALL BLOWN-IN CELLULOSE INSULATION IN STUD CAVITIES AND INSTALL NEW WEATHER RESISTANT MEMBRANE OVER EXISTING WALL SHEATHING.
5	CAREFULLY REMOVE EXISTING LAP SIDING TO INVESTIGATE IF EXISTING HISTORIC SIDING EXISTS UNDER CURRENTLY EXPOSED SIDING. IF HISTORIC SIDING EXISTS, CAREFULLY REMOVE ALL EXISTING LAP SIDING TO EXPOSE AND RESTORE HISTORICAL SIDING. IF HISTORICAL SIDING DOES NOT EXIST, REMOVE ALL SIDING AS REQUIRED TO INSTALL NEW WEATHER RESISTANT MEMBRANE AND 5-1/4" (4-1/2" EXPOSURE) LAP SIDING. DRILL HOLES IN EXISTING WALL SHEATHING BETWEEN STUDS AS REQUIRED TO INSTALL BLOWN-IN CELLULOSE INSULATION IN STUD CAVITIES.
6	REMOVE ALL WOOD SIDING AND INSTALL REPLICA 5-1/4" (4-1/2" EXPOSURE) LAP SIDING WITH MATCHING WOOD GRAINING TO MATCH HISTORICAL SIDING. DRILL HOLES IN EXISTING WALL SHEATHING BETWEEN STUDS AS REQUIRED TO INSTALL BLOWN-IN CELLULOSE INSULATION IN STUD CAVITIES AND INSTALL NEW WEATHER RESISTANT MEMBRANE OVER EXISTING WALL SHEATHING.
7	REMOVE ALL WOOD SIDING AND INSTALL REPLICA 5-1/4" (4-1/2" EXPOSURE) LAP SIDING WITH MATCHING WOOD GRAINING TO MATCH HISTORICAL SIDING. INSTALL NEW WEATHER RESISTANT MEMBRANE OVER EXISTING WALL SHEATHING.
8	TYPICAL NEW ADDITION EXTERIOR WALL- 6-1/4" (5" EXPOSURE) JAMES HARDIE CEDARMILL LAP SIDING PER ELEVATIONS OVER WEATHER RESISTANT BARRIER OVER 1/2" WALL SHEATHING OVER 2x6 WOOD STUDS AT 16" O.C. MAX. WITH CLOSED CELL SPRAY FOAM INSULATION FILLING ALL VOIDS IN WALL CAVITY.
9	SEE DOOR AND WINDOW SCHEDULES FOR EXTERIOR TRIM REHABILITATION, REPLACEMENT OR NEW TRIM REQUIREMENTS.
10	INSTALL DOOR AND WINDOW HEAD WOOD TRIM AND PAINTABLE GALVANNEALED .022" HEAD FLASHING BEHIND SIDING. INSTALL NEW SIDING AFTER TRIM AND FLASHING INSTALLATION.
11	REMOVE WOOD SIDING AND WOOD DOOR TRIM AS REQUIRED TO INSTALL NEW DOORS, WOOD TRIM AND PAINTABLE GALVANNEALED .022" HEAD FLASHING BEHIND SIDING. INSTALL NEW SIDING AFTER DOOR, TRIM AND FLASHING INSTALLATION. INSTALL NEW REPLICA TRIM BOARDS.
12	AT ALL EXISTING EXTERIOR DOORS, REMOVE DOOR THRESHOLD AND EPOXY WOOD BELOW WHERE CRACKS OR MINOR ROT EXISTS. INSTALL NEW WATERPROOF SILL MEMBRANE AND METAL THRESHOLD BACKFLASHING PRIOR TO REINSTALLING WOOD DOOR THRESHOLD.
13	EPOXY CORNER WOOD TRIM WHERE CRACKS OR MINOR ROT EXISTS. REATTACH TRIM WHERE LOOSE OR NEEDS TO BE REALIGNED CORRECTLY AS REQ'D. TO PROVIDE TIGHT TRIM JOINTS. ANTICIPATE REHABILITATION ON 50% OF CORNER TRIM.
14	SAND AND PAINT NEW ELECTRICAL SERVICE BOX AND PIPING TO MATCH SIDING.
15	RECONSTRUCT HISTORIC SUSPENDED CURVED PEDIMENT BUTTRESS AT PARAPET PER HISTORIC PHOTOS.
16	REPLACE EXISTING WOOD PARAPET CAP TRIM W/ NEW WOOD PARAPET STEPPED WOOD TRIM PER HISTORIC PHOTOS.
17	REPLACE EXISTING WOOD PARAPET CAP TRIM W/ NEW REPLICA WOOD PARAPET TRIM.
18	REMOVE DAMAGED AND DETERIORATED WOOD FASCIA AND INSTALL NEW REPLICA WOOD FASCIA WITH MATCHING WOOD GRAINING. INSTALL 2x OUTLOOKERS WHERE MISSING WITH SUBFASCIA AS REQUIRED TO SUPPORT NEW FASCIA BOARD AND SOFFIT BOARDS. EPOXY EXISTING WOOD FASCIA WHERE CRACKS OR MINOR ROT EXISTS. REATTACH FASCIA BOARD WHERE LOOSE OR NEEDS TO BE REALIGNED AS REQUIRED TO PROVIDE TIGHT TRIM JOINTS.ANTICIPATE REHABILITATION ON 75% OF FASCIA.
19	REPLACE WOOD FRIEZE TRIM AS REQUIRED TO PROVIDE TIGHT TRIM JOINTS. ANTICIPATE REHABILITATION ON 20% OF FRIEZE TRIM.
20	RESTORE EXISTING WOOD SOFFIT PANELS. REATTACH WHERE LOOSE, EPOXY CRACKS AND SAND TO THE NEXT SOUND LAYER. ANTICIPATE REHABILITATION ON 75% OF SOFFIT PANELS.
21	INSTALL STEEL ANGLE SUPPORTS FOR EXISTING MASONRY CHIMNEYS PER STRUCTURAL DWGS. INSTALL NEW POWDER COATED GALVANIZED METAL STEP FLASHING (TO MATCH ADJACENT BRICK SURFACE) BETWEEN CHIMNEY AND ROOF. RE: 3/A5.0.
22	INSTALL SYNTHETIC SHAKE SHINGLE ROOFING AND ASSOCIATED ROOFING MATERIALS INCLUDING BUT NOT LIMITED TO SHINGLES, UNDERLAYMENT, FLASHING, GUTTERS AND DOWNSPOUTS. SHINGLES TO BE CeDUR SOLID POLYURETHANE PRODUCT INSTALLED IN A STRAIGHT COURSE INSTALLATION.
23	REMOVE EXISTING GUTTERS AND DOWNSPOUTS AND INSTALL NEW 'K' STYLE GUTTERS WITH RECTANGULAR DOWNSPOUTS AND EXTENSIONS. SIZE PER ROOFING GENERAL NOTES. GUTTERS TO MATCH COLOR OF FASCIA. DOWNSPOUTS TO MATCH SURFACE DIRECTLY BEHIND DOWNSPOUT- ANTICIPATE 2 COLORS.
24	RESTORE EXISTING VERTICAL WOOD PANELS. REATTACH WHERE LOOSE AND SAND TO THE NEXT SOUND LAYER IN PREPARATION FOR PAINTING.
25	INSTALL CURVED WOOD GABLE END TRIM AND PAINT REPLICA EMMA MALABY GROCERY LETTERING PER HISTORIC PHOTO. CONSULT W/ OWNER AND ARCHITECT.
26	PAINT REPLICA WOODYARD LETTERING PER HISTORIC PHOTO. CONSULT W/ OWNER AND ARCHITECT.
27	RESTORE EXISTING WOOD PILASTERS. REATTACH WHERE LOOSE, EPOXY CRACKS AT BOTTOM OF PILASTERS AND SAND TO THE NEXT SOUND LAYER IN PREPARATION FOR PAINTING.
28	RESTORE EXISTING DECORATIVE WOOD PANELS AND SURROUNDING PANEL TRIM. EPOXY CRACKS OF BOTTOM HORIZONTAL 2x RAIL AND SAND ALL PANEL MEMBERS TO THE NEXT SOUND LAYER IN PREPARATION FOR PAINTING.
29	REGRADE EXISTING SITE GRADING AS REQUIRED TO SLOPE SOIL AT THE BASE OF THE BUILDING MINIMUM 6" DOWN IN 10' AND DRAIN TO A SWALE AWAY FROM THE BUILDING. REMOVE ALL VEGETATION FROM AGAINST THE BUILDING AND INSTALL A FOUNDATION DRYZONE SYSTEM FROM THE BUILDING FACE TO ONE FOOT BEYOND THE DRIPLINE OF THE ROOF WHERE SPACE ALLOWS.
30	SEE FLOOR PLAN FOR SITE LANDINGS, STEPS, SIDEWALKS AND RAMPS.

NOTE: ALL VERTICAL JOINTS BETWEEN WOOD SIDING PIECES AND SIDING AND TRIM TO BE SEALED WITH PAINTABLE SEALANT TO BE PAINTED TO MATCH SIDING.

PRELIMINARY - NOT FOR CONSTRUCTION

SCHEUBER + DARDEN architects LLC

P.O. BOX 909
PARKER, COLORADO 80134
303.915.8415

CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

DATE:	DESCRIPTION:
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

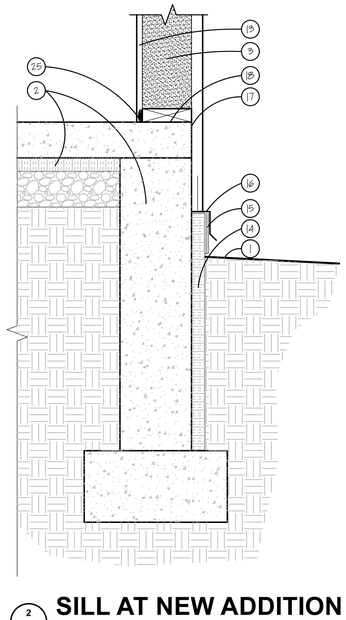
PROJECT NUMBER:

DRAWN BY: JBD CHECKED BY: JBD

COMPUTER FILE: EMMA MALABY BASE DRAWING

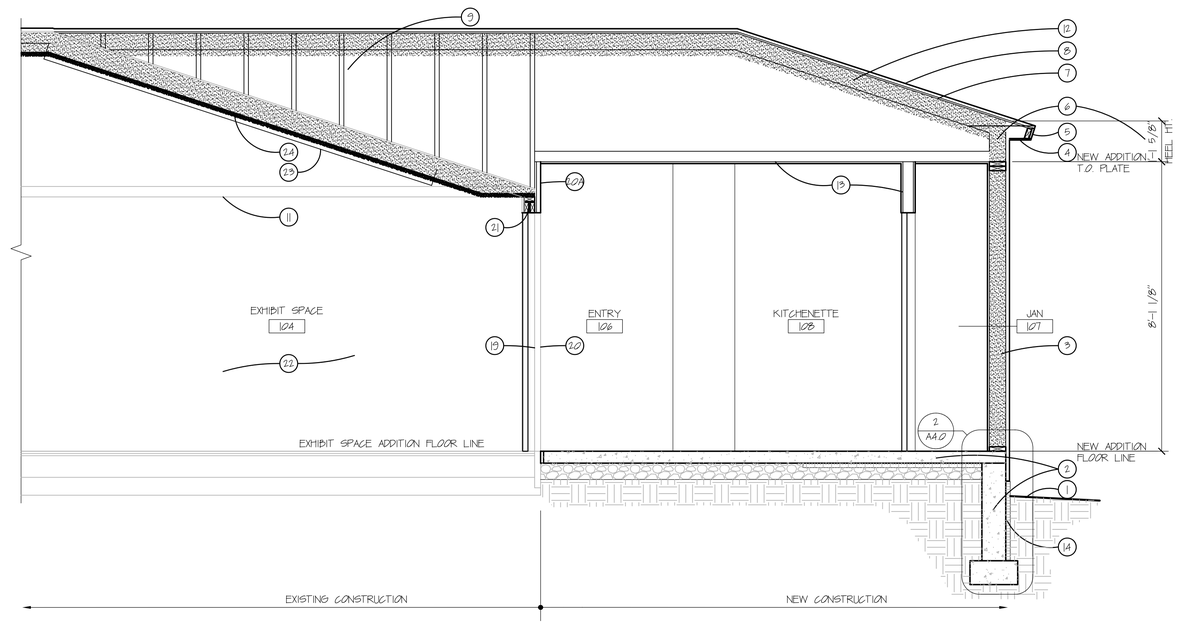
BUILDING ELEVATIONS

A2.1



2 A4.0 SILL AT NEW ADDITION

SCALE: 1-1/2" = 1'-0"



1 A4.0 E-W BUILDING SECTION THRU NEW ADDITION

SCALE: 1/2" = 1'-0"

SECTION NOTES	
1	FINISH GRADE. SEE GENERAL NOTES FOR DRAINAGE REQUIREMENTS.
2	REINFORCED CONCRETE FOUNDATION WALL, FOOTING AND SLAB. PROVIDE AIRTIGHT VAPOR BARRIER ON GRADE ON 4" GRAVEL WITH 1-1/2" (R-10 TOTAL) RIGID INSULATION BELOW SLAB.
3	TYPICAL NEW ADDITION EXTERIOR WALL- 6-1/4" (5" EXPOSURE) JAMES HARDIE CEDARMILL LAP SIDING PER ELEVATIONS OVER WEATHER RESISTANT BARRIER OVER 1/2" WALL SHEATHING OVER 2x6 WOOD STUDS AT 16" O.C. MAX. WITH CLOSED CELL SPRAY FOAM INSULATION FILLING ALL VOIDS IN WALL CAVITY.
4	SOFFIT BOARD TO MATCH EXISTING BUILDING SOFFIT.
5	ROOF FASCIA TO MATCH EXISTING BUILDING FASCIA.
6	ENERGY TRUSS RAISED HEEL HEIGHT W/ EAVE EXTENSION CUT TO 2x4.
7	1/2" CDX PLYWOOD ROOF SHEATHING.
8	SYNTHETIC SHAKE SHINGLE ROOFING PER ROOF REPLACEMENT NOTES.
9	2x8 AT 24" O.C. OVERFRAMING ON EXISTING BUILDING ROOF FRAMING.
10	FLASHING AND COUNTERFLASHING AT ALL ROOF TO WALL INTERSECTIONS PER GENERAL ROOFING NOTES.
11	EXISTING BUILDING CONSTRUCTION.
12	INSTALL R49 CLOSED CELL SPRAY FOAM INSULATION ON UNDERSIDE OF ROOF DECK AND ROOF FRAMING IN ALL OF NEW ADDITION.
13	5/8" GYPSUM BOARD ON ALL WALLS AND CEILINGS.
14	1-1/2" (R-10 TOTAL) RIGID FOUNDATION INSULATION.
15	PARGE COAT OVER EXPOSED RIGID FOUNDATION INSULATION.
16	PREFINISHED THRU-WALL MINIMUM 26 GAUGE GALVANIZED METAL FLASHING WITH DRIP EDGE.
17	SELF-ADHERED FLASHING MEMBRANE- INSTALL OVER INTERSECTION OF SILL PLATE AND CONCRETE SLAB.
18	SILL PLATE INSTALLED OVER SILL GASKET.
19	EXISTING BUILDING WALL CONSTRUCTION.
20	CAREFULLY REMOVE EXISTING LAP SIDING TO INVESTIGATE IF EXISTING HISTORIC SIDING EXISTS UNDER CURRENTLY EXPOSED SIDING. IF HISTORIC SIDING EXISTS, CAREFULLY REMOVE ALL EXISTING LAP SIDING TO EXPOSE AND RESTORE HISTORICAL SIDING. IF HISTORICAL SIDING DOES NOT EXIST, REMOVE ALL SIDING AS REQUIRED TO INSTALL NEW WEATHER RESISTANT MEMBRANE AND 5-1/4" (4-1/2" EXPOSURE) LAP SIDING. DRILL HOLES IN EXISTING WALL SHEATHING BETWEEN STUDS AS REQUIRED TO INSTALL BLOWN-IN CELLULOSE INSULATION IN STUD CAVITIES.
20A	INSTALL NEW SIDING TO MATCH SIDING TYPE DETERMINED BY NOTE 20. INSTALL OVER EXTERIOR SHEATHING ON 2x OVERFRAMING OR 2x4 WALL FRAMED ON TOP OF EXISTING ROOF SHEATHING AS REQUIRED TO ALIGN WITH EXISTING WALL SIDING BELOW.
21	CAREFULLY REMOVE EXISTING INTERIOR BEADBOARD AT NEW DOOR OPENING AND INVESTIGATE HISTORICAL DOOR OPENING FOR STUD SPACING AND EXISTING HEADER. REMOVE EXISTING WALL ASSEMBLY AS REQUIRED FOR NEW DOOR AND INSTALL NEW JACK AND KING STUDS AND 2x4 HEADER IF NONE EXIST.
22	RE: FINISH SCHEDULE FOR ALL INTERIOR WORK TO BE REPAIRED, REHABILITATED OR REPLACED.
23	ROOF STABILIZATION- RE: STRUCTURAL DWGS.
24	INSTALL R45 CLOSED CELL SPRAY FOAM INSULATION W/ 1.25" (R4.5) URE-K GRAY SPRAY CELLULOSE INSULATION OVER THE SPF ON UNDERSIDE OF ROOF DECK AND ROOF FRAMING IN EXHIBIT SPACE.
25	CAULK OR GASKET JOINT AT BOTTOM OF STUD WALL AT GYPSUM BOARD- TYP. AT ALL NEW ADDITION EXTERIOR WALLS.

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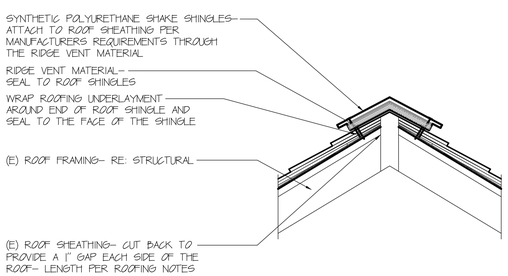
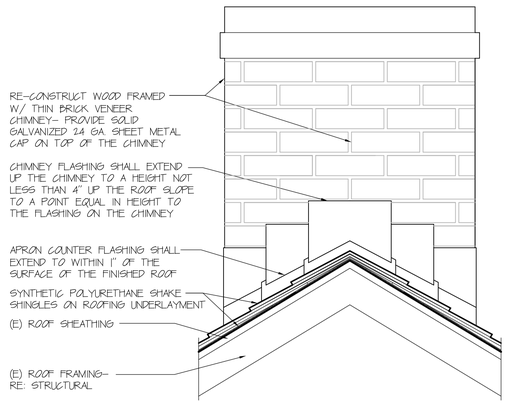
BUILDING SECTION AND DETAILS

A4.0



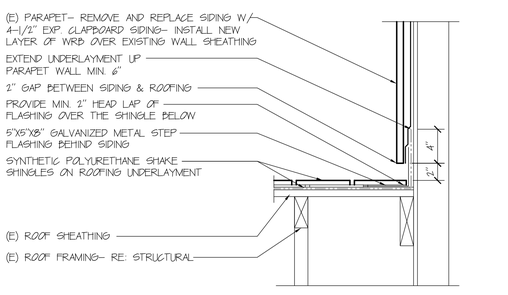
6 A5.0 RIDGE VENT DETAIL

SCALE: 1-1/2" = 1'-0"



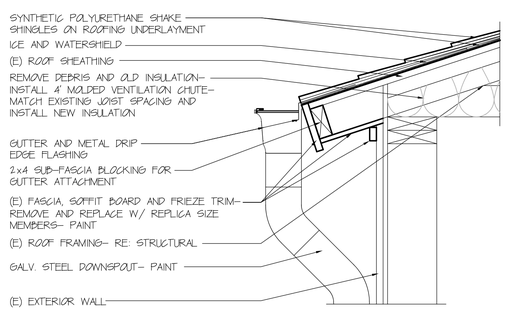
3 A5.0 CHIMNEY DETAIL

SCALE: 1-1/2" = 1'-0"



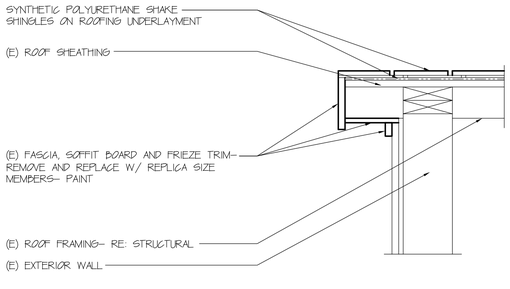
5 A5.0 ROOF/WALL INTERSECTION DETAIL

SCALE: 1-1/2" = 1'-0"



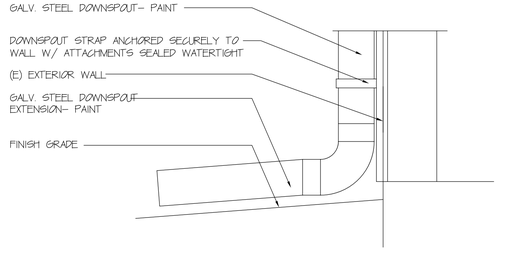
2 A5.0 ROOF EAVE DETAIL

SCALE: 1-1/2" = 1'-0"



4 A5.0 ROOF RAKE DETAIL

SCALE: 1-1/2" = 1'-0"



1 A5.0 DOWNSPOUT BASE DETAIL

SCALE: 1-1/2" = 1'-0"

GENERAL ROOFING NOTES

A	INSTALL MANUFACTURER'S REQUIRED SELF-ADHERING ICE AND WATER SHIELD AT ALL LOCATIONS WHERE ICE DAMMING IS A POTENTIAL, INCLUDING DOWNSLOPE EAVES, VALLEYS, CRICKETS, AROUND PENETRATIONS AND AT RAKE EDGES. ICE AND WATER SHIELD TO BE INSTALLED A MINIMUM OF 2' INSIDE EXTERIOR WALL LINE AS REQUIRED BY BUILDING CODE AND MANUFACTURER.
B	PROVIDE SHOP DRAWINGS OF THE MANUFACTURER'S DETAILS THAT PERTAIN SPECIFICALLY TO THE ROOFING INSTALLATION FOR THIS BUILDING AND THIS ROOF SYSTEM PRIOR TO START OF ROOFING WORK.
C	RESTORE ROOF TO A WEATHERTIGHT CONDITION AT THE CONCLUSION OF EACH DAY'S ROOF REMOVAL AND RE-ROOFING ACTIVITIES.
D	ROOFING CONTRACTOR TO INSTALL ROOF TO MEET APPLICABLE WIND UPLIFT CODE REQUIREMENTS.
E	ROOFING MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE FINAL INSPECTION AFTER COMPLETION OF THE ROOF INSTALLATION. A COMPLETED PUNCH LIST SHALL BE PROVIDED TO THE GENERAL CONTRACTOR.
F	SHEET METAL STEP AND APRON FLASHINGS ARE TO BE A MINIMUM 26-GAUGE PRE-FINISHED GALVANIZED STEEL OR AN EQUIVALENT LONGEVITY NON-CORROSIVE METAL AS REQUIRED BY MANUFACTURER. SUBMIT PRODUCT DOCUMENTATION FOR APPROVAL.
G	THE VERTICAL FLANGE OF ALL STEP FLASHING SHALL BE LAPPED A MIN. OF 5". SHEET METAL COUNTERFLASHING MAY BE INSTALLED WHERE WALL CLADDING OR SIDING OVERLAPS STEP FLASHING. INSTALL ALL FLASHING AS REQ'D. BY MFR.
H	IF A SOLID WOOD NAILING SURFACE IS NOT PRESENT AT THE PERIMETER OF THE ROOF DECK, INSTALL TO PROVIDE A SOLID NAILING SURFACE FOR THE METAL DRIP EDGE FLASHING.
I	INSTALL DRIP-EDGE FLASHING IN SUCH A MANNER TO PERMIT WATER TO DRIP OFF THE ROOF AND INTO THE GUTTER WITHOUT AFFECTING THE UNDERLYING CONSTRUCTION DURING TIMES OF NO WIND.
J	INSTALL THE HORIZONAL FLANGE OF THE SHEET METAL DRIP-EDGE FLASHING APPROXIMATELY 4" MINIMUM ONTO THE ROOF DECK.
K	INSTALL AN ISOLATER SHEET (STRIP OF ASPHALT-SATURATED FELT) BETWEEN THE WOOD ROOF DECK AND SHEET METAL FLASHING TO MINIMIZE POTENTIAL FOR CONDENSATION AND RESULTING DECAY.
L	CONTRACTOR TO PROVIDE ROOFING SAMPLES FOR APPROVAL PRIOR TO ORDERING SHINGLES.
M	GUTTER CONTRACTOR TO CALCULATE GUTTER AND DOWNSPOUT SIZING REQUIREMENTS AND COORDINATE WITH ARCHITECT, OWNER AND SHF. GUTTER COLOR TO MATCH FASCIA.
N	IF DOWNSPOUTS ARE LOCATED DIFFERENTLY THAN SHOWN ON DRAWINGS, COORDINATE LOCATIONS WITH ARCHITECT, OWNER AND SHF. DOWNSPOUT COLOR TO MATCH SURFACE COLOR BEHIND DOWNSPOUT AT ALL LOCATIONS.
O	COMPLETE MOCKUP OF RIDGE VENT/SHINGLE RIDGE CAP PRIOR TO INSTALLING.
P	VERIFY SIZE, LOCATION AND NUMBER OF ROOF PENETRATIONS, INCLUDING CHIMNEYS, VENTS, PIPES, CURBS, ROOF DRAINS, CONDUITS, ETC. PROVIDE NEW FLASHING AND SEAL ALL PENETRATIONS WHETHER OR NOT INDICATED ON THE DRAWINGS.
Q	REPAIR AND REPLACE THE ROOFING SYSTEM OR STRUCTURE DAMAGED BY IMPROPER STORAGE, CONSTRUCTION ACTIVITIES OR LACK OF ADEQUATE TEMPORARY PROTECTION. THIS INCLUDES INTERIOR DAMAGE TO FINISHES, EQUIPMENT, FURNISHINGS, ETC. RESULTING FROM LEAKS.
R	NEW BLOCKING SHALL BE PRESERVATIVE TREATED WOOD.
S	ALL NEW EXPOSED ROOF VENTS AND PLUMBING STACKS ARE TO BE EXTENDED NO MORE THAN THE LOWEST CODE MINIMUM REQUIRED DISTANCE ABOVE THE ROOF, AND ARE TO BE PAINTED TO MATCH THE ROOF SHINGLES. PROVIDE NEW FLASHING AND SEAL PENETRATIONS.

ROOF REPLACEMENT NOTES

1	INSTALL SYNTHETIC SHAKE SHINGLE ROOFING AND ASSOCIATED ROOFING MATERIALS INCLUDING BUT NOT LIMITED TO SHINGLES, UNDERLAYMENT, FLASHING, GUTTERS AND DOWNSPOUTS. SHINGLES TO BE CeDUR SOLID POLYURETHANE PRODUCT INSTALLED IN A STRAIGHT COURSE INSTALLATION.
2	REMOVE EXISTING CEDAR ROOFING MATERIALS INCLUDING BUT NOT LIMITED TO SHINGLES, UNDERLAYMENT, FLASHING, GUTTERS AND DOWNSPOUTS TO THE EXISTING STRUCTURAL ROOF DECK.
3	INSPECT STRUCTURAL ROOF DECK AND REPLACE ANY BOARD DECKING THAT IS TOO DETERIORATED TO REUSE. REATTACH ANY LOOSE DECKING AS REQUIRED FOR NEW ROOFING INSTALLATION.
4	REMOVE BOARD DECKING AND PLYWOOD DECKING AT ROOF RIDGE TO PROVIDE VENTILATION SYSTEM AT RIDGE, EXPOSING ROOF JOISTS. REMOVAL OF DECKING SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. SUBMIT PRODUCT LITERATURE FOR APPROVAL SO THAT SOFFIT VENTING COORDINATION CAN OCCUR. COORDINATE WITH MANUFACTURER TO INSTALL NEW RIDGE VENTING SYSTEM TO MINIMIZE IMPACT ON HISTORIC APPEARANCE AND BE INSTALLED UNDER NEW MANUFACTURER'S FIELD ASSEMBLED RIDGE. INSTALL RIDGE VENTS, SIMILAR TO CORAVENT V-600E. RE: 6/A5.0
	A. MAIN ROOF RIDGE VENT LENGTH - 32'
	B. NEW ADDITION ROOF RIDGE VENT LENGTH - 16'
5	INSTALL 2 LAYERS OF MANUFACTURER'S REQUIREDED SYNTHETIC OR NO. 30 FELTS UNDERLAYMENT. INSTALL PER MANUFACTURER'S REQUIREMENTS.
6	REMOVE EXISTING FASCIA AND SOFFIT BOARDS AND INSTALL NEW REPLICA FASCIA AND SOFFIT BOARDS. ANTICIPATE 75% REPLACEMENT. INSTALL NEW POWDER COATED GALVANIZED METAL DRIP EDGE FLASHING (COLOR TO MATCH ADJACENT SURFACE).
7	INSTALL STEEL ANGLE SUPPORTS FOR EXISTING MASONRY CHIMNEYS PER STRUCTURAL DWGS. INSTALL NEW POWDER COATED GALVANIZED METAL STEP FLASHING (TO MATCH ADJACENT BRICK SURFACE) BETWEEN CHIMNEY AND ROOF. RE: 3/A5.0.
8	INSTALL NEW ROOFING MANUFACTURER'S REQUIRED FLASHING AT ALL ROOF PENETRATIONS.
9	REMOVE EXISTING GUTTERS AND DOWNSPOUTS AND INSTALL NEW 'K' STYLE GUTTERS WITH RECTANGULAR DOWNSPOUTS AND EXTENSIONS. SIZE PER ROOFING GENERAL NOTES. GUTTERS TO MATCH COLOR OF FASCIA. DOWNSPOUTS TO MATCH SURFACE DIRECTLY BEHIND DOWNSPOUT- ANTICIPATE 2 COLORS.
10	DOWNSPOUTS TO EXTEND BEYOND THE FACE OF THE BUILDING A MINIMUM OF 2'. INSTALL CONCRETE SPLASHBLOCK AT OUTLET AND SLOPE AWAY FROM THE BUILDING.
11	INSTALL SOFFIT VENTS, SIMILAR TO CORAVENT S-400. COORDINATE LOCATIONS WITH ARCHITECT, OWNER AND SHF.
	A. MAIN ROOF SOFFIT VENTS - 64'.
	B. NEW ADDITION ROOF SOFFIT VENTS - 32'.
	C. COORDINATE LOCATIONS WITH ARCHITECT, OWNER AND SHF.
12	OUTLINE OF BUILDING BELOW.
13	LINE OF ROOF FASCIA, RAKE, RIDGE OR HIP.
14	LINE OF ROOF SLOPE CHANGE IN PITCH. INSTALL FLASHING PER REQUIREMENTS OF ROOFING MANUFACTURER.
15	LINE OF PARAPET.

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ROOF DETAILS

A5.0

MECHANICAL SYMBOLS

(NOT ALL SYMBOLS SHOWN ARE USED ON THESE DRAWINGS)

ABBR.	SYMBOL	DESCRIPTION
	UP DOWN	
		OUTSIDE AIR INTAKE DUCT
		POSITIVE PRESSURE DUCT
		NEGATIVE PRESSURE DUCT
MAV		MANUAL VOLUME DAMPER IN DUCT
		SUPPLY DIFFUSER
		RETURN/EXHAUST GRILLE
DCW	— - — - —	DOMESTIC COLD WATER
DHW	——— - - ——	DOMESTIC HOT WATER
DHWC	——— - - - - —	DOMESTIC HOT WATER CIRCULATING
THW	120°— - - —	TEMPERED HOT WATER @ TEMPERATURE INDICATED
THWC	120°———	TEMPERED HOT WATER CIRCULATING
	— —SS— —	SANITARY SEWER (BURIED)
	— —SS— —	SANITARY SEWER (SUSPENDED)
	— —GSS— —	GREASE SANITARY SEWER (BURIED)
	— — V — —	VENT
	——— G ———	NATURAL GAS
CO		HORIZONTAL CLEANOUT
		VERTICAL CLEANOUT
		BALL VALVE
		BUTTERFLY VALVE
		CHECK VALVE

ABBREVIATIONS

(NOT ALL ABBREVIATIONS SHOWN ARE USED ON THESE DRAWINGS)

ABBR.	DESCRIPTION
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BDD	BACKDRAFT DAMPER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CI	CAST IRON
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ELEV	ELEVATION
FCO	FLOOR CLEANOUT
GCO	GRADE CLEANOUT
(N)	NEW
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
TSP	TOTAL STATIC PRESSURE
VTR	VENT THROUGH ROOF
WCO	WALL CLEANOUT

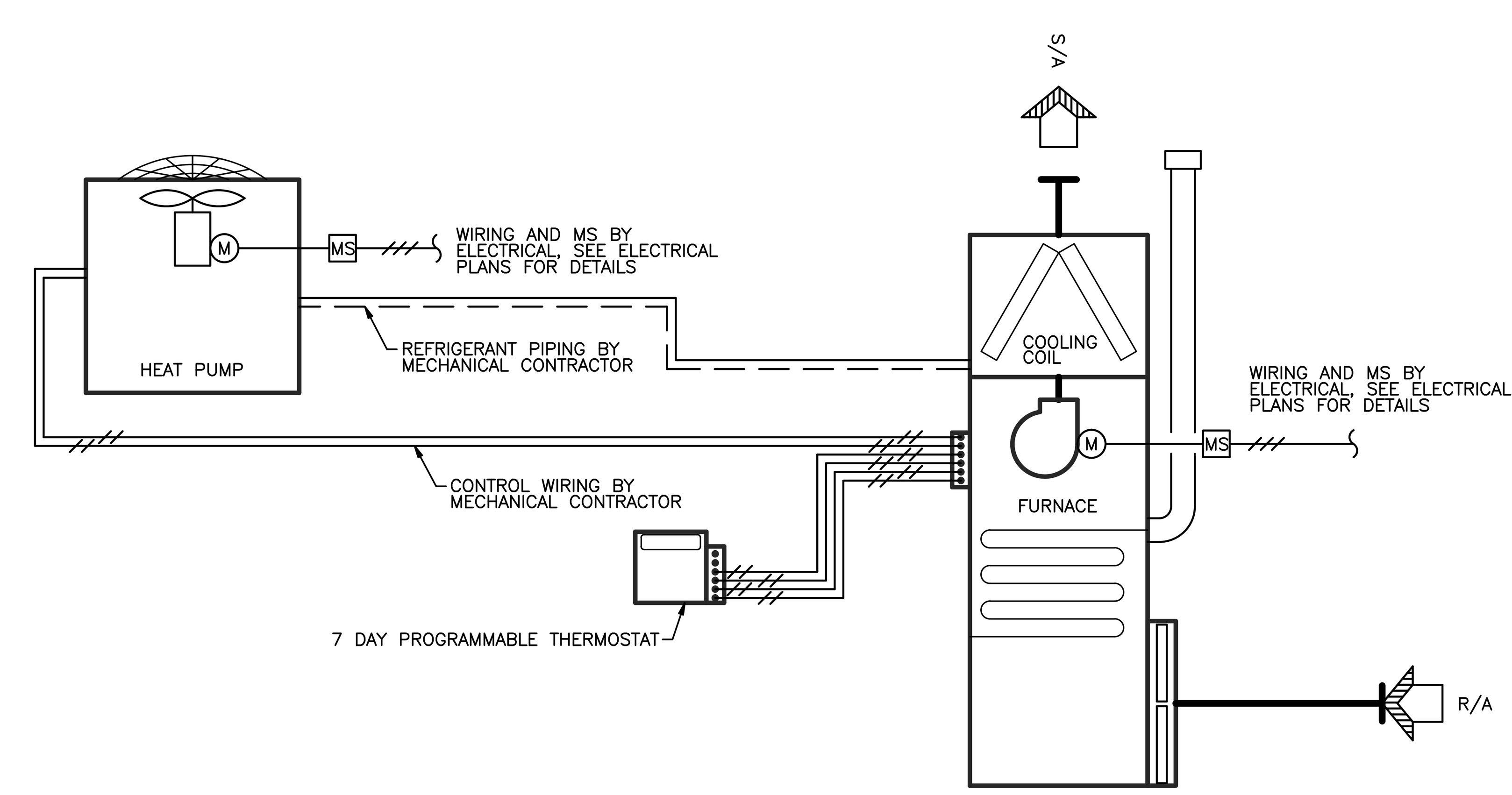
DRAWING SYMBOLS

(NOT ALL SYMBOLS SHOWN ARE USED ON THESE DRAWINGS)

SYMBOL	DESCRIPTION
	POINT OF CONNECTION TO EXISTING SYSTEM
/////////	PIPING AND EQUIPMENT TO BE REMOVED
QUANTITY (X) SIZE/CFM (X) TYPE	GRILLE, REGISTER, OR DIFFUSER TAG

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED AND ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF FORT COLLINS BUILDING CODE INCLUDING, 2021 INTERNATIONAL MECHANICAL CODE, 2021 INTERNATIONAL PLUMBING CODE, 2021 INTERNATIONAL FUEL GAS CODE AND 2021 INTERNATIONAL ENERGY CONSERVATION CODE, INCLUDING ALL ASSOCIATED AMENDMENTS.
2. ALL SHEET METAL SHALL BE 26 GAUGE (MINIMUM) AND SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARD (CURRENT VERSION) AND ASHRAE STANDARDS.
3. PROVIDE A TEST AND BALANCE CONTRACTOR TO BALANCE AIR AND WATER FLOWRATES TO FLOWRATES INDICATED AND PROVIDE COPY OF REPORT TO OWNER, ENGINEER AND INSPECTOR AT TIME OF FINAL INSPECTION. PROVIDE BALANCING FOR ALL SUPPLY, RETURN AND EXHAUST GRILLES, OUTSIDE AIR, ALL HYDRONIC COILS, ALL HYDRONIC PUMPS AND ALL SUPPLY, RETURN AND EXHAUST FANS. TESTING SHALL BE COMPLETED AFTER SYSTEM IS CLEAN AND NEW FILTERS ARE INSTALLED.
4. COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
5. PROVIDE R=8.0 INSULATION ON ALL S/A AND R/A DUCTWORK LOCATED WITHIN PLENUM SPACES AND R=15.0 FOR ALL S/A AND R/A DUCTWORK LOCATED OUTSIDE THE BUILDING ENVELOPE. TOTAL R VALUE SHALL BE A COMBINATION OF ACOUSTICAL LINER (IF REQUIRED) AND EXTERIOR INSULATION.
6. DOMESTIC WATER PIPING SHALL BE COPPER, TYPE L WITH WROUGHT COPPER SOLDERED FITTING. PROVIDE 1" FIBERGLASS INSULATION ON DOMESTIC WATER PIPING AND VAPOR BARRIER ON COLD PIPING. USE NO LEAD SOLDER.
7. SANITARY AND VENT PIPING SHALL BE CAST IRON AND INSTALLED WITH 1/4" SLOPE IN DIRECTION OF FLOW.
8. DUCT SIZES INDICATED ARE CLEAR INSIDE DIMENSIONS. OUTSIDE DUCT DIMENSIONS SHALL BE INCREASED TO ACCOUNT FOR ACOUSTICAL LINER AS REQUIRED.
9. ALL VENT MATERIAL SHALL BE TYPE B AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCE BETWEEN VENT AND COMBUSTIBLE MATERIALS.
10. BELOW SLAB DOMESTIC WATER PIPING SHALL BE TYPE L SOFT COPPER.
11. CONDENSATE DRAIN PIPING SHALL BE TYPE L COPPER. PROVIDE AIR GAP FITTING BETWEEN CONDENSATE PIPING AND FLOOR DRAIN.
12. PROVIDE BALANCING DAMPER FOR ALL SUPPLY AND RETURN GRILLES.
13. ALL DOMESTIC WATER PIPING INSTALLED WITHIN EXTERIOR WALL SHALL BE ROUTED ON THE WARM SIDE OF THE WALL INSULATION.
14. NO DOMESTIC WATER PIPING SHALL BE ROUTED THROUGH UNHEATED SPACES.
15. ALL GAS PIPING SHALL BE SCHEDULE 40 WITH SCREW FITTINGS. PROVIDE DIRT LEG AND GAS COCK AT ALL APPLIANCES.
16. PROVIDE ALL NECESSARY EQUIPMENT, CONTROLS, VALVES AND APPURTENANCES AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
17. SEAL ALL EXTERIOR WALL AND ROOF PENETRATIONS WEATHER AND WATERTIGHT.
18. ALL DOMESTIC WATER ISOLATION VALVES SHALL BE FULL PORT BALL VALVES.
19. PROVIDE BALANCING VALVE FOR ALL HYDRONIC COILS AND PUMPS.
20. ALL SUPPLY DUCTWORK SHALL BE PROVIDED WITH 1" ACOUSTICAL LINER. SUPPLY DUCTWORK FROM EVAPORATIVE COOLING UNITS SHALL NOT BE PROVIDED WITH ACOUSTICAL LINER.
21. ALL DUCT INSULATION SHALL BE FIBERGLASS BLANKET, TYPE II WITH HEAVY DUTY FSK VAPOR BARRIER FACING, 1 1/2" AND 3/4# PER CF WITH A MAXIMUM K VALUE OF 0.28 AT 75° F.
22. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, FREE OF DEFECTS, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S CURRENT PUBLISHED RECOMMENDATIONS IN A NEAT MANNER AND IN ACCORDANCE WITH STANDARD PRACTICE OF THE INDUSTRY.
23. ALL SPIN IN FITTINGS SHALL BE HERCULES HTO WITH MVD OR EQUAL.
24. CERTAIN MATERIALS AND/OR EQUIPMENT IN THIS SPECIFICATION ARE SPECIFIED BY MANUFACTURER AND CATALOG NUMBERS. THE DESIGN WAS BASED ON THE SPECIFIED EQUIPMENT AND ESTABLISHES A DEGREE OF QUALITY, PERFORMANCE, PHYSICAL CONFIGURATION, ETC. IF THE CONTRACTOR SHOULD ELECT TO USE EQUIPMENT OTHER THAN THE EQUIPMENT USED AS A BASIS FOR DESIGN, HE SHALL BE RESPONSIBLE FOR SPACE REQUIREMENTS, CONFIGURATION, PERFORMANCE AND CHANGES IN, BASES, SUPPORTS, VIBRATION ISOLATORS, STRUCTURAL MEMBERS, OPENINGS IN STRUCTURE AND OTHER APPARATUS THAT MAY BE AFFECTED BY ITS USE.
25. THE APPEARANCE OF THE FINISHED WORK SHALL BE OF EQUAL IMPORTANCE WITH ITS MECHANICAL EFFICIENCY. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE COMMERCIAL PRACTICES.FURNISH THE SERVICES OF AN EXPERIENCED SUPERINTENDENT WHO SHALL BE CONSTANTLY IN CHARGE OF THE INSTALLATION OF THE WORK TOGETHER WITH ALL SKILLED WORKMEN, PLUMBERS, FITTERS, METAL WORKERS, WELDERS, HELPERS, AND LABOR REQUIRED TO UNLOAD, TRANSFER, ERECT, CONNECT-UP, ADJUST, START, OPERATE, AND TEST EACH SYSTEM.
26. MECHANICAL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL OPERATE UNDER ALL LOAD CONDITIONS WITHOUT SOUND OR VIBRATION WHICH IS OBJECTIONABLE IN THE OPINION OF THE OWNER'S REPRESENTATIVE. IN CASE OF MOVING MACHINERY, SOUND OR VIBRATION NOTICEABLE OUTSIDE OF ROOM IN WHICH IT IS INSTALLED, OR ANNOYINGLY NOTICEABLE INSIDE ITS OWN ROOM, WILL BE CONSIDERED OBJECTIONABLE. SOUND OR VIBRATION CONDITIONS CONSIDERED OBJECTIONABLE BY THE OWNERS SHALL BE CORRECTED IN AN APPROVED MANNER BY THE CONTRACTOR AT HIS EXPENSE. VIBRATION CONTROL SHALL BE BY MEANS OF APPROVED VIBRATION ELIMINATORS IN A MANNER AS RECOMMENDED BY THE MANUFACTURER OF THE ELIMINATORS
27. THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC IN CHARACTER AND DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, VALVE, FITTING, ETC.
28. ALL DUCTWORK SHALL BE SEALED TO SEAL CLASS A, ALL LONGITUDINAL AND TRANSVERSE SEAMS SEALED TO 10" w.c.
29. COORDINATE THE COLOR OF ALL VISIBLE MECHANICAL EQUIPMENT WITH THE ARCHITECT AND OWNER BEFORE ORDERING ANY EQUIPMENT.
30. THE VISIBLE INTERIOR OF ALL SUPPLY, RETURN AND EXHAUST GRILLES SHALL BE PAINTED FLAT BLACK.
31. PROVIDE LOCKING ACCESS PANEL FOR ALL MECHANICAL EQUIPMENT (VALVES, DAMPERS, CONTROL EQUIPMENT, ETC.) INSTALLED WITHIN WALL CAVITIES. ACCESS PANEL SHALL BE MINIMUM OF 24X24 AND SIZED TO ALLOW MINIMUM 6" CLEARANCE AROUND MECHANICAL EQUIPMENT.
32. PROVIDE R=5.0 INSULATION ON ALL EXHAUST DUCTS FROM THE ENVELOPE PENETRATION TO THE BACKDRAFT DAMPER.
33. ALL EXISTING EQUIPMENT AND COMPONENTS ARE BASED UPON REFERENCE DRAWINGS AND FIELD OBSERVATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL EQUIPMENT, PIPING, COMPONENTS AND INVERTS PRIOR TO ANY CONSTRUCTION ACTIVITIES.
34. SEE SPECIFICATION SHEETS AT END OF DRAWING PACKAGE FOR ALL SPECIFICATION REQUIREMENTS.



1 / M0.0 FURNACE/HEAT PUMP SYSTEM CONTROL DIAGRAM

SCALE:NONE

SEQUENCE OF OPERATION:

GENERAL:

1. THIS SYSTEM IS A CONSTANT VOLUME PACKAGED GAS FIRED 2 STAGE FURNACE AND HEAT PUMP SYSTEM CAPABLE OF PROVIDING HEATING, COOLING AND VENTILATION.
2. THE UNIT SHALL PROVIDE THE SUPPLY AIRFLOW AND OUTSIDE AIRFLOW INDICATED IN THE EQUIPMENT SCHEDULE IN ALL OCCUPIED MODES. THESE AIRFLOWS SHALL BE ESTABLISHED DURING BALANCING OF THE SYSTEM.

UNOCCUPIED MODE:

1. THE SYSTEM SHALL BE OFF.
2. UPON A CALL FOR HEATING OR COOLING, FROM THE PROGRAMMABLE THERMOSTAT, THE UNIT SHALL START AND PROVIDE HEATING OR COOLING TO SATISFY THE UNOCCUPIED MODE SETBACK TEMPERATURE SETPOINT.
3. THE UNOCCUPIED MODE COOLING SETBACK TEMPERATURE SETPOINT SHALL BE 80°F (ADJUSTABLE).
4. THE UNOCCUPIED MODE HEATING SETBACK TEMPERATURE SETPOINT SHALL BE 65°F (ADJUSTABLE).
5. THE UNIT SHALL RUN FOR A MINIMUM OF 30 MINUTES.

OCCUPIED HEATING MODE:

1. THE OCCUPIED MODE SHALL BEGIN AT 6:00 AM (ADJUSTABLE) AND END AT 6:00 PM (ADJUSTABLE) MONDAY THROUGH FRIDAY (ADJUSTABLE).
2. THE FAN SHALL RUN CONTINUOUSLY.
3. THE HEAT PUMP UNIT SELF CONTAINED CONTROL SYSTEM SHALL PROVIDE HEATING AS REQUIRED TO SATISFY THE TEMPERATURE SETPOINT. THE COOLING SHALL BE OFF.
4. THE OCCUPIED MODE HEATING TEMPERATURE SETPOINT SHALL BE 70°F (ADJUSTABLE).
5. HEATING SHALL BEGIN USING HEAT PUMP SYSTEM. IF THE SPACE TEMPERATURE REMAINS BELOW THE HEATING MODE SETPOINT TEMPERATURE, THE 1ST STAGE GAS HEATING SHALL BE ENERGIZED. IF THE SPACE TEMPERATURE REMAINS BELOW THE HEATING, THE 2ND STAGE GAS HEATING SHALL BE ENERGIZED.
6. PROVIDE SUFFICIENT DEADBANDS TO PREVENT CYCLING BETWEEN HEATING STAGES.

OCCUPIED COOLING MODE:

1. THE OCCUPIED MODE SHALL BEGIN AT 6:00 AM (ADJUSTABLE) AND END AT 6:00 PM (ADJUSTABLE) MONDAY THROUGH FRIDAY (ADJUSTABLE).
2. THE FAN SHALL RUN CONTINUOUSLY.
3. THE HEAT PUMP UNIT SELF CONTAINED CONTROL SYSTEM SHALL PROVIDE COOLING AS REQUIRED TO SATISFY THE COOLING MODE TEMPERATURE SETPOINT. THE HEATING SYSTEM SHALL BE OFF.
4. THE OCCUPIED MODE COOLING TEMPERATURE SETPOINT SHALL BE 75°F (ADJUSTABLE).
5. THE 1ST STAGE COMPRESSOR SHALL BE ENERGIZED TO MAINTAIN THE ROOM TEMPERATURE SETPOINT. IF THE SPACE TEMPERATURE REMAINS ABOVE THE COOLING MODE SPACE TEMPERATURE SETPOINT FOR 10 MINUTES (ADJUSTABLE), THE 2ND STAGE DX COMPRESSOR SHALL BE ENERGIZED.
6. PROVIDE SUFFICIENT DEADBANDS TO PREVENT CYCLING BETWEEN 1ST STAGE COOLING AND 2ND STAGE COOLING.

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Mechanical Engineering | Consulting

CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

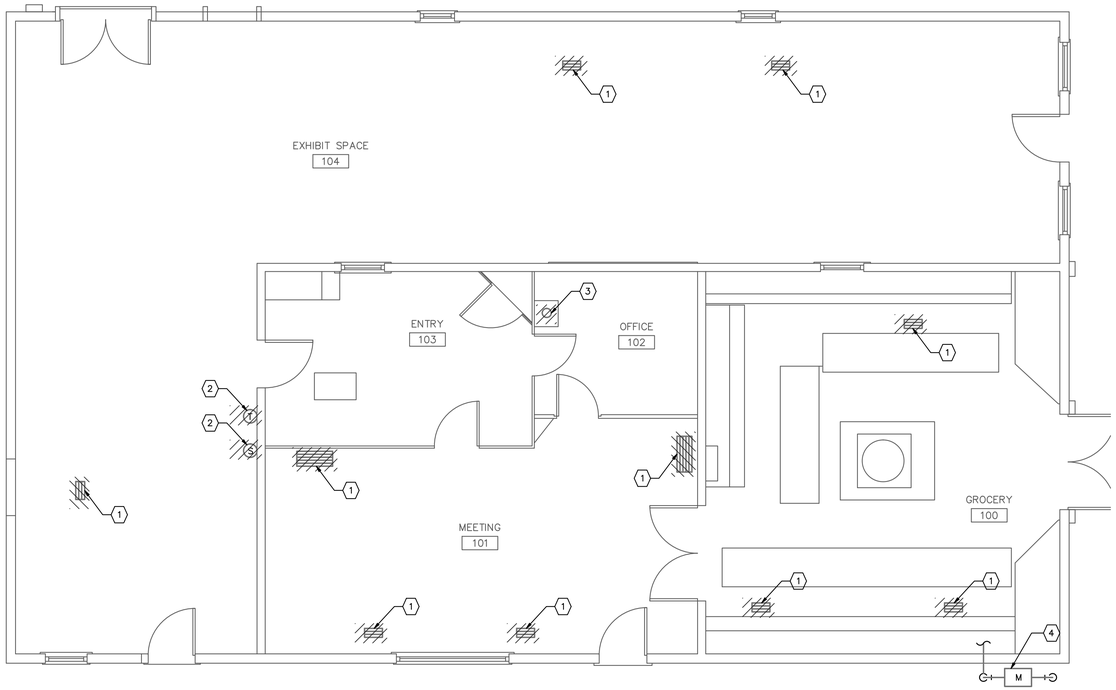
EMMA MALABY GROCERY

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

DATE:	DESCRIPTION
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE:	NOVEMBER 4, 2024
PROJECT NUMBER	EMMA MALABY
DRAWN BY: LCE	CHECKED BY: LCE
COMPUTER FILE:	-

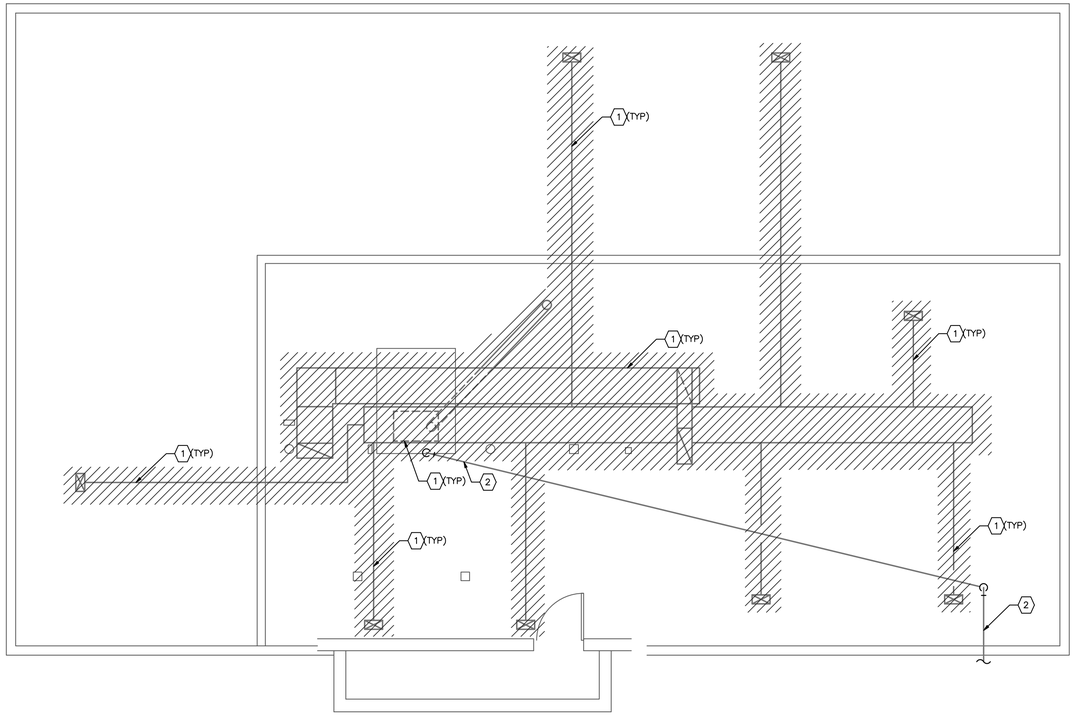
M0.0



North 1 M1.0 MECHANICAL FLOOR PLAN–DEMO
1/4" = 1'–0"

SHEETNOTES

1. DEMO (E) FLOOR GRILLE, INCLUDING GRILLE, DAMPER AND ALL ASSOCIATED APPURTENANCES. FIELD VERIFY EXACT LOCATION. SEE BASEMENT PLAN FOR SHEETMETAL DEMO REQUIREMENTS.
2. DEMO (E) THERMOSTAT AND ON–OFF SYSTEM SWITCH, INCLUDING THERMOSTAT AND SWITCH, CONTROL WIRING FROM THERMOSTAT AND SWITCH TO SOURCE AND ALL ASSOCIATED APPURTENANCES. FIELD VERIFY EXACT LOCATION.
3. DEMO (E) FURNACE FLUE FROM FURNACE THROUGH ROOF, INCLUDING FLUE, SUPPORTS, BRACKETS AND ALL ASSOCIATED APPURTENANCES. FIELD VERIFY EXACT FLUE LOCATION.
4. (E) GAS METER AND GAS PIPING, NO WORK ON THIS EQUIPMENT. SEE BASEMENT PLAN FOR GAS PIPING WORK IN BASE3MENT LEVEL.



North 2 M1.0 MECHANICAL BASEMENT PLAN–DEMO
1/4" = 1'–0"

SHEETNOTES

1. DEMO (E) FURNACE, SHEETMETAL AND CONTROLS, FIELD VERIFY EXACT LOCATION AND SIZES. DEMO ALL EQUIPMENT, HANGERS, SUPPORTS, CONTROLS AND ALL ASSOCIATED APPURTENANCES.
2. (E) 3/4" GAS PIPING FROM METER TO FURNACE. DEMO SECTION OF GAS PIPING AT FURNACE FOR INSTALLATION OF NEW FURNACE SYSTEM, SEE NEW BASEMENT PLAN FOR DETAILS.

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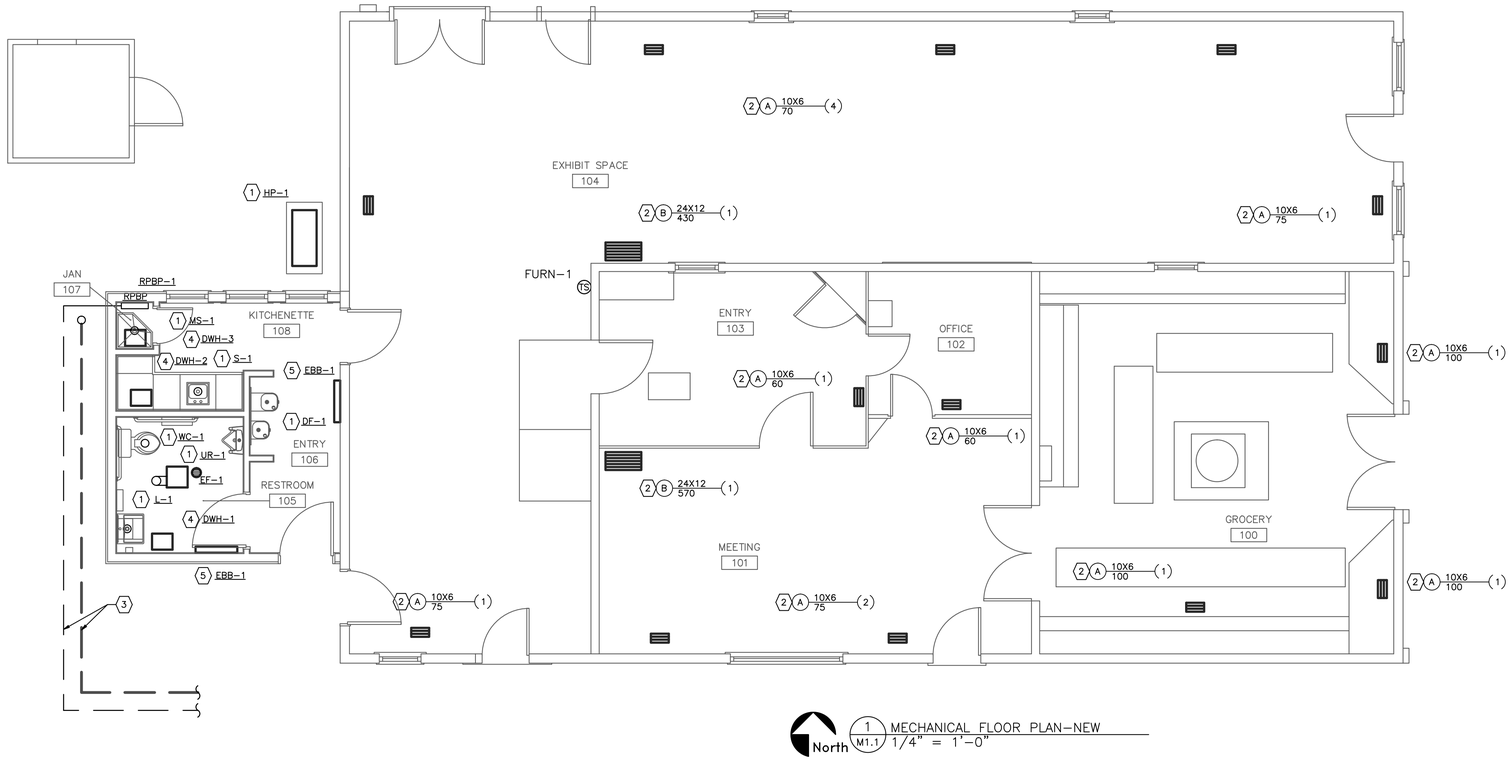

North 1 M1.1 MECHANICAL FLOOR PLAN-NEW
1/4" = 1'-0"

SHEETNOTES

1. PROVIDE NEW PLUMBING FIXTURE AS INDICATED. PROVIDE NEW SANITARY AND VENT PIPING FROM FIXTURE, SEE ISOMETRIC DIAGRAM. PROVIDE NEW DOMESTIC PIPING FROM FIXTURE, SEE ISOMETRIC DIAGRAM. SEE PLUMBING FIXTURE SCHEDULE FOR PIPE SIZES FROM FIXTURE TO MAINS.
2. PROVIDE NEW FLOOR GRILLE AS INDICATED. PROVIDE NEW DUCTWORK FROM GRILLE TO FURNACE SYSTEM IN BASEMENT BELOW, SEE BASEMENT PLAN FOR DUCTWORK AND FURNACE SYSTEM DETAILS. BALANCE NEW GRILLES TO AIRFLOW INDICATED.
3. PROVIDE NEW DCW AND SS MAIN PIPING AS INDICATED. EXTEND NEW MAIN PIPING TO UTILITIES IN STREET, SEE CIVIL PLAN FOR CONTINUATION AND DETAILS. PROVIDE 2-WAY GCO AT ALL OFFSETS IN SS MAIN PIPING. SEE ISOMETRIC DIAGRAM FOR DCW AND SS MAIN PIPE SIZES.
4. PROVIDE DOMESTIC WATER HEATER AS INDICATED. PROVIDE 3/4" DCW AND 3/4" DHW PIPING TO DWH AND CONNECT. PROVIDE ISOLATION VALVE IN PIPING. EXTEND RELIEF VALVE PIPING, FULL SIZE, DOWN AND OFFSET TO DISCHARGE AWAY FROM USERS.
5. PROVIDE (N) ELECTRIC BASE BOARD HEATER. FIELD COORDINATE UNIT INSTALLATION TO PROVIDE ADA ACCESS COMPLIANCE AT ENTRY.
6. PROVIDE NEW HEAT PUMP SYSTEM CONDENSING UNIT AS INDICATED. PROVIDE 4" HIGH CONCRETE PAD BELOW UNIT. PROVIDE REFRIGERANT PIPING FROM CONDENSING UNIT TO FURNACE DX COIL SIZED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTION. PROVIDE 1" AP ARMAFLEX WHITE LAPSEAL INSULATION ON ALL REFRIGERANT PIPING.

MISC. EQUIPMENT SCHEDULE

TAG	DESCRIPTION
TV-1	TEMPERING VALVE, WATTS MMV SERIES THERMOSTATIC TEMPERING VALVE, 0.5 GPM MAXIMUM FLOW PER LAV, 105°F SUPPLY WATER TEMPERATURE
EBB-1	HYDRONIC ELECTRIC BASE BOARD HEATER, RAYWALL 3900 SERIES, 400 WATTS, BUILT IN TAMPER RESISTANT THERMOSTAT, 120/1ø, 3.3 AMPS, 12 GAUGE WHITE POWDER COATED ALUMINUM HOUSING, COPPER ELEMENT IN HEAT TRANSFERING FLUID, 28" LONG, MANUFACTURER MODEL NUMBER E3904-28
DWH-1	ELECTRIC DOMESTIC WATER HEATER, BOSCH TRONIC 3000T, 2.7 GALLON GLASS LINED TANK, 120V, 1440 WATTS, 12.0 AMPS, TEMPERATURE/PRESSURE RELIEF VALVE, 3-PRONG 6 FOOT CORD, PROVIDE TV-1 AT DHW DISCHARGE
DWH-2	ELECTRIC DOMESTIC WATER HEATER, BOSCH TRONIC 3000T, 2.7 GALLON GLASS LINED TANK, 120V, 1440 WATTS, 12.0 AMPS, TEMPERATURE/PRESSURE RELIEF VALVE, 3-PRONG 6 FOOT CORD, PROVIDE TV-1 AT DHW DISCHARGE
DWH-3	ELECTRIC DOMESTIC WATER HEATER, BOSCH TRONIC 3000T, 2.7 GALLON GLASS LINED TANK, 120V, 1440 WATTS, 12.0 AMPS, TEMPERATURE/PRESSURE RELIEF VALVE, 3-PRONG 6 FOOT CORD, PROVIDE TV-1 AT DHW DISCHARGE
CP-1	LITTLE GIANT CONDENSATE COLLECTION AND PUMP MODEL VCMA-20ULS, 1/30 HP, 115V/1 PH, 93 WATTS, 48 GPH AT 10 FEET LIFT, 6 FOOT 3 PRONG ELECTRICAL CORD, 0.5 GALLON TANK, AUTOMATIC START/STOP, CHECK VALVE IN DISCHARGE

FAN SCHEDULE

TAG	TYPE	SERVICE	CFM	ESP In w.c.	RPM	EFF. %	FAN DIA. Inches	BHP	MOTOR WATTS	ELECTRICAL VOLTS/PH	MANUFACTURER AND MODEL	NOTES
EF-1	CEILING	RESTROOM	50	0.125	808	--	--	--	3.7	120/1ø	GREENHECK SP-A50-90VG	1,2,3

NOTES:
1. ALL AIR PERFORMANCE IS BASED UPON THE PROJECT ELEVATION OF 7,970 FT.
2. PROVIDE INTEGRAL BACKDRAFT DAMPER AND EC MOTOR FOR CONSTANT FLOW.
3. PROVIDE INTEGRAL GRILLE AND INTERLOCK FAN WITH ROOM LIGHT SWITCH.
4.
5.
6.

GRILLE/REGISTER/DIFFUSER SCHEDULE

TAG	STYLE	SERVICE	FACE SIZE	PATTERN	MAXIMUM CFM	MAXIMUM NC	MATERIAL	OBD	MANUFACTURER AND MODEL	NOTES
A	CEILING/FLOOR	SUPPLY	SEE PLANS	SCROLL	150	30	CAST ALUMINUM	NO	REGGIO	1,2,3
B	CEILING/FLOOR	RETURN	SEE PLANS	SCROLL	300	30	CAST ALUMINUM	NO	REGGIO	1,2

NOTES:
1. ALL AIR PERFORMANCE IS BASED UPON THE PROJECT ELEVATION.
2. SEE PLANS FOR NECK SIZE. PROVIDE SCREW HOLES AND FACE SIZE IS ABOUT 2" LARGER THAN NEECK SIZE. COLOR AS SELECTED BY ARCHITECT.
3. PROVIDE LOUVER ASSEMBLY BEHIND GRILLE WITH KEY ADJUSTABLE PATTERN.
4.
5.
6.
7.

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER AND MODEL	CONNECTION SIZES					NOTES
			TRAP	DCW	DHW	SS	V	
L-1	LAVATORY, WHEELCHAIR, WALL MOUNTED, ADA COMPLIANT, VITREOUS CHINA, 20X18, WHITE, SELF RIMMING, 4" CENTERS, DELTA 591TF0258TR HANDS FREE HARD WIRED WITH TRANSFORMER SINGLE HOLE WITH DRAIN, 0.5 GPM, LAMINAR FLOW	AMERICAN STANDARD DECORUM	1 1/4"	1/2"	1/2"	1 1/4"	1 1/4"	1,4,5
WC-1	WATER CLOSET, ALTO, FLOOR MOUNTED, VITREOUS CHINA, ELONGATED BOWL, 2 PIECE, ADA COMPLIANT, SIPHON JET, 1.6 GPF, ELONGATED OPEN FRONT SEAT, 16 1/2" BOWL HEIGHT	MANSFIELD 137-3173	---	1/2"	---	4"	2"	2,4,5
UR-1	URINAL, BREVITY, WALL HUNG, ADA COMPLIANT, VITREOUS CHINA, 3/4" TOP SPUD, 0.125 GPF, ZURN Z6003AV-ULF FLUSH VALVE	MANSFIELD 422	---	3/4"	---	2"	1 1/2"	2,5
MS-1	MOP SINK, PRECAST TERRAZZO, CORNER MOP SINK, 12" HIGH WALLS WITH 6" HIGH FRONT, SS DRAIN BODY WITH 3" PIPE CONNECTION, DELTA 28T9 FAUCET WITH MOP HANGER, HOSE AND HOSE BRACKET, VACUUM BREAKER, 4.0 GPM	FIAT TSBC1610	3"	3/4"	3/4"	3"	1 1/2"	3,4,5
FD-1	FLOOR DRAIN, CAST IRON, TWO PIECE BODY, DOUBLE DRAINAGE FLANGE, FLASHING COLLAR, WEEP HOLES, BOTTOM OUTLET, 6" ADJUSTABLE ROUND STRAINER, TRAP PRIMMER CONNECTION	WADE 1102STD6	2"	---	---	2"	1 1/2"	--
DF-1	DRINKING FOUNTAIN, TWO STATION DUAL HEIGHT, 1.1 GPM BOTTLE FILL STATION, ADA COMPLIANT, FLEXI GUARD BUBBLER, 8.0 GPH 50°F WATER, 370 WATTS, 5.0 FLA, 115V	ELKAY EZSTL8WSVR	1 1/2"	3/4"	---	1 1/2"	1 1/4"	5
RPBP-1	REDUCED PRESSURE BACKFLOW PREVENTER WITH WATTS 909AC AIR GAP FITTING, 14.0 PSI PRESSURE DROP AT 15.0 GPM, PROVIDE ISOLATION VALVES, STRAINER AND TEST PORTS	WATTS LF909-QT-S	---	1"	---	---	---	--
S-1	HAND SINK, DROP IN, 20 GAUGE 304 STAINLESS STEEL, 12X10X6 BOWL, 3 HOLE 4" ON CENTER, DELTA 2171LF, GOOSENECK FAUCET, ADA WRIST BLADE HANDLES, 2.2 GPM, DRAIN AND STRAINER	ELKAY BCR15	1 1/4"	1/2"	1/2"	1 1/4"	1 1/4"	1,5

NOTES:
1. PROVIDE STRAINER.
2. PROVIDE BEMIS MODEL 1655C HEAVY DUTY, COMMERCIAL GRADE, PLASTIC OPEN FRONT SEAT.
3. FAUCET PROVIDED WITH INTEGRAL STOPS, PAIL HOOK, INLINE VACUUM BREAKER AND WALL BRACE.
4. COLOR SELECTED BY ARCHITECT.
5. PROVIDE ALL NECESSARY ACCESSORIES, STOPS AND WALL CARRIERS
6.
7.

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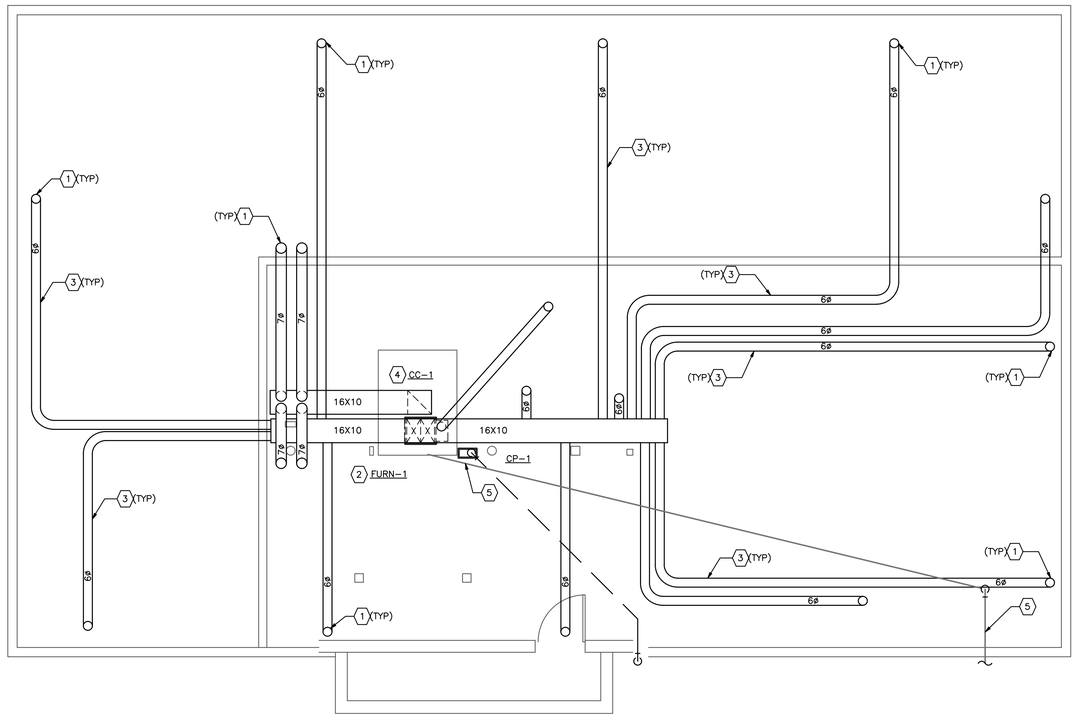
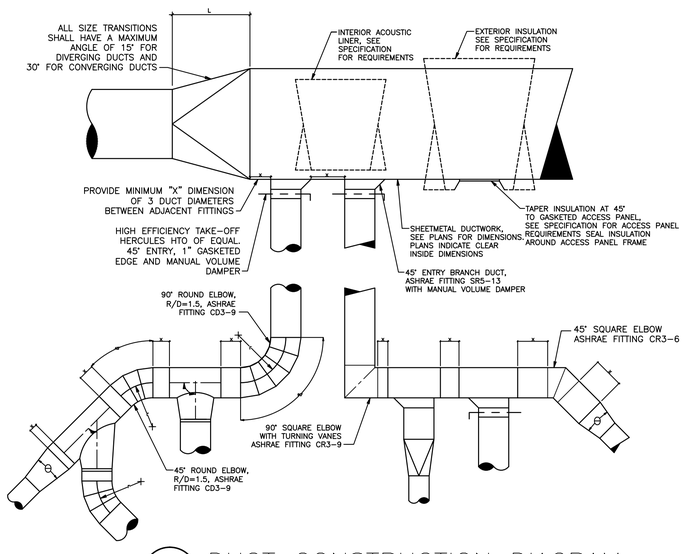


1 / M1.2 MECHANICAL BASEMENT PLAN-NEW
1/4" = 1'-0"

North

SHEETNOTES

1. NEW DUCT UP TO FLOOR GRILLE ABOVE, SEE FIRST FLOOR PLAN FOR GRILLE. PROVIDE ANGLE BOOT BETWEEN GRILLE AND DUCT. SEE FIRST FLOOR PLAN FOR GRILLE DETAILS. DUCT ROUTES BETWEEN EXISTING FLOOR JOIST, FIELD VERIFY FLOOR JOIST LOCATIONS.
2. PROVIDE NEW FURNACE UNIT ON EXISTING CONCRETE PAD. PROVIDE B VENT PIPING FROM FURNACE TO EXTERIOR THROUGH EXISTING CHASE AND TERMINATE WITH MANUFACTURER PROVIDED CAP. PIPING SHALL MATCH DISCHARGE SIZE AT FURNACE. PROVIDE CONDENSATE PIPING FULL SIZE FROM DX COIL TO CP-1. EXTEND 1/2" PVC CONDENSATE PIPING TO EXTERIOR AND TERMINATE TO DISCHARGE TOWARD GRADE. PAINT EXTERIOR PIPING IN COLOR AS SELECTED BY ARCHITECT. PROVIDE REFRIGERANT PIPING FROM CONDENSING UNIT TO FURNACE DX COIL SIZED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTION. PROVIDE 1" AP ARMAFLEX WHITE LAPSEAL INSULATION ON ALL REFRIGERANT PIPING. PROVIDE 4" CONCRETE PAD FOR CONDENSING UNIT. PROVIDE GAS PIPING FROM EXISTING 3/4" GAS PIPING AND CONNECT TO FURNACE. PROVIDE ISOLATION VALVE, UNION AND 6" DIRT LEG.
3. PROVIDE BRANCH DUCT AS INDICATED. PROVIDE 45° INLET FITTING WITH MVD AND BALANCE BRANCH AIRFLOW TO SUM OF ALL CONNECTED GRILLES.
4. PROVIDE TRANSITION FROM DX COIL DISCHARGE TO SUPPLY DUCT SIZE, SEE FURNACE SYSTEM DIAGRAM FOR DETAILS.
5. (E) 3/4" GAS PIPING FROM METER TO FURNACE.



2 / M1.2 DUCT CONSTRUCTION DIAGRAM
SCALE: NONE

FURNACE SCHEDULE

TAG	ROOM	OSA	SUPPLY AIR	REQUIRED COOLING			REQUIRED HEATING			SYSTEM	ELECTRICAL (BLOWER UNIT ONLY)				MODEL	NOTES
				TOTAL BtuH	EAT	LAT	BtuH	EAT	LAT	ESP	VOLTS	PHASE	MCA	MOCP		
FURN-1	EXISTING BUILDING	0 CFM	900 CFM	10,789	75.0°F/55.2°F	55.0°F/46.4°F	30,820	70.0°F	105.0°F	0.40"	120	1ø	7.7	15	CARRIER 58TPQB-045V14-12	1-12

NOTES:
1. ALL PERFORMANCE AND OUTPUT IS BASED UPON THE PROJECT ELEVATION OF 5,000 FEET.
2. HEATING AND COOLING CAPACITY BASED UPON PROJECT REQUIREMENTS, ACTUAL UNIT OUTPUT SHALL EXCEED OR MATCH PROJECT REQUIREMENTS.
3. FACTORY INSULATED UNIT.
4. VARIABLE 25 SPEED ECM MOTOR WITH PERMANENTLY LUBRICATED MOTORS.
5. EXTERNAL FILTER RACK WITH WITH 2 SETS OF FILTERS.
7. SINGLE POINT POWER CONNECTION.
8. FACTORY TESTED CHARGED AND WIRED.
9. R-410A REFRIGERANT.
10. 090 GALVANIZED STEEL CABINET CONSTRUCTION WITH 1/2" INTERIOR INSULATION, INSULATION SHALL BE COATED ON AIRSTREAM SIDE.
11. PROVIDE HP-1 AND CC-1.
12. NO SUBSTITUTIONS.

HEAT PUMP SCHEDULE

TAG	HEATING		COOLING		ELECTRICAL					MANUFACTURER AND MODEL	NOTES
	HSPF2	BtuH	SEER2	BtuH	VOLTS	PHASE	FLA	MCA	MOCP		
HP-1	8.0	35,691	15.5	32,567	208/230	1ø	--	41	50	CARRIER 38MURAQ36AB3	1,2
											1,2
											1,2

1. LISTED CAPACITY IS MANUFACTURER RATE DATA AT -10°F OAT HEATING AT 71.6°F INDOOR.
2. LISTED CAPACITY IS MANUFACTURER RATE DATA AT 95°F OAT COOLING AND 77°F/60.8°F INDOOR.
3. SYSTEM (FURNACE, COIL AND HP) SHALL BE AHRI RATED AND LISTED.
4. PROVIDE CRANKCASE AND BASE PAN HEATERS.
5. LISTED SEER2 AND HSPF2 BASED UPON AHRI CERTIFICATE RATING. MANUFACTURER LISTED SEER2 IS 15.8 AND HSPF2 IS 9.5.

COOLING COIL SCHEDULE

TAG	SEN. CAP. (BtuH)	TOT. CAP. (BtuH)	APD (w.c.)	MAX. FACE VELOCITY	MANUFACTURER AND MODEL	NOTES
CC-1	26,480	28,580	0.11	500 FPM	CARRIER CAPMP 3617	1,2,3

NOTES:
1. ALL AIR PERFORMANCE IS BASED UPON THE MANUFACTURER STANDARD DATA.
2. COIL SHALL PROVIDED MINIMUM PERFORMANCE INDICATED IN FURNACE SCHEDULE AT PROJECT ELEVATION OF 5,000 FEET.
3. MANUFACTURER DATA AT 40°F SATURATED EVAPORATOR TEMPERATURE AND 62°F EWB.

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SHF #2024-M1-010
FOR
EMMA MALABY GROCERY

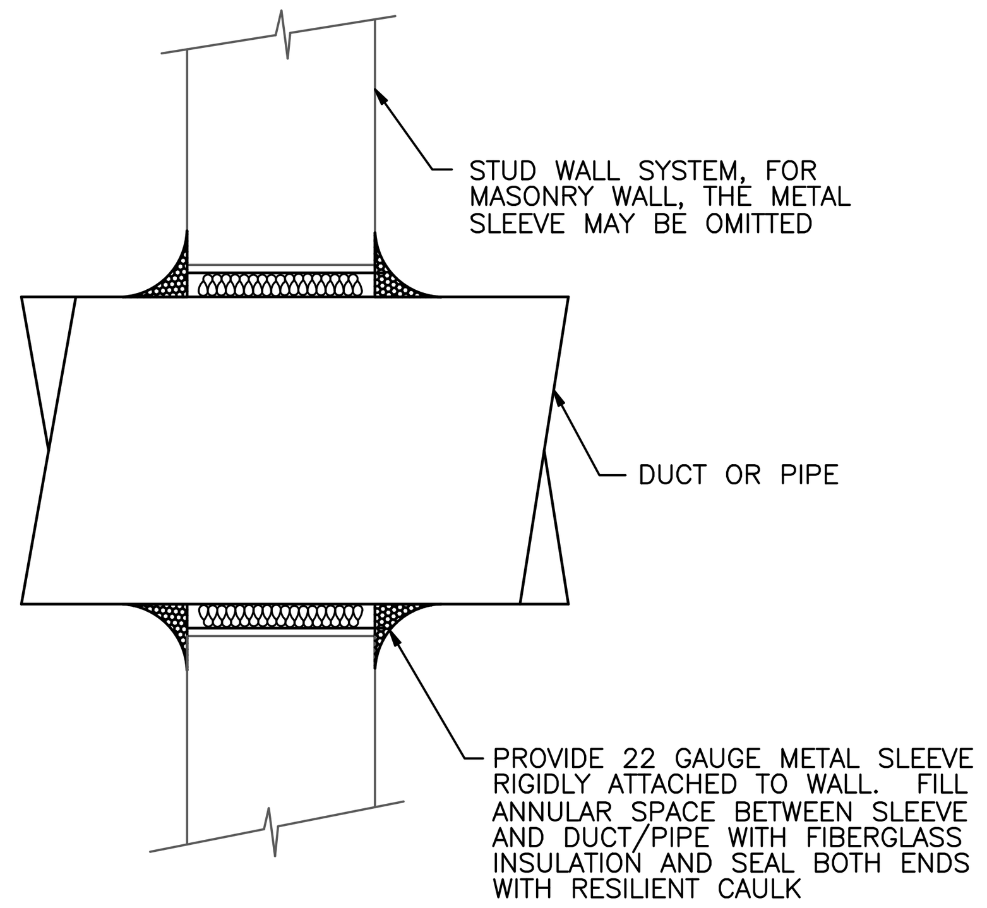
313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

DATE:	DESCRIPTION
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

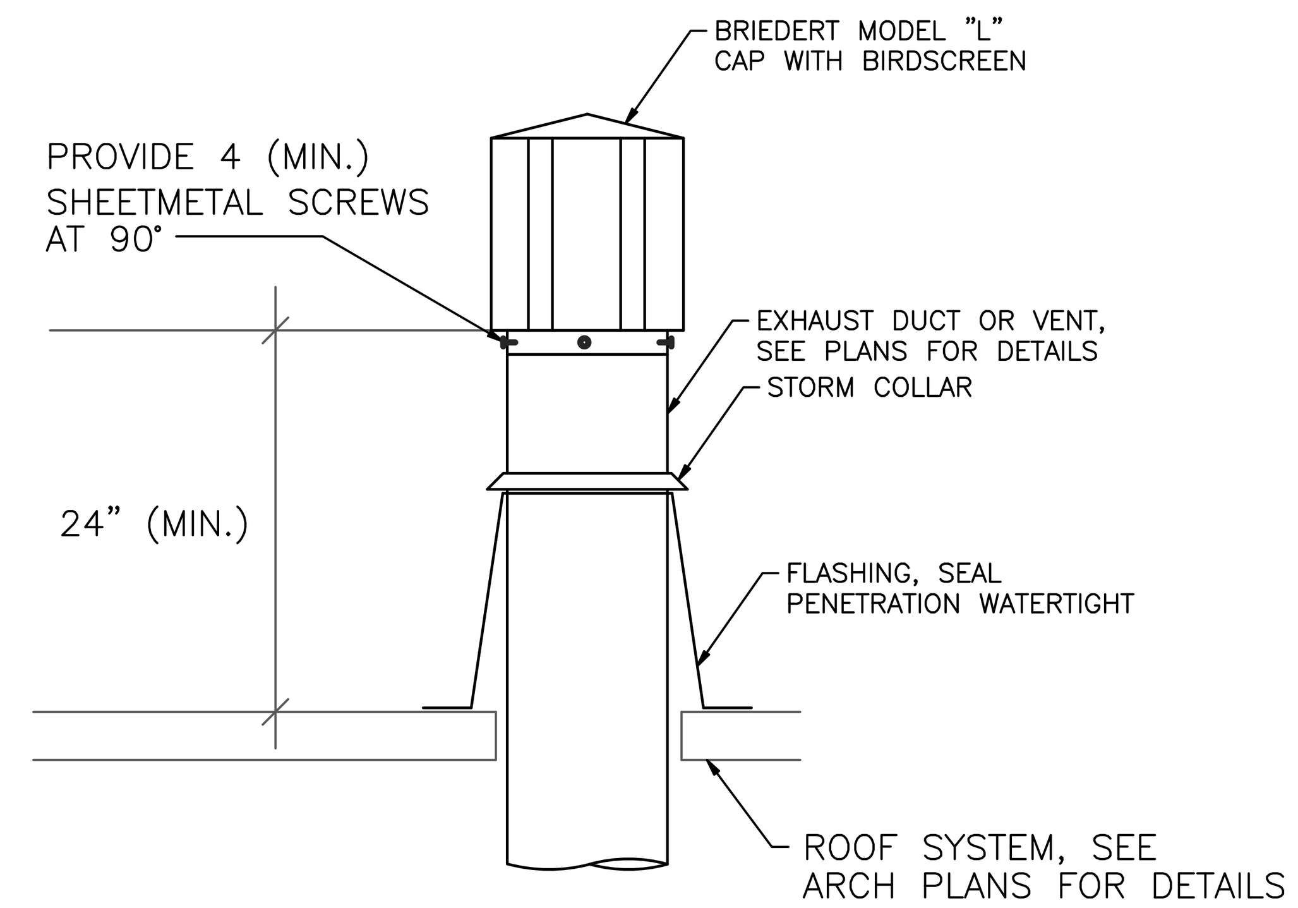
DATE: NOVEMBER 4, 2024
PROJECT NUMBER EMMA MALABY
DRAWN BY: LCE CHECKED BY: LCE
COMPUTER FILE: -

M1.2

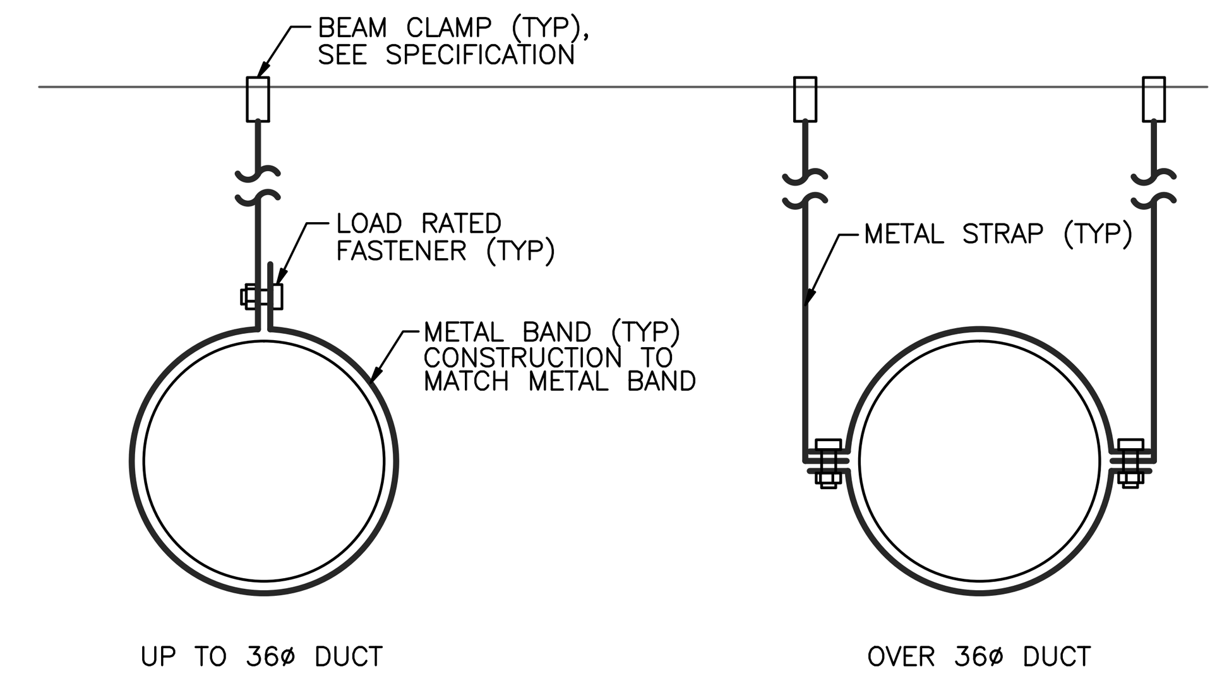
J:\Projects\2024 Projects\10456 Drawings\Mechanical\10456 Mechanical.dwg



1 M1.3 WALL PENETRATION DIAGRAM
SCALE: NONE



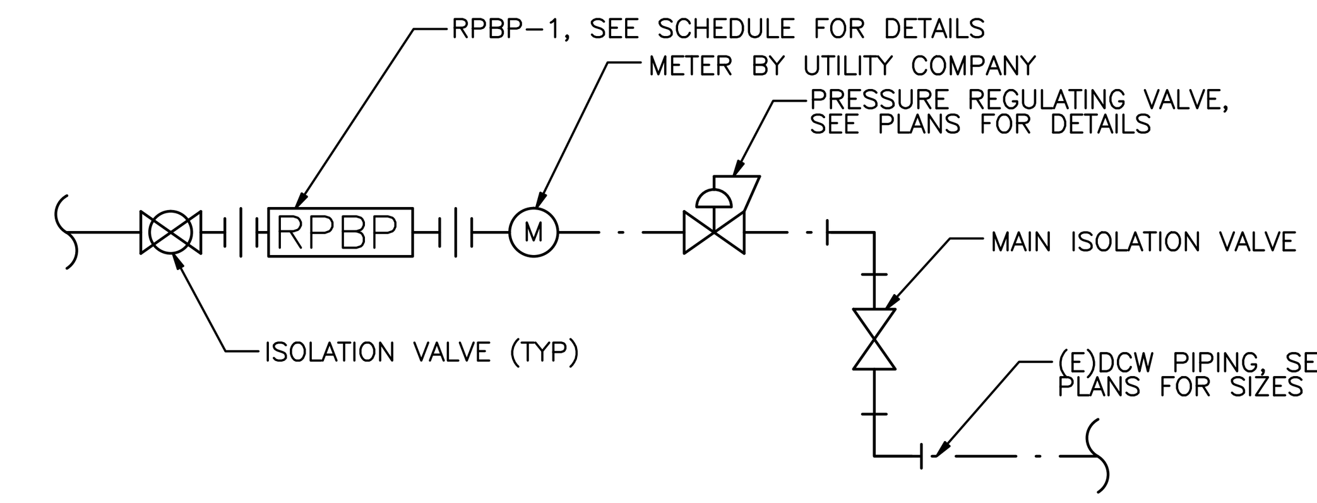
2 M1.3 E/A OR VENT TERMINATION
SCALE: NONE



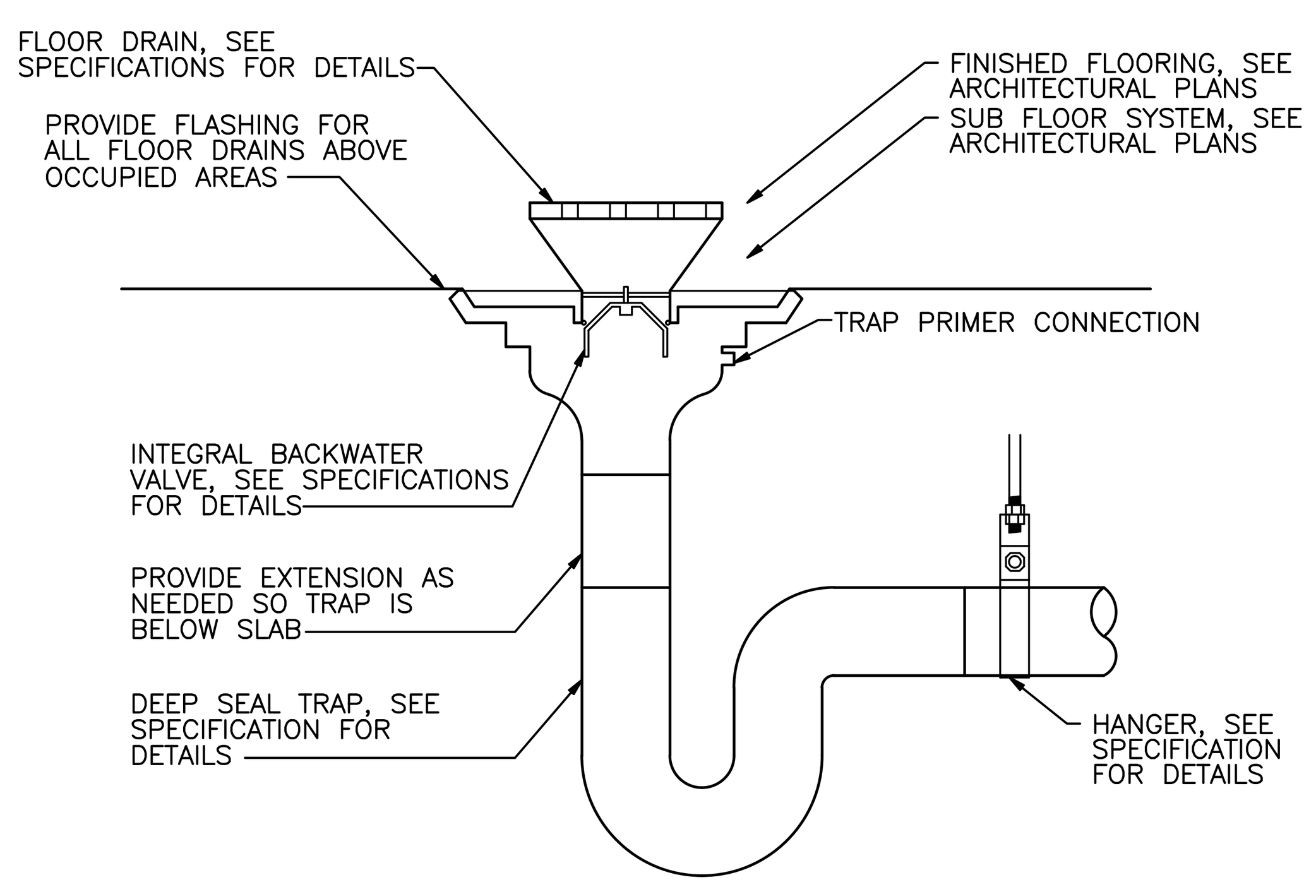
DUCT DIA.	MAX. SPACING	STRAP
UP TO 10ø	10 FT	1" X 22 GAUGE
11 TO 18ø	10 FT	1" X 22 GAUGE
19 TO 24ø	10 FT	1" X 22 GAUGE
25 TO 36ø	10 FT	1" X 20 GAUGE
37 TO 50ø	10 FT	2-1" X 20 GAUGE
51 TO 60ø	10 FT	2-1" X 18 GAUGE
61 TO 84ø	10 FT	2-1" X 16 GAUGE

STRAPS SHALL BE GALVANIZED STEEL
PROVIDE DUCT HANGER ON EACH SIDE OF A SEAM OR FITTING

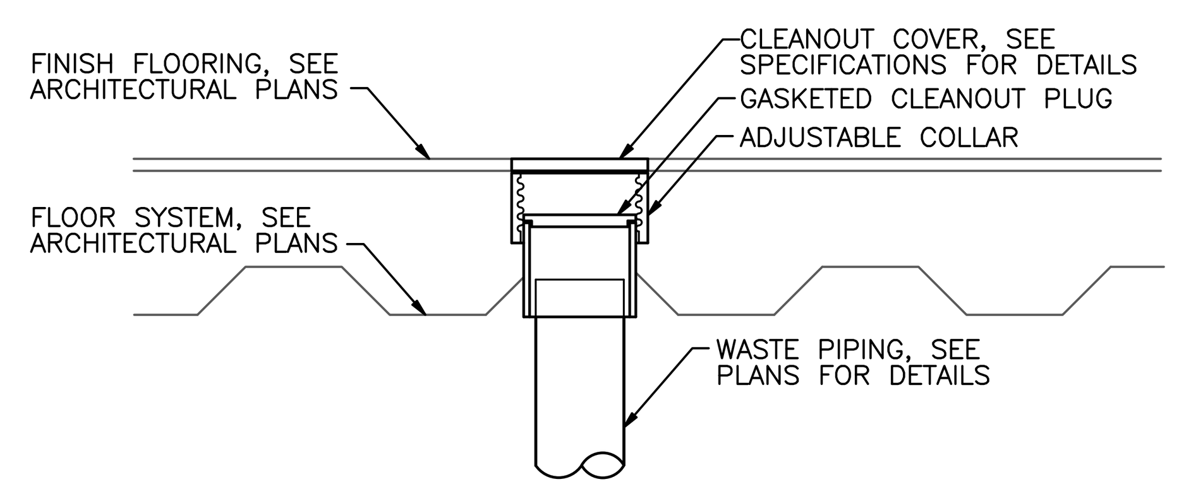
3 M1.3 ROUND DUCT HANGER DIAGRAM
SCALE: NONE



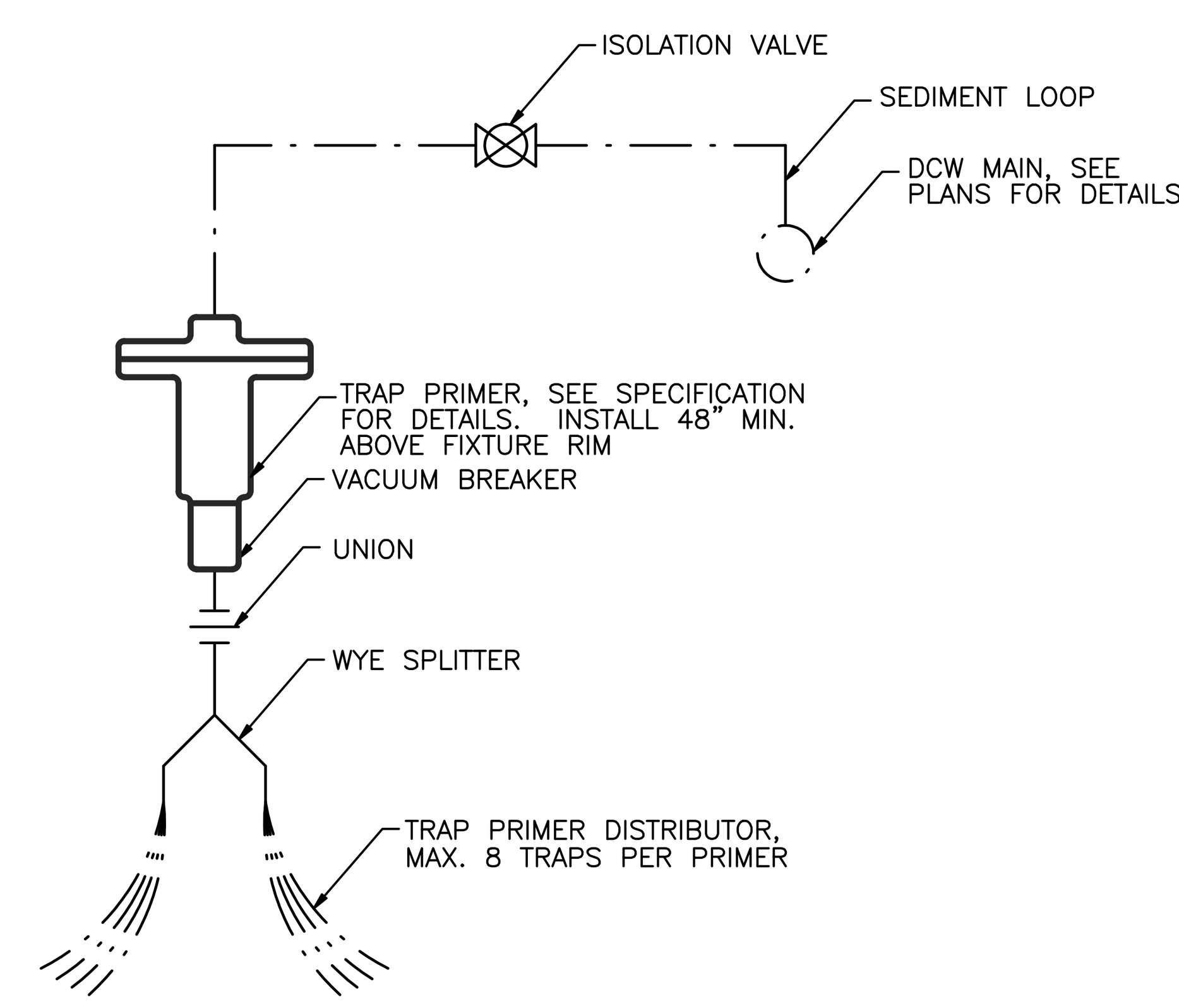
4 M1.3 DCW ENTRY PIPING DIAGRAM
SCALE: NONE



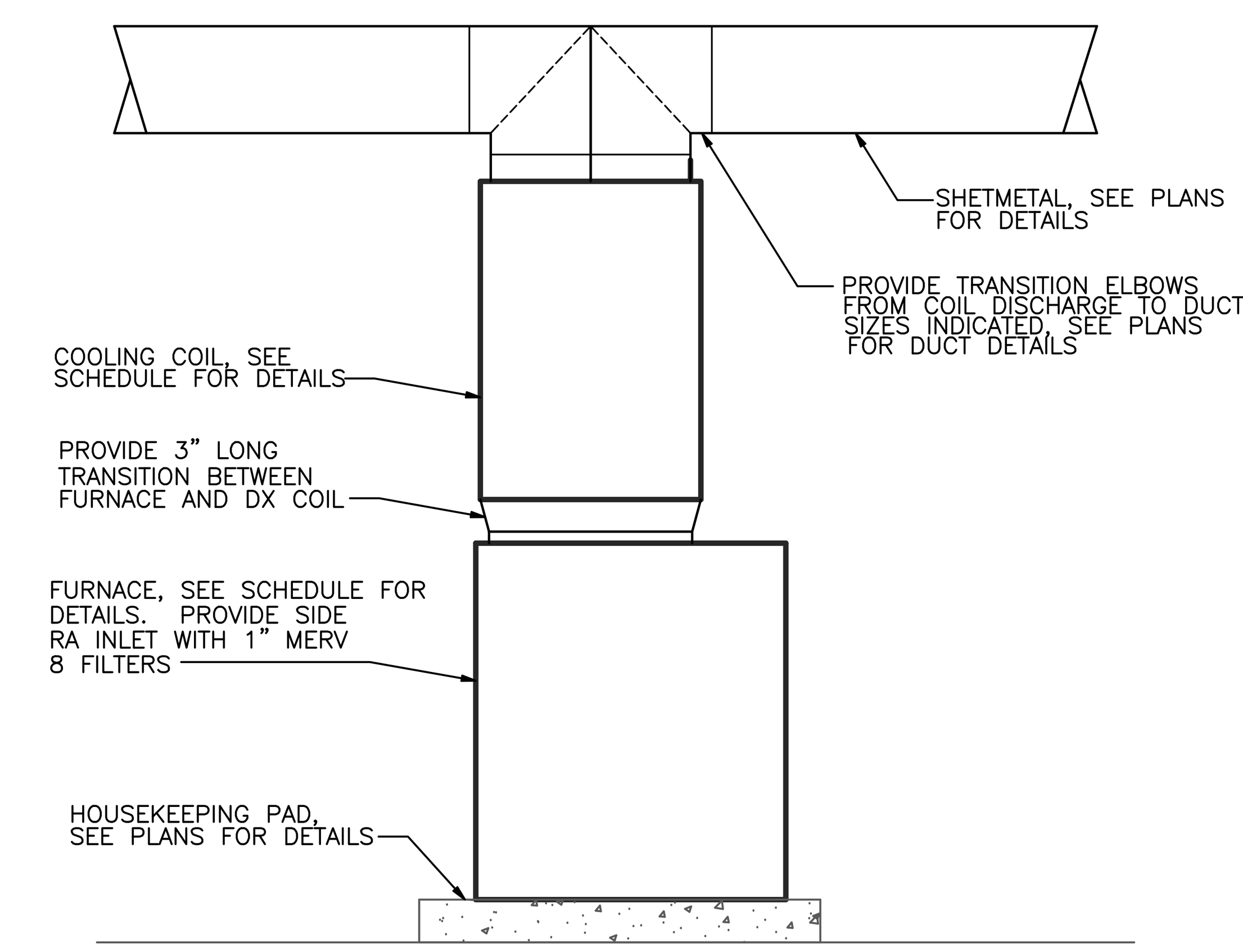
5 M1.3 FLOOR DRAIN DIAGRAM
SCALE: NONE



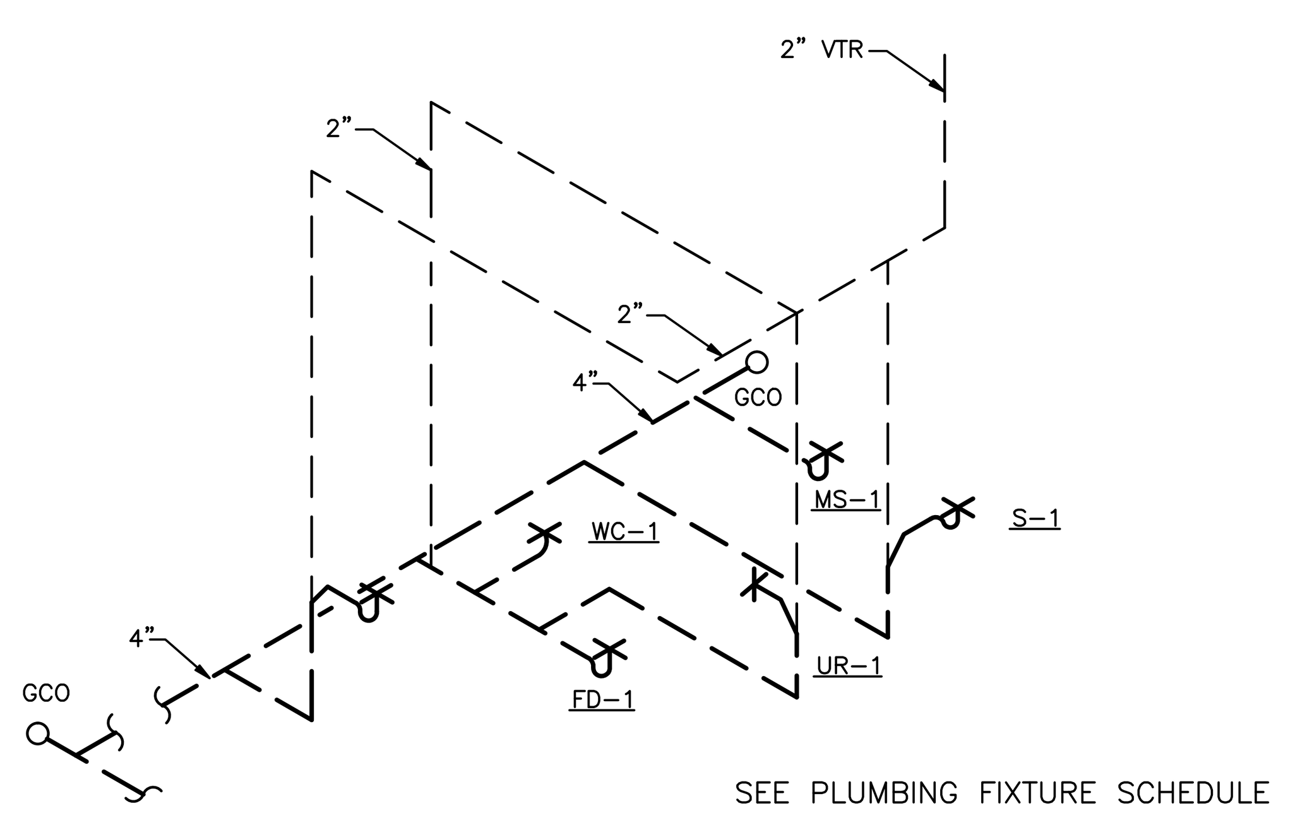
6 M1.3 CLEANOUT DIAGRAM
SCALE: NONE



7 M1.3 TRAP PRIMER DIAGRAM
SCALE: NONE

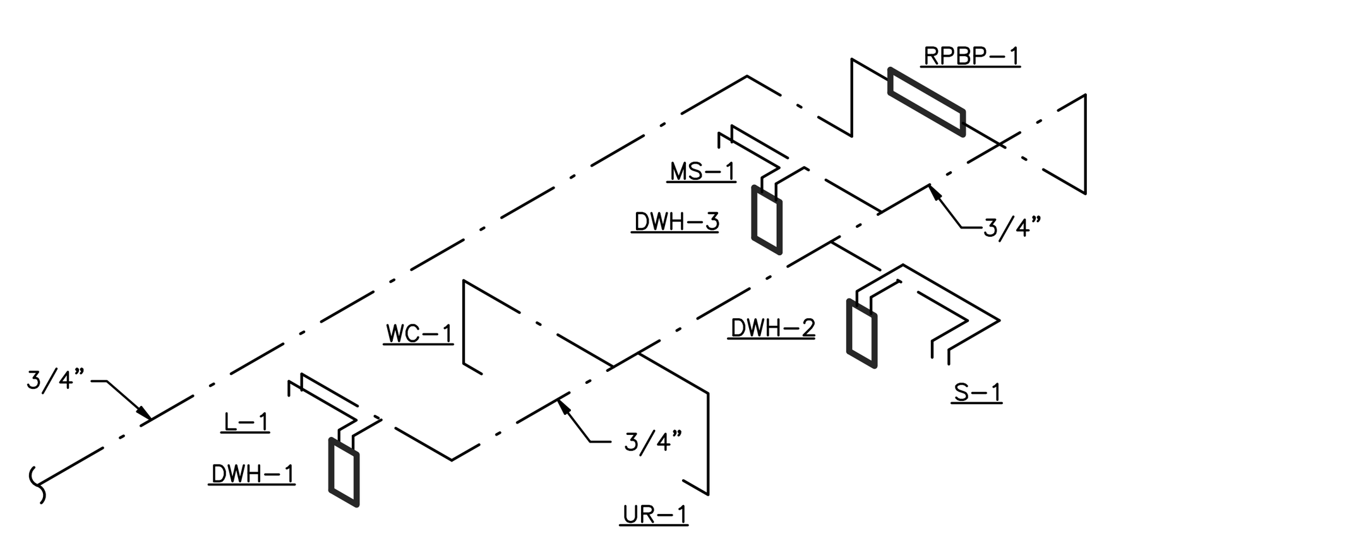


8 M1.3 FURNACE DIAGRAM
SCALE: NONE



SEE PLUMBING FIXTURE SCHEDULE
FOR PIPE SIZES TO INDIVIDUAL FIXTURES

9 M1.3 SS AND V ISOMETRIC DIAGRAM
SCALE: NONE



SEE PLUMBING FIXTURE SCHEDULE
FOR PIPE SIZES TO INDIVIDUAL FIXTURES

10 M1.3 DCW AND DHW ISOMETRIC DIAGRAM
SCALE: NONE

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PO BOX 909
PARKER, COLORADO 80134
303.915.8415

Leffingwell Consulting Engineers, Inc.
Building Performance Service
Mechanical Engineering | Consulting

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SECTION 23 05 00 COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes basic materials and methods that may be common to two or more sections of Division 23.

1.2 SUMMARY

A. This Section includes the following basic mechanical materials and methods.
   1. Identification and labels

1.3 SCOPE

A. The work covered by this Division of the Project Specifications consists of furnishing all labor, supervision, equipment, materials, incidentals, and appurtenances, and performing all operations as necessary to complete the installation of Division 23 work in strict accordance with this Division of the Project Specifications and as indicated on the Project Drawings.

1.4 RELATED WORK SPECIFIED ELSEWHERE

A. The General Conditions of the Contract, Supplementary Conditions, and General Requirements are a part of these Specifications and shall be used in conjunction with this Division as a part of the Contract Documents. Consult them for further instructions pertaining to this work. Contractors shall be responsible for and be governed by all requirements thereunder.

B. Related Sections:
   1. Common Work Results for HVAC Systems Section 23 05 00
   2. Testing Adjusting and Balancing Section 23 05 93

1.5 WORK NOT INCLUDED

A. Painting except as otherwise specified within this Division.

B. Electric equipment and wiring except as otherwise specified within this Division.

C. Lintels over wall openings.

D. Framing around openings and chases.

E. Concrete equipment pads or bases except concrete fill for vibration isolation bases.

F. Installation of access panels in materials other than sheet metal.

G. Cutting and patching of new and existing work.

1.6 QUALITY ASSURANCE

A. Chemical and physical properties of all materials, design, performance characteristics and methods of construction of all items of equipment shall be in accordance with the following applicable regulations, references and standards of current editions in effect 30 days prior to receipt of bids:
   1. Air Movement and Control Association, Inc. (AMCA)
   2. American National Standards Institute (ANSI)
   3. Air Conditioning and Refrigeration Institute (ARI)
   4. American Society of Heating, Refrigerating, Air Conditioning Engineers (ASHRAE)
   5. American Society of Mechanical Engineers (ASME)
   6. American Society for Testing and Materials (ASTM)
   7. National Electrical Manufacturer's Association (NEMA)
   8. National Fire Protection Association (NFPA)
   9. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
   10. Underwriters' Laboratories, Inc. (UL)

B. All work, materials and equipment shall comply with the rules and regulations of all codes and ordinances of the local, state and federal authorities. Such codes, when more restrictive, shall take precedence over these plans and specifications. As a minimum, the installation shall comply with the latest published version of the following codes:
   1. International Building Code (IBC)
   2. International Fire Code (IFC)
   3. National Electric Code (NEC)
   4. National Fire Code (NFC)
   5. Occupational Safety and Health Act (OSHA)
   6. International Mechanical Code (IMC)
   7. International Plumbing Code (IPC)
   8. Applicable state and local codes

C. Comply with ASME A13.1, "Scheme for the Identification of Piping Systems" for lettering size, length of color field, colors, and viewing angles of identification devices.

1.7 DEFINITIONS

A. "Furnish" shall mean the Contractor will purchase and deliver to the site the referenced piece of equipment.

B. "Install" shall mean the Contractor will connect the referenced piece of equipment so it is complete, fully functional and ready for operation.

C. "Provide" shall mean the Contractor will furnish and install the reference piece of equipment.

D. "Contractor" shall mean the Contractor performing all work associated with this Division, except the Temperature Control System.

E. "Control Contractor" shall mean the Contractor performing the work associated with the Temperature Control System.

F. "Mechanical" shall apply to all work performed under this Division of the Specifications.

G. "Owner's Representative" shall mean the person representing the Owner of the project.

H. "Project Specifications" are the construction specifications for this project.

I. "Project Drawings" are the construction plans for this project.

J. "Contract Documents" shall mean the Project Specifications and Drawings.

K. "MSS" Manufacturers Standardization Society for the Valve and Fittings Industry.

L. "Environmental air duct" shall mean any supply or return duct conveying heating, cooling, exhaust or outside air.

M. "WOG" Water or Gas pressure.

1.8 CONTRACT DOCUMENTS

A. The mechanical drawings are diagrammatic in character and do not necessarily indicate every required offset, valve, fitting, etc.

B. All drawings relating to this project, together with these specifications, shall be considered in bidding and construction. The drawings and specifications are complementary, and what is called for in either of these shall be as binding as though called for by both. Should any conflict or omissions arise between the drawings and specifications, such conflict shall be brought to the attention of the Owner's Representative for resolution.

C. Unless otherwise indicated, all equipment and performance data listed is for job site conditions (elevation 5280 ft.).

D. Drawings are not to be scaled.

1.9 MATERIALS AND MANUFACTURERS

A. All materials and equipment shall be new, free of defects, installed in accordance with manufacturer's current published recommendations in a neat manner and in accordance with standard practice of the Industry.

B. Certain materials and/or equipment in this specification are specified by manufacturer and catalog numbers. The design was based on the specified equipment and establishes a degree of quality, performance, physical configuration, etc. If the Contractor should elect to use equipment other than the equipment used as a basis for design but listed as "acceptable" in the specifications, he shall be responsible for space requirements, configuration, performance and changes in, bases, supports, vibration isolators, structural members, openings in structure and other apparatus that may be affected by its use.

C. Contractor further agrees that if deviations, discrepancies, or conflicts between reviewed submittals and/or shop drawings and the Contract Documents are discovered after submittals and/or shop drawings are processed by the Owner's Representative, the Contract Documents shall control and shall be followed unless modified by addenda or change order.

1.10 SUBSTITUTION APPROVALS

A. Equipment and/or materials manufactured by any one of the manufacturers listed in the Contract Documents shall be acceptable. Where no specific manufacturer is listed, a first-class item of cataloged manufacture shall be furnished.

B. Prior Approvals: Refer to Section 01.

C. Substitution Requests after Execution of Contract: If Contractor wishes to furnish or use a substitute item of material and/or equipment, he must submit a change order request to the Owner's Representative. The request for change order shall itemize each of the proposed substitutions identified by applicable specification section, paragraph number and/or drawing number. A price change (increase or decrease) shall be listed for each item along with complete data showing performance over entire range, physical dimensions, electrical characteristics, material construction, operating weight and other applicable data. The change order request will be reviewed for equality, suitability and reasonableness of price differential. A single substitution change order listing the approved items will be issued with the net cost of the change order being the sum of the approved item costs. No subsequent substitution change orders will be considered. The Owner's Representative's decision will be final.

D. It shall be the responsibility of the Contractor to assure that the substitute material and/or equipment fits into the space provided and the Contractor shall pay for all extra costs incurred by other trades for any and all changes necessitated by these substitutions.

1.11 SUBMITTALS

A. Refer to Section 01 for general requirements.

B. Contractor agrees that shop drawings and/or submittals processed by the Owner's Representative are not change orders. The purpose of shop drawings and/or submittals is to inform the Owner which equipment and materials the Contractor intends to provide.

C. Submittals and/or shop drawings are to be edited to show only specific data for the mechanical equipment that the Contractor intends to provide.

D. Submittals and/or shop drawings are to be identified with equipment tags identical to those listed in the Contract Documents.

E. All shop drawings for special systems (fire protection, temperature controls, etc.) that will become permanent record documents shall be prepared on sheets of 4-mil mylar of the same size as the Project Drawings.

F. Provide submittals for all products the Contractor intends to use on this project and listed in Part 2 of this Division's Specifications.

G. Submittals: All Section 23 product submittals shall be provided in the manner detailed below regardless of description provided elsewhere in the Contract Documents.
   1. All product submittals shall be provided to the Owner's Representative in a single three ring binder. Each copy of the product submittal shall be provided in an individual three ring binder. Each binder shall be white with a clear vinyl cover and contain three metal rings.
   2. Each binder shall be appropriately sized for the number of product submittals.
   3. Each binder shall contain a cover sheet with the project name, Contractor's name and submittal date.
   4. Each binder shall contain dividers which divide the product submittals into sections matching the specification sections. A table of contents identifying each section shall be included in the front of each binder.
   5. The Owner's Representative will provide two (2) reviews of the product submittals. If after two (2) reviews the submittals are not in compliance with the Contract Documents, the Contractor shall be responsible for compensating the Owner for additional submittal reviews. Compensation shall consist of shipping and delivery costs, hourly wages and other costs incurred during the additional services submittal review.

H. Shop Drawings: Provide detailed drawings indicating mechanical equipment, piping and sheetmetal systems and components, and the spatial relationship of mechanical systems and equipment with other systems, equipment, and building components. Indicate requirements for equipment installation and all access and maintenance space required. Shop drawings shall be prepared on sheets matching the sheet size and scale of the Contract Documents. Shop drawings for mechanical rooms shall be at ¼"=1'-0". Include the following in all shop drawings:
   1. Planned hydronic and plumbing piping layout, including valve and specialty locations and valve-stem movement.
   2. Planned sheetmetal layout including balance dampers, fire dampers, fire/smoke dampers, fittings, access panels, grilles, and diffusers.
   3. All equipment connected to the piping or sheetmetal system including all maintenance access and clearances for each piece of equipment.
   4. Equipment and accessory service connections and support details.
   5. Exterior wall and foundation penetrations.
   6. Fire-rated wall and floor penetrations.
   7. Sizes and location of required concrete pads and bases.
   8. Floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.
   9. Reflected ceiling plans to coordinate and integrate installation of air outlets and inlets, light fixtures, communication system components, sprinklers, and other ceiling-mounted items.

1.12 OPERATION AND MAINTENANCE MANUALS

A. The Contractor shall prepare an operation and maintenance manual which shall cover all systems and equipment installed under Division 23.

B. Refer to Section 01 for general requirements.

C. Operation and maintenance manuals shall be provided at the completion of the construction. Submit three copies of the operation and maintenance manual to the Owner's Representative for review at least two weeks prior to the substantial completion site visit. Failure to provide the operation and maintenance manuals two weeks before the substantial completion site visit will result in delaying the site visit until the manuals are received and reviewed.

D. Each operation and maintenance manual shall be indexed and contain the following information.
   1. Contractors' names, addresses and telephone numbers.
   2. Alphabetical list of all system components with the name and address and 24-hour phone number of the company responsible for servicing each item during the first year of operation.
   3. Guarantees and warranties for all equipment whenever applicable.
   4. All manufacturers' data applicable to the installed equipment, including:
      a. Approved shop drawings
      b. Installation instructions
      c. Lubrication instructions
      d. Wiring diagrams
   5. A simplified description of the operation of all systems including the function of each piece of equipment within each system. These descriptions shall be supported with a schematic flow diagram when applicable.
   6. Temperature control diagrams including an explanation of the control sequence of each system along with the following instructions.
      a. Emergency procedures for fire or failure of major equipment.
      b. Normal starting, operating and shutdown modes of operation.
      c. Summer or winter shutdown procedures.
   7. Approved Testing, Adjusting and Balancing report.
   8. Valve tag list when applicable.
   9. An outline of a preventative maintenance program for each system which shall include a schedule of inspection and maintenance. It shall suggest the maintenance and inspection operations that should be performed by the Owner and the operations that should be performed by contractors.

E. Each Operation and maintenance manual shall be provided in the manner detailed below regardless of description provided elsewhere in the Contract Documents.
   1. Each manual shall be provided to the Owner's Representative in a single three ring binder. Each copy of the manual shall be provided in an individual three ring binder. Each binder shall be white with a clear vinyl cover and contain three metal rings.
   2. Each binder shall be appropriately sized for the information contained in the manual.
   3. Each binder shall contain a cover sheet with the project name, Contractor's name and submittal date.
   4. Each binder shall contain dividers that divide the manual into sections matching the information sections listed above. A table of contents identifying each section shall be included in the front of each binder.

1.13 WORKMANSHIP

A. The appearance of the finished work shall be of equal importance with its mechanical efficiency. All work shall be done in accordance with acceptable commercial practices.

B. Furnish the services of an experienced superintendent who shall be constantly in charge of the installation of the work together with all skilled workmen, plumbers, fitters, metal workers, welders, helpers, and labor required to unload, transfer, erect, connect-up, adjust, start, operate, and test each system.

1.14 SAFETY AND HEALTH REQUIREMENTS

A. These Construction Documents and the construction hereby contemplated are to be governed at all times by applicable provisions of the "Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 91-596" and the latest amendments thereto.

1.15 QUIET OPERATION AND VIBRATION

A. Mechanical equipment provided under this contract shall operate under all load conditions without sound or vibration which is objectionable in the opinion of the Owner's Representative. In case of moving machinery, sound or vibration noticeable outside of room in which it is installed, or annoyingly noticeable inside its own room, will be considered objectionable. Sound or vibration conditions considered objectionable by the Owner's Representative shall be corrected in an approved manner by the Contractor at his expense. Vibration control shall be by means of approved vibration eliminators in a manner as recommended by the manufacturer of the eliminators.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Identification and Labels:
   1. Seton Corp.
   2. Brady Co.
   3. Mechanical Identification
   4. Brimar Industries

2.2 IDENTIFICATION AND LABELS

A. All ductwork, piping, valves, controls, and equipment on the project shall be identified as specified herein. All identification shall be easily visible from the floor or usual point of vision. All lettering, sizes, and colors shall comply with ANSI Standard. A13.1, unless more stringent criteria are indicated below.

B. Ductwork:
   1. The letters and flow arrow shall be pressure-sensitive, preprinted type or shall be made by precut stencils and black oil-base paint with aerosol can. Letters shall be a minimum of 2" high and the flow arrow shall be a minimum of 6" long.

C. Each piece of equipment shall have a metal permanently fastened equipment nameplate provided by the equipment manufacturer with data engraved or stamped. Provide the manufacturer's name, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and essential data. The equipment nameplate shall be visible, accessible, and not covered with insulation.

D. Each manual and control valve shall be identified with a 1 1/2" round brass tag, stamped or engraved with 1/4-inch lettering. Each tag shall be securely fastened to each valve with a brass bead chain or S-hook fastener.

E. Provide 1/16-inch thick, engraved plastic-laminate marker for each access panel with abbreviated terms and numbers corresponding to concealed equipment and valves. Each marker shall have 1" high white letters on a black background.

F. Provide 1/16-inch thick, engraved plastic-laminate marker for each piece of equipment with title as indicated on the Contract Documents and located in a position clearly visible from the floor. Each marker shall have 2" high white letters on a black background.

G. Provide a wood or extruded aluminum framed valve schedule with ¼" clear Plexiglas cover in each mechanical room. Each framed valve schedule shall be securely attached to the mechanical room wall.

H. Controls: All controls and instruments shall be identified with labels mounted under the control or instrument.
   1. Labels for remote devices shall be metal tags or engraved plastic laminate with letters not less than ¼" high.
   2. Labels for internal panel-mounted devices may be laminate adhesive-backed printed strips (Kroy, DuraType, or Brothers P-Touch 30) with 12-point or larger type or engraved plastic laminate. Door-mounted labels shall be engraved plastic-laminate with letters not less than ¼" high and shall be screwed or riveted to the panel door.

I. Time of Application: No identification shall be performed until all painting required under the project specifications has been accomplished.

2.3 FIRE STOP MATERIALS

A. Material shall be UL listed for filling openings around ducts and/or pipes passing through fire rated walls and floors. Fire resistance ratings shall be by testing per ASTM E814.
   1. Caulk: Intumescent latex based no-sag elastomeric caulk designed as a through penetration fire stop system.
   2. Putty: Intumescent water based elastomeric hand formable putty designed as a through penetration fire stop system.

B. All fire stop materials shall be installed per the manufacturer's UL Listed installation instructions. Provide all necessary sleeves and inserts required to meet the UL Listed installation instructions.

2.4 HANGER AND SUPPORT INSTALLATION

A. Pipe Hanger and Support Installation: Comply with MSS-SP-69 and MSS-SP-89. Install hangers, supports, clamps, and attachments as required by manufacturer's installation instructions to properly support piping from building structure.

B. Channel Support System Installation: Arrange for grouping of parallel runs of piping to be supported on field-assembled channel systems. Channel systems shall be assembled and installed according to manufacturer's installation instructions.

C. Install hangers and supports complete with necessary inserts, beam clamps, bolts, rods, nuts, washers, and other accessories.

D. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.

E. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.

F. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and so maximum pipe deflections allowed by ASME B31.9, "Building Services Piping," is not exceeded.

2.5 IDENTIFYING AND LABELING SYSTEMS

A. Ductwork:
   1. Identify ductwork to indicate air handler system number, type of duct, and direction of flow. The air handler or exhaust system number shall correspond to the equipment tag indicated on the Contract Documents. The type of duct shall correspond to the type of air in the ductwork, i.e. supply air, return air , exhaust air, outside air, or relief air.
   2. Provide identification for all ducts in finished and unfinished areas, machine rooms; and accessible maintenance spaces such as shafts, tunnels, and plenums according to the following:
      a. Near each main balance damper.
      b. Near each branch connection, excluding short takeoffs to grilles, diffusers, or terminal units. Mark each duct at branch, where flow pattern is not obvious.
      c. On each side of penetrations through walls or floors.
      d. At entry and exit of shafts and chases
      e. At access doors and similar access points that permit view of concealed duct.
      f. Near major equipment items and other points of origination and termination.
      g. Spaced at a maximum of 25-foot intervals along each run.
      h. On ductwork above removable acoustical ceilings.
   3.
   4. Unless noted otherwise, do not identify exposed ducts in finished areas.

2.6 EQUIPMENT SIGNS AND MARKERS

H. Install engraved plastic-laminate signs on each major piece of mechanical equipment. Include signs for the following general categories of equipment:
   1. Main control and operating valves, including safety devices and hazardous units such as gas outlets.
   2. Fire department hose valves and hose stations.
   3. Meters, gages, thermometers, and similar units.
   4. Fuel-burning units, including boilers, furnaces, heaters, and absorption units.
   5. Pumps, compressors, chillers, condensers, and similar motor-driven units.
   6. Heat exchangers, coils, evaporators, cooling towers, heat recovery units, and similar equipment.
   7. Fans, blowers, primary balancing dampers, and mixing boxes.
   8. Air handling units, VAV boxes, and CV boxes.
   9. Tanks and pressure vessels.
   10. Strainers, filters, humidifiers, water-treatment systems, and similar equipment.

2.7 DELIVERY AND STORAGE OF MATERIALS

A. Make provisions for the delivery and safe storage of materials and make the required arrangements with other Contractors for the introduction into the building of equipment too large to pass through finished openings.

2.8 MECHANICAL WIRING

A. Provide all temperature control wiring, all interlock wiring, and equipment control wiring for the equipment that is to be provided under Section 23 unless specifically shown on electrical drawings.

B. All line voltage interlock and control wiring shall be not less than No. 14 insulated color coded wire in conduit or raceway. Conductors shall be labeled at both ends.

2.9 MAINTENANCE MANUAL

A. The Contractor shall prepare a maintenance manual which shall contain maintenance information for all systems and equipment installed under this Division. Refer to Division 1 for submittal requirements.

B. The manual shall be indexed for each system and type of component and contained within a 3-ring hard cover binder. The binder shall be sized to hold all of the maintenance information. The Contractor shall cross out all references to equipment and options which were not installed on this project. Provide the following information.
   1. Contractors' names, addresses, and telephone numbers.
   2. Alphabetical list of all system components with the name, address and 24-hour phone number of the company responsible for servicing each item during the first year of operation.
   3. Guarantees and warranties of all equipment whenever applicable.
   4. All manufacturers' data applicable to the installed equipment such as the following:
      a. Approved shop drawings
      b. Installation instructions
      c. Lubrication and maintenance instructions
      d. Wiring diagrams
   5. A simplified description of the operation of each system including the function of each piece of equipment. These descriptions shall be supported with a schematic flow diagram when applicable.
   6. Temperature control diagrams including an explanation of the control sequence for each system and the following instruction wherever applicable.
      a. Emergency procedures for fire or failure of major equipment
      b. Normal starting, operating and shutdown
      c. Summer or winter shutdown
   7. System balancing report.
   8. Valve tag list when applicable.
   9. An outline of a preventative maintenance program for each system which shall include a schedule of inspection and maintenance. It shall suggest the maintenance and inspection that should be performed by the Owner and that which should be done using an outside service.

2.10 WATERPROOFING

A. Where any work pierces waterproofing, including waterproof concrete, the method of installation shall be as approved by the Owner's Representative before work is performed. Contractor shall furnish all necessary sleeves, caulking, and flashing required to make openings absolutely watertight.

B. Flashing of all building penetrations to the outside shall be per applicable codes and standards. Refer to appropriate sections for acceptable materials and methods.

2.11 OLD PIPE LINES

A. If any old sewer, water, gas, or other pipes are encountered that interfere with the proper installation of new work and that will not be used in connections with the new work, promptly advise the General Contractor and Owner's Representative.

2.12 COORDINATION AND COOPERATION WITH OTHER TRADES

A. The Contractor for this work shall examine the Contract Documents for other trades. If clearance or space conditions appear inadequate or if any discrepancies occur between his work and the work of others, he shall report such discrepancies to the Owner's Representative and shall obtain written instructions for any changes necessary to accommodate his work with the work of others. Any changes in the work covered by the Contract Documents made necessary by the failure or neglect of the Contractor to report such discrepancies shall be made by and at the expense of this Contractor.

B. Where the mechanical work will be installed in close proximity to, or will interfere with work of other trades, the Contractor shall assist in working out space conditions to make a satisfactory adjustment. If so directed by the Owner's Representative, the Contractor shall prepare composite working drawings and sections at a suitable scale not less than 1/4" = 1'-0", clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordinating with other trades, or so as to cause any interference with work of other trades, he shall make the necessary changes in his work to correct the condition without extra charge.

2.13 INSTALLATION

A. Unless otherwise specifically indicated on the plans or specifications, all equipment and materials shall be installed in accordance with the recommendations of the manufacturer. Maintain maximum head room and space conditions at all points.

B. Coordinate work with other trades prior to fabrication and installation of equipment, piping, and ductwork. Adjust ductwork and piping to fit into space available.

2.14 ACCESSIBILITY

A. Locate all equipment that must be serviced, operated, or maintained in fully accessible positions. Equipment shall include, but not be limited to, valves, traps, clean-outs, motors, controllers, switchgear, and drain points. If required for accessibility, furnish access doors for this purpose. Minor deviations from drawings may be made to allow for better accessibility.

2.15 PAINTING

A. Paint field-fabricated hangers and frames, unpainted equipment, and uninsulated exposed piping (interior and exterior) with one coat of primer and two coats of flat enamel paint, color as selected by Owner's Representative.

2.16 CLEANUP

A. At the completion of work, all equipment on the project shall be checked and thoroughly cleaned including coils, plenums, under equipment and any and all other areas around or in equipment provided under this section. Clean all exposed surfaces of all piping, hangers, ducts, and other exposed metal of all grease, plaster, or other foreign material. Remove all stick-on labels and clean surfaces.

B. At the completion of the work, remove from the building, the premises, and surrounding streets, alleys, etc., all rubbish and debris resulting from this project and leave all equipment spaces absolutely clean and ready for use.

C. Any filters used during construction shall be replaced with new filters during final cleanup.

2.17 DAMAGED SURFACES

A. At the completion of work, all mechanical equipment furnished under this contract shall be checked for paint damage, and any factory finished paint that has been damaged shall be repaired to match the adjacent areas. Any metal cabinet, jacket, or enclosure that has been deformed shall be replaced with new material and repainted to match the adjacent areas.

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CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

DATE:	DESCRIPTION
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

PROJECT NUMBER: EMMA MALABY

DRAWN BY: LCE | CHECKED BY: LCE

COMPUTER FILE: -

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2.18 PROTECTION

A. The Contractor shall protect all work and material from damage by his work or workmen, and shall be liable for all damage thus caused.

B. The Contractor shall be responsible for work and equipment until finally inspected, tested, and accepted; he shall protect work against theft, injury, or damage; and shall carefully store material and equipment received on site that is not immediately installed. He shall close open ends of work with temporary covers or plugs during storage and construction to prevent entry of foreign objects.

2.19 RECORD OF CHANGES

A. Refer to Division 1 for requirements.

2.20 RESPONSIBILITY OF CONTRACTOR

A. The Contractor is responsible for the complete and satisfactory installation of the systems and equipment in accordance with the intent of the Contract Documents. As part of his work, he shall provide all incidental items necessary to provide a complete and operational system. He shall coordinate the installation of the multiple components and parts so that the completed system will function as intended by the Contract Documents. At the completion of the project, he shall provide a system with all components and parts adjusted and in proper working order.

END OF SECTION 23 05 00

SECTION 22 07 00 PLUMBING INSULATION

PART 1 - GENERAL

1.1 description

A. This Section includes semi-rigid and flexible duct, plenum, and breeching insulation; insulating cements; field-applied jackets; accessories and attachments; and sealing compounds.

1.2 SUMMARY

A. This section includes the following materials and methods.
1. Mineral-Fiber Insulation

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. The General Conditions of the Contract, Supplementary Conditions and General Requirements are a part of the Project Specification and shall be used in conjunction with this Division as a part of the Contract Documents. Consult them for further instructions pertaining to this work. Contractors shall be responsible for and be governed by all requirements thereunder.

B. Related Sections:
1. Common Work Results for Plumbing Systems Section 22 05 00
2. Valves and Piping Components for Plumbing Systems Section 22 05 23
3. Plumbing Fixtures Section 22 40 00

1.4 QUALITY ASSURANCE

A. All components of the insulation system including insulation, facing, mastic, and adhesives, except elastomeric material specified elsewhere, shall not exceed the following hazard ratings as determined by NFPA 255, ASTM E84, and UL 723. For piping insulation systems: flame spread rating of 25, Fuel contributed rating of 25, and Smoke developed rating of 50. For duct insulation systems: Flame spread rating of 25, Fuel contributed rating of 0, and Smoke developed rating of 50.

B. Protect insulation against dirt, water, chemical, or mechanical damage before, during, and after installation. Any such insulation or covering damaged prior to final acceptance of the work shall be satisfactorily repaired or replaced.

1.5 SUBMITTALS

A. Submit manufacturer's technical product data, installation instructions, and maintenance data for each type of mechanical insulation, including fittings, adhesives, and jacket.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Mineral-Fiber Insulation:
1. CertainTeed
2. Knauf Fiberglass
3. Owens-Corning Fiberglas Corp.
4. Schuller International, Inc.

2.2 INSULATION

A. Specification Type “H”: Preformed fiberglass complying with ASTM C 547, Type I or II. Factory applied ASJ/SSL type jacket, ASTM C921 or C1136 Type I for vapor barrier or Type II for non-vapor barrier. At Contractors option, Type I may be used for vapor barrier and non-vapor barrier systems. "K" factor of 0.23 maximum at 75°F mean temperature. Factory-applied flap adhesive (SSL) or conventional staple and tape seal at Contractor's option. See schedule for thickness.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely effect insulation application.

B. Insulation shall be applied after testing duct or piping systems.

3.2 GENERAL APPLICATION REQUIREMENTS

A. Insulation shall be installed by workmen regularly engaged in this kind of work in strict accordance with the manufacturer's recommendations and recognized industry practices.

B. Refer to schedules at the end of this Section for materials, forms, jackets, and thickness required for each insulation system.

C. When installing multiple layers of insulation, stagger the longitudinal and end seams.

D. Keep insulation materials dry during application and finishing.

E. Apply insulation with the least number of joints practical.

F. For insulation application where a vapor barrier is indicated, seal ends as recommended by the insulation manufacturer to maintain vapor barrier.

G. Cut insulation according to manufacturer's written instructions to prevent compressing insulation to less than 75 percent of its nominal thickness.

H. Pipe insulation shall be continuous through walls and floor openings except where walls and floors are required to have a fire resistant rating. At fire resistant penetrations, stop the insulation on each side of the penetration and fill the open space remaining between the sleeve and pipe and/or duct with fire-stop insulation.

I. Insulation for all cold surfaces must be installed with a continuous, unbroken vapor barrier. Supports, anchors, etc., that are secured directly to cold surfaces must be adequately insulated and provided with a vapor barrier to prevent condensation.

J. Insulated cold pipes shall be insulated continuously through hangers. Insulated hanger shields shall be provided at all pipe hangers and supports. Pipe insulation shall abut the insulated hanger shield. Apply a wet coat of vapor barrier lap cement on all butt joints and seal the joints with 3"-wide vapor barrier tape or band.

K. For penetrations of below-grade exterior walls, terminate insulation flush with mechanical sleeve seal. Seal terminations with vapor barrier mastic.

L. Fittings and valves shall be covered with premolded one-piece PVC insulated covers. This product is not to be installed in locations where its use is prohibited by local codes.

3.3 PIPING INSULATION APPLICATION

A. Apply insulation to straight pipes and tubes as follows:
1. Secure each layer of preformed pipe insulation to pipe with wire, tape, or bands without deforming insulation materials.
2. Where vapor retarders are indicated, seal longitudinal seams and end joints with vapor-retarder mastic. Apply vapor retarder to ends of insulation at intervals of 15 to 20 feet to form a vapor retarder between pipe insulation segments.
3. For insulation with factory-applied jackets, secure laps with outward clinched staples at 6 inches o.c.
4. For insulation with factory-applied jackets with vapor retarders, do not staple longitudinal tabs but secure tabs with additional adhesive as recommended by the insulation material manufacturer and seal with vapor-retarder mastic.

B. Apply insulation to fittings as follows:
1. Apply insulation over fittings, valves, and specialties, with continuous thermal and vapor-barrier, unless otherwise indicated.
2. Where the factory premolded, one-piece, PVC-insulated fitting covers can be used, the proper factory precut insulation shall be applied to the fitting using two layers for pipe temperatures above 250°F or below 35°F, single-layer insulation is suitable between 35°F and 250°F. The ends of the insulation shall be tucked snugly into the throat of the fitting and the edges adjacent to the pipe covering, tufted and tucked in, fully insulating the pipe fitting. Covers shall overlap the adjoining pipe insulation and jackets. On cold pipes, all fitting edges shall be sealed with vapor barrier adhesive. On hot piping, the circumferential edges of all covers shall be sealed with pressure sensitive tape. The tape shall overlap the jacket and the cover at least 1”.
3. At locations where PVC covers are prohibited, the Contractor shall insulate fittings., using one coat of insulation cement over premolded fiberglass fitting covers and/or segments of pipe insulation. Finish shall be ASJ jacket or glass fabric embedded in fire-retardant mastic. Raw ends shall be coated with vinyl acrylic mastic CP-10/11 for hot piping or shall be coated with vapor barrier mastic (CP-30 or Fosters 30-35) for cold piping.

C. Pipe installed below grade shall be spiral wrapped with 10 mil PVC tape (Scotchwrap No. 50 or equal) with 50% overlap, laid in a bed of sand with 3" min. cover on all sides.
1. Fittings shall be double-wrapped with second layer extended a minimum of 12" beyond fittings.
2. All hot piping systems installed below grade shall also be insulated using Type I ASJ vapor barrier jacket. Cold piping shall be protected with metal jacketing.

3.4 INSTALLATION OF PIPE INSULATION EXPOSED TO WEATHER

A. All insulation on exterior piping exposed to weather shall have a Type I ASJ/SSL factory jacket with a vapor barrier and shall be protected with a weatherproof metal jacket. The outer metal jacket shall be 0.016”-thick aluminum with laminated vapor barrier and have “Z” groove to assure watertight seal. Each joint will be sealed with snap straps containing permanent plastic sealing compound and secured by 1/2”-wide stainless steel bands.

SYSTEM APPLICATIONS

A. Insulation materials are specified in schedules at the end of this Section.

B. Unless otherwise indicated, do not insulate the following systems or equipment:
1. Testing agency labels and stamps.
2. Nameplates and data plates.
3. Manholes.
4. Handholes.
5. Cleanouts.
6. Fire-suppression piping.
7. Drainage piping located in crawl spaces, unless otherwise indicated.
8. Below-grade piping, unless otherwise indicated.
9. Chrome-plated pipes and fittings, unless potential for personnel injury.
10. Air chambers, unions, strainers, check valves, plug valves, and flow regulators.

3.6 GENERAL APPLICATION REQUIREMENTS

A. Insulate the following indoor equipment:
1. Domestic hot-water storage tanks, not factory insulated.

3.7 INSULATION APPLICATION SCHEDUL

Piping Insulation Schedule

Domestic Cold Water	1” for pipe sizes up to 4”, Type H with vapor barrier
Domestic hot Water	1” for pipe sizes up to 4”, Type H with vapor barrier
Domestic hot Water Circulation	1” for pipe sizes up to 4”, Type H with vapor barrier

END OF SECTION 22 07 00

SECTION 23 31 00 HVAC DUCTS AND CASINGS

PART 1 - GENERAL

A. DESCRIPTION

B. This section describes the fabrication and installation of material and equipment associated with the air distribution system.

C. SUMMARY

D. This section includes the following materials and methods.
1. Ductwork

E. RELATED WORK SPECIFIED ELSEWHERE

F. The General Conditions of the Contract, Supplementary Conditions and General Requirements are a part of the Project Specification and shall be used in conjunction with this Division as a part of the Contract Documents. Consult them for further instructions pertaining to this work. Contractors shall be responsible for and be governed by all requirements thereunder.

G. Related Sections:
1. Common Work Results for HVAC Systems Section 23 05 00
2. Testing Adjusting and Balancing Section 23 05 93
3. HVAC Insulation Section 23 07 00
4. HVAC Ducts and Casings Section 23 31 00
5. Air Duct Accessories Section 23 33 00
6. HVAC Fans Section 23 34 00
7. Packaged Outdoor HVAC Equipment Section 23 75 00

H. QUALITY ASSURANCE

I. The air distribution system's construction and installation shall meet the requirements of any applicable codes and standards listed below:
1. National Fire Protection Association
   a. NFPA 45, Fire Protection for Laboratories, 1991
   b. NFPA 54, National Fuel Gas Code, 1992
   c. NFPA 90A, Installation of A/C and Vent Systems, 1999
   d. NFPA 90B, Installation of Warm Air Heating and A/C Systems, 1999
   e. NFPA 91, Installation of Exhaust Systems for Air Conveying of Materials, 1992
   f. NFPA 92A, Smoke Control Systems, 1993
   g. NFPA 92B, Smoke Management Systems in Malls, Atria, Large Areas, 1991
   h. NFPA 96, Ventilation Control and Fire Protection of Commercial Cooking Operations, 1994
   i. NFPA 101, Life Safety Code, 1994
   j. NFPA 204M, Smoke and Heat Venting, 1991
   k. NFPA 211, Chimneys, Fireplaces, and Venting Systems, 1992
2. SMACNA HVAC Duct Construction Standards, Metal and Flexible, 2nd Edition, 1995
3. SMACNA Fibrous Glass Duct Construction Standards, 1992
4. Air Diffusion Council (ADC) Test Code 1062 and ASHRAE Test Standard 70-1991 for outlets and inlets.
5. Air Movement and Control Association (AMCA) 500- Test Methods for Louvers, Dampers, and Shutters.

J. SUBMITTALS

K. Submit the manufacturer's technical product and performance data for the following:
1. Factory-fabricated ductwork
2. Duct sealant and fire stop materials
3. Submit fabric duct manufacturer's drawings indicating size and placement of dispersion units, and mounting instructions.

L. ENVIRONMENTAL AIR DUCT CONSTRUCTION STANDARDS

M. All ducts shall be constructed and installed in accordance with SMACNA HVAC Duct Construction Standards for the pressure classes specified below.
1. The proprietary TDC and TDF formed-on duct connector systems may be used provided they are limited to ductwork of ± 2” w.g. or lower pressure class, Seal Class B, and a maximum dimension of 42” or less. All corners shall have sealant back-up plates.
2. “Ductmate” or WDCI proprietary connector systems are acceptable provided the type of joint and the maximum joint spacing for various gages and pressure classes conform to the SMACNA Duct Construction Standards Manual.”
3. All longitudinal seams shall be Pittsburgh Lock or better. “Snaplock” is not acceptable.
4. The Contractor will be required to replace all ductwork not in conformance with this specification.

N. Leakage criteria shall be as follows:
1. Constant Volume Systems:
   a. Supply ductwork at 0-2” w.g.
      1) Allowable Leakage: 2% of design cfm
   b. Supply ductwork at 3” w.g. or higher
      1) Allowable Leakage: 1% of design cfm
   c. Return ductwork:
      1) Allowable Leakage: 2% of design cfm

O. Duct sealing shall be per construction and installation standards published in the SMACNA HVAC Duct Construction Standards as follows:

DUCT SEALING REQUIREMENTS

Seal Class	Sealing Required
A	All transverse joints, longitudinal seams, and duct wall penetrations, up to 10" w.g. pressure class

P. SOUND CRITERIA

Q. All equipment and material furnished under this section shall be selected so that required NC sound levels in various spaces are not exceeded. Attenuation by ceilings, duct liner, and room absorption may be taken into account when making fan, terminal unit, and air distribution selections. Refer to the latest edition of the ASHRAE Applications Handbook for further information.

R. Provide sufficient submittal data for terminal units, sound traps, duct liner, and air distribution devices to verify required space sound levels will not be exceeded.

PART 2 - PRODUCTS

A. MANUFACTURERS

B. Factory Fabricated Ductwork:
1. Hercules
2. McGill Airflow

C. Fabric Duct:
1. DuctSox
2. Or pre approved equal

D. Duct Sealant:
1. Chicago Mastic Corp.
2. Foster
3. Hardcast
4. SOLVseal
5. Tough Bond
6. McGill Airflow

E. SHEET METAL DUCTWORK

F. All sheet metal used for duct and plenum construction shall be G-90 coated galvanized steel of lock forming quality, conforming to ASTM A653 and ASTM A924.

G. At installer's option, shop fabricated duct and fittings may be provided in lieu of factory-fabricated duct and fittings. All factory and field fabricated ductwork shall meet the construction criteria established below.

H. Factory-fabricated, Low-pressure Round Ductwork (-1" to +2" w.g., Seal Class A):
1. Round ductwork shall be spiral seam (Type RL-1) for sizes 3" through 12", spiral seam (Type RL-1) for 14" through 78", and rolled longitudinal butt welded seam (Type RL-4) construction for sizes 79" and larger.
2. Elbows shall have a centerline radius of 1.5 times the duct diameter.
   a. 10” and smaller shall be one-piece construction for 90-degree and 45-degree elbows.
   b. Over 10” shall be segmented with welded circumferential joint or standing seam construction.
3. Transverse joints shall be a beaded interior sleeve joint.
4. All round ductwork and fittings shall be constructed to be suitable for use on systems with positive static pressures up to 2" w.g.

I. DUCT LINER
1. Provide liner as indicated in table below. All duct sizes shown on drawings are clear internal dimensions and do not include liner.

Exposed Rectangular Supply 1”Flat board
Exposed Round Supply 1”Round board
Concealed Rectangular Supply 1”Flat board
Concealed Round Supply 1”Round board
Exposed Rectangular Return 1”Flat board
Exposed Round Return 1”Round board
Concealed Rectangular Return 1”Flat board
Concealed Round Return 1”Round board

J. Material:
1. All liner material shall comply with the requirements of NFPA 90A and 90B, UL 181 Class 1, ASTM C1071, and the Materials Standard of the North American Insulation Manufacturer's Association (NAIMA); Type 200, Flame Spread 25 max. and Smoke Development 50 max.
2. All liner material shall not absorb more than 1% moisture when tested per ASTM C1104.
3. All liner material shall not cause corrosion of duct material (aluminum or galvanized steel) when tested per ASTM C665.
4. All liner material shall not breed or promote growth of fungi and/or bacteria when tested per ASTM C1071, G-21, and G-22. Coating shall include an EPA-registered anti- microbial agent.
5. Airstream surface and transverse edge shall be factory coated with a tough composite material to provide a maximum average velocity rating of 5,000 fpm or better at 250°F when tested per ASTM C1071.
6. Flat liner board shall have a nominal "k" value of 0.23 or less for 1" thick liner when tested per ASTM C518 at 75°F mean temperature. Round liner board shall have a nominal "k value of 0.23 or less for 1" thick liner when tested per ASTM C518-85 at 75°F mean temperature.
7. Flat liner board shall have a sound absorption coefficient of 0.91 or higher at 1,000 Hz for 1” thick liner when tested per ASTM C423-90 Type A mounting. Round liner board shall have a sound absorption coefficient of 1.01 or higher at 1,000 Hz for 1” thick liner when tested per ASTM C423-90 Type A mounting.
8. All liner shall be installed in accordance with manufacturer's written installation instructions, including cut edge treatment, welded pins, pin spacing and adhesive installation. All liner shall be installed in accordance with SMACNA installation requirements.
9. static pressures up to 2" w.g.

K. FABRIC DUCT SYSTEM

L. Fabric duct system shall be woven fire retardant and permeable fabric complying with the following characteristics:
1. 100% Flame Retardant Polyester per UL 2518
2. 6.8 oz./yd² per ASTM D3776
3. Max. 0.5% per shrinkage DIN EN 26 630
4. Color as selected by architect
5. Temperature Range: -40°F to +284°F
6. Permeability: 2 (+2/-1%) per ASTM D737, Frazier - calandering of fabric NOT accepted

M. Fabrication Requirements
1. The air permeability of the fabric must NOT be created by perforating the fabric. The air permeability must be confirmed to third party testing to eliminate the formation of condensate on the fabric. Warranty shall be minimum of 10 years. Provide sewn in, but still removable, aluminum hoops.
2. Elbows of 70° or more to have 2 hoops sewn in order to maintain shape.
3. The system is made of permeable fabric. Permeability of fabric must be reached based on weave construction only and weave must have gone through thermo fixation in order to secure same permeability after wash. Fabric with permeability obtained based on calandering is not accepted.
4. Provide system in sections optimized for maintenance, connected by zippers. Zippers must provide closure completely around the circumference to prevent leakage. Required number of zippers as specified by manufacturer.
5. Each section to have a unique tag including information about: manufacturers order number, position, diameter of section, length of section, maintenance instruction, code compliance and contact details for spare parts.
6. Fabric system shall include connectors to attach to suspension system listed below.
7. Inlet connection to metal duct via fabric draw band with anchor patches as supplied by manufacturer. Anchor patches to be secured to metal duct via. zip screw fastener - supplied by contractor.
8. Inlet connection includes zipper for easy removal / maintenance.
9. Lengths to include required intermediate zippers as specified by manufacturer.
10. System to include Adjustable Flow Devices to balance turbulence, airflow and distribution as needed. Flow restriction device shall include ability to adjust the airflow resistance from 0.06 - 0.60 in w.g. static pressure.
11. End cap includes zipper for easy maintenance.
12. Each section of the textile shall include identification labels documenting order number, section diameter, section length, piece number, code certifications and other pertinent information.
13. Air Dispersion System:

N. Air dispersion and extended throws are accomplished by reinforced orifices and permeable fabric. Reinforced orifices are to be installed to keep the integrity of opening and withstand laundry processes. Diameter, quantity, and location of reinforced orifices to be specified and approved by manufacturer.

O. Design Parameters
1. Do not use fabric air diffusers in concealed locations.
2. Fabric diffusers shall be designed from minimum 0.25” water gage to 3” as the maximum - 0.5” being the standard.
3. Design temperatures between -40°F and 284°F
4. Manufacturer shall approve all technical design parameters.
5. Use fabric air diffusers only for positive pressure air distribution.

P. Hangers and Supports
1. Hoops (IHS) System: Air diffusers shall be constructed with internal retention system.
   a. System shall consist of an internal 360 degree hoop system, spaced 5' on center.
   b. System shall be installed with a one row suspension system located 1.5” above top-dead-center of the textile system.
   c. System attachment to cable or U-Track shall be made using Gliders spaced 12 inches.
   d. Cable suspension hardware to include cable, eye bolts, thimbles, cable clamps, and turnbuckle(s) as required. Cable suspension shall be stainless steel steel cable

Q. DUCT SEALANT

R. All duct sealant shall comply with requirements of NFPA 90A and 90B, Flame Spread 25 max. and Smoke Developed 50 max. Sealant shall be UL classified as fire resistive when dry.

S. Duct joint and Seam Sealant Options:
1. Tape System: Woven fiber, 3" tape impregnated with a gypsum mineral compound using an Acrylic Copolymer adhesive to form a hard, durable seal.
2. Liquid Sealant: Polymeric rubber sealant formulated with a minimum of 70% solids and manufactured specifically for sealing joints and seams in low, medium, and high pressure ductwork.

T. Sealant used on outdoor ductwork shall be listed and approved for outdoor service.

PART 3 - EXECUTION

A. DUCT CONSTRUCTION AND INSTALLATION

B. All ductwork shall be fabricated and installed so that no undue vibration or noise results. Joints shall be sealed airtight using criteria established for each seal class and additional sealant and caulking shall be provided if necessary.

C. Hang rectangular ducts with strap iron attached to bottom of ducts and spaced not over 5' center to center.

D. Square elbows shall have single-thickness turning vanes.

E. Provide all necessary manual, backdraft, and relief dampers as required for proper adjustment and control of air distribution.
1. Provide a 45-degree entry fitting at all branches in rectangular ductwork, except where parallel flow branches are used.
2. Manual dampers shall have rigid bearings and locking quadrants which allow no rattling. Damper rods shall be marked to indicate the relative position of the damper blade with respect to the rod.
3. Backdraft and relief dampers shall be installed per the manufacturer's recommendations.
4. Provide volume extractors similar to Titus AG45 set at 20° in ductwork behind sidewall supply registers.

F. Provide 1" angle collars for all exposed ducts passing through walls, ceilings, or floors. Anchor collars in position after installation is complete.

G. Provide flexible connections at inlet and discharge duct connections to in-line fans, fan coil units, and air handling equipment. Flexible connections shall be securely fastened to the duct and equipment per SMACNA Duct Construction Standards. Provide at least 1” of slack.

H. At all locations where interior of duct is visible through grilles, louvers, etc., paint interior of duct flat black.

I. Install sash lock type access panels or removable pin hinged access doors on ductwork to provide access to all parts of every automatic damper, fire and/or smoke damper, upstream and downstream of duct coils, and any other item requiring maintenance or inspection. Panels and/or doors shall be gasketed to minimize leakage. Fire damper access doors shall be painted red.

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CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

DATE:	DESCRIPTION
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

PROJECT NUMBER: EMMA MALABY

DRAWN BY: LCE

CHECKED BY: LCE

COMPUTER FILE: -

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A. Install sash lock type access panels or removable pin hinged access doors on ductwork to provide access to all parts of every automatic damper, fire and/or smoke damper, upstream and downstream of duct coils, and any other item requiring maintenance or inspection. Panels and/or doors shall be gasketed to minimize leakage. Fire damper access doors shall be painted red.

B. Transitions in ductwork shape and size shall be made with angles not exceeding 15 degrees diverging or 30 degrees converging.

C. Where vertical ducts pass through floors, supporting angles shall be rigidly attached to ducts and to the floor. Angles shall be galvanized and of approved sizes to properly support the ductwork. The supporting angles shall be placed on at least two sides of the duct.

D. Where horizontal ducts pass through walls and vertical ducts pass through floors, opening shall be filled to provide a tight seal between duct and opening. Refer to Part 2 of this section for approved fire stop materials to be used at all rated walls and floors.

E. Contractor shall not provide holes in any duct for the installation of hangers, conduits, other equipment, etc. The work of all other trades shall be coordinated before work begins.

F. Clean ductwork internally of dust and debris as it is installed. Clean external surfaces of foreign substances which might cause corrosion or deterioration. Where ductwork is to be painted clean all substances which might interfere with painting or cause paint deterioration.

G. Strip protective paper from stainless ductwork surfaces, and repair finish wherever it has been damaged.

H. A temporary cover shall be provided for ducts which when installed have not been connected to equipment, other ductwork, or air distribution devices. Temporary cover shall be plywood, corrugated cardboard backed polyethylene film, or other covering which will prevent entrance of dust and debris until connections are completed.

I. Flexible ducts shall be installed using lengths at least 4' long, but not exceeding 8' for all connections. Flexible duct shall be suspended at intervals not exceeding 3 ft. with a 1"-wide, 22-gauge steel band. Maximum allowable sag is 1/2" per foot of spacing between supports. All connections shall be made with stainless steel duct clamp with worm gear fastener.

J. All moisture-laden air exhaust ducts shall be constructed with longitudinal seams on the top side of the duct and shall be pitched to drain toward a grille.

K. SEALING OF DUCTS

L. All ducts shall be sealed as defined in Part 1 of this section. Apply duct sealant per the manufacturer's written instructions, but at a minimum perform the following. Metal surfaces shall be clean, dry, and grease-free prior to applying sealant. Apply a heavy brushed on coat of sealant to the surface of the duct slip joint, position ducts and secure sections in place. Apply a finish heavy brushed on coat of sealant to the exterior surface covering the joint and heads of lock joint screws. Ensure that all voids are completely filled to ensure a continuous air pressure seal.

M. Where excessive duct vibration or mechanical abuse is possible, and additional joint finish shall be applied. Apply a heavy brushed on coat of sealant to the exterior surface joint and lay a reinforcing membrane of glass fabric approximately 2" wide onto the wet sealant. Press the reinforcing membrane into the wet sealant. Apply a second heavy brushed on coat of sealant.

END OF SECTION 23 31 00

SECTION 23 33 00 AIR DUCT ACCESSORIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes the fabrication and installation of material and equipment associated with the air distribution system.

1.2 SUMMARY

A. This section includes the following materials and methods.
1. Duct dampers and accessories
2. Grilles, registers, and diffusers

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. The General Conditions of the Contract, Supplementary Conditions and General Requirements are a part of the Project Specification and shall be used in conjunction with this Division as a part of the Contract Documents. Consult them for further instructions pertaining to this work. Contractors shall be responsible for and be governed by all requirements thereunder.

B. Related Sections:
1. Common Work Results for HVAC Systems Section 23 05 00
2. Testing Adjusting and Balancing Section 23 05 93
3. HVAC Ducts and Casings Section 23 31 00
4. Air Duct Accessories Section 23 33 00

1.4 QUALITY ASSURANCE

A. The air distribution system's construction and installation shall meet the requirements of any applicable codes and standards listed below:
1. National Fire Protection Association
a. NFPA 45, Fire Protection for Laboratories, 1991
b. NFPA 54, National Fuel Gas Code, 1992
c. NFPA 90A, Installation of A/C and Vent Systems, 1999
d. NFPA 90B, Installation of Warm Air Heating and A/C Systems, 1999
e. NFPA 91, Installation of Exhaust Systems for Air Conveying of Materials, 1992
f. NFPA 92A, Smoke Control Systems, 1993
g. NFPA 92B, Smoke Management Systems in Malls, Atria, Large Areas, 1991
h. NFPA 96, Ventilation Control and Fire Protection of Commercial Cooking Operations, 1994
i. NFPA 101, Life Safety Code, 1994
j. NFPA 204M, Smoke and Heat Venting, 1991
k. NFPA 211, Chimneys, Fireplaces, and Venting Systems, 1992
2. SMACNA HVAC Duct Construction Standards, Metal and Flexible, 2nd Edition, 1995
3. SMACNA Fibrous Glass Duct Construction Standards, 1992
4. Air Diffusion Council (ADC) Test Code 1062 and ASHRAE Test Standard 70-1991 for outlets and inlets.
5. Air Movement and Control Association (AMCA) 500- Test Methods for Louvers, Dampers, and Shutters.

1.5 SUBMITTALS

A. Submit the manufacturer's technical product and performance data for the following:
1. Flexible duct and takeoff fittings
2. Manual volume dampers
3. Grilles, registers, and diffusers

1.6 OPERATION AND MAINTENANCE DATA

A. Submit the manufacturer's operation and maintenance data for the following:
1. Grilles, registers, and diffusers

1.7 SOUND CRITERIA

A. All equipment and material furnished under this section shall be selected so that required NC sound levels in various spaces are not exceeded. Attenuation by ceilings, duct liner, and room absorption may be taken into account when making fan, terminal unit, and air distribution selections. Refer to the latest edition of the ASHRAE Applications Handbook for further information.

B. Provide sufficient submittal data for terminal units, sound traps, duct liner, and air distribution devices to verify required space sound levels will not be exceeded.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Flexible Duct:
1. Flexmaster
2. Hart & Cooley
3. Hercules (IFM)
4. Thermaflex
5. Wiremold

B. Manual Volume Dampers:
1. Greenheck
2. Ruskin
3. Nailor

C. Grilles, Registers, and Diffusers:
1. Krueger
2. Nailor
3. Titus

2.2 FLEXIBLE DUCT

A. Dimensions shown on the plans are clear inside diameter.

B. Flexible duct shall comply with requirements of NFPA 90A and 90B, and UL 181 Standards as Class 1 Air Duct, Flame Spread 25 max. and Smoke Developed 50 max.

C. Flexible ducts shall have a minimum working pressure of 6" w.g. positive and 0.5" w.g. negative.

D. Flexible ducts upstream of air terminal units shall be medium-pressure type rated for 10" w.g. positive and 2" w.g. negative at 5,000 fpm.

E. Flexible ducts shall constructed of a metalized polyester inner liner supported by helical-wound, mechanically locked galvanized steel wire, insulation, and an outer vapor barrier with fiberglass reinforcing.
1. Insulation shall be 1" or thicker, 3/4 lb. density fiberglass with a minimum "R" value of 4.0 at 75°F.

2.3 MANUAL VOLUME DAMPERS

A. Rectangular manual volume dampers for low velocities (1,500 fpm or less)
1. Provide 16 gauge galvanized steel channel frame.
2. Provide 16 gauge galvanized steel opposed or parallel blades with ½" hex axle. Maximum blade width of 8", except single blade may be up to 12". Blades 36" and longer shall be furnished with reinforcing cone. Maximum blade length of 48".
3. Provide 3/8" control shaft with locking quadrant.
4. Basis of design is Ruskin MD 35.

A. Round manual volume dampers for low velocities (1,500 fpm or less)
1. Provide single blade to 20" diameter and multi-blades above 20" diameter.
2. Provide 20-gauge blade and frame to 12" diameter and 18-gauge blade above 12" diameter.
3. Basis of design is Ruskin MDRS 25.

C. Rectangular manual volume dampers for medium velocities (1,500 to 4,000 fpm)
1. Provide 16 gauge galvanized steel channel frame reinforced with corner braces.
2. Provide airfoil opposed blade double skin galvanized steel construction with 16 gauge equivalent thickness and flexible blade seals mechanically locked to blade edge.
3. Provide permanently lubricated stainless steel sleeve bearings mounted in frame.
4. 1/2"-diameter control shaft with locking quadrant.
5. Basis of design is Ruskin CD60.

2.4 GRILLES, REGISTERS, AND DIFFUSERS

A. All grilles, registers, and diffusers shall be performance tested and rated in accordance with ASHRAE Standard 70-1991 and ANSI S1.31-1980.

B. Provide grilles, registers, and diffusers of face size, neck size, and style indicated and scheduled on the Project Drawings. Provide all scheduled accessories and options from the grille, register, and diffuser manufacturer.

C. Provide all grilles, registers, and diffusers with white baked-on enamel finish, unless noted otherwise.

D. Provide all grilles, registers, and diffusers with a border style compatible with the required mounting surface. Provide grilles, registers, and diffusers that are specifically manufactured for each type of mounting surface to provide an accurate fit and adequate support. Refer to the Project Drawings and Specifications for mounting surfaces and ceiling systems.

E. Ceiling Supply Grilles:
1. Provide grilles constructed of 22 gauge aluminum.
2. Provide removable core.
3. DO NOT provide a volume dampers at neck unless specifically indicated or scheduled.
4. Provide adjustable louver face with throw pattern (1,2,3, or 4 way throw) as indicated on the Project Drawings.
5. Basis of design as indicated in schedule.

F. Perforated Ceiling Return Grilles:
1. Provide perforated steel face return grille with steel back pan.
2. Minimum free are of perforated face shall be 50% using 3/16" diameter holes at ¼" on center. Holes shall be staggered.
3. DO NOT provide a volume damper unless specifically indicated or scheduled.
4. Provide 90 degree return boot with acoustical lining as indicated on the Project Drawings.
5. Basis of design as indicated in schedule.

PART 3 - EXECUTION

3.1 GRILLES, REGISTERS, AND DIFFUSERS

A. Grilles, registers, and diffusers shall be installed and supported per manufacturer's recommendations.
1. Ceiling-mounted air devices or services weighing less than 20 pounds shall be positively attached to the ceiling suspension main runners or to cross runners with the same carrying capacity as the main runners.
2. Devices or services weighing 20 pounds, but not more than 56 pounds, in addition to the above, shall have two No. 12-gauge hangers connected from the device or service to the ceiling system hangers or to the structure above. These wires may be slack.
3. Air devices or services weighing more than 56 pounds shall be supported directly from the structure above by approved hangers.
4. Seal the neck joints on all grilles, registers and diffusers.

B. Throw patterns (directions) shall be furnished and/or adjusted to match those shown and/or scheduled on the drawings.

C. Ductwork visible behind grilles, registers, and diffusers shall be painted flat black.

D. Appropriate Ak factors shall be transmitted to the Test and Balance Contractor.

END OF SECTION 23 33 00

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CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

DATE:	DESCRIPTION
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

PROJECT NUMBER EMMA MALABY

DRAWN BY: LCE CHECKED BY: LCE

COMPUTER FILE: -

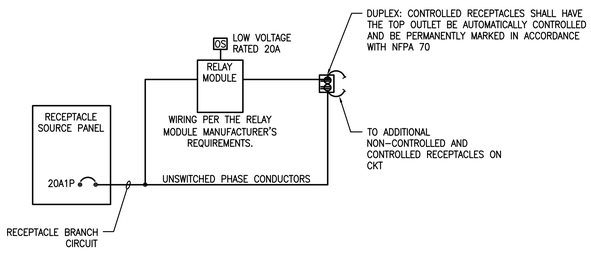
M1.6

GENERAL NOTES:

1. LIGHT TEXT AND LIGHT LINES INDICATE EXISTING TO REMAIN. DARK TEXT AND SOLID LINES INDICATE NEW WORK.
2. ELECTRICAL SYSTEMS SHALL BE INSTALLED TO COMPLY WITH THE 2023 NATIONAL ELECTRICAL CODE, THE 2021 SERIES OF I CODES AND THE CITY OF FORT COLLINS AMENDMENTS.
3. REFER TO FULL SET OF CONSTRUCTION DOCUMENTS FOR ADDITIONAL ELECTRICAL REQUIREMENTS.
4. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL DESIGN, ARRANGEMENT AND EXTENT OF SYSTEMS. DO NOT SCALE DRAWINGS NOR USE AS SHOP DRAWINGS. WHERE ALTERNATE ROUTING, OFFSETS AND TRANSITIONS ARE REQUIRED FOR COORDINATION OF ALL WORK, THIS CONTRACTOR SHALL MAKE CHANGES WITHOUT ADDITIONAL COSTS.
5. SHARED NEUTRALS ARE NOT PERMITTED IN MULTIPLE CIRCUIT HOMERUNS. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR PER NEC.
6. REFER TO ARCHITECTURAL ELEVATIONS FOR DEVICE AND LUMINAIRE MOUNTING HEIGHTS, SUSPENSION LENGTHS AND LOCATIONS.
7. INSTALL CEILING MOUNTED DEVICES IN THE CENTER OR QUARTER POINT OF CEILING TILES, WHERE APPLICABLE.
8. PROVIDE PULLSTRINGS IN ALL EMPTY CONDUITS. PROVIDE LABELS ON ALL EMPTY CONDUITS THAT INDICATE WHERE THEY ARE ROUTED.
9. ALL EXTERIOR RECEPTACLES SHALL BE WP/WR AND MOUNTED AT +24" AFF UNLESS NOTED OTHERWISE.
10. ALL DISCONNECTS SHALL BE MOUNTED IN LOCATIONS WHERE THEY WILL BE READILY ACCESSIBLE AFTER EQUIPMENT IS INSTALLED.
11. CONCEAL ALL CONDUITS WITHIN FINISHED WALLS, CEILINGS AND FLOORS UNLESS NOTED OTHERWISE. COORDINATE ALL EXPOSED SURFACE MOUNTED CONDUIT, RACEWAY AND BOX LOCATIONS AND ROUTING WITH ARCHITECT PRIOR TO ROUGH-IN. ALL EXPOSED CONDUIT AND BOXES SHALL BE PAINTED TO MATCH ADJACENT SURFACES.
12. CARE SHOULD BE TAKEN FOR ANY NEW OR REMOVAL WORK TO MAINTAIN EXISTING FINISHES.
13. COORDINATE THE LOCATIONS OF WALL CONTROLS WITH ACTUAL INSTALLED DOOR SWINGS, CONTROLS SHALL BE LOCATED ON STRIKE SIDE OF DOOR.
14. CONNECT EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO AREA LIGHTING CIRCUIT AHEAD OF SWITCH LEG.
15. LOCATIONS OF OCCUPANCY SENSORS ARE DIAGRAMMATIC. CONTRACTOR SHALL PROVIDE ENGINEERED OCCUPANCY SENSOR LAYOUT DRAWINGS BY MANUFACTURER SHOWING COVERAGE AREAS DURING SHOP DRAWINGS. LAYOUT DRAWINGS SHALL INCLUDE ALL KNOWN INFORMATION ABOUT FURNITURE TO BE INSTALLED IN THE SPACE. CARE SHALL BE TAKEN TO LOCATE OCCUPANCY SENSORS AWAY FROM WINDOWS TO MINIMIZE NUISANCE TRIPPING.
16. CONTRACTOR TO SCHEDULE A MEETING PRIOR TO START OF WORK TO COORDINATE NEW FEEDER AND BRANCH CIRCUIT ROUTING WITH ARCHITECT. FEEDERS AND BRANCH CIRCUITS TO BE CONCEALED. IF SURFACE MOUNTED ROUTING (CONDUIT) IS REQUIRED COORDINATE WITH ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. PAINT SURFACE MOUNTED CONDUIT AS DIRECTED BY ARCHITECT.
17. CONFIRM REMOVAL OF EXISTING DATA AND NEW DATA WITH OWNER.
18. REFER TO LIGHTING CONTROL SCHEDULE ON E3.0 FOR LIGHTING CONTROL REQUIREMENTS.

REMOVAL GENERAL NOTES:

1. LIGHT TEXT AND LIGHT LINES INDICATE EXISTING TO REMAIN. DARK TEXT AND DASHED LINES INDICATE REMOVAL WORK.
2. EXISTING SYSTEMS AND CONDITIONS SHOWN ARE PROVIDED FOR GUIDANCE ONLY. PORTIONS OF THE EXISTING ELECTRICAL DISTRIBUTION IS INACCESSIBLE AND HAS BEEN ASSUMED. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID AND SHALL INCLUDE IN THEIR BID AN ALLOWANCE FOR THE REMOVAL AND RELOCATION OF EXISTING CONDUITS, WIRES, DEVICES, FIXTURES OR OTHER EQUIPMENT AS INDICATED ON THE PLANS OR AS REQUIRED TO COORDINATE AND ADAPT NEW AND EXISTING ELECTRICAL SYSTEMS TO ALL OTHER WORK REQUIRED ON THIS PROJECT.
3. VERIFY THAT ABANDONED CONDUCTORS AND EQUIPMENT SERVE ONLY ABANDONED FACILITIES. MAINTAIN ELECTRICAL CONTINUITY TO REMAINING CONDUCTORS AND EQUIPMENT.
4. CARE SHOULD BE TAKEN FOR ANY NEW OR REMOVAL WORK TO MAINTAIN EXISTING FINISHES.
5. REMOVE EXISTING ELECTRICAL DEVICES, BRANCH CIRCUITS AND SURFACE MOUNTED RACEWAY UNLESS NOTED OTHERWISE.



OCCUPANCY SENSOR AUTOMATIC RECEPTACLE CONTROL WIRING DIAGRAM

NOT TO SCALE

NOTES:

1. AUTOMATIC RECEPTACLE CONTROL SHALL MEET IECC 2021 C405.11.

ELECTRICAL LEGEND

(NOTE: ALL SYMBOLS SHOWN MAY NOT BE USED IN THIS SET OF ELECTRICAL DRAWINGS.)

LIGHTING (LETTER ADJACENT TO LUMINAIRE REFERS TO LUMINAIRE SCHEDULE.)

- SURFACE OR PENDANT MOUNTED LUMINAIRE
- RECESSED LUMINAIRE
- WALL MOUNTED LUMINAIRE
- PENDANT MOUNTED LINEAR LUMINAIRE
- SURFACE WALL WASH LUMINAIRE
- RECESSED WALL WASH LUMINAIRE
- STRIPLIGHT
- LIGHT TRACK (# OF HEADS AS SHOWN)
- L — LANDSCAPE LUMINAIRE
- POLE MOUNTED LUMINAIRE
- EXIT SIGN
- BATTERY PACK
- LUMINAIRE ON EMERGENCY CIRCUIT

LIGHTING CONTROL (LOWER CASE LETTER INDICATES SWITCHING.)

- S* — SWITCH (* INDICATES TYPE)
  - SINGLE-POLE SWITCH
  - 3 THREE-WAY SWITCH
  - 4 FOUR-WAY SWITCH
  - D DIMMER SWITCH
  - K KEY OPERATED SWITCH
  - PN PILOT LIGHT (LOAD ON)
  - PF PILOT LIGHT (LOAD OFF)
- LOW VOLTAGE SWITCH
- OS — OCCUPANCY SENSOR
- VS — VACANCY SENSOR
- P — PHOTOCELL/DAYLIGHT SENSOR
- TC — TIMECLOCK
- LCP — LIGHTING CONTROL PANEL
- INV — EMERGENCY INVERTER

POWER

- SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE
- GFCI DUPLEX RECEPTACLE
- ABOVE COUNTER DUPLEX RECEPTACLE
- ABOVE COUNTER GFCI DUPLEX RECEPTACLE
- IG — ISOLATED GROUND DUPLEX RECEPTACLE
- USB — USB CHARGER DUPLEX RECEPTACLE
- SPLIT WIRED DUPLEX RECEPTACLE
- CEILING DUPLEX RECEPTACLE
- FLOOR DUPLEX RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE
- GFCI DOUBLE DUPLEX RECEPTACLE
- ABOVE COUNTER DOUBLE DUPLEX RECEPTACLE
- ABOVE COUNTER GFCI DOUBLE DUPLEX RECEPTACLE
- CEILING DOUBLE DUPLEX RECEPTACLE
- FLOOR DOUBLE DUPLEX RECEPTACLE
- SPECIAL PURPOSE OUTLET
- CEILING SPECIAL PURPOSE OUTLET
- FLOOR SPECIAL PURPOSE OUTLET
- MULTI-OUTLET ASSEMBLY (QUANTITY OF RECEPTACLES AND SPACING AS SPECIFIED)
- FEEDER BUS DUCT
- CABLE TRAY (WIDTH, DEPTH AND LOAD AS SPECIFIED)
- POWER/TELEPHONE POLE (QUANTITY OF DEVICES AND SPACING AS SPECIFIED)
- PB — PULL BOX
- J — JUNCTION BOX
- CEILING JUNCTION BOX
- FLOOR JUNCTION BOX
- PUSH BUTTON
- M — MOTOR
- M — METER
- T2 — TRANSFORMER (REFER TO TRANSFORMER SCHEDULE)
- S_{TO} — THERMAL OVERLOAD SWITCH
- CB 50A 3P — CIRCUIT BREAKER DISCONNECT W/SIZE
- 50A 3P — NON-FUSED DISCONNECT SWITCH W/SIZE
- 50A 3P 30A — FUSED DISCONNECT SWITCH W/SIZE
- MOTOR STARTER
- COMBINATION MOTOR STARTER/ DISCONNECT SWITCH
- VFD — VARIABLE FREQUENCY DRIVE
- MCP — MECHANICAL CONTROL PANEL
- MCC — MOTOR CONTROL CENTER
- "MDP" — MAIN DISTRIBUTION PANEL
- BRANCH CIRCUIT PANELBOARD
- GROUND BUS ON WALL
- T — LINE VOLTAGE THERMOSTAT

ONE-LINE DIAGRAM

- CIRCUIT BREAKER
- DRAWOUT CIRCUIT BREAKER
- FUSE
- FUSED SWITCH
- SWITCH
- CIRCUIT BREAKER (* INDICATES TYPE)
  - ST SHUNT TRIP
  - K KEY INTERLOCKED
  - E ELECTRIC OPERATED
- GFP — CIRCUIT BREAKER WITH GROUND FAULT PROTECTION
- CURRENT TRANSFORMER
- A — AMMETER
- V — VOLTMETER
- AS — AMMETER SELECTOR SWITCH
- VS — VOLTMETER SELECTOR SWITCH
- BATTERY
- T — PAD MOUNTED TRANSFORMER
- T1 — TRANSFORMER (REFER TO TRANSFORMER SCHEDULE)
- X X X — PANELBOARD (REFER TO ONE LINE DIAGRAM FOR DESIGNATION)
- POTENTIAL TRANSFORMER
- AUTOMATIC TRANSFER SWITCH
- MANUAL TRANSFER SWITCH
- G — ENGINE GENERATOR
- WEATHER HEAD SERVICE ENTRANCE
- CONTACT (NO) NORMALLY OPEN
- CONTACT (NC) NORMALLY CLOSED
- OH — OVERHEAD LINE
- GROUND

SYSTEMS

- TTB — TELEPHONE TERMINAL BACKBOARD
- TELEVISION OUTLET
- P — PUBLIC ADDRESS SPEAKER
- C — CLOCK
- TELECOMMUNICATION OUTLET
- ABOVE COUNTER TELECOMMUNICATION OUTLET
- CEILING TELECOMMUNICATION OUTLET
- FLOOR TELECOMMUNICATION OUTLET
- SCP — SECURITY CONTROL PANEL
- CCTV
- CR — CARD READER
- WAP — WIRELESS ACCESS POINT

RACEWAYS

- CONCEALED RACEWAY
- S — SURFACE RACEWAY
- UF — UNDERFLOOR RACEWAY
- UG — UNDERGROUND RACEWAY
- CAP
- SEAL OFF
- RACEWAY TURNED UP
- RACEWAY TURNED DOWN
- LIGHTING CONTROL SYSTEM WIRELESS CONNECTION

HOME RUN INDICATES NUMBER OF CIRCUITS. WIRES AND CONDUIT SIZE AS SHOWN UNLESS OTHERWISE NOTED ON DRAWINGS:

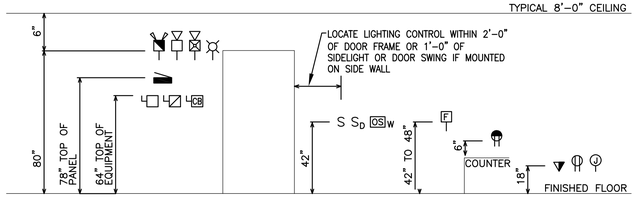
- (2)#12 & 1(#12O)3/4"C.
- (4)#12 & 1(#12O)3/4"C.
- (6)#12 & 1(#12O)3/4"C.
- (8)#12 & 1(#12O)3/4"C.

MISCELLANEOUS

- X — XXXXXX — FEEDER (REFER TO FEEDER SCHEDULE)
- XXX — EQUIPMENT (REFER TO SCHEDULE)
- XXX — TYPICAL CIRCUIT (THIS AREA)
- XXX — TYPICAL LUMINAIRE (THIS AREA)
- XXX — LIGHTING CONTROL TYPE (REFER TO SCHEDULE)
- WORK NOTE SYMBOL
- REVISION SYMBOL
- DETAIL NUMBER REFERENCE DRAWING
- DARK, SOLID SYMBOL DENOTES NEW WORK
- LIGHT, SOLID SYMBOL DENOTES EXISTING TO REMAIN
- DASHED SYMBOL DENOTES REMOVAL WORK

ABBREVIATIONS

+4'-6"	MOUNTING HEIGHT AFF	CP	CONTROL PANEL	FCU	FAN COIL UNIT	MC	MECHANICAL CONTRACTOR	Ø OR PH	PHASE	UC	UNDER CABINET
A	AMPS	CT	CURRENT TRANSFORMER	FDR	FEEDER	MCC	MOTOR CONTROL CENTER	PT	POTENTIAL TRANSFORMER	UF	UNDER FLOOR
AC	ALTERNATING CURRENT	D	DEDICATED	FS	FIRE SUPPRESSION	MDP	MAIN DISTRIBUTION PANEL	PVC	POLYVINYL CHLORIDE	UG	UNDER GROUND
ac	ABOVE COUNTER	DP	DISTRIBUTION PANEL	G	GROUND	MDS	MAIN DISTRIBUTION SWITCHBOARD	(R)	RELOCATED	UON	UNLESS OTHERWISE NOTED
AFCI	ARC FAULT CIRCUIT INTERUPTER	(E)	EXISTING	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	MH	MANHOLE	(RR)	REMOVE & RELOCATE	UPS	UNINTERRUPTABLE POWER SUPPLY
AFF	ABOVE FINISHED FLOOR	EC	ELECTRICAL CONTRACTOR	GRC	GALVANIZED RIGID CONDUIT	MTD	MOUNTED	RT	RAINTIGHT	V	VOLTS
AFG	ABOVE FINISHED GRADE	EF	EXHAUST FAN	H	PREFIX DENOTING 277/480 PANEL	MTS	MANUAL TRANSFER SWITCH	RTU	ROOF TOP UNIT	VAC	VOLTS ALTERNATING CURRENT
AHU	AIR HANDLING UNIT	EOL	END OF LINE RESISTOR	HP	HORSE POWER	N	NEUTRAL	SPD	SURGE PROTECTIVE DEVICE	VDC	VOLTS DIRECT CURRENT
AIC	AMPERE INTERRUPTING CAPACITY	EM	EMERGENCY	IG	ISOLATED GROUND	(N)	NEW	SRG	SIGNAL REFERENCE GRID	VFD	VARIABLE FREQUENCY DRIVE
AF	AMP FRAME	EMT	ELECTRICAL METALLIC TUBING	KV	KILOVOLT	NC	NORMALLY CLOSED	ST	SHUNT TRIP	WHM	WATTHOUR METER
AT	AMP TRIP	EPO	EMERGENCY POWER OFF	KVA	KILOVOLT-AMPERE	NL	NIGHT LIGHT	SW	SWITCH	WP	WEATHERPROOF
ATS	AUTOMATIC TRANSFER SWITCH	EWC	ELECTRIC WATER COOLER	KW	KILOWATT	NIC	NOT IN CONTRACT	TR	TAMPER RESISTANT	WR	WEATHER RESISTANT
B	BATTERY	EP	EXPLOSION-PROOF	L	PREFIX DENOTING 120/208V PANEL	NO	NORMALLY OPEN	TS	TEST SWITCH		
C	CONDUIT	F	FUSE OR FIRE	LV	LOW VOLTAGE	PDU	POWER DISTRIBUTION UNIT	TTB	TELEPHONE TERMINAL BOARD		
CKT	CIRCUIT	FA	FIRE ALARM	M	MONITOR	PF	POWER FACTOR	TTC	TELEPHONE TERMINAL CABINET		



TYPICAL DEVICE MOUNTING HEIGHTS

NOT TO SCALE

NOTES:

1. HEIGHTS ARE SHOWN TYPICAL TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.
2. DEVICES ABOVE DOORS SHALL BE CENTERED BETWEEN TOP OF DOOR TRIM AND CEILING LINE.
3. COORDINATE THE LOCATIONS OF WALL CONTROLS WITH ACTUAL INSTALLED DOOR SWINGS, CONTROLS SHALL BE LOCATED ON STRIKE SIDE OF DOOR.
4. MOUNTING HEIGHTS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL TAKE PRECEDENCE OVER THOSE SHOWN ABOVE.
5. FOR CEILING HEIGHTS HIGHER THAN 7'-2", INSTALL FIRE ALARM NOTIFICATION AUDIO AND VISUAL APPLIANCES AT 80" A.F.F., OTHERWISE INSTALL AT 6" BELOW CEILING.

ELECTRICAL SHEET LIST

SHEET NUMBER	SHEET NAME
E0.0	ELECTRICAL GENERAL INFORMATION
E0.1	ELECTRICAL SPECIFICATION
E0.2	ELECTRICAL SPECIFICATION AND COMCHECK
E1.0	ELECTRICAL BASEMENT POWER AND LIGHTING PLAN
E1.1	ELECTRICAL FIRST FLOOR POWER PLAN
E2.1	ELECTRICAL FIRST FLOOR LIGHTING PLAN
E3.0	ELECTRICAL ONE-LINE DIAGRAM AND SCHEDULES
ED1.1	ELECTRICAL REMOVAL PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

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CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

DATE:	DESCRIPTION:
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

PROJECT NUMBER:

DRAWN BY: LMW CHECKED BY: LMW

COMPUTER FILE: EMMA MALABY BASE DRAWING

ELECTRICAL GENERAL INFORMATION

E0.0

ELECTRICAL SPECIFICATIONS 26 00 00

DIVISION 260000 - ELECTRICAL SPECIFICATION

260500 - BASIC ELECTRICAL REQUIREMENTS

1.1GENERAL REQUIREMENTS

A. WORK SHALL INCLUDE FURNISHING ALL LABOR, EQUIPMENT, SUPPLIES AND MATERIALS NECESSARY FOR COMPLETE AND OPERATIONAL ELECTRICAL SYSTEMS AS REQUIRED BY THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS, UNLESS NOTED OTHERWISE, SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. ALL OTHER WORK AND MISCELLANEOUS ITEMS NOT MENTIONED OR SHOWN WHICH ARE NECESSARY FOR THE SUCCESSFUL OPERATION AND TESTING OF ALL ELECTRICAL SYSTEMS SHALL BE PROVIDED.

B. SEE GENERAL CONDITIONS AND ALL OTHER REQUIREMENTS RELATING TO ELECTRICAL SYSTEMS FOR THIS PROJECT.

1.2STANDARDS

A. COMPLY WITH ALL APPLICABLE LOCAL AND STATE ORDINANCES AND LATEST EDITION OF:

A) ANSI/NFPA 70, NATIONAL ELECTRICAL CODE (NEC)

B) ANSI/IEEE C2, NATIONAL ELECTRICAL SAFETY CODE

C) IBC, INTERNATIONAL BUILDING CODE

D) NECA, STANDARD OF INSTALLATION

E) REQUIREMENTS OF UTILITY AND TELEPHONE COMPANIES FURNISHING SERVICE

B. COMPLY WITH MOST STRINGENT OF CURRENTLY ADOPTED CODES, STATUTES, ORDINANCES, OR DRAWINGS/SPECIFICATIONS. THE DRAWINGS/SPECIFICATIONS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT. CURRENTLY ADOPTED CODES, STATUTES, AND/OR ORDINANCES TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT.

C. PROCURE AND PAY FOR ALL PERMITS, LICENSES, AND LIABILITY INSURANCE, ETC. FURNISH CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM LOCAL INSPECTOR.

1.3DRAWINGS AND SPECIFICATIONS

A. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF CIRCUITS AND OUTLETS, LOCATIONS OF SWITCHES, PANELBOARDS AND OTHER WORK. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. THE ARCHITECT/ENGINEER WILL NOT ACCEPT REVISING THE CIRCUITING SHOWN WITHOUT PRIOR WRITTEN APPROVAL.

B. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY EACH TO THE OTHER. WORK REQUIRED BY EITHER SHALL BE AS BINDING AS IF REQUIRED FOR BY BOTH.

C. INSTALL AND COORDINATE ALL NEW WORK INCLUDING WHAT IS SHOWN BY OTHER TRADES, ARCHITECTURAL, STRUCTURAL, MECHANICAL, ETC. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE, ADJUST ALL WORK TO CONFORM TO THE CONDITIONS SHOWN THEREIN. ALERT THE CONSTRUCTION MANAGER TO ANY DISCREPANCIES BETWEEN DRAWINGS OF OTHER TRADES AND THE ELECTRICAL DRAWINGS.

D. PRIOR TO SUBMITTING A BID, VISIT THE SITE OF THE JOB AND INCLUDE AN ALLOWANCE IN THE BID FOR ALL COSTS AND SCHEDULE ADJUSTMENTS RELATED TO THE ELECTRICAL INSTALLATION.

E. DISCREPANCIES BETWEEN DIFFERENT PLANS, BETWEEN PLANS AND SPECIFICATIONS, BETWEEN SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THIS INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER IN WRITING BEFORE THE DATE OF BID OPENING. IN THE EVENT SUCH DISCREPANCIES EXIST, AND THE CONSTRUCTION MANAGER IS NOT SO NOTIFIED, THE ADJUDICATION OF RESPONSIBILITY SHALL BE SOLELY AT THE DISCRETION OF THE CONSTRUCTION MANAGER.

F. THE WORD “FURNISH” OR "PROVIDE" SHALL MEAN "THIS CONTRACTOR SHALL SUPPLY, INSTALL AND CONNECT".

1.4COORDINATION

A. PRIOR TO FABRICATION OR INSTALLATION OF ANY ELECTRICAL WORK, PARTICIPATE IN DETAILED COORDINATION MEETINGS WITH ALL OTHER CONSTRUCTION TRADES, UNDER THE DIRECTION OF THE GENERAL CONTRACTOR, SO AS TO COMPLETELY ESTABLISH ROUTINGS, ELEVATIONS, SPACE REQUIREMENTS, AND COORDINATION OF ACCESS, LAYOUT, AND SUSPENSION REQUIREMENTS IN RELATIONSHIP TO THE BUILDING STRUCTURE AND THE WORK OF ALL OTHER TRADES.

B. THIS CONTRACTOR SHALL COORDINATE DIVISION 26 WORK WITH THE INSTALLER OF DIVISION 21, 22, AND 23 AND OTHER TRADES TO ENSURE THAT CODE REQUIRED CLEARANCES RELATING TO SPACE REQUIRED FOR ACCESS TO ELECTRICAL EQUIPMENT, ALONG WITH LIMITATIONS RELATING TO INSTALLATION OF MECHANICAL OR OTHER PIPING, DUCTWORK, OR EQUIPMENT ABOVE, OR ADJACENT TO, ELECTRICAL APPARATUS, ARE PROPERLY MAINTAINED.

C. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF DEVICES. FINAL LOCATION OF ALL DEVICES TO BE DETERMINED BY THE ARCHITECT.

D. PRIOR TO COMMENCING CONSTRUCTION, NOTIFY CONSTRUCTION MANAGER OF ANY DISCREPANCIES BETWEEN ELECTRICAL DRAWINGS AND ANY OTHER PROJECT DRAWINGS (I.E., ARCHITECTURAL, FURNITURE SYSTEM, MECHANICAL, STRUCTURAL, ETC.) AS WELL AS DISCREPANCIES BETWEEN DRAWINGS AND EXISTING FIELD CONDITIONS.

E. LAY OUT ALL WORK IN ADVANCE TO ELIMINATE, WHERE POSSIBLE, CUTTING, CHANNELING, CHASING, OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS AND ROOFS. DO NOT DEFACE WORK OF OTHER TRADES. INSTALL ALL SLEEVES AND BLOCKOUTS; WATERPROOF AS REQUIRED.

F. ALL OPENINGS MADE IN FIRE-RATED WALLS, FLOORS OR CEILINGS, SHALL BE PATCHED AND MADE TIGHT IN A MANNER TO CONFORM TO THE FIRE RATING FOR THE SURFACE PENETRATED.

G. COORDINATE ALL OUTAGES ON THE ENTIRE OR ON PORTIONS OF EXISTING OR NEW ELECTRICAL SYSTEMS WITH THE OWNER AND UTILITY COMPANY. OUTAGES SHALL BE MINIMIZED AND SHALL BE OF A DURATION THAT IS ACCEPTABLE TO THE OWNER. OUTAGES SHALL BE SCHEDULED A MINIMUM OF THREE (3) DAYS IN ADVANCE. INCLUDE AN OVERTIME ALLOWANCE IN THE BID FOR PERFORMANCE OF WORK REQUIRING OUTAGES OUTSIDE OF NORMAL WORKING HOURS AS NECESSITATED BY THE OWNER.

1.5SAFETY AND INDEMNITY

A. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

B. NO ACT, SERVICE, DRAWING REVIEW, CONSTRUCTION OBSERVATION BY THE OWNER, ENGINEER, OR THEIR CONSULTANTS IS INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

1.6SUBMITTALS

C. SUBMIT SHOP DRAWINGS AND PRODUCT DATA IN ACCORDANCE WITH DIVISION 1 FOR THE FOLLOWING ITEMS: WIRING DEVICES, DISTRIBUTION EQUIPMENT, PANELBOARDS, LUMINAIRES, AND LIGHTING CONTROLS.

D. SHOP DRAWINGS SHALL CLEARLY INDICATE PRODUCT BEING SUBMITTED WITH THE SAME DESIGNATION SHOWN IN THE CONTRACT DOCUMENTS. IDENTIFY SPECIFIC ITEM PROPOSED BY HIGHLIGHTING MODEL NUMBER AND ALL PROPOSED OPTIONS. SUBMITTALS WHICH ARE INCOMPLETE WILL BE RETURNED TO THE CONTRACTOR WITHOUT REVIEW.

E. CONTRACTOR AGREES THAT SUBMITTALS PROCESSED BY THE CONSTRUCTION MANAGER ARE NOT CHANGE ORDERS; THAT THE PURPOSE OF SUBMITTALS IS TO DEMONSTRATE TO THE CONSTRUCTION MANAGER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT; AND THAT THE CONTRACTOR DEMONSTRATES THIS UNDERSTANDING BY INDICATING WHICH EQUIPMENT AND MATERIAL HE INTENDS TO FURNISH AND INSTALL AND BY DETAILING THE PROPOSED FABRICATION AND INSTALLATION METHODS HE INTENDS TO USE.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR DIMENSIONS (WHICH CONTRACTOR SHALL CONFIRM AND CORRELATE AT THE JOB SITE), FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, AND COORDINATION OF HIS WORK WITH THAT OF OTHER TRADES. THE CONTRACTOR SHALL CHECK AND VERIFY ALL MEASUREMENTS AND REVIEW SHOP DRAWINGS PRIOR TO SUBMITTING THEM. IF ANY DEVIATIONS FROM THE SPECIFIED REQUIREMENTS FOR ANY ITEM OF MATERIAL OR EQUIPMENT EXIST, SUCH DEVIATION SHALL BE EXPRESSLY STATED IN WRITING AND INCORPORATED AS PART OF THE SUBMITTAL.

G. NO EQUIPMENT OR MATERIALS SHALL BE INSTALLED OR STORED AT THE JOBSITE UNTIL SUBMITTALS FOR SUCH EQUIPMENT OR MATERIALS HAVE BEEN GIVEN REVIEW ACTION PERMITTING THEIR USE.

1.7RECORD DRAWINGS

A. MAINTAIN A SET OF ELECTRICAL DRAWINGS AT THE SITE. NEATLY RECORD ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL CONTRACT DOCUMENTS WITH RED PENCIL/INK. UPON COMPLETION OF THE CONTRACT THIS SET (OR A DIGITAL VERSION) OF RECORD DRAWINGS SHALL BE DELIVERED TO THE CONSTRUCTION MANAGER.

1.8MATERIALS AND EQUIPMENT

A. ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED SHALL BE NEW, UNLESS OTHERWISE SPECIFIED. ALL EQUIPMENT AND MATERIALS SHALL BE IN FIRST-CLASS CONDITION AND SHALL BE APPROVED BY EITHER UNDERWRITERS' LABORATORIES, INC. (UL) OR A NATIONAL TESTING AGENCY ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, AND SHALL COMPLY WITH APPLICABLE NEMA STANDARDS.

B. MATERIALS SHALL BE PROVIDED AS SPECIFIED UNLESS PRIOR WRITTEN ACCEPTANCE HAS BEEN OBTAINED FROM ARCHITECT/ENGINEER SEVEN (7) DAYS BEFORE BID OPENING.

C. DEFECTIVE OR DAMAGED EQUIPMENT AND MATERIALS SHALL BE REPLACED OR REPAIRED, PRIOR TO FINAL ACCEPTANCE, IN A MANNER ACCEPTABLE TO THE ARCHITECT/ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

D. EQUIPMENT LAYOUTS ARE BASED ON USE OF EQUIPMENT SPECIFIED. IF THE CONTRACTOR CHOOSES TO PROVIDE EQUIPMENT BY AN ALTERNATE MANUFACTURER, EITHER ANOTHER MANUFACTURER LISTED AS ACCEPTABLE OR ANOTHER MANUFACTURER THAT HAS PRIOR WRITTEN ACCEPTANCE, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT THE EQUIPMENT CAN BE INSTALLED IN THE SPACE PROVIDED WHILE MAINTAINING CODE REQUIRED CLEARANCES.

E. STORE EQUIPMENT AND MATERIALS AT THE JOB SITE PER THE MANUFACTURER INSTRUCTIONS WITH SEALS AND LABELS INTACT AND LEGIBLE.

1.9WARRANTY

A. THE ENTIRE ELECTRICAL SYSTEM INSTALLED UNDER THIS CONTRACT SHALL BE LEFT IN PROPER WORKING ORDER. REPLACE, AT NO ADDITIONAL COST TO THE OWNER, ANY WORK, MATERIALS, OR EQUIPMENT WHICH EVIDENCES DEFECTS IN DESIGN, CONSTRUCTION, OR WORKMANSHIP WITHIN ONE YEAR, OR AS SPECIFICALLY NOTED ELSEWHERE IN THESE SPECIFICATIONS, FROM DATE OF FINAL ACCEPTANCE.

1.10 WORKMANSHIP

A. WORKMANSHIP SHALL CONFORM TO HIGHEST INDUSTRY STANDARDS FOR EACH TRADE INVOLVED IN ERECTION OF THE WORK.

B. CONTRACTOR'S PERSONNEL AND SUBCONTRACTORS SELECTED TO PERFORM THE WORK SHALL BE WELL VERSED AND SKILLED IN THE TRADES INVOLVED.

C. ANY CHANGES OR DEVIATIONS FROM THE DRAWINGS OR SPECIFICATIONS MUST BE ACCEPTED IN WRITING BY THE CONSTRUCTION MANAGER. ALL ERRORS IN INSTALLATION SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR. ALL SPECIALTIES SHALL BE INSTALLED AS DETAILED ON THE DRAWINGS. WHERE DETAILS OR SPECIFIC INSTALLATION REQUIREMENTS ARE NOT PROVIDED, MANUFACTURER'S RECOMMENDATIONS SHALL BE FOLLOWED.

D. UPON COMPLETION OF WORK, ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED COMPLETE, THOROUGHLY CHECKED, CORRECTLY ADJUSTED, AND LEFT READY FOR INTENDED USE OR OPERATION. ALL WORK SHALL BE THOROUGHLY CLEANED AND ALL RESIDUE SHALL BE REMOVED FROM SURFACES. EXTERIOR SURFACES OF ALL MATERIAL AND EQUIPMENT SHALL BE DELIVERED IN A PERFECT, UNBLEMISHED CONDITION.

E. CONTRACTOR SHALL PROVIDE A COMPLETE INSTALLATION, INCLUDING ALL REQUIRED LABOR, MATERIAL, CARTAGE, INSURANCE, PERMITS, AND TAXES.

1.11 ELECTRICAL COMPLETION

A. DEMONSTRATE THE OPERATION OF ALL ELECTRICAL SYSTEMS FOR THE OWNER AT A TIME AS DIRECTED BY CONSTRUCTION MANAGER.

B. SUBMIT OPERATING AND MAINTENANCE MANUALS IN ACCORDANCE WITH DIVISION 1.

C. REMOVE ALL MATERIALS, SCRAP, AND DEBRIS RELATIVE TO THE ELECTRICAL INSTALLATION, AND LEAVE THE PREMISES AND ALL EQUIPMENT, LAMPS, LUMINAIRES, ETC. IN A CLEAN, ORDERLY CONDITION. ANY COSTS TO THE OWNER FOR CLEAN UP OF THE SITE WILL BE CHARGED AGAINST THE CONTRACTOR.

D. FINAL ACCEPTANCE BY THE OWNER WILL NOT OCCUR UNTIL ALL OPERATING INSTRUCTIONS ARE RECEIVED AND OWNER'S PERSONNEL HAVE BEEN THOROUGHLY INDOCTRINATED IN THE MAINTENANCE AND OPERATION OF ALL EQUIPMENT.

260510 - ELECTRICAL REMODELING PROVISIONS

1.1EXAMINATION

A. FIELD VERIFY MEASUREMENTS AND CIRCUITING ARRANGEMENTS.

B. VERIFY THAT ABANDONED WIRING AND EQUIPMENT SERVE ONLY ABANDONED FACILITIES. MAINTAIN ELECTRICAL CONTINUITY TO REMAINING WIRING AND EQUIPMENT.

C. REMOVAL DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION AND/OR EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO CONSTRUCTION MANAGER BEFORE DISTURBING EXISTING INSTALLATION.

D. EXISTING SYSTEMS AND CONDITIONS SHOWN ON DRAWINGS ARE PROVIDED FOR GUIDANCE ONLY. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING AND INCLUDE AN ALLOWANCE IN THE BID FOR THE REMOVAL AND/OR RELOCATION OF EXISTING CONDUITS, WIRES, DEVICES, LUMINAIRES, ETC., AS INDICATED ON THE DRAWINGS OR AS REQUIRED TO COORDINATE AND ADAPT THE NEW AND EXISTING ELECTRICAL SYSTEMS TO ALL OTHER WORK REQUIRED ON THIS PROJECT.

1.2PREPARATION

A. PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.

B. EXISTING ELECTRICAL SERVICE, FIRE ALARM SYSTEM, AND TELEPHONE SYSTEM: MAINTAIN EXISTING SYSTEMS IN SERVICE UNTIL NEW SYSTEMS ARE ACCEPTED OR AS OTHERWISE INDICATED. DISABLE SYSTEMS ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. NOTIFY THE OWNER AT LEAST 36 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. MINIMIZE OUTAGE DURATION. MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREA.

1.3REMOVAL AND EXTENSION OF EXISTING ELECTRICAL WORK

A. REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.

B. REMOVE ABANDONED WIRING TO SOURCE OF SUPPLY.

C. REMOVE EXPOSED ABANDONED CONDUIT, INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILING FINISHES. CUT CONDUIT FLUSH WITH WALLS AND FLOORS, AND PATCH SURFACES.

D. DISCONNECT ABANDONED OUTLETS AND REMOVE DEVICES. REMOVE ABANDONED OUTLETS IF CONDUIT SERVICING THEM IS ABANDONED AND REMOVED. PROVIDE BLANK COVER FOR ABANDONED OUTLETS WHICH ARE NOT REMOVED.

E. DISCONNECT AND REMOVE ABANDONED PANELBOARDS AND DISTRIBUTION EQUIPMENT.

F. DISCONNECT AND REMOVE ELECTRICAL DEVICES AND EQUIPMENT SERVING UTILIZATION EQUIPMENT THAT HAS BEEN REMOVED.

G. DISCONNECT AND REMOVE ABANDONED LUMINARIES. REMOVE BRACKETS, STEMS, HANGERS, AND OTHER ACCESSORIES.

H. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION WORK. PROVIDE MODIFICATIONS TO ASSURE THAT CIRCUITS OR SYSTEMS WIRING SHALL NOT PASS THROUGH OUTLET OR JUNCTION BOXES WHICH MAY BE RENDERED INACCESSIBLE BY CHANGES MADE TO THE BUILDING.

I. MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE ACCESS PANEL AS APPROPRIATE.

J. EXTEND EXISTING INSTALLATIONS USING MATERIALS AND METHODS AS SPECIFIED.

K. WHERE THE REUSE OF EXISTING CONDUITS, OUTLETS, JUNCTION BOXES, ETC. IS PERMISSIBLE, MAKE CERTAIN THAT THE WIRING FOR THEM IS CONTINUOUS FROM OUTLET TO OUTLET.

L. CONNECT NEW WORK TO EXISTING WORK IN A MANNER THAT WILL ASSURE PROPER RACEWAY GROUNDING THROUGHOUT IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE.

M. EXISTING CONDUITS, WIRE, DEVICES, LUMINAIRES, ETC. WHICH SHALL BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED.

N. REVISE PANELBOARD SCHEDULES TO REFLECT REMOVAL OR RELOCATION OF EQUIPMENT. CIRCUIT INTEGRITY OF EQUIPMENT IN ADJACENT AREAS SHALL BE LEFT INTACT.

O. WHERE REMODELING INTERFERES WITH EXISTING CIRCUITS AND EQUIPMENT WHICH ARE NOT TO BE REMOVED, SUCH CIRCUITS AND EQUIPMENT SHALL BE REWORKED AND RELOCATED AS REQUIRED TO COMPLETE THE PROJECT.

P. WHERE REMODELING INTERFERES WITH CIRCUITS SERVING AREAS OUTSIDE OF THE PROJECT OR PHASE LIMITS OR WHICH ARE REMODELED IN LATER PHASES OF THE PROJECT, CIRCUITS SHALL BE REWORKED OR TEMPORARY CIRCUITS PROVIDED AS REQUIRED.

1.4CLEANING AND REPAIR

A. CLEAN AND REPAIR EXISTING MATERIALS AND EQUIPMENT WHICH REMAIN OR ARE TO BE REUSED.

B. PANELBOARDS: CLEAN EXPOSED SURFACES AND CHECK TIGHTNESS OF ELECTRICAL CONNECTIONS. REPLACE DAMAGED CIRCUIT BREAKERS AND PROVIDE CLOSURE PLATES FOR VACANT POSITIONS. PROVIDE TYPED CIRCUIT DIRECTORY SHOWING REVISED CIRCUITING ARRANGEMENT.

1.5INSTALLATION

A. CONTRACTOR SHALL PERFORM ALL CUTTING, CHANNELING, CHASING, DRILLING, ETC., AS REQUIRED TO INSTALL OR REMOVE ELECTRICAL EQUIPMENT IN AREAS OF REMODELING. THIS WORK SHALL BE PERFORMED SO AS TO MINIMIZE DAMAGE TO PORTIONS OF WALL FINISHES, SURFACES, PLASTERED, OR PAINTED, UNDER ANOTHER DIVISION OF THESE SPECIFICATIONS.

B. CAREFULLY COORDINATE WITH THE REQUIRED REMODEL WORK, CUTTING AND PATCHING, ETC., PERFORMED BY THE OTHER TRADES. REMOVE OR RELOCATE EXISTING ELECTRICAL CONDUITS, WIRES, DEVICES, FIXTURES, AND OTHER EQUIPMENT AS NECESSARY.

260519 - BUILDING WIRE AND CABLE

A. BUILDING WIRE

A) FEEDERS AND BRANCH CIRCUITS: COPPER, 600 VOLT INSULATION, THHN/THWN OR XHHW. CONDUCTORS #10 AWG AND LARGER SHALL BE STRANDED. CONDUCTORS SMALLER THAN #10 SHALL BE SOLID.

B) CONTROL CIRCUITS: COPPER, STRANDED CONDUCTOR, 600 VOLT INSULATION, THHN/THWN OR XHHW.

B. METAL CLAD CABLE: NOT ALLOWED

C. MINIMUM WIRE SIZE FOR BRANCH CIRCUITS NO. 12 AWG. EXCEPT FOR CONTROL CIRCUITS, WHICH MAY BE NO. 14 AWG. SIGNAL CIRCUITS WIRE SIZE SHALL BE AS INDICATED ON THE DRAWINGS. ALL WIRING SHALL BE ROUTED WITHIN RACEWAYS.

D. USE NO. 10 AWG CONDUCTOR FOR 20 AMPERE, 120-VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET.

E. PLACE EQUAL NUMBER OF CONDUCTORS FOR EACH PHASE OF A CIRCUIT IN SAME RACEWAY OR CABLE. PULL ALL CONDUCTORS INTO RACEWAY AT THE SAME TIME. USE UL LISTED WIRE PULLING LUBRICANT FOR PULLING NO. 4 AWG AND LARGER WIRES.

F. FOR NO. 8 AWG AND SMALLER, USE INSULATED SPRING WIRE CONNECTORS WITH PLASTIC CAPS.

G. USE SPLIT BOLT CONNECTORS FOR COPPER WIRE SPLICES AND TAPS, NO. 6 AWG AND LARGER. TAPE UN-INSULATED CONDUCTORS AND CONNECTORS WITH ELECTRICAL TAPE TO 150 PERCENT OF THE INSULATION VALUE OF CONDUCTOR.

H. ALL WIRES SHALL BE COLOR CODED. WIRES NO. 6 AWG AND SMALLER SHALL BE FACTORY COLOR CODED. WIRE NO. 4 AWG AND LARGER MAY BE COLOR CODED BY FIELD PAINTING OR COLOR TAPING OF 6 INCH LENGTH OF EXPOSED ENDS.

A) 120/208V SYSTEM: PHASE A = BLACK, B = RED, NEUTRAL = WHITE, GROUND = GREEN

260526 - GROUNDING

A. GROUND THE ELECTRICAL SERVICE SYSTEM NEUTRAL AT SERVICE ENTRANCE EQUIPMENT TO METALLIC COLD WATER SERVICE AND TO SUPPLEMENTARY GROUNDING ELECTRODES, AS INDICATED ON DRAWINGS.

B. GROUND EACH SEPARATELY-DERIVED SYSTEM NEUTRAL TO NEAREST METALLIC COLD WATER PIPE 2-INCH DIAMETER OR LARGER, BUILDING STEEL AND WHERE PRESENT TO THE REFERENCED GROUND BAR AS SHOWN ON DRAWINGS.

C. BOND TOGETHER SYSTEM NEUTRALS, SERVICE EQUIPMENT ENCLOSURES, EXPOSED NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT, METAL RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN RACEWAYS AND CABLES, RECEPTACLE GROUND CONNECTORS, AND PLUMBING SYSTEMS.

D. ALL SERVICE EQUIPMENT, CONDUIT SYSTEMS, SUPPORTS, CABINETS, LIGHTING STANDARDS, POLES, EQUIPMENT, FIXTURES, ETC., AND THE GROUNDED CIRCUIT CONDUCTOR SHALL BE PROPERLY GROUNDED IN ACCORDANCE WITH THE LATEST ISSUE OF THE NATIONAL ELECTRICAL CODE. PROVIDE BONDING JUMPERS, GROUNDING BUSHINGS, CLAMPS, ETC., FOR COMPLETE GROUNDING.

A) PROVIDE A SEPARATE GROUNDING CONDUCTOR, SECURELY GROUNDED ON EACH SIDE OF ALL RACEWAYS CONTAINING SECTIONS OF PLASTIC, FIBER, CEMENT, OR FLEXIBLE RACEWAYS. SIZE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

B) PROVIDE A GREEN GROUNDING JUMPER FROM THE GROUND SCREW TO A BOX GROUNDING SCREW OR CLIP FOR ALL GROUNDING TYPE DEVICES. USE INSULATED WIRE.

C) PROVIDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN EVERY FEEDER AND BRANCH CIRCUITS. IF THE SIZE IS NOT INDICATED ON THE DRAWINGS, SIZE IN ACCORDANCE WITH TABLE 250-122 OF NEC.

E. MATERIALS

A) GROUND RODS: COPPER OR COPPER-CLAD STEEL, ¾-INCH DIAMETER, MINIMUM LENGTH 10 FEET.

B) MECHANICAL GROUNDING CONNECTORS: FOR ALL GROUNDING CONNECTIONS ABOVE GRADE. MANUFACTURER: BURNDY ELECTRICAL. MATERIAL: COPPER. COMPRESSION TYPE: IRREVERSIBLE. UL LISTED UNDER STANDARD UL467.

C) WIRE: MATERIAL: COPPER. SIZE: AS INDICATED ON THE DRAWINGS. WHEN SIZE IS NOT INDICATED, SIZE PER ARTICLE 250 OF NEC REQUIREMENTS.

D) GROUNDING CONNECTION ACCESSORIES: ELECTRICAL INSULATING TAPE, HEAT-SHRINKABLE INSULATING TUBING, WELDING MATERIALS, BONDING STRAPS, AS RECOMMENDED BY ACCESSORIES MANUFACTURERS FOR TYPE SERVICE REQUIRED.

260529 - SUPPORTING DEVICES AND SEALS

A. FASTEN HANGER RODS, CONDUIT CLAMPS, AND OUTLET AND JUNCTION BOXES TO BUILDING STRUCTURE USING PRECAST INSERT SYSTEM, EXPANSION ANCHORS, PRESET INSERTS, OR BEAM CLAMPS. DO NOT USE SPRING STEEL CLIPS AND CLAMPS; HOWEVER, CADDY FASTENERS ARE ACCEPTED.

B. USE TOGGLE BOLTS OR HOLLOW WALL FASTENERS IN HOLLOW MASONRY, PLASTER, OR GYPSUM BOARD PARTITIONS AND WALLS; EXPANSION ANCHORS OR PRESET INSERTS IN SOLID MASONRY WALLS; SELF-DRILLING ANCHORS OR EXPANSION ANCHOR ON CONCRETE SURFACES; SHEET METAL SCREWS IN SHEET METAL STUDS; AND WOOD SCREWS IN WOOD CONSTRUCTION.

C. DO NOT FASTEN SUPPORTS TO PIPING, DUCTWORK, MECHANICAL EQUIPMENT, OR CONDUIT.

D. DO NOT DRILL STRUCTURAL STEEL MEMBERS.

E. FABRICATE SUPPORTS FROM STRUCTURAL STEEL OR STEEL CHANNEL, RIGIDLY WELDED OR BOLTED TO PRESENT A NEAT APPEARANCE. USE HEXAGON HEAD BOLTS WITH SPRING LOCK WASHERS UNDER ALL NUTS.

F. INSTALL ALL FREE-STANDING ELECTRICAL EQUIPMENT ON A 4-INCH CONCRETE HOUSEKEEPING PAD.

G. INSTALL SURFACE-MOUNTED CABINETS AND PANELBOARDS WITH MINIMUM OF FOUR ANCHORS.

H. BRIDGE STUDS TOP AND BOTTOM WITH CHANNELS TO SUPPORT FLUSH-MOUNTED CABINETS AND PANELBOARDS IN STUD WALLS.

I. WHERE CONDUIT PENETRATES FIRE-RATED WALLS, CONCRETE AND/OR MASONRY WALLS AND FLOORS, IT SHALL BE SLEEVED. SEAL OPENING AROUND CONDUIT WITH UL LISTED FOAMED SILICONE ELASTOMER COMPOUND.

J. WHERE CONDUIT PENETRATES WATERPROOFED FLOORS OR EXTERIOR WALLS SUBJECT TO ENTRY OF MOISTURE, PROVIDE PIPE SLEEVES TWO SIZES LARGER THAN CONDUIT, SUITABLY FLASHED OR SEALED WHERE APPROPRIATE. SEAL ANNULAR SPACE AROUND CONDUIT WITH UL LISTED FOAMED SILICONE ELASTOMER COMPOUND.

K. ROUTE CONDUIT THROUGH ROOF OPENINGS FOR PIPING AND DUCTWORK WHERE POSSIBLE; OTHERWISE, ROUTE THROUGH ROOF JACK WITH PITCH POCKET.

L. NO SUSPENDED CONDUIT OR BOX SUPPORTS SHALL BE LESS THAN 1/4-INCH DIAMETER STEEL ROD. ROD USED AS PEDESTAL SUPPORT IS NOT ACCEPTABLE. THE CONTRACTOR SHALL NOT USE TIE WIRE OR WIRE OF ANY TYPE TO SUPPORT CONDUITS, JUNCTION BOXES, OR PULL BOXES.

M. NO MORE THAN FIVE (5) 1/2-INCH CONDUITS, THREE (3) 3 /4-INCH CONDUITS, OR TWO (2) 1-INCH CONDUITS SHALL BE SUPPORTED ON A SINGLE 1/4-INCH DIAMETER STEEL ROD.

N. ALL CONDUITS SHALL BE SUPPORTED BY APPROVED HANGERS. SUPPORTS INSTALLED AND USED BY OTHER TRADES SUCH AS DUCT HANGERS, PIPE HANGERS, CEILING HANGERS, ETC. SHALL NOT BE USED FOR CONDUIT SUPPORT. NO CONDUIT SHALL BE HUNG FROM AIR HANDLING DUCT OF ANY TYPE. ELECTRICAL CONDUIT SYSTEMS "SHALL STAND ALONE."

O. ALL LUMINAIRES SHALL BE INDEPENDENTLY SUPPORTED AT OPPOSITE CORNERS FROM STRUCTURAL STEEL OR FROM TRAPEZE SUPPORTED FROM STRUCTURAL STEEL BY ELECTRICAL CONTRACTOR.

P. WALL-MOUNTED LUMINAIRES SHALL BE SUPPORTED FROM BUILDING STRUCTURE WITH APPROVED BACKING SUPPORT TO PREVENT ANY DAMAGE TO THE WALL.

Q. CONCRETE ANCHORS SHALL NOT BE USED TO SUSPEND HEAVY ELECTRICAL LOADS SUCH AS ELECTRICAL SWITCH PANELS OR FOUR-INCH AND LARGER CONDUITS. ANCHORS SHALL BE DESIGNED TO SUPPORT CONDUITS AND CABLE TRAY WHEN FULL FITTED TO MAXIMUM CAPACITY WITH CABLES.

260532 - CONDUIT

A. MINIMUM SIZE:

A) ABOVE ACCESSIBLE CEILING, ABOVE INACCESSIBLE CEILING AND IN CONCRETE SLAB: 3/4-INCH

B) BELOW GRADE AND BELOW SLAB ON GRADE: 1-INCH

C) BRANCH CIRCUIT AFTER FIRST JUNCTION POINT: 1/2-INCH UNLESS OTHERWISE SPECIFIED

B. RIGID CONDUIT, INTERMEDIATE METALLIC CONDUIT, AND/OR ELECTRICAL METALLIC TUBING AS PERMITTED BY NEC.

C. SCHEDULE 40, RIGID PVC PLASTIC CONDUIT FOR ALL LOCATIONS DIRECTLY IN EARTH, GRAVEL, ETC., OR DIRECTLY BELOW OR IN CONCRETE SLAB-ON-GRADE. WITHIN 5-FEET FROM FOUNDATION WALL USE RIGID STEEL PLASTIC COATED CONDUIT.

D. RIGID STEEL CONDUIT FOR OUTDOOR LOCATIONS ABOVE GRADE.

E. RIGID STEEL CONDUIT FOR WET AND DAMP LOCATIONS SUBJECT TO PHYSICAL DAMAGE.

F. ELECTRICAL METALLIC TUBING FOR CONCEALED DRY LOCATIONS. RIGID STEEL CONDUIT FOR DRY LOCATIONS SUBJECT TO DAMAGE BELOW 8-FEET, OTHERWISE ELECTRICAL METALLIC TUBING.

G. PROVIDE FLEXIBLE METAL CONDUIT WHERE WIRING MUST BE FISHED OR FOR EQUIPMENT, MOTORS, LIGHTING FIXTURE OR TRANSFORMER CONNECTIONS.

H. ALL EMT CONNECTORS AND COUPLINGS SHALL BE STEEL, COMPRESSION GLAND, OR SETSCREW TYPE. CONNECTORS AND COUPLINGS MADE OF MALLEABLE IRON OR OTHER MATERIALS ARE NOT ACCEPTABLE.

I. INSTALL RACEWAYS CONCEALED. SURFACE-MOUNT CONDUITS IN ELECTRICAL AND MECHANICAL ROOMS OR WHERE APPROVED BY THE ARCHITECT.

J. RACEWAY AND OUTLET SUPPORTS:

A) TOGGLE BOLTS IN HOLLOW MASONRY.

B) EXPANSION BOLTS IN CONCRETE OR BRICK.

C) MACHINE SCREWS ON METAL SURFACES.

D) WOOD SCREWS ON WOOD CONSTRUCTION.

K. INSTALL CONDUIT IN ACCORDANCE WITH NECA "STANDARD OF INSTALLATION".

L. INSTALL NONMETALLIC CONDUIT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

M. ARRANGE SUPPORTS TO PREVENT MISALIGNMENT DURING WIRING INSTALLATION.

N. SUPPORT CONDUIT USING COATED STEEL OR MALLEABLE IRON STRAPS, LAY-IN ADJUSTABLE HANGERS, CLEVIS HANGERS, AND SPLIT HANGERS.

O. GROUP RELATED CONDUITS; SUPPORT USING CONDUIT RACK. CONSTRUCT RACK USING STEEL CHANNEL, PROVIDE SPACE ON EACH FOR 25 PERCENT ADDITIONAL CONDUITS.

P. FASTEN CONDUIT SUPPORTS TO BUILDING STRUCTURE AND SURFACES UNDER PROVISIONS OF SECTION 260529.

Q. DO NOT SUPPORT CONDUIT WITH WIRE OR PERFORATED PIPE STRAPS. REMOVE WIRE USED FOR TEMPORARY SUPPORTS

R. DO NOT ATTACH CONDUIT TO CEILING SUPPORT WIRES.

S. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND PRESENT NEAT APPEARANCE.

T. ROUTE EXPOSED CONDUIT PARALLEL AND PERPENDICULAR TO WALLS.

U. ROUTE CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO BUILDING ELEMENTS AND WALLS.

V. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT-TO-POINT. DIMENSION FROM BUILDING COLUMNS.

W. DO NOT CROSS CONDUITS IN SLAB EXCEPT WITH WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.

X. ROUTING CONDUITS PARALLEL IN THE SLAB IS PROHIBITED EXCEPT WITH WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.

Y. MAINTAIN ADEQUATE CLEARANCE BETWEEN CONDUIT AND PIPING.

Z. MAINTAIN 12-INCH CLEARANCE BETWEEN CONDUIT AND SURFACES WITH TEMPERATURES EXCEEDING 104 DEGREES F.

AA. CUT CONDUIT SQUARE USING SAW OR PIPE CUTTER; DE-BURR CUT ENDS.

BB. BRING CONDUIT TO SHOULDER OF FITTINGS; FASTEN SECURELY.

CC. JOIN NONMETALLIC CONDUIT USING CEMENT AS RECOMMENDED BY MANUFACTURER. WIPE NONMETALLIC CONDUIT DRY AND CLEAN BEFORE JOINING. APPLY FULL EVEN COAT OF CEMENT TO ENTIRE AREA INSERTED IN FITTING. ALLOW JOINT TO CURE FOR TWENTY (20) MINUTES, MINIMUM.

DD. USE CONDUIT HUBS OR SEALING LOCKNUTS TO FASTEN CONDUIT TO SHEET METAL BOXES IN DAMP AND WET LOCATIONS AND TO CAST BOXES.

EE. INSTALL NO MORE THAN EQUIVALENT OF FOUR 90-DEGREE BENDS BETWEEN BOXES. USE CONDUIT BODIES TO MAKE SHARP CHANGES IN DIRECTION, AS AROUND BEAMS. USE HYDRAULIC ONE-SHOT BENDER TO FABRICATE OR FACTORY ELBOWS FOR BENDS IN METAL CONDUIT LARGER THAN 2-INCH SIZE.

FF. AVOID MOISTURE TRAPS; PROVIDE JUNCTION BOX WITH DRAIN FITTING AT LOW POINTS IN CONDUIT SYSTEM.

GG. PROVIDE SUITABLE FITTINGS TO ACCOMMODATE EXPANSION AND DEFLECTION WHERE CONDUIT CROSSES, CONTROL AND EXPANSION JOINTS.

HH. PROVIDE SUITABLE PULL STRING IN EACH EMPTY CONDUIT EXCEPT SLEEVES AND NIPPLES.

II. USE SUITABLE CAPS TO PROTECT INSTALLED CONDUIT AGAINST ENTRANCE OF DIRT AND MOISTURE.

JJ. GROUND AND BOND CONDUIT UNDER PROVISIONS OF SECTION 260526.

KK. IDENTIFY CONDUIT UNDER PROVISIONS OF SECTION 260553.

LL. TRANSITION FROM UNDERGROUND NONMETALLIC CONDUIT TO ABOVE GRADE METAL CONDUIT OR ELECTRICAL METALLIC TUBING SHALL BE MADE IN OR BELOW THE SLAB. THE TRANSITION BETWEEN NONMETALLIC CONDUIT AND ABOVE GRADE CONDUIT SHALL BE MADE WITH A RIGID STEEL, PLASTIC COATED ELBOW.

PRELIMINARY - NOT
FOR CONSTRUCTION

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CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

DATE:	DESCRIPTION:
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

PROJECT NUMBER:

DRAWN BY: LMW CHECKED BY: LMW

COMPUTER FILE: EMMA MALABY BASE DRAWING

ELECTRICAL SPECIFICATION

E0.1

ELECTRICAL SPECIFICATIONS 26 00 00

260534 - BOXES

A. FOUR-INCH (4") SQUARE OR OCTAGONAL, ZINC-COATED SHEET STEEL BOXES.

B. INSTALL ELECTRICAL BOXES AS SHOWN ON DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS AND COMPLIANCE WITH REGULATORY REQUIREMENTS.

C. INSTALL PULL BOXES AND JUNCTION BOXES ABOVE ACCESSIBLE CEILINGS AND IN UNFINISHED AREAS ONLY.

D. INACCESSIBLE CEILING AREAS: INSTALL OUTLET AND JUNCTION BOXES NO MORE THAN 6 INCHES FROM CEILING ACCESS PANEL OR FROM REMOVABLE RECESSED LUMINAIRE.

E. INSTALL BOXES TO PRESERVE FIRE RESISTANCE RATING OF PARTITIONS AND OTHER ELEMENTS, USING MATERIALS AND METHODS UNDER THE PROVISIONS OF DIVISION 7.

F. ALIGN ADJACENT WALL-MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS, AND SIMILAR DEVICES WITH EACH OTHER.

G. USE FLUSH MOUNTING OUTLET BOXES IN FINISHED AREAS.

H. DO NOT INSTALL FLUSH MOUNTING BOXES BACK-TO-BACK IN WALLS; PROVIDE MINIMUM 6-INCH SEPARATION. PROVIDE MINIMUM 12-INCH SEPARATION BETWEEN BACK-TO-BACK BOXES IN ACOUSTIC-RATED WALLS.

I. SECURE FLUSH MOUNTING BOX TO INTERIOR WALL AND PARTITION STUDS. ACCURATELY POSITION TO ALLOW FOR SURFACE FINISH THICKNESS.

J. USE STAMPED STEEL BRIDGES TO FASTEN FLUSH MOUNTING OUTLET BOX BETWEEN STUDS.

K. INSTALL FLUSH MOUNTING BOX WITHOUT DAMAGING WALL INSULATION OR REDUCING ITS EFFECTIVENESS.

L. USE ADJUSTABLE STEEL CHANNEL FASTENERS FOR HUNG CEILING OUTLET BOX.

M. DO NOT FASTEN BOXES TO CEILING SUPPORT WIRES.

N. SUPPORT BOXES INDEPENDENTLY OF CONDUIT, EXCEPT CAST BOX THAT IS CONNECTED TO TWO (2) RIGID METAL CONDUITS BOTH SUPPORTED WITHIN 12 INCHES OF BOX.

O. USE GANG BOX WHERE MORE THAN ONE (1) DEVICE IS MOUNTED TOGETHER. DO NOT USE SECTIONAL BOX.

P. USE GANG BOX WITH PLASTER RING FOR SINGLE DEVICE OUTLETS.

Q. USE CAST OUTLET BOX IN EXTERIOR LOCATIONS EXPOSED TO THE WEATHER AND WET LOCATIONS.

R. USE CAST FLOOR BOXES FOR INSTALLATIONS IN SLAB ON GRADE; FORMED STEEL BOXES ARE ACCEPTABLE FOR OTHER INSTALLATIONS.

S. SET FLOOR BOXES LEVEL.

T. LARGE PULL BOXES: BOXES LARGER THAN 100 CUBIC INCHES IN VOLUME OR 12-INCHES IN ANY DIMENSION.

U. INTERIOR DRY LOCATIONS: USE HINGED ENCLOSURE UNDER PROVISIONS OF SECTION 260535.

V. OTHER LOCATIONS: USE SURFACE-MOUNTED CAST IRON BOX.

W. MINIMUM JUNCTION AND PULL BOX SIZE 4-11/16" X 4-11/16" X 2-1/8".

X. MINIMUM OUTLET BOX SIZE 4" X 4" X 1-1/2".

Y. MINIMUM TELEPHONE OUTLET BOX SIZE 4" X 4" X 2-1/8".

Z. MINIMUM JUNCTION BOX SIZE FOR FIRE ALARM PULL STATIONS, CONTROL MODULE, MONITOR MODULE, 4" X 4" X 2-3/4". PROVIDE PLASTER RING AT ALL PULL STATION LOCATIONS.

260553 - ELECTRICAL IDENTIFICATION

A. INSTALL NAMEPLATES AND TAPE LABELS PARALLEL TO EQUIPMENT LINES.

B. SECURE NAMEPLATES TO EQUIPMENT FRONTS USING SCREWS, RIVETS, OR PERMANENTLY BONDING EPOXY GLUE. SECURE NAMEPLATE TO INSIDE FACE OF RECESSED PANELBOARD DOORS IN FINISHED LOCATIONS.

C. EMBOSSED TAPE OR SELF-STICKING ADHESIVE BACKED NAMEPLATES WILL NOT BE PERMITTED FOR ANY APPLICATION.

D. WIRE MARKERS

A) DESCRIPTION: TAPE TYPE WIRE MARKERS

B) LOCATIONS: EACH CONDUCTOR AT PANELBOARD GUTTERS, PULL BOXES, OUTLET AND JUNCTION BOXES, AND EACH LOAD CONNECTION.

C) IDENTIFY ALL BRANCH CIRCUIT NUMBERS OF THE CONDUCTORS CONTAINED IN JUNCTION AND PULL BOXES BY BLACK INDELIBLE "MAGIC MARKER" ON THE EXTERIOR OF THE BOX COVER.

E. PROVIDE NAMEPLATES OF MINIMUM LETTER HEIGHT AS LISTED BELOW:

A) PANELBOARDS: 1/4-INCH: IDENTIFY EQUIPMENT DESIGNATION. 1/8-INCH: IDENTIFY VOLTAGE RATING AND SOURCE. INSCRIPTIONS SHALL INDICATE THE PANEL NAME, VOLTAGE, PHASE, WIRE, FEEDER SIZE, AND FEEDER SOURCE.

B) INDIVIDUAL CIRCUIT BREAKERS, SWITCHES, AND MOTOR STARTERS IN PANELBOARDS, SWITCHBOARDS, AND MOTOR CONTROL CENTERS: 1/8-INCH: IDENTIFY CIRCUIT AND LOAD SERVED, INCLUDING LOCATION.

C) INDIVIDUAL CIRCUIT BREAKERS, ENCLOSED SWITCHES, AND MOTOR STARTERS: 1/8-INCH: IDENTIFY LOAD SERVED.

D) DEVICE PLATES:

1) WHERE MORE THAN TWO WALL SWITCHES OR WALL DIMMERS ARE INSTALLED IN GANGED OUTLET ASSEMBLIES: 1/8-INCH: IDENTIFY TYPE OF LIGHTING CONTROLLED. USE KORY OR BROTHER TYPE TAPE LABELS ON THE EXTERIOR OF EACH WALL PLATE TO IDENTIFY THE CIRCUIT SERVING THE DEVICE.

2) PROVIDE TAPE LABELS FOR IDENTIFICATION OF INDIVIDUAL RECEPTACLES AND SWITCHES. LOCATED TAPE ON FRONT OF PLATE AND INDICATE ASSOCIATED SOURCE PANELBOARD AND CIRCUIT NUMBER.

F. FOR PANELBOARDS, PROVIDE FRAMED, TYPED CIRCUIT SCHEDULES (LABEL ALL SPARES AND SPACES IN PENCIL) WITH EXPLICIT DESCRIPTION AND IDENTIFICATION OF ITEMS CONTROLLED BY EACH INDIVIDUAL BREAKER.

260580 - EQUIPMENT WIRING SYSTEM

A. WHERE OUTLETS ARE INDICATED FOR MISCELLANEOUS EQUIPMENT REQUIRING ELECTRICAL POWER OR CONTROL, PROVIDE WIRE, CONDUIT, OUTLETS, HEAVY DUTY DISCONNECT SWITCHES, ETC., AND MAKE ALL REQUIRED CONNECTIONS.

B. PROVIDE GROUNDING FOR ALL EQUIPMENT IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.

C. VERIFY EXACT CONNECTIONS REQUIRED FOR ALL EQUIPMENT PRIOR TO ROUGH IN.

D. FOR INDIVIDUALLY-MOUNTED MOTOR CONTROLLERS SUPPLIED UNDER SPECIFICATIONS DIVISIONS OTHER THAN DIVISION 26, CONTROLLERS AND DISCONNECTS SHALL BE SUPPLIED BY THE EQUIPMENT SUPPLIER. ELECTRICAL CONTRACTOR TO SET IN PLACE AND PROVIDE ALL REQUIRED CONNECTIONS.

E. ELECTRICAL CONTRACTOR TO PROVIDE ALL MATERIALS AND LABOR REQUIRED FOR THE INSTALLATION AND TESTING.

260923 - LIGHTING CONTROL DEVICES

A. ACCEPTABLE MANUFACTURERS: AS SPECIFIED ON DRAWINGS.

B. ELECTRONIC TIME SWITCHES: SOLID STATE, PROGRAMMABLE, WITH ALPHANUMERIC DISPLAY; COMPLYING WITH UL 917.

C. INDOOR OCCUPANCY AND VACANCY SENSORS:

A) DUAL-TECHNOLOGY TYPE: [WALL] [CEILING] MOUNTED; DETECT OCCUPANTS IN COVERAGE AREA USING PIR AND ULTRASONIC DETECTION METHODS. THE PARTICULAR TECHNOLOGY OR COMBINATION OF TECHNOLOGIES CONTROL ON-OFF FUNCTIONS IS SELECTABLE IN THE FIELD BY OPERATING CONTROLS ON UNIT.

D. INSTALL AND AIM SENSORS IN LOCATIONS TO ACHIEVE NOT LESS THAN 90 PERCENT COVERAGE OF AREAS INDICATED. DO NOT EXCEED COVERAGE LIMITS SPECIFIED IN MANUFACTURER'S WRITTEN INSTRUCTIONS.

262411 - ELECTRIC SERVICE

A. PROVIDE SERVICE AS INDICATED ON THE DRAWINGS. COORDINATE SERVICE LOCATION WITH UTILITY COMPANY. VERIFY AND COMPLY WITH ALL UTILITY COMPANY REQUIREMENTS.

B. PROVIDE METERING FACILITIES, C.T. CABINETS, ETC., AS INDICATED ON THE DRAWINGS AND AS REQUIRED BY THE UTILITY COMPANY REQUIREMENTS.

C. FUSIBLE DISCONNECT SWITCH SHALL BE HEAVY DUTY AND U.L. LISTED FOR SERVICE USE.

262416 - PANELBOARDS

A. DEAD-FRONT, CIRCUIT BREAKER TYPE, FLUSH KEY LOCK, AND TYPED DIRECTORY CARDS. PANELS SHALL BE "DOOR IN DOOR" CONSTRUCTION.

B. THERMAL MAGNETIC CIRCUIT BREAKERS, COMPLETELY INTERCHANGEABLE, BOLTED TO THE BUS. MULTI-POLE BREAKERS SHALL HAVE COMMON, INTERNAL TRIP.

C. MINIMUM INTEGRATED SHORT CIRCUIT RATING: 10,000 AMPERES RMS SYMMETRICAL FOR 240 VOLT PANELBOARDS; 14,000 AMPERES RMS SYMMETRICAL FOR 480 VOLT PANELBOARDS, OR AS INDICATED ON THE DRAWINGS.

D. EXCEPT SPECIFIED OTHERWISE, PANELBOARDS TYPE SHALL BE AS FOLLOWS:

MANUFACTURER	120/208V
A) GENERAL ELECTRIC	AQ
B) CUTLER-HAMMER	PRL1
C) SQUARE-D	NQOD
D) SIEMENS	P SERIES

E. PANELBOARDS MAY CONTAIN NOT MORE THAN TWO SUBFEED BREAKERS WITH RATINGS IN EXCESS OF 100A, BUT LESS THAN 225A.

F. PANELBOARDS SHALL BE OF TYPE SCHEDULED WHERE MORE THAN TWO SUBFEED BREAKERS RATED IN EXCESS OF 100A ARE REQUIRED, AND FOR ANY PANELBOARD CONTAINING BREAKERS WITH RATINGS OF 225A OR MORE.

G. PANEL BUSES SHALL BE COPPER.

H. MOUNT TOP OF TRIM 74 INCHES ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED.

I. STUB FOUR 1-INCH EMPTY CONDUITS FROM PANELBOARD INTO ACCESSIBLE CEILING SPACE OR SPACE DESIGNATED TO BE CEILING SPACE FOR FUTURE. STUB FOUR 1-INCH EMPTY CONDUITS INTO RAISED FLOOR SPACE OR BELOW SLAB NOT ON GRADE.

J. FULLY RATED TO INTERRUPT SYMMETRICAL SHORT-CIRCUIT CURRENT AVAILABLE AT TERMINALS.

262726 - WIRING DEVICES

A. ACCEPTABLE MANUFACTURERS: COOPER WIRING DEVICES, HUBBELL INCORPORATED, LEVITON MANUFACTURING COMPANY, AND PASS & SEYMOUR/LEGRAND.

B. DEVICES SHALL BE AS FOLLOWS:

A) SPECIFICATION GRADE CONVENIENCE RECEPTACLES: 125V, 20A: COMPLY WITH NEMA WD1, NEMA WD6 CONFIGURATION 5-20R, UL 498, AND FS W-C-596. HEAVY DUTY, STRAIGHT BLADE, SINGLE-PIECE, HIGH STRENGTH NYLON FACE WITH FINDER GROOVES AND BRASS HEAVY DUTY GROUNDING STRAPS. BACK AND SIDE WIRED TO ACCEPT #12 AWG THROUGH #10 AWG SOLID CONDUCTORS.

B) DUPLEX GFCI CONVENIENCE RECEPTACLES: 125V, 20A: COMPLY WITH NEMA WD1, NEMA WD6 CONFIGURATION 5-20R, UL 498 SUPPLEMENT SD, UL 943 CLASS A, AND FS W-C-596. HEAVY DUTY, STRAIGHT BLADE, NON-FEED-THROUGH TYPE, HIGH STRENGTH NYLON FACE AND BRASS HEAVY DUTY GROUNDING STRAPS. INDICATOR LIGHT THAT SHOWS WHEN THE GFCI HAS MALFUNCTIONED AND NO LONGER PROVIDES PROPER GFCI PROTECTION. BACK AND SIDE WIRED TO ACCEPT #12 AWG THROUGH #10 AWG SOLID CONDUCTORS.

C) DEAD FRONT, SELF TEST, GFCI RECEPTACLE, 125V, 20A, COMPLY WITH NEMA WD 1, NEMA WD 6, UL 943 CLASS A, AND FS W-C-596. SPECIFICATION GRADE, FEED-THROUGH TYPE, HIGH STRENGTH NYLON FACE, BRASS GROUNDING STRAPS. INDICATOR LIGHT THAT SHOWS THEN THE GFCI HAS MALFUNCTIONED AND NO LONGER PROVIDES PROPER GFCI PROTECTION. BACK AND SIDE WIRED TO ACCEPT #12 AWG THROUGH #10 AWG SOLID OR STRANDED CONDUCTORS.

D) WEATHER-RESISTANT DUPLEX GFCI CONVENIENCE RECEPTACLES: 125V, 20A: COMPLY WITH NEMA WD1, NEMA WD6 CONFIGURATION 5-20R, UL 498 SUPPLEMENT SD, UL 943 CLASS A, AND FS W-C-596. HEAVY DUTY, STRAIGHT BLADE, NON-FEED-THROUGH TYPE, HIGH STRENGTH UV RESISTANT NYLON FACE AND BRASS HEAVY DUTY GROUNDING STRAPS. INDICATOR LIGHT THAT SHOWS WHEN THE GFCI HAS MALFUNCTIONED AND NO LONGER PROVIDES PROPER GFCI PROTECTION. BACK AND SIDE WIRED TO ACCEPT #12 AWG THROUGH #10 AWG SOLID CONDUCTORS.

E) SINGLE POLE SWITCHES: 120/277V, 20A: COMPLY WITH NEMA WD1, UL 20, AND FS W-S-896. HEAVY DUTY SPECIFICATION GRADE, WITH THERMOPLASTIC POLYCARBONATE TOGGLE AND HEAVY DUTY TOGGLE BUMPERS FOR SMOOTH AND QUIET OPERATION, AMPERAGE MARKING ON FACE. BACK AND SIDE WIRED TO ACCEPT #12 AWG THROUGH #10 AWG SOLID CONDUCTORS.

F) LED DIMMER: MODULAR; COMPATIBLE WITH LED DRIVER; DIMMER-DRIVER COMBINATION CAPABLE OF CONSISTENT DIMMING WITH LOW END NOT GREATER THAN 10 PERCENT OF FULL BRIGHTNESS.

C. WALL PLATES:

A) SINGLE AND COMBINATION TYPES SHALL MATCH CORRESPONDING WIRING DEVICES. SMOOTH, HIGH-IMPACT THERMOPLASTIC, EXCEPT AS DIRECTED BY ARCHITECT.

B) DAMP LOCATIONS: THERMOPLASTIC WITH SPRING-LOADED LIFT COVER, AND LISTED AND LABELED FOR USE IN WET AND DAMP LOCATIONS.

D. SPECIAL PURPOSE RECEPTACLES OR OTHER DEVICES SHALL BE AS INDICATED ON THE DRAWINGS.

E. WIRING DEVICES AND DEVICE PLATES COLOR SHALL BE AS DIRECTED BY THE ARCHITECT.

262813 - FUSES

A. ACCEPTABLE MANUFACTURERS: BUSSMAN, LITTELFUSE, FERRAZ-SHAWMUT.

B. FUSES PROTECTING POWER PANELS, DISTRIBUTION PANELS, AND DRY TYPE TRANSFORMERS SHALL BE DUAL ELEMENT TIME-DELAY TYPE. FUSES SHALL BE AS FOLLOWS (BUSSMAN NUMBERS ARE INDICATED FOR REFERENCE):

A) 200 AMPS OR LESS - CLASS RK5 FUSETRON FRN-R (250V), FRS-R (600V)

B) 225 AMPS TO 600 AMPS - CLASS J LOW-PEAK LPJ (600V)

C) 600 AMPS AND LARGER - CLASS L KRP-C

C. FUSES PROTECTING MOTORS AND MOTOR FEEDERS SHALL BE DUAL-ELEMENT TIME-DELAY TYPE ABLE TO CARRY 500% OF RATING FOR 10 SECONDS, AND SET AT LEAST TO 125% OF MOTOR NAMEPLATE RATING. FUSES SHALL BE AS FOLLOWS (BUSSMAN NUMBERS ARE INDICATED FOR REFERENCE):

A) 100 AMPS OR LESS - CLASS RK5 FUSETRON FRN-R (250V), FRS-R (600V)

B) LARGER THAN 100 AMPS - CLASS J LOW-PEAK LPJ (600V)

D. FUSES PROTECTING LIGHTING PANELS SHALL BE DUAL-ELEMENT TYPE. FUSES SHALL BE AS FOLLOWS (BUSSMAN NUMBERS ARE INDICATED FOR REFERENCE):

A) 250 AMPS OR LESS - CLASS RK1 LOW-PEAK LPN-RK (250V), LPS-RK (600V)

262816 - ENCLOSED SWITCHES

A. ACCEPTABLE MANUFACTURERS: EATON CORPORATION, GENERAL ELECTRIC, SQUARE D, SIEMENS.

B. FUSIBLE SWITCH ASSEMBLIES: NEMA KS 1, TYPE HD, ENCLOSED LOAD INTERRUPTER KNIFE SWITCH. HANDLE LOCKABLE IN OFF POSITION.

C. NONFUSIBLE SWITCH ASSEMBLIES: NEMA KS 1, TYPE HD, ENCLOSED LOAD INTERRUPTER KNIFE SWITCH. HANDLE LOCKABLE IN OFF POSITION.

D. FABRICATION: NEMA KS 1

A) INTERIOR DRY LOCATIONS: TYPE 1

B) EXTERIOR LOCATIONS: TYPE 3R

262913 - ENCLOSED MOTOR CONTROLLERS

A. EXCEPT SPECIFIED OTHERWISE, MOTOR CONTROLLER TYPE SHALL BE AS MANUFACTURED BY: ALLEN-BRADLEY, CUTLER-HAMMER, GENERAL ELECTRIC, AND SQUARE-D.

B. MANUAL MOTOR CONTROLLER: FULL_VOLTAGE STARTING, NEMA IS 2, AC, HEAVY-DUTY CLASS, MANUALLY OPERATED CONTROLLER WITH: 1) TOGGLE OPERATOR AND THERMAL OVERLOAD ELEMENT FOR FRACTIONAL HORSEPOWER INDUCTION MOTORS; OR: 2) OVERLOAD ELEMENT, RED PILOT LIGHT, 2 NO/NC FIELD INTERCHANGEABLE AUXILIARY CONTACTS AND PUSH BUTTON OPERATOR FOR INDUCTION MOTORS 1/2 HP AND LARGER.

C. AUTOMATIC MAGNETIC MOTOR CONTROLLERS: FULL VOLTAGE STARTING, NEMA IS 2, AC, HEAVY-DUTY CLASS, MAGNETIC CONTROLLER RATED IN HORSEPOWER. CONTROLLER SHALL BE PROVIDED WITH: 1) TWO (2) NO/NC FIELD CONVERTIBLE AUXILIARY CONTACTS IN ADDITION TO FACTORY SUPPLIED SEAL_IN CONTACTS; 2) COVER MOUNTED INCANDESCENT RED AND GREEN PILOT LIGHTS AND PUSHBUTTON OPERATOR; 3) ROTARY TYPE SELECTOR SWITCH; 4) CONTROL POWER TRANSFORMER WITH 120 VOLT SECONDARY VOLTAGE AND VA RATING AS REQUIRED BY THE LOAD SERVED. CONTROL TRANSFORMER SHALL BE FUSE PROTECTED ON BOTH, PRIMARY AND SECONDARY WINDINGS.

D. INSTALL ENCLOSED CONTROLLERS WHERE INDICATED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. HEIGHT OF THE OPERATING HANDLE NOT OVER 5 FT TO FINISHED FLOOR.

E. SELECT AND INSTALL OVERLOAD HEATER ELEMENTS IN MOTOR CONTROLLERS TO MATCH INSTALLED MOTOR CHARACTERISTICS.

F. MECHANICAL EQUIPMENT MOTORS AND MOTOR STARTERS FURNISHED BY MECHANICAL CONTRACTOR.

G. PROVIDE FEEDER CIRCUITS TO MECHANICAL EQUIPMENT AND MOTOR STARTERS AND MAKE ALL CONNECTIONS.

H. PROVIDE, NORMAL DUTY, HP RATED, QUICK-MAKE, QUICK-BREAK, FUSIBLE OR NON-FUSIBLE DISCONNECT SWITCHES AS REQUIRED BY NEC.

265100 - LUMINAIRES

A. PROVIDE ALL NEW LIGHTING FIXTURES COMPLETE WITH LAMPS, DRIVERS, REFLECTORS, PLASTER FRAMES, FLANGES, LOUVERS, STEM HANGERS, ETC., ASSEMBLED AND READY FOR OPERATION AND AS DESCRIBED ON THE DRAWINGS. (VERIFY CEILING TYPES.)

B. FOR ALL LED LUMINAIRES, SUBMIT LM79 TESTING REPORT.

C. ALL LAMPS SHALL BE LED EQUAL TO GENERAL ELECTRIC, PHILLIPS, OR SYLVANIA.

D. COORDINATE LAYOUT AND INSTALLATION OF LUMINAIRES AND SUSPENSION SYSTEM WITH OTHER CONSTRUCTION THAT PENETRATES CEILINGS OR IS SUPPORTED BY THEM, INCLUDING, BUT NOT LIMITED TO, HVAC EQUIPMENT, FIRE-SUPPRESSION SYSTEM, AND PARTITION ASSEMBLIES.

E. PROVIDE TWO NO. 12 GAUGE HANGERS CONNECTED FROM THE FIXTURE HOUSING TO THE STRUCTURE, IN ADDITION TO THE FIXTURE REQUIRED ATTACHMENT TO THE CEILING SUSPENSION SYSTEM.

F. SUBSTITUTIONS:

a) DURING THE BIDDING PROCESS (PRIOR APPROVALS): ALTERNATE LUMINAIRES WILL BE REVIEWED BY THE ENGINEER DURING THE BIDDING PROCESS. APPROVAL OF ALTERNATE LUMINAIRES DURING THE SUBMITTAL PROCESS IS AT THE SOLE DISCRETION OF THE ENGINEER. ANY LUMINIARE DEEMED NOT EQUAL BY THE ENGINEER DURING THE SUBMITTAL PROCESS SHALL BE RESUBMITTED AND ANY COST DIFFERENCE SHALL BE BORNE BY THE CONTRACTOR.

1) ANY PROPOSED ALTERNATE LUMINAIRE SHALL BE SUBMITTED BY THE CONTRACTOR BIDDING THE PROJECT AND SHALL BE ACCOMPANIED BY A DETAILED PRICING BREAKOUT INDICATING THE COST OF THE SPECIFIED LUMINAIRE AND THE COST OF THE PROPOSED LUMINAIRE. IF THE INSTALLATION COSTS ARE DIFFERENT BETWEEN THE SPECIFIED LUMINAIRE AND THE PROPOSED LUMINAIRE, THIS INFORMATION SHALL BE SUBMITTED AS PART OF THE SUBSTITUTION REQUEST. SUBSTITUTION REQUESTS FROM LIGHTING REPRESENTATIVES WILL NOT BE ACCEPTED.

b) DURING THE SUBMITTAL PROCESS: ALTERNATE LUMINAIRES WILL NOT BE REVIEWED BY THE ENGINEER DURING THE SUBMITTAL PROCESS.

END OF SPECIFICATION

COMcheck Software Version COMcheckWeb
Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: EMMA MALABY GROCERY
Project Type: Alteration

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Museum:Restoration	2363	1.10	2599
		Total Allowed Watts =	2599

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Museum: Restoration (2363 sq.ft.)				
LED: D4: DOWNLIGHT: Other:	1	6	12	72
LED: D12: DOWNLIGHT: Other:	1	2	15	30
LED: PG/PM: PENDANT: Other:	1	13	25	325
LED: S4/S4P/S4S: STRIPLIGHT: Other:	1	16	25	400
LED: U14: UNDER CABINET: Other:	1	1	5	5
LED: U20: UNDER CABINET: Other:	1	3	8	24
			Total Proposed Watts =	856

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project 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 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

Project Title: EMMA MALABY GROCERY Report date: 11/03/24
Data filename: Page 1 of 6

COMcheck Software Version COMcheckWeb
Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: EMMA MALABY GROCERY
Project Type: Alteration
Exterior Lighting Zone 2 (Residentially zoned area (LZ2))

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Pedestrian and vehicular entrances and exits	12 ft of	14	Yes	168
		Total Tradable Watts (a) =		168
		Total Allowed Watts =		168
		Total Allowed Supplemental Watts (b) =		400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Pedestrian and vehicular entrances and exits (12 ft of door width): Tradable Wattage				
LED: EWE: AREA LIGHT: Other:	1	4	11	44
			Total Tradable Proposed Watts =	44

Exterior Lighting PASSES

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

Project Title: EMMA MALABY GROCERY Report date: 11/03/24
Data filename: Page 2 of 6

PRELIMINARY - NOT FOR CONSTRUCTION

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CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

DATE:	DESCRIPTION:
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE:	NOVEMBER 4, 2024
PROJECT NUMBER:	
DRAWN BY: LMW	CHECKED BY: LMW
COMPUTER FILE:	EMMA MALABY BASE DRAWING

ELECTRICAL SPECIFICATION AND COMCHECK

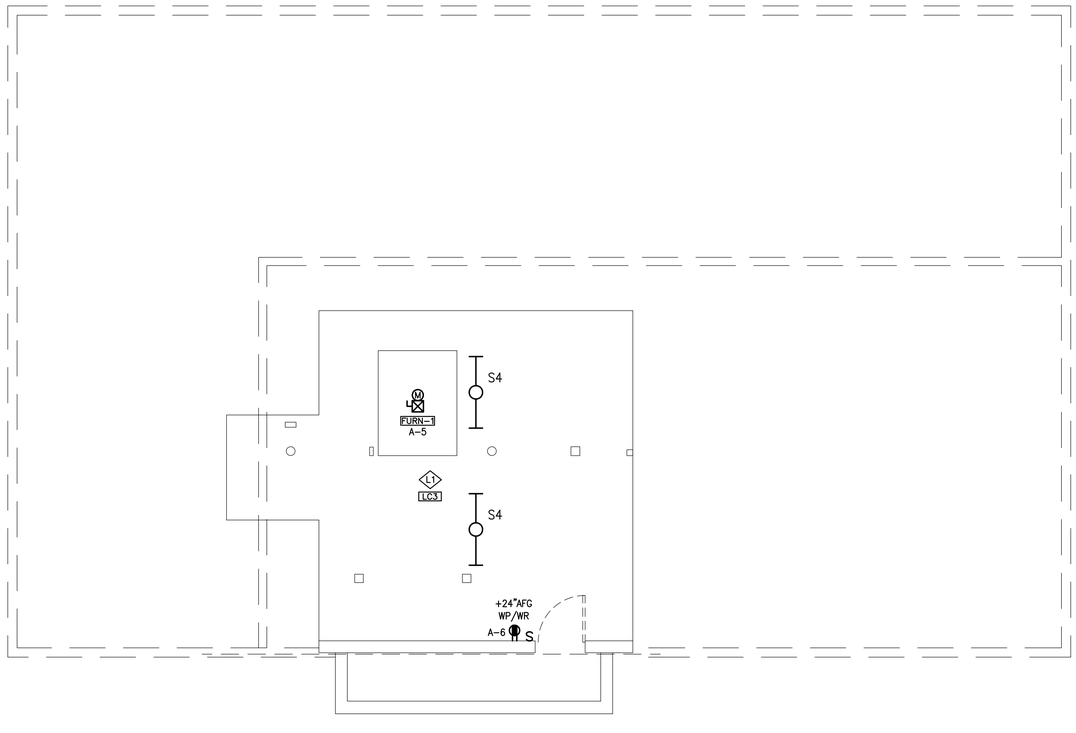
E0.2

GENERAL NOTES:

1. CONCEAL ALL CONDUITS WITHIN FINISHED WALLS, CEILINGS AND FLOORS UNLESS NOTED OTHERWISE. COORDINATE ALL EXPOSED SURFACE MOUNTED CONDUIT, RACEWAY AND BOX LOCATIONS AND ROUTING WITH ARCHITECT PRIOR TO ROUGH-IN. ALL EXPOSED CONDUIT AND BOXES SHALL BE PAINTED TO MATCH ADJACENT SURFACES.
2. CARE SHOULD BE TAKEN FOR ANY NEW OR REMOVAL WORK TO MAINTAIN EXISTING FINISHES.
3. CONTRACTOR TO SCHEDULE A MEETING PRIOR TO START OF WORK TO COORDINATE NEW FEEDER AND BRANCH CIRCUIT ROUTING WITH ARCHITECT. FEEDERS AND BRANCH CIRCUITS TO BE CONCEALED. IF SURFACE MOUNTED ROUTING (CONDUIT) IS REQUIRED COORDINATE WITH ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. PAINT SURFACE MOUNTED CONDUIT AS DIRECTED BY ARCHITECT.
4. CONFIRM REMOVAL OF EXISTING DATA AND NEW DATA WITH OWNER.
5. REFER TO LIGHTING CONTROL SCHEDULE ON E3.0 FOR LIGHTING CONTROL REQUIREMENTS.

WORK NOTES:

L1 CONNECT INTERIOR LIGHTING TO A-21.



1 E1.0 ELECTRICAL BASEMENT POWER AND LIGHTING PLAN

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

PRELIMINARY - NOT FOR CONSTRUCTION

SCHEUBER + DARDEN architects LLC

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wSBE • DBE • EDE • SBE

313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

DATE:	DESCRIPTION:
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

PROJECT NUMBER:

DRAWN BY: LMW CHECKED BY: LMW

COMPUTER FILE: EMMA MALABY BASE DRAWING

ELECTRICAL BASEMENT POWER AND LIGHTING PLAN

E1.0

GENERAL NOTES:

1. CONCEAL ALL CONDUITS WITHIN FINISHED WALLS, CEILINGS AND FLOORS UNLESS NOTED OTHERWISE. COORDINATE ALL EXPOSED SURFACE MOUNTED CONDUIT, RACEWAY AND BOX LOCATIONS AND ROUTING WITH ARCHITECT PRIOR TO ROUGH-IN. ALL EXPOSED CONDUIT AND BOXES SHALL BE PAINTED TO MATCH ADJACENT SURFACES.
2. CARE SHOULD BE TAKEN FOR ANY NEW OR REMOVAL WORK TO MAINTAIN EXISTING FINISHES.
3. CONTRACTOR TO SCHEDULE A MEETING PRIOR TO START OF WORK TO COORDINATE NEW FEEDER AND BRANCH CIRCUIT ROUTING WITH ARCHITECT. FEEDERS AND BRANCH CIRCUITS TO BE CONCEALED. IF SURFACE MOUNTED ROUTING (CONDUIT) IS REQUIRED COORDINATE WITH ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. PAINT SURFACE MOUNTED CONDUIT AS DIRECTED BY ARCHITECT.
4. CONFIRM REMOVAL OF EXISTING DATA AND NEW DATA WITH OWNER.

WORK NOTES:

P1 PROVIDE NEW RECEPTACLE IN EXISTING LOCATION TO MATCH EXISTING. PROVIDE NEW BRANCH CIRCUIT, DEVICE AND COVER PLATE. ROUTE BRANCH CIRCUIT UNDER FLOOR. FEED UP FROM UNDER FLOOR TO EACH RECEPTACLE. LIMIT SURFACE MOUNTED CONDUIT IN BUILDING.

P2 PROVIDE NEW QUAD RECEPTACLE IN LOCATION OF EXISTING DUPLEX RECEPTACLE. PROVIDE NEW BRANCH CIRCUIT, DEVICE AND COVER PLATE. ROUTE BRANCH CIRCUIT UNDER FLOOR. FEED UP FROM UNDER FLOOR TO EACH RECEPTACLE. LIMIT SURFACE MOUNTED CONDUIT IN BUILDING.

P3 PROVIDE NEW GFCI DUPLEX RECEPTACLE IN EXISTING LOCATION. PROVIDE NEW BRANCH CIRCUIT, DEVICE AND WEATHERPROOF COVER. ROUTE BRANCH CIRCUIT IN ATTIC OR ABOVE CEILING AND THROUGH TO EXTERIOR. LIMIT SURFACE MOUNTED CONDUIT ON EXTERIOR OF BUILDING.

P4 PROVIDE SPLIT CONTROLLED RECEPTACLES (TOP RECEPTACLE CONTROLLED) IN ENCLOSED OFFICES AND CONFERENCE (MEETING) ROOMS TO MEET IECC C405.11. CONTROL RECEPTACLES VIA CEILING MOUNTED OCCUPANCY SENSOR (LOW VOLTAGE RATED FOR 20A) TO TURN OFF 20 MINUTES AFTER OCCUPANTS HAVE LEFT THE SPACE. CONTROLLED RECEPTACLES TO BE PERMANENTLY MARKED PER NEC.

P5 PROVIDE FIRE RATED POKE-THROUGH HUBBELL #S1PT4X4BRS (4 PREWIRED 20A RECEPTACLES, 4 KEYSTONE OPENING SUBPLATE AND BRASS HINGED DOOR) OR APPROVED EQUIVALENT. COORDINATE REQUIREMENTS WITH FLOOR CONSTRUCTION.

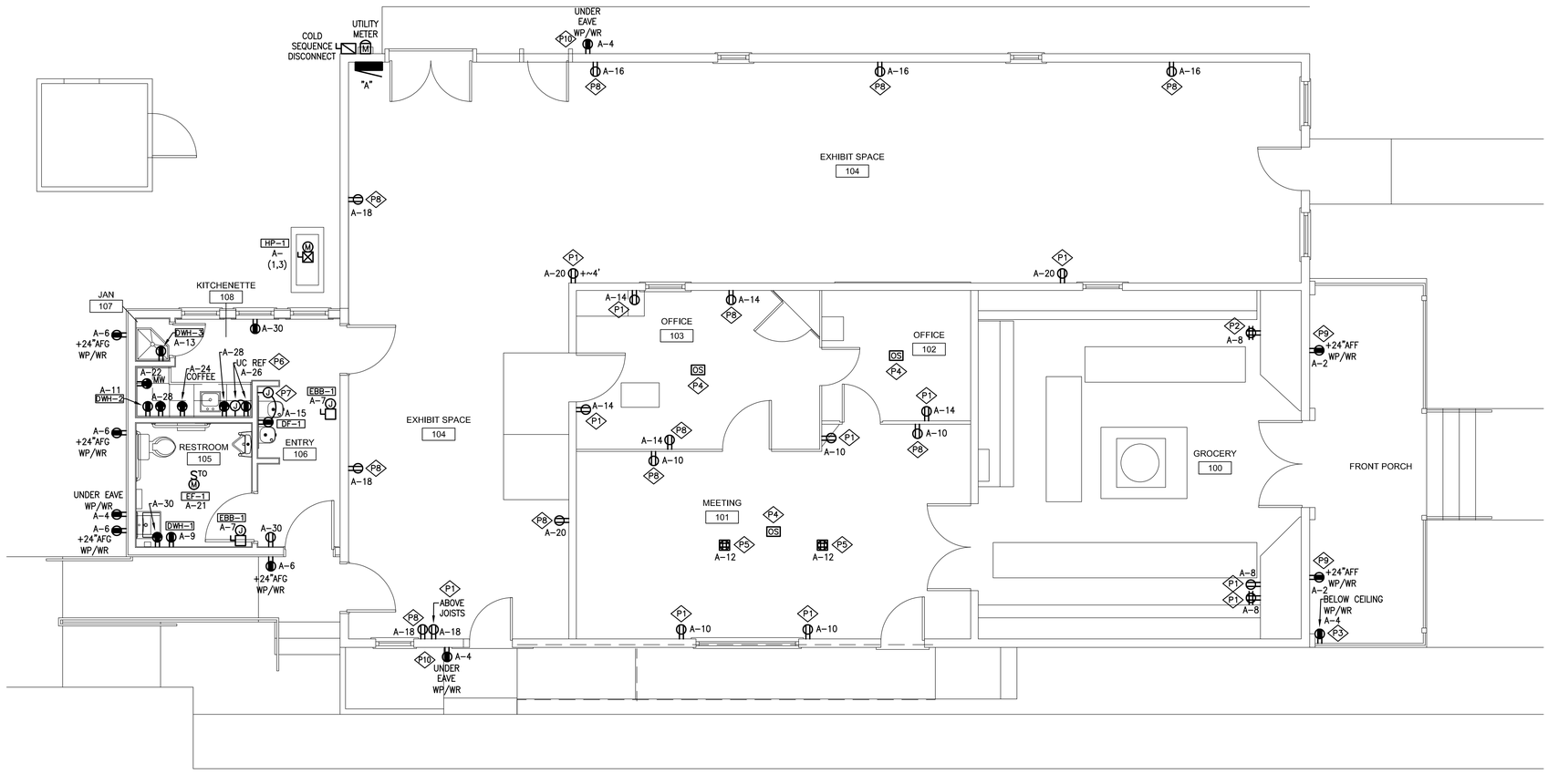
P6 PROVIDE DEAD FRONT GFCI DEVICE, PASS AND SEYMOUR #2085, OR APPROVED EQUAL, FOR GFCI PROTECTION OF UC REFRIGERATOR AS REQUIRED BY THE NEC. DEVICE SHALL BE INSTALLED ABOVE COUNTER AN ACCESSIBLE LOCATION AND LABELED "UC REFRIGERATOR GFCI".

P7 PROVIDE DEAD FRONT GFCI DEVICE, PASS AND SEYMOUR #2085, OR APPROVED EQUAL, FOR GFCI PROTECTION OF DF-1 AS REQUIRED BY THE NEC. DEVICE SHALL BE INSTALLED AT +84" IN AN ACCESSIBLE LOCATION AND LABELED "DRINKING FOUNTAIN GFCI".

P8 NEW RECEPTACLE. ROUTE BRANCH CIRCUIT UNDER FLOOR. FEED UP FROM UNDER FLOOR TO EACH RECEPTACLE. LIMIT SURFACE MOUNTED CONDUIT IN BUILDING.

P9 NEW EXTERIOR RECEPTACLE. ROUTE BRANCH CIRCUIT UNDER FLOOR AND THROUGH TO EXTERIOR. FEED UP EXTERIOR WALL TO EACH RECEPTACLE. LIMIT SURFACE MOUNTED CONDUIT ON EXTERIOR OF BUILDING.

P10 NEW EXTERIOR RECEPTACLE AT EAVE. ROUTE BRANCH CIRCUIT IN ATTIC OR ABOVE CEILING AND THROUGH TO EXTERIOR. LIMIT SURFACE MOUNTED CONDUIT ON EXTERIOR OF BUILDING.



1 E1.1 ELECTRICAL FIRST FLOOR POWER PLAN

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

PRELIMINARY - NOT FOR CONSTRUCTION

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SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

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FT. COLLINS, COLORADO 80521

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ELECTRICAL FIRST FLOOR POWER PLAN

E1.1

TYPE D4 - 4" DOWNLIGHT, WHITE TRIM

TYPE PG - GROCERY PENDANT
BLACK, BLACK CORD, BLACK CANOPY

TYPE S4P/S4S - EXHIBIT SPACE
PENDANT/SURFACE + PENDANT
BLACK FINISH

TYPE S4 - CRAWL SPACE - WIREGUARD

TYPE D12 - 12" SQUARE DOWNLIGHT,
FIT OVER EXISTING SQUARE HOLE

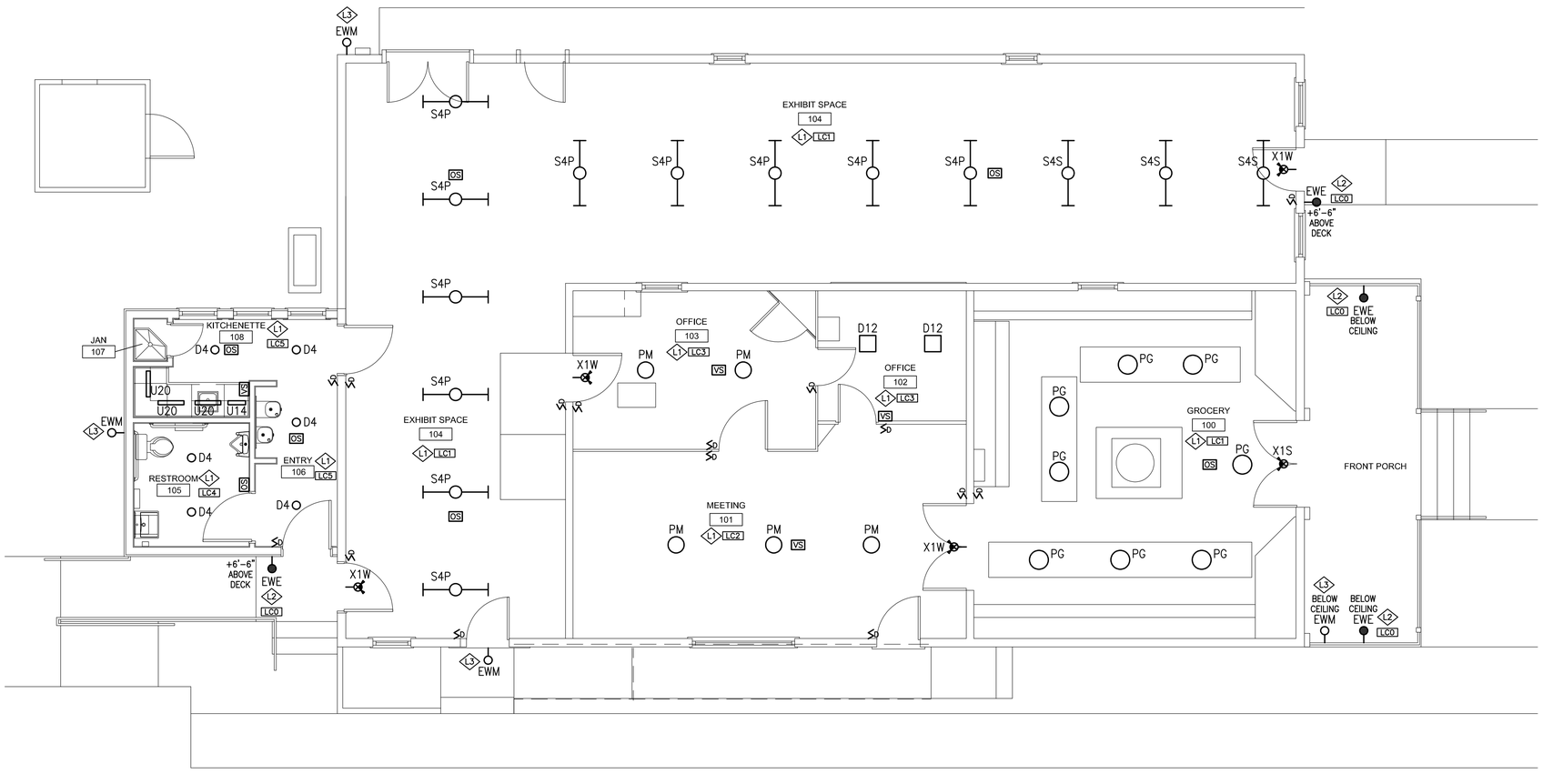
TYPE PM - MTG RM & OFFICE PENDANT
OPAL GLASS, BLACK CORD, BLACK CANOPY

TYPE UC14/UC20 - UNDER CABINET

TYPE EWE - EXTERIOR EGRESS DOORS

TYPE EWS - RING EXTERIOR
SECURITY/MOTION LIGHT

TYPE X1W/X1S - EXIT SIGN
WITH LED EM LIGHT BAR



1 E2.1 ELECTRICAL FIRST FLOOR LIGHTING PLAN

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

GENERAL NOTES:

1. CONCEAL ALL CONDUITS WITHIN FINISHED WALLS, CEILINGS AND FLOORS UNLESS NOTED OTHERWISE. COORDINATE ALL EXPOSED SURFACE MOUNTED CONDUIT, RACEWAY AND BOX LOCATIONS AND ROUTING WITH ARCHITECT PRIOR TO ROUGH-IN. ALL EXPOSED CONDUIT AND BOXES SHALL BE PAINTED TO MATCH ADJACENT SURFACES.
2. CARE SHOULD BE TAKEN FOR ANY NEW OR REMOVAL WORK TO MAINTAIN EXISTING FINISHES.
3. CONTRACTOR TO SCHEDULE A MEETING PRIOR TO START OF WORK TO COORDINATE NEW FEEDER AND BRANCH CIRCUIT ROUTING WITH ARCHITECT. FEEDERS AND BRANCH CIRCUITS TO BE CONCEALED. IF SURFACE MOUNTED ROUTING (CONDUIT) IS REQUIRED COORDINATE WITH ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. PAINT SURFACE MOUNTED CONDUIT AS DIRECTED BY ARCHITECT.
4. REFER TO LIGHTING CONTROL SCHEDULE ON E3.0 FOR LIGHTING CONTROL REQUIREMENTS.

WORK NOTES:

L1 CONNECT INTERIOR LIGHTING TO A-21.

L2 CONNECT EXTERIOR LIGHTING TO A-23.

L3 CONNECT EXTERIOR SECURITY LIGHTING TO A-25.

SCHEUBER + DARDEN architects LLC

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CONSTRUCTION DOCUMENTS

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ELECTRICAL FIRST FLOOR LIGHTING PLAN

E2.1

PRELIMINARY - NOT FOR CONSTRUCTION

LIGHTING CONTROL SCHEDULE

APPLICABLE ENERGY CODE = 2021 **IECC**

TYPE	SPACE DESCRIPTION	ON	OFF	SENSOR	TIMING	DIMMING	DAYLIGHT	DAYLIGHT SETTINGS	EM	INTERFACE	NOTES
		M = MANUAL(SWITCH) A = AUTOMATIC(SENSOR) T = TIME SCHEDULE P = PHOTOCELL		C = CEILING W= WALL CR = CORNER SI = SENSOR INTEGRAL TO LUMINAIRE LI = SENSOR INTEGRAL TO LUMINAIRE DT = PIR SENSOR, DT = DUAL TECH SENSOR US = ULTRASONIC SENSOR		0-10V, ELV, MLV, DALI, DMX	INT = INTERIOR DIMMING PHOTOSENSOR EXT = EXTERIOR PHOTOCELL INPUT LUM = PHOTOSENSOR INTEGRAL TO LUMINAIRE(S)		BATT = INTEGRAL EM BATTERY INV = INVERTER	N = TIE TO CENTRAL NETWORK BAS = TIE TO BAS AV = ENABLE SCENE CONTROL VIA AV SYSTEM	
LC0	EXTERIOR - BUILDING MOUNTS	P	T		COORDINATE WITH OWNER	0-10V	EXT		BATT	N	1
LC1	GROCERY 100, EXHIBIT SPACE 104	A	A	C DT	20 MIN	0-10V					
LC2	MEETING 101	M	A	C DT	10 MIN	0-10V					
LC3	OFFICE102, OFFICE 103	M	A	SI/C DT	10 MIN	0-10V					
LC4	RESTROOM 105	A	A	SI DT	5 MIN						
LC5	ENTRY 106, KITCHENETTE 108	A	A	C DT	20 MIN	0-10V					2
LC6	MECHANICAL CRAWL SPACE	M	M								3

GENERAL NOTES:

A. PROVIDE ALL REQUIRED COMPONENTS, ACCESSORIES, AND CONNECTIONS TO ACCOMPLISH DESIGN INTENT, AND PROVIDE A COMPLETE AND OPERATIONAL LIGHTING CONTROL SYSTEM.
B. SUBMITTALS SHALL INCLUDE FLOOR PLANS SHOWING ALL DEVICE LAYOUTS, AS WELL AS WIRING DIAGRAMS, CUT SHEETS, ETC. SHOP DRAWINGS SUBMITTED WITHOUT FLOOR PLAN LAYOUTS WILL BE RETURNED WITHOUT REVIEW.
C. PROVIDE ALL DEVICES AND ACCESSORIES FROM A SINGLE MANUFACTURER WHENEVER POSSIBLE.
D. NOT ALL SPACE NAMES MAY BE LISTED FOR EACH LIGHTING CONTROL TYPE. REFER TO PLANS FOR ALL SPACES TO BE CONTROLLED.
E. SPACES MAY CONTAIN MULTIPLE ZONES OF CONTROL. REFER TO PLANS FOR ADDITIONAL INFORMATION.
F. LOCATIONS OF OCCUPANCY SENSORS ON PLANS ARE DIAGRAMMATIC. FINAL LOCATION OF SENSORS SHALL BE PER MANUFACTURER'S SHOP DRAWINGS. MANUFACTURER SHALL REVIEW AND REVISE LOCATIONS AS REQUIRED FOR PROPOSED PRODUCTS. CONTRACTOR AND MANUFACTURER SHALL BE RESPONSIBLE TO RECONFIGURE AND ADJUST COMPONENTS IN FIELD WHERE CONTROL SYSTEM DESIGN INTENT IS NOT MET.
G. CONTRACTOR SHALL COORDINATE AND VERIFY DIMMING COMPATIBILITY OF THE PROPOSED CONTROLS AND LUMINAIRES TO ENSURE THAT LUMINAIRES CAN MEET THE SPECIFIED DIMMING RANGE. ALL LUMINAIRES SHALL BE CAPABLE OF DIMMING TO OFF.

NOTES:

1. COORDINATE ON/OFF TIMES WITH OWNER. REDUCE LIGHT LEVELS BY 50% BETWEEN 1 HOUR AFTER BUSINESS CLOSE AND 1 HOUR BEFORE BUSINESS OPEN.
2. CONTROL UNDER CABINET LIGTING VIA VACANCY SENSOR (MANUAL ON/AUTO OFF 20 MIN) MOUNTED ABOVE COUNTER.
3. PROVIDE ON/OFF TOGGLE SWITCH AT ENTRANCE TO CRAWL SPACE.

LUMINAIRE SCHEDULE

ALL LED LAMPS TO BE 2700K COLOR TEMPERATURE AND MINIMUM 80CRI, UNLESS NOTED OTHERWISE.

TYPE	LAMP	LUMENS	DIMMING	VOLT	FINISH	MOUNTING	DESCRIPTION	MFR	MODEL	VA	NOTES
D4	LED	900	0-10V	120	WHITE	RECESSED GYP	4" IC RATED RECESSED LED DOWNLIGHT. MEDIUM FLOOD DISTRIBUTION. 10% DIM. WHITE CONE, WHITE TRIM RING.	JUNO	IC1LED G4 09LM 27K 90CRI MVOLT ZT10 17WWH	12	
D12	LED	1400	0-10V	120	WHITE	SURFACE J-BOX	12" SQUARE DOWNLIGHT (JBOX INSTALLATION.) SET 2700K. 10% DIM.	JUNO	JSFSQ 12IN 13LM SWW5 (27K) 90CRI MVOLT ZT WH	15	1
PG	LED	2812	0-10V	120	BLACK	PENDANT	PENDNAT IN GROCERY. LED RLM VENTED 14" SHADE. BLACK SHADE, BLACK CORD, BLACK CANOPY. PRISMATIC GLASS.	BASELITE	V214 41 LBLC LED25W 27K LDM0-10 PR4	25	2
PM	LED	2812	0-10V	120	BLACK OPAL GLASS	PENDANT	PENDANT IN MEETING ROOM AND OFFICE. LED 14" SCHOOLHOUSE. BLACK CORD, BLACK CANOPY. OPAL GLASS.	BASELITE	SCP SHO14 41 LBLC LED25W 27K LDM0-10	25	2
S4	LED	5000		120	WHITE	PENDANT/ SURFACE	4' LED STRIPLIGHT. PENDANT/SURFACE MOUNT. WIREGUARD. COORDINATE LOCATION WITH EXISTING STRUCUTRE AND MECHANICAL EQUIPMENT.	LITHONIA	ZL1D L48 5000LM FST 120V 27K 90CRI WH WGZ48	34	
S4P	LED	5000	0-10V	120	BLACK	PENDANT	4' LED STRIPLIGHT. BLACK FINISH. PENDANT MOUNT WITH AIRCRAFT CABLE SO LENS AT BOTTOM OF JOIST HEIGHT.	LITHONIA	ZL1D L48 5000LM FST 120V 27K 90CRI MB ZACVH M100	34	3
S4S	LED	5000	0-10V	120	BLACK	SURFACE	4' LED STRIPLIGHT. BLACK FINISH. SURFACE MOUNT TO HISTROIC CEILING. PENDANT MOUNT ONE END (AS REQUIRED) WITH AIRCRAFT CABLE.	LITHONIA	ZL1D L48 5000LM FST 120V 27K 90CRI MB ZACVH M100	34	3
U14	LED	335		120	WHITE	SURFACE CABINET	14" UNDER CABINET LED.	WAC	LS-LED14P-27-WT	5	4
U20	LED	520		120	WHITE	SURFACE CABINET	20" UNDER CABINET LED.	WAC	LS-LED20P-27-WT	8	4
EWE	LED	1550		120	DARK BRONZE	SURFACE WALL	EXTERIOR WALL PACK WITH INTEGRAL COLD WEATHER EMERGENCY BATTERY.	LITHONIA	WPX1 LED P1 30K MVOLT E14WC DDBXD	11	5
EWM				120	WHITE	SURFACE WALL	MOTION SENSOR DUAL HEAD FLOODLIGHT WITH SMART CONTROLS.	RING	FLOODLIGHT WIRED + BRIDGE		5,6
X1W	LED			120	WHITE	SURFACE WALL	WALL MOUNTED COMBINATION LED EXIT SIGN WITH EMERGENCY LIGHT BAR. GREEN LETTERS.	LITHONIA	ECBG LED M6		7
X1S	LED			120	WHITE	SUSPENDED FROM CEILING	SUSPENDED COMBINATION LED EXIT SIGN WITH EMERGENCY LIGHT BAR. GREEN LETTERS. SUSPEND FROM CEILING ON SOLID STEM. WHITE TO MATCH EXIT SIGN.	LITHONIA	ECBG LED M6		3,4

GENERAL NOTES:

A. ALL CRITERIA LISTED IN THE DESCRIPTION SHALL BE PROVIDED. MODEL NUMBER MAY NOT REPRESENT THE COMPLETE MODEL NUMBER.
B. MODEL NUMBER REPRESENTS THE PRODUCT FROM THE FIRST MANUFACTURER LISTED. ALTERNATE MANUFACTURERS ARE LISTED AS BEING ABLE TO PROVIDE EQUIVALENT PRODUCTS. EQUIVALENT PRODUCTS MUST MEET THE CRITERIA LISTED IN THE DESCRIPTION AND THE MODEL NUMBER.
C. PROVIDE ALL COMPONENTS (INTEGRAL/REMOTE DRIVER, MOUNTING HARDWARE, LENSES, END CAPS, CABLES, ETC) NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
D. CONFIRM CEILING TYPES AND VERIFY TRIM COMPATIBILITY PRIOR TO SUBMITTALS.
E. VERIFY FINAL LUMINAIRE FINISH SELECTIONS WITH ARCHITECT PRIOR TO ORDERING. FINISH SHALL BE SELECTED FROM MANUFACTURER'S STANDARD FINISHES UNLESS NOTED OTHERWISE.
F. VERIFY FINAL LUMINAIRE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO ORDERING.

NOTES:

1. LUMINAIRE TO COVER EXISTING SQUARE LUMINAIRE HOLE. FIELD COORDINATE PRIOR TO PURCHASE.
2. COORDINATE FINAL PENDANT LENGTH (MOUNTING HEIGHT) WITH ARCHITECT PRIOR TO PURCHASE.
3. FILED COORDINATE PENDANT LENGTH (MOUNTING HEIGHT) WITH CEILING/STRUCTURE PRIOR TO PURCHASE.
4. FILED COORDINATE UNDER CABINET LUMINAIRE LENGTH WITH CABINETS PRIOR TO PURCHASE.
5. COORDIANTE FINAL MOUNTING HEIGHT AND LOCATION OF EXTERIOR LUMINAIRES WITH ARCHITECT PRIOR TO ROUGH-IN.
6. COORDINATE FINAL EMERGENCY MOTION SENSOR LIGHT WITH OWNER (CAMERA OR NO CAMERA.) COORDINATE WITH OWNER FOR THEIR IT TO ENABLE THE SMART CONTROLS.
7. EXIT SIGN: 90 MINUTE, TEST SWITCH, STATUS INDICATOR, UL924. MAINTENANCE FREE NICKEL CADMIUM HIGH OUTPUT BATTERY.

MECHANICAL EQUIPMENT SCHEDULE

EQUIPMENT DESIGNATION	EQUIPMENT DESCRIPTION	MOTORS HP	MOTORS FLA	OTHER WATTS	EQUIV. LOAD (VA)	VOLTAGE VOLTS	VOLTAGE PH	PROTECTION BREAKER	DISC AT UNIT DISC SWITCH	DISC AT UNIT FUSE	FEEDER	NOTES
DF-1	DRINKING FOUNTAIN			370	370	120	1	20 A 1 P	CORD & PLUG		1 [(2 # 12 &1 # 12 G) 3/4 "C]	
DWH-1	ELECTRIC DOMESTIC WATER HEATER			1440	1,440	120	1	20 A 1 P	CORD & PLUG		1 [(2 # 12 &1 # 12 G) 3/4 "C]	
DWH-2	ELECTRIC DOMESTIC WATER HEATER			1440	1,440	120	1	20 A 1 P	CORD & PLUG		1 [(2 # 12 &1 # 12 G) 3/4 "C]	
DWH3	ELECTRIC DOMESTIC WATER HEATER			1440	1,440	120	1	20 A 1 P	CORD & PLUG		1 [(2 # 12 &1 # 12 G) 3/4 "C]	
EBB-1	ELECTRIC BASEBOARD (TYP OF 2)			400	400	120	1	20 A 1 P	30 A 1 P		1 [(2 # 12 &1 # 12 G) 3/4 "C]	
EF-1	RESTROOM FAN			3.7	4	120	1	20 A 1 P	STO		1 [(2 # 12 &1 # 12 G) 3/4 "C]	1
FURN-1	FURNACE		7.7		924	120	1	20 A 1 P	30 A 1 P	15	1 [(2 # 12 &1 # 12 G) 3/4 "C]	
HP-1	HEAT PUMP		41.0		9,840	240	1	50 A 2 P	60 A 2 P	50	1 [(2 # 4 &1 # 8 G) 1 1/4 "C]	
					0	0	0	0 A 0 P	0 A 0 P	0	0 [(0 # 0 &1 # 0 G) 0 "C]	

GENERAL NOTES:

A. VERIFY EQUIPMENT ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR AND SUBMITTALS PRIOR TO ROUGH-IN..
B. VERIFY EQUIPMENT LOCATIONS AND POINTS OF CONNECTIONS WITH MECHANICAL CONTRACTOR, ARCHITECT AND/OR OWNER PRIOR TO ROUGH-IN.
C. MAINTAIN REQUIRED WORKING SPACE CLEARANCES FOR ALL EQUIPMENT.

NOTES:

1. CONTROL VIA RESTROOM OCCUPANCY SENSOR.

PANEL: A - SERVICE ENTRANCE RATED

LOCATION: EXHIBIT SPACE
SUPPLY FROM: UTILITY
MOUNTING: SURFACE
NOTES:

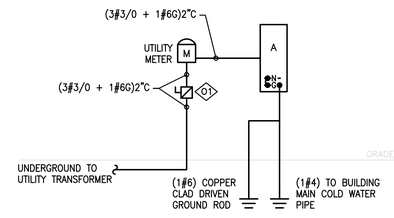
VOLTAGE: 240/120
PHASES: 1
WIRES: 3
NEUTRAL: 100%

A.I.C. RATING: 10,000 A
MAIN TYPE: MCB
IAIN BUS RATING: 200 A
MCB RATING: 200 A
MAX AMPACITY: 200 A

NOTES	CKT	DESCRIPTION	CB	POLES	A		B		POLES	CB	DESCRIPTION	CKT	NOTES
	-	HP-1	50	1	4920	360			1	20	RCPT-FRONT PROCH	2	
	3	—	-	1			4920	720	1	20	RCPT-EXT EAVE	4	
	5	FURN-1	20	1	924	900			1	20	RCPT-EXTERIOR/BSMT	6	
	-	(2) EBB-1	20	1			900	900	1	20	RCPT-GROCERY	9	
	9	DWH-1	20	1	1440	900			1	20	RCPT-MTG RM	10	
	11	DWH-2	20	1			1440	720	1	20	RCPT-MTG FLOOR	12	
	13	DWH-3	20	1	1440	900			1	20	RCPT-OFFICE 102/103	14	
	15	DF-1	20	1			370	540	1	20	RCPT-EXHIBIT	16	
	17	SPARE	20	1	0	720			1	20	RCPT-EXHIBIT	18	
	19	SPARE	20	1			0	540	1	20	RCPT-EXHIBIT	20	
	21	LTG-INTERIOR/EF-1	20	1	1000	1200			1	20	MICROWAVE	22	
	23	LTG-EXTERIOR	20	1			44	1000	1	20	COFFEE	24	
	25	SECURITY LTG-EXT	20	1	400	900			1	20	UC REFRIG	26	
	27	SPARE	20	1			0	360	1	20	RCPT-KIT COUNTER	28	
	29	SPARE	20	1	0	540			1	20	RCPT-ENTRY/RR/KIT	30	
	31	SPARE	20	1			0	0	1	20	SPARE	32	
	33	SPACE	-	1	0	0			1	-	SPACE	34	
	35	SPACE	-	1			0	0	1	-	SPACE	36	
	37	SPACE	-	1	0	0			1	-	SPACE	38	
	39	SPACE	-	1			0	0	1	-	SPACE	40	
	41	SPACE	-	1	0	0			1	-	SPACE	42	
		TOTAL LOAD			16,448 VA		12,354 VA						

LOAD CLASSIFICATION	CONNECTED LOAD (VA)	DEMAND FACTOR	ESTIMATED DEMAND (VA)	PANEL TOTALS	
LIGHTING	1044	1.25	1305		
RECEPTACLE	8100	10KVA + 50% REMAIN	8100	TOTAL CONNECTED LOAD:	28,802 VA
LARGEST MOTOR	3350	1.25	12300	TOTAL ESTIMATED DEMAND:	31,523 VA
MOTOR	928	1.00	928	TOTAL CONNECTED AMPS:	120 A
EQUIPMENT	8890	1.00	8890	TOTAL ESTIMATED DEMAND AMPS:	131 A
PANEL	0	1.00	0		
KITCHEN	0	1.00	0	SPARE CAPACITY:	34%

NOTES:
1



EXISTING ELECTRICAL ONE-LINE DIAGRAM

SCALE: NONE

GENERAL NOTES:

1. REMOVE EXISTING 100A, 240V1PH ELECTRICAL SERVICE. REMOVE EXISTING PANELBOARD.
2. PROVIDE NEW 200A, 240V1PH ELECTRICAL SERVICE. COORDINATE REQUIREMENTS WITH CITY OF FORT COLLINS UTILITIES.

WORK NOTES:

COLD SEQUENCE DISCONNECT, NEMA 3R. PROVIDE FAULT CURRENT LIMITING FUSES TO LIMIT FAULT TO 10,000A AT THE METER.

PRELIMINARY - NOT FOR CONSTRUCTION

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EnLighten ENGINEERING, LLC
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313 N. MELDRUM STREET
FT. COLLINS, COLORADO 80521

CONSTRUCTION DOCUMENTS

SHF #2024-M1-010

FOR

EMMA MALABY GROCERY

DATE:	DESCRIPTION:
11-04-24	DELIVERABLE 5 - DRAFT CONSTRUCTION DOCUMENTS

DATE: NOVEMBER 4, 2024

PROJECT NUMBER:

DRAWN BY: LMW CHECKED BY: LMW

COMPUTER FILE: EMMA MALABY BASE DRAWING

ELECTRICAL ONE-LINE DIAGRAM AND SCHEDULES

E3.0

GENERAL NOTES:

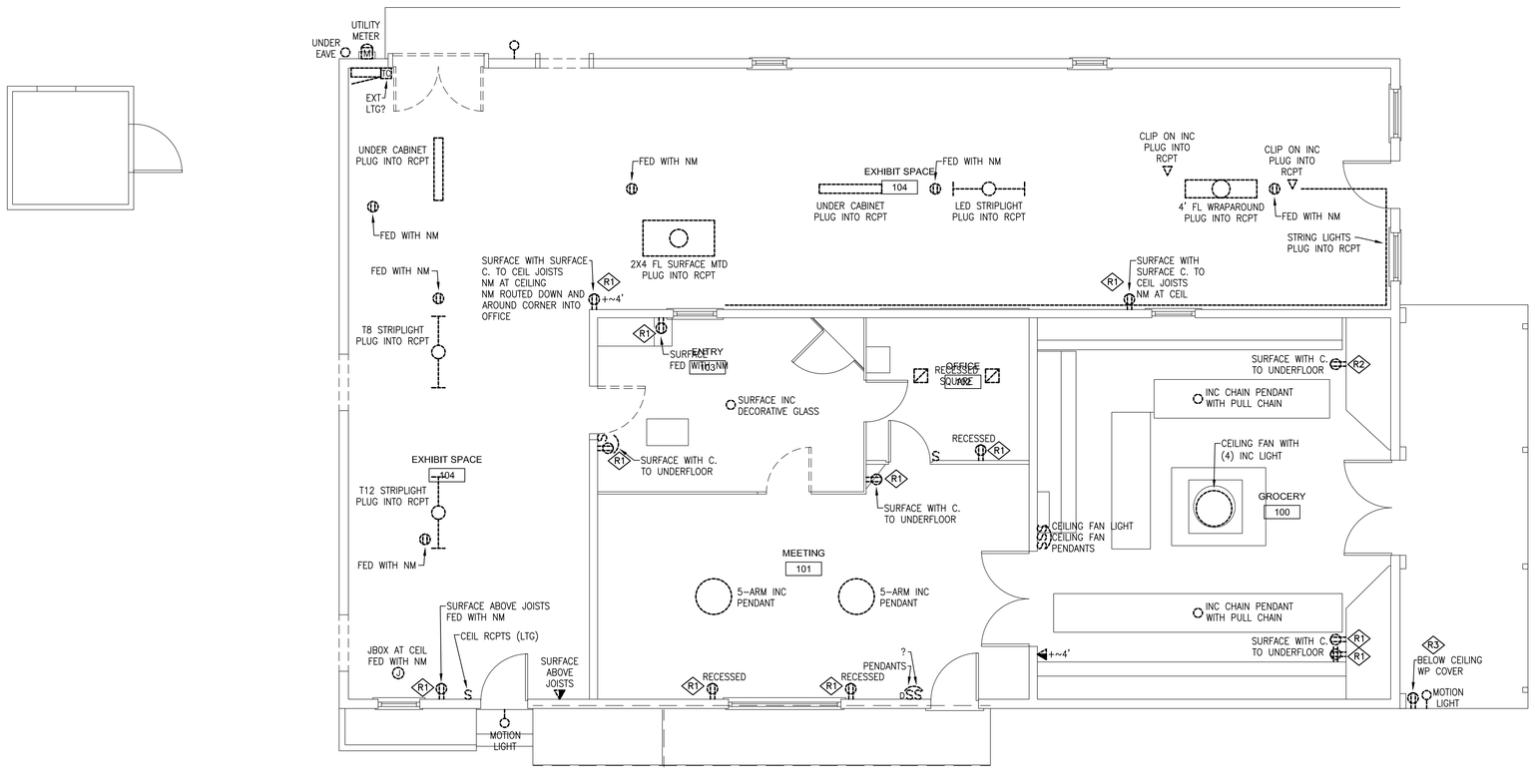
1. CARE SHOULD BE TAKEN FOR ANY NEW OR REMOVAL WORK TO MAINTAIN EXISTING FINISHES.
2. REMOVE EXISTING ELECTRICAL DEVICES, BRANCH CIRCUITS AND SURFACE MOUNTED RACEWAY UNLESS NOTED OTHERWISE.
3. REMOVE EXITING RECEPTACLES, LIGHTING AND ELECTRICAL CONNECTION TO FURNACE IN BASEMENT.

WORK NOTES:

R1 REMOVE EXISTING RECEPTACLE AND BRANCH CIRCUIT. NEW RECEPTACLE AND BRANCH CIRCUIT TO BE PROVIDED IN EXISTING LOCATION TO MATCH EXISTING.

R2 REMOVE EXISTING RECEPTACLE AND BRANCH CIRCUIT. NEW QUAD RECEPTACLE AND BRANCH CIRCUIT TO BE PROVIDED IN EXISTING LOCATION.

R3 REMOVE EXISTING RECEPTACLE AND BRANCH CIRCUIT. NEW GFCI RECEPTACLE AND BRANCH CIRCUIT TO BE PROVIDED IN EXISTING LOCATION.



1 ED1.1 ELECTRICAL REMOVAL PLAN

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

SCHEUBER + DARDEN architects LLC

P.O. BOX 909
PARKER, COLORADO 80134
303.915.8415

enLighten ENGINEERING, LLC
WIRE • CODE • EDIE • SIDE

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ELECTRICAL REMOVAL PLAN

ED1.1

PRELIMINARY - NOT FOR CONSTRUCTION


BRAVA
Beautifully Authentic High-Performance Roofing
Brava Cedar Shake

Inspired by the timeless beauty and intricate patterns of authentic cedar shake.

The beauty of cedar shake:
Not every shingle is alike.

Natural Cedar Shake

Brava Cedar Shake: Canyon Gray

The beauty of Brava Roof Tile:
Not every synthetic shake is alike.

Brava Cedar Shake

Beautiful appearance that fits your home.	No maintenance costs.	50-year transferable warranty.	Class A fire rating available.	Highest resistance rating against hail and storm damage.	In compliance with major building codes.

Beautiful appearance that fits your home.	Must be cleaned, repaired, and treated every 4-5 years.	Replacement required every 20 years.	Burns easily, increases insurance costs.	More susceptible to hail and storm damage.	Being blocked by more local building codes.

Traditional Cedar Shake

Brava Cedar Shake: Lake Forest

Truly Realistic

A hallmark of Mother Nature is her varied colors. Brava took that cue and visually matches natural cedar shake like no other engineered product. The subtle difference between hues creates a depth and texture for a rich, warm look with no discernible pattern. This results in variegated and multi-toned colors on every Brava shake.

Brava uses natural minerals for color and texture, with the most advanced UV stabilizing elements for superior color and strength.

Our core collection of six Mother Nature-inspired hues.


Aged Cedar


Aspen


Canyon Gray


Lake Forest


Natural Cedar


Weathered

Our premium collection of six magnificent color blends.

New Cedar

Sierra

White

Driftwood

Woodland

Legacy and custom colors available upon request.

Uniquely Crafted

Every Brava Cedar Shake roof is made to order. Our molds are cast from hand-split Western Red Cedar shakes, giving them an authentic feel. Forms are created naturally, look organic, and don't have repetitive patterns.

Brava uses state-of-the-art compression molding technology, making it the strongest shake available. It's this attention to detail that makes Brava stand above the competition.

Brava Cedar Shake: Natural

High Performance

Brava Cedar Shake has a Class 4 impact rating and is available with a Class A fire rating, so it stands up to even the fiercest hail storms and has the highest level of fire resistance.

Brava Cedar Shake: Natural

Once you see it for yourself, you'll understand the combination of artistry and technology that goes into every Brava shake. There is no comparison.

Brava Cedar Shake: Weathered

Fully Sustainable

All of our products use recycled material and we're proud to share that our Cedar Shake is fully recyclable. Brava is committed to a sustainable future and works hard every day to keep used building materials out of landfills.

Brava shakes are crafted with a blend of high-grade, high-spec pre-consumer recycled plastic, natural minerals, and binders.

Brava Cedar Shake: Aged Cedar

"We prefer to use Brava synthetic roofing because it offers the ultimate protection for our homeowners while giving them the traditional natural look they desire."

Lorena Vargas - Contractor

Brava Cedar Shake: Aged Cedar

Brava Cedar Shake: Aged Cedar

"We get a lot of mold in South Florida. We will never have that issue with Brava. It is close celled. It doesn't consume the water and collect mold."

Steve Barone - Homeowner

BRAVA

Bravarooftile.com

844-290-4196

Cover photo: Brava Cedar Shake: Canyon Gray

CS.LB.V5.1223


InvisibleStructures.com
GRAVELPAVE2
BY INVISIBLE STRUCTURES™
INVISIBLE
STRUCTURES
EST. 1982
THIS
POROUS
PAVING
ROCKS

GRAVELPAVE2
BY INVISIBLE STRUCTURES™

PAVING THE WAY

The trusted choice for low maintenance porous paving since 1991, Gravelpave2 provides remarkable compressive strength (15,940 psi / 2,295,000 psf—five times that of concrete) and can support the weight of virtually any vehicle. Gravelpave2 is crafted with a 100% recycled plastic, ring-on-grid structure with a fabric backing that acts as a vegetation barrier, a dust inhibitor and provides true containment since it will never come off or disintegrate. A 92% void space allows for rapid stormwater drainage and filtration of environmental toxins through bioremediation.

WHAT IS POROUS PAVING?

Porous paving is a type of pavement or surface material that allows water to pass through it, rather than creating a solid, impermeable surface. It enables rainwater to infiltrate the ground, reducing surface runoff and helping to return water to natural aquifers and restore groundwater.

MEETING STORMWATER REQUIREMENTS AND EROSION CONTROL

Because of our innovative design and specifications, you can meet Stormwater Requirements in less square footage than most porous paving types using Gravelpave2.

ADA-certified and tested to meet the DOJ ADA requirements for a smooth and stable exterior surface.

WHAT IS THE URBAN HEAT ISLAND?

The urban heat island (UHI) effect refers to the phenomenon where urban areas experience higher temperatures than rural regions due to human activities and the modification of land surfaces. Urban areas have a higher percentage of impervious surfaces like asphalt and concrete, which absorb and retain heat more than natural surfaces. Gravelpave2 can make a difference.

WHY GRAVELPAVE2?

Created by a Landscape Architect, Gravelpave2 has been the trusted choice for low maintenance porous paving since 1991. With a compressive strength five times that of concrete, Gravelpave2 can support the weight of virtually any vehicle. Made from 100% recycled plastic, the lightweight and flexible rolls allow for quick and easy installation and can be easily trimmed for design versatility. Gravelpave2 is available in custom colors, making the possibilities limitless.

Gravelpave2

THE GRAVELPAVE2 ADVANTAGES

- **Stronger Compressive Strength (15,940 psi / 2,295,000 psf)**
- **Rolls Out – Quicker to Install, Saves Labor**
- **Permanent Fabric Backing Prevents Weeds, Rutting and Puddles**
- **Lifetime Warranty with a Long Lifespan & Low Maintenance**
- **92% Void Space for Drainage**
- **All-Weather Applications**
- **Toxin Filtration**
- **Made From 100% Recycled Plastic**
- **Available in Custom Colors**

APPLICATIONS

Fire Lanes, Utility &
Emergency Access Roads

Parking Lots

Driveways

Outdoor Event Spaces

Paths & Walkways

Ramps, Docks & Loading Areas

Airplane Taxiing Areas

Stormwater Management

IT'S EASY BEING GREEN

Sustainability starts from the ground up. Gravelpave2 not only protects the environment, but it also enhances it. All our products are made from 100% recycled plastic—plastic that goes into improving the environment and not into a landfill.

Other benefits include:

- Reduces erosion and soil migration.
- Reduces site disturbance.
- Contributes to airborne dust capture and retention.
- Promotes the conversion of carbon dioxide (greenhouse gas) into oxygen.
- Has an "air-conditioning effect" to help cool the atmosphere and reduce the Urban Heat Island effect.

1.5 MILLION POUNDS
of recycled plastic are used every year for Invisible Structures products.

Sustainability

BIOREMEDIATION

Through bioremediation, porous pavers can clean pollutants out of stormwater.

- Heavy metals: 96–99%
- Suspended solids: 95%
- Phosphorous: 65%
- Nitrogen: 82%
- Hydrocarbons: up to 100%

HUG A TREE

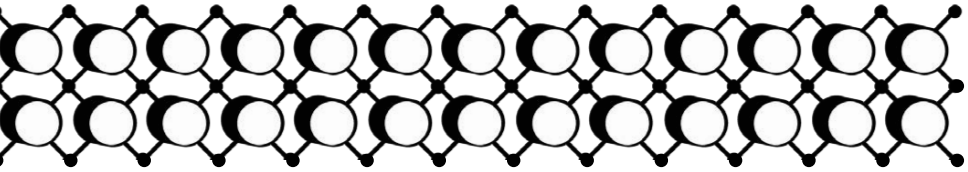
Concrete and asphalt suffocate and starve tree roots of air and water. With Gravelpave2, plant or retain as many trees as your site will allow. Gravelpave2 can come within inches of mature tree trunks without damage. Plus, our mats uniquely flex with tree root growth that would otherwise crack hard surfaces.

BEAUTY BELOW THE SURFACE

How can something that's invisible be beautiful? The end result is the real appeal. Gravelpave2 creates a more stunning surface and adds a unique look to a site.

THE FAULTS OF ASPHALT

Most paving solutions, like asphalt and concrete, distract and detract from the surroundings in the name of functionality. But Gravelpave2 gives you design flexibility to integrate your paving with your setting for a stunning, complementary solution.



GREAT SHAPE

Our trademark ring-on-grid design is what gives our products a competitive advantage. Evenly spaced rings make for a flexible yet strong structure with independent weight distribution and no stress points. You can create curves or customize layouts with pruning shears. It's a beautifully simple solution.

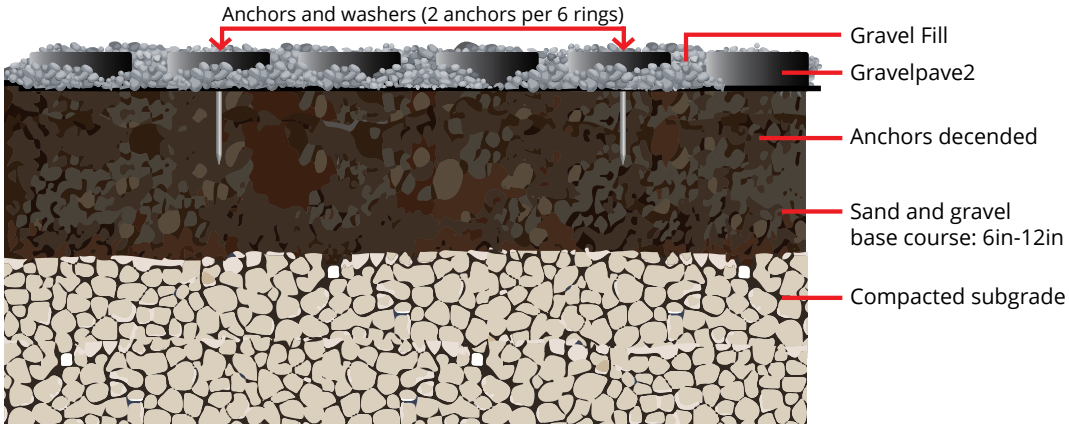
AVAILABLE COLORS

Gravelpave2 is available in five colors (Granite, Black, Tan, Gray and Terra Cota). Granite is our newest color, and we highly recommend it, as it blends with just about any color of aggregate.

HARDWARE MADE EASY

All water-safe, galvanized steel, 8” landscape anchors and washers needed for your project are included with every order, and no other geotextile is required for installation. We’ve got you covered.

GRAVELPAVE2 INSTALLATION CROSS SECTION



ALWAYS ON A ROLL

Due to our trademark design and proprietary blend of HDPE 100% recycled plastic, our products offer distinct design and installation advantages.

Installation and Maintenance:

- Install 430 square feet of product with one person in five minutes.
- A full installation of the same size can be completed in about an hour.
- Trim with pruning shears or use our curve chart to easily create curves or customize layouts.
- The recommended max slope for Gravelpave2 is 5% for fire lanes, 8% for cars and lighter weight trucks and 15% – 20% for golf carts, pedestrian use and trails. For a slope greater than 20%, Slopetame3 may be used (up to 45%) and will support pedestrian and light vehicular traffic.

Installation

INVISIBLE STRUCTURES—STANDARD PRODUCT ROLL SIZES

	WIDTH		LENGTH		ROLL DIAMETER		AREA		WEIGHT	
Model	m	ft	m	ft	m	ft	m^2	ft^2	kg	lbs
1010	1	3.3	10	32.8	.5	1.7	10	108	24	53
2020	2	6.6	20	65.6	.8	2.7	40	430	96	212

BASE COURSE DEPTH RECOMMENDATIONS

	NORMAL TRAFFIC		ROLL DIAMETER		INFREQUENT PASSES	
	CBR 2-4	CBR > 4	CBR 2-4	CBR > 4	CBR 2-4	CBR > 4
Heavy Fire Truck & H-20 Loading Max 130 psi 95,000 lb	14 in	12-14 in	12-14 in	12 in	12 in	10-12 in
Light Fire Truck & H-15 Loading Typical 85 psi 60,000 lb	12 in	10-12 in	10 in	8-10 in	8-10 in	8 in
Utility & Delivery Truck & H-10 Loading Typical 60 psi 40,000 lb	8-10 in	8 in	8-10 in	6-8 in	6-8 in	6 in
Cars & Pick-Up Truck Access Typical 45 psi 8,000 lb	6-8 in	6 in	6 in	4-6 in	4-6 in	2-4 in
Trail Use and Cart Paths <1,000 lb	2-4 in	2-4 in	2-4 in	0-2 in	none	none

QUICK REFERENCE GUIDE FOR GRAVELPAVE2

DESCRIPTION	CONNECTABLE RING AND GRID SYSTEM
Description	Connectable ring, grid, and permanent fabric backing
Also Included	Water-safe, galvanized steel, 8” landscape anchors and washers
Available in Large, Flexible Rolls	Yes, various sizes
Colors	Black, gray, tan, terra cotta, granite, custom colors extra
Components Needed for System	Base course, 11/40 (3.2cm) of 3/16in to 3/8in decorative gravel, and labor
Traffic	Low speed, unlimited use
Compressive System Strength	Filled: 15,940 psi (2.29 million per sq ft / 109,906 kPa)
Life Span	Lifetime with proper maintenance
Recommended Maximum Slope	5% fire lanes, 8% car/light truck, 15-20% golf carts, pedestrian use, and trails
Stormwater Storage	Yes
Clean Pollutants through Bioremediation	Good
Air-Conditioning Effect	No
Heat Island Mitigation	Yes with light colored gravel fill—Albedo .16
Reduces Runoff and Non-Point Source Pollution	Yes
Recycled Content	100% recycled HDPE plastic with recycled remnant fabric
Erosion Control	Yes
Airborne Dust Capture and Retention	Good
Promotes and Retains Tree Growth	Yes
Recharges Groundwater	Yes

PSI STRENGTH

See additional technical resources here:

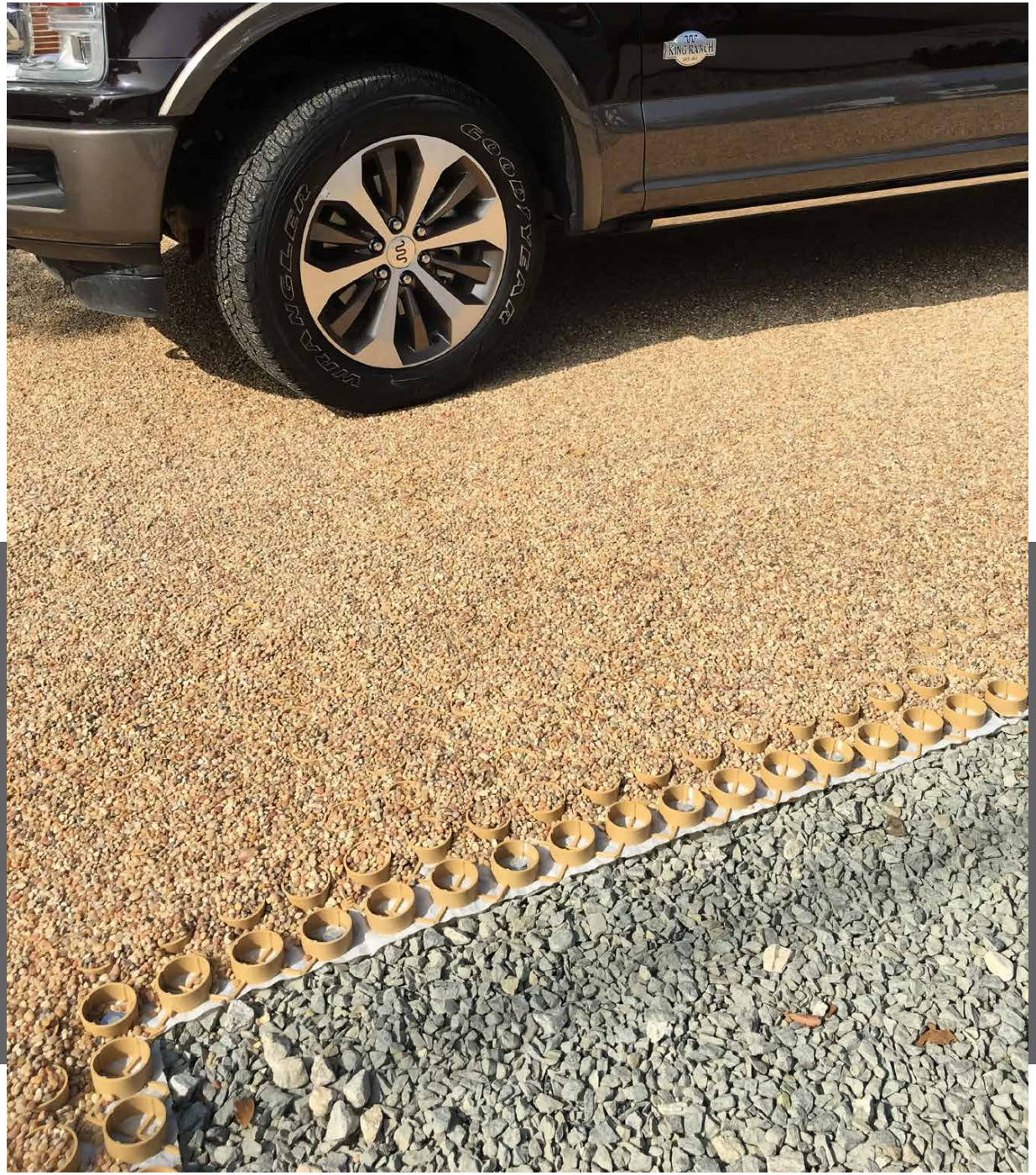
Support

FEATURED CASE STUDIES

IDEA CAMP RIO

See how Gravelpave2 reduced the runoff coefficient with maximum infiltration, while providing support for fire trucks, bus traffic and other vehicles.

Idea Camp Rio
Case Study Online



PRIVATE RESIDENCE, CULVER CITY, CALIFORNIA

Gravelpave2, Grasspave2 and Rainstore3 were all used in this project to replace the cracking concrete and clay soil, which became slick and oily when wet. The yard space was increased, and the concrete driveway was eliminated to create a beautiful, sustainable environment for people and pets.

Culver City Private Residence
Case Study Online

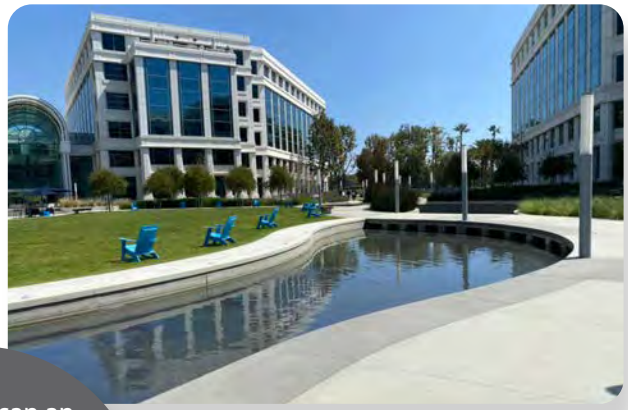
GROUNDED IN PERFORMANCE™

Invisible Structures is the leader in porous paving and stormwater management solutions. We enhance your project and the planet with strong, stylish, and streamlined solutions for:

GRASSPAVE2 BY INVISIBLE STRUCTURES™ | Grass Porous Paving

GRAVELPAVE2 BY INVISIBLE STRUCTURES™ | Gravel Porous Paving

RAINSTORE3 BY INVISIBLE STRUCTURES™ | Underground Stormwater Storage



How long can an Invisible Structures product last? We'll get back to you. All maintained installations are still functioning and beautiful!

SLOPETAME3 BY INVISIBLE STRUCTURES™ | Erosion Control

DRAINCORE2 BY INVISIBLE STRUCTURES™ | Drainage

BEACHRINGS2 BY INVISIBLE STRUCTURES™ | Portable ADA Access Mats

INVISIBLE STRUCTURES EST. 1982

Gravelpave2 is the BMP choice for the EPA, US Army of Engineers, Center for Watershed Protection, and many other Federal and state agencies.

303.233.8383
sales@invisiblestructures.com
www.invisiblestructures.com

0524-GRAVP2broV1

EMMA MALABY
GROCERY
313

EMMA MALABY
GROCERY


SUPER
shop-vac
HISTORY OF


HISTORIC
HOME TOUR
EXIT
CLOVER
HONEY


FORT COLLINS, COLORADO
1911
WELLPICT
BERRIES
HISTORIC
HOME TOUR


THE HOOSIER-MARTIN
COMMERCIAL CO.
FARM MACHINERY
COAL


HILLS BROS COFFEE
OPEN
SAVE
Niagara
LAVA SOAP
DIXIE CUPS
KOOL

Pipes like
STERLING
GEORGE WASHINGTON
SMOKING TOBACCO
DILL'S BEST
"Man Appeal!"
FOLGER'S COFFEE
Mountain Grown
IT'S RICH...IT'S VIGOROUS...IT'S FOLGERS
SLOWER-BURNING CAMELS SMOKE SO MUCH MILDER AND COOLER
NOW FIDO TELL THE FOLKS THE NAME OF THE BEST COFFEE IN THE WORLD
HILLS BROS COFFEE
Hills Bros COFFEE
HILLS BROS COFFEE
LAVA SOAP
FLY-RIBBON
Niagara
RALEIGH
This is PAYDAY
MOUNDS
BEICH Sextettes
SMITH BROTHERS' BLACK COUGH DROPS