

IMPORTANT: APPLICANTS MAY REQUEST UP TO FIFTY PERCENT MATCH (50%) FUNDING FOR PROJECTS THAT ALIGN WITH THE RAILROAD URBAN RENEWAL DISTRICT PLAN. COSTS TO BE PAID WITH RAILROAD URBAN RENEWAL DISTRICT FUNDS MAY NOT BE INCURRED BY THE APPLICANT PRIOR TO FUNDING APPROVAL AND THE SATISFACTION OF ANY CONDITIONS OF SUCH APPROVAL.

CITY STAFF RESERVE THE RIGHT TO RETURN MATERIALS THAT ARE DEEMED INCOMPLETE OR LACK SUFFICIENT SUPPORTING DOCUMENTATION.

ANYONE SEEKING TIF ASSISTANCE FROM THE CITY OF HELENA <u>MUST</u> SUBMIT A WRITTEN APPLICATION FOR EACH TIF-ASSISTED PROJECT. THE FOLLOWING PROCEDURE HAS BEEN DEVELOPED TO EXPEDITE THE REVIEW OF TIF FUNDING REQUESTS.

- 1. <u>Initial Contact</u>: Contact the City of Helena Community Development Department, 316 N. Park Avenue, Room 445, Helena, MT 59623, (406) 447-8490, citycommunitydevelopment@helenamt.gov, to discuss the project and determine eligibility for TIF assistance.
- 2. <u>Prepare a Written Application</u>: The Applicant must prepare a written application for each funding request. The City of Helena staff will assist the applicant with any questions in the preparation of the application. The application should address the questions posed in the Project Narrative section.
- 3. <u>Staff Review</u>: Upon submittal of all necessary information, City staff will review the merits of the project and the need for funding. At any point in the review process, the staff or Board may request more information of the Applicant or solicit comment on the project from other public agencies. Items included in personal financial statements will not be subject to public review or presentation to or comment by other agencies.
- 4. <u>Board Review and Approval</u>: The RURD TIF Advisory Board will review the project and staff recommendations, and then recommend the funding request or any part thereof, and any special terms of TIF assistance to the City Commission.
- 5. <u>Development Agreement</u>: The City of Helena and the Applicant must execute a legally binding contract, which establishes the terms and conditions of the TIF assistance.

#### CHECKLIST ITEMS

- ✓ Project Description
- ✓ Project Renderings (where applicable)
- ✓ Application Form (pages 4-6)
- ✓ Project Financing Worksheet (page 7)
- ✓ Project Narrative Section (page 9)



#### APPLICATION PRIORITY AREAS FOR TIF ASSISTANCE

TIF Applications will be assessed based on the merits of individual projects in relation to the goals and objectives of the Plan, and the project priority areas set by the RURD TIF Advisory Board, which are as follows:

- 1. <u>RURD Housing Program</u>: Consideration will be given to projects that create or retain affordable housing opportunities in the district.
- 2. <u>Infrastructure Improvement Program</u>: Consideration will be given to projects that identify and prioritize upgrades to water, sewer, stormwater drainage infrastructure, and vehicular, parking, and pedestrian/bike transportation improvements.
- 3. <u>Transportation Planning Study Program</u>: Consideration will be given for transportation planning study projects within the Railroad Urban Renewal District to address vehicular and pedestrian/bike transportation planning needs.
- 4. <u>Demolition Program</u>: Consideration will be given to demolition projects that remove blighted structures in the Railroad Urban Renewal District.
- 5. <u>Historic Façade & Site Improvement Program</u>: Consideration will be given to projects that restore/rehabilitate historic buildings and other historic site features such as brick paving, fencing, and lighting.
- 6. <u>Marketing/Branding Project Program</u>: Consideration will be given to projects that work to more fully develop a marketing initiative that is based on the RURD's distinct history and cultural/economic importance. Initiatives should cover a cohesive, comprehensive branding and marketing plan with an associated implementation plan.
- 7. <u>RURD Planning Study Program</u>: Consideration will be given for planning projects that identify regulatory roadblocks to redevelopment and promote sound urban design through zoning reform for the Railroad Urban Renewal District.



#### APPLICATION PRIORITY AREAS FOR TIF ASSISTANCE

Applications will be evaluated based on the following measurable objectives for projects and programs (listed in no particular order of priority):

- 1. <u>Increased Taxable Valuation</u>: Implementation of the project should encourage and/or result in an increase in the URD's tax base.
- 2. <u>Cost-Benefit Analysis of the Investment/Expenditure</u>: Analysis of how the request cost of the TIF funds compares with the benefits of the project to the District.
- 3. <u>Leverage-Ratios of Tax Increment Funds to Other Sources:</u> The relationship of private investment to public investment of a project shall be significant enough ensure prudent investment of public funds within the urban renewal district.
- 4. <u>Health and Safety Concerns</u>: The Project's impact, positive or negative, on the environment in terms of noise, dust, pollution, public safety, traffic congestion, pedestrian access, visual aesthetics, etc.
- 5. <u>Historic Preservation</u>: The Project's capacity to encourage the preservation and protection of the cultural and economic heritage and physical assets of the district.
- 6. <u>Density</u>, <u>Infill</u>, <u>and Adaptive Reuse</u>: Projects will be evaluated for their ability to encourage or result in infill and adaptive reuse of underutilized and vacant lots and properties, and to promote more compatible, complementary uses within the District.
- 7. <u>Cost of Public Services</u>: The Project's ability to improve public services, such as water, sewer, sidewalks, parking, improved traffic circulation, etc., to an area that is currently underserved.
- 8. <u>Job Creation</u>: Projects that create opportunities for new employment contribute to the economic vitality of the District and community in a variety of ways.
- 9. <u>Conformance with the goals and objectives of the Railroad URD Plan, Helena Growth Policy, and other Relevant Adopted Plans:</u> The Project's ability to significantly further specific goals found in the current Urban Renewal Plan, Growth Policy, and consistency with other City plans and objectives.
- 10. <u>Conformance with Requirements for TIF Fund Expenditures</u>, per 7-15-4288, MCA: Projects must cover eligible project activities stated in Montana statutes and be approved by the City Commission to satisfy needs identified in the Railroad Urban Renewal District Plan.



Project Name: 1429 Helena Avenue Project

Date Submitted: 5/26/2023

#### APPLICANT INFORMATION

Name (First & Last): Larson Building,	LLC		
Address: 1437 Helena Ave #8			
City: Helena	State: MT	Zip Code: 59601	
Phone: 406 459-3344	Cell: 406 459-3344	Other:	
Email: iversonmontana@gmail.com			

If the applicant is not an individual doing business under his/her own name, the applicant has the status indicated below and is organized or operating under the laws of: State of Montana

A non-profit or charitable institution/corporation

$\overline{\checkmark}$ A partnership or corporate entity known	Larson Building, LLC
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District Resident

Local Government

Other (explain)

#### **PROJECT INFORMATION**

 Building Address:
 1429 Helena Ave. Helena, MT 59601

 Legal Description:
 NORTHERN PACIFIC ADDN, S29, T10 N, R03 W, BLOCK 27, Lot 1 - 9

#### PROPERTY OWNER INFORMATION

If the property is <u>not</u> owned by the Applicant, written permission from the owner must be included to carry out the project and lease or other materials.

Property Owner (First &	Last):		
Address:			
City:	State:	Zip Code:	
Phone:	Cell:	Other:	
Email:			



#### PROJECT ARCHITECTURAL FIRM INFORMATION (WHERE APPLICABLE)

Company/Firm: Slate Architecture

Point of Contact (First & Last Address, 1470 N. Roberts St	):		
City: Helena	State: MT	Zip Code: 59601	
Phone: 406 457 0360	Cell:	Other:	
Email:			

### PROJECT FINANCIAL LENDING INSTITUTION (WHERE APPLICABLE)

Company/Institution:	Dank		
Point of Contact (First & Last):	Steve Fawcett		
Address: 3094 North Sanders St			
City: Helena	State: MT	Zip Code: 59601	
Phone: 406 447 9015	Cell: 406 581 1070	Other:	
Email: steve.fawcett@stockmanba	ank.com		

#### PROJECT CONTRACTOR INFORMATION (WHERE APPLICABLE)

Company/Firm: Sexton Construction				
Point of Contact (First & Last): Ed Sexton				
Address: 3218 Centennial Dr				
City: Helena	State: MT	Zip Code: 59601		
Phone: 406 439 2600	Cell:	Other:		
Email:sextongroupbuilders@bresnan.net				

#### DESCRIPTION OF PROJECT

In a separate attachment, please provide a full written description of your project. Please indicate if the items are existing or new construction.

#### PROJECT RENDERINGS (IF APPLICABLE)

Submit design schematic and/or site and landscaping plans for project.



#### TOTAL COST OF THE PROJECT

Please summarize. A full breakdown of costs is required on the *Project Cost Worksheet*. The anticipated cost for this project is \$250,170.00

#### **PROPERTY OWNERSHIP**

Do you own the property or are you currently purchasing it? Explain. Larson Building, LLC has owned the building for 10 years

#### JOB CREATION

Will there be any new permanent or part time jobs as a result of this project excluding construction jobs associated with the development of the project? If so, how many?

Yes. This project will unlock and open up prevously unavailable rental space to new and expanding buisnesses.

We do not know how many jobs.

#### **PROJECT COMPLETION**

What is the expected completion date of the project? Summer of 2023

#### **PROPERTY TAXES**

How much are the current annual property taxes including any improvements? Is the payment of taxes current? The annual property taxes are \$23,873.00. All tax payments are current.



#### **PROJECT COST & FINANCING SECTION**

Summarize the project costs on the Project Cost Worksheet. Use general categories and include items that are in the assistance request. The total cost should include land costs and "soft costs" such as zoning processes, surveys, and permits to enable the RURD Advisory Board to evaluate the entire private investment. If in doubt about an item's eligibility, include it. Staff will review the items and help determine eligibility. Briefly describe how the project will be financed and be sure to include equity and other investments into the project. If financing commitment is contingent on grants or URD TIF commitment to the project, has multiple sources, or other complex factors, provide that information.

**NOTE:** The TIF Program requests which include demolition/deconstruction activities, public sidewalks, streets, alleys and other right-of-way improvements; and/or work on utility main transmission lines totaling over \$25,000 are subject to Montana Prevailing Wage Rates and must include that in the itemized costs.

PROJECT COST WORKSHEET		
Professional Services		
1. Architecture and Engineering plans		\$ <u>22,792.00</u>
2		\$
	Subtotal	\$ <u>22,792.00</u>
Construction/Rehabilitation Costs		
1. Site Work		\$ <u>16,885.00</u>
2. Construction		\$ 86,827.00
3. Mechanical work		\$ <mark>87,575.00</mark>
4. Miscellaneous - permits, fees and general costs		\$ 36,091.00
5		\$
6		\$
	Subtotal	\$ <u>227,378.00</u>
Printing, Advertising, etc.		
I		\$
2.		\$
	Subtotal	\$ 0
Other Miscellaneous Costs		
I		\$
2.		\$
	Subtotal	\$ <mark>0</mark>
TOTAL PROJECT DEVELOPMENT COSTS		
Total \$ 250,170.00		-



PROJECT FINANCING WORKSHEET		
Owner/Developer Investment		
Total applicant investment in the project	250,170	).00
Listing of Other Funding Sources & Amounts (Continue on	eparate s	sheet if needed)
1. <u>Stockman bank</u>	214,904	4.00
2		
3		
Request for Eligible items		
Total TIF Request	35,266.	00

TOTAL PROJECT FINANCING \$ 250,170.00

Larson Block Remodel	June 9, 2023	
1429 Helena Avenue		
Helena, MT 59602		
GENERAL		
Plan copies	\$185.00	
General labor	\$540.00	
Rental equipment	\$185.00	
Landfill charges	\$690.00	
Demolition	\$4,275.00	
Concrete cutting (inspect 2 core walls)	\$3,554.00	
Exterior site work - parking, removal of existing	\$9,500.00	
sidewalk, and repouring of new sidewalk		
Framing materials**	\$2,822.00	
Framing labor	\$6,774.00	
Door hardware	\$3,666.00	
Labor to install doors	\$3,882.00	
Exterior doors**	\$2,585.00	
Building permits and inspections**	\$2,974.00	
Overhead	\$8,876.00	
Profit	\$17,750.00	
Supervision	\$1,225.00	
Administrative	\$1,050.00	
TOTAL	\$70,533.00	
TIF request @ 50% of eligible expences	\$35,266.00	



#### PROJECT NARRATIVES SECTION:

- 1. Description of Project. Provide a written description of the project, scope of work if a marketing plan or similar plan, number, and types of jobs to be created, etc.
  - a. <u>Compliance with the Railroad URD Plan</u>: Identify how your project supports the Railroad URD Plan and how the project benefits the neighborhood, URD, and community (See Attachment B for Goals and objectives of the Plan).
  - b. <u>Local Zoning and Other Requirements</u>: All projects assisted by Railroad URD TIF funds must, depending on the project location, comply with the City's Zoning Requirements, provide a brief narrative as to how the design successfully meets the requirements of City Zoning. Include any project schematic, site, and landscaping plans.
  - c. <u>Demolition/Deconstruction</u>: If the project request includes removal of structures, it must be done in accordance with to the provisions of Helena City Code Title 3 Chapter 15. Provide a brief narrative on how the building will be removed and whether it is a structure within the city that is individually listed on the National Register of Historic Places, or a property located within the city's historic districts which is designated by the state historic preservation office (SHPO) as primary or contributing.
  - d. <u>Dislocation</u>: If existing tenants are to be dislocated as a result of the project, provide a separate narrative describing how they have been or will be appropriately relocated.
- 2. Logistical Considerations. Provide a brief narrative describing the following:
  - a. <u>Project Feasibility</u>: The Applicant's demonstration of financial readiness and ability to proceed.
  - b. <u>Applicant's Ability to Perform</u>: The Applicant's capability to undertake the relative complexities of the project.
  - c. <u>Timely Completion</u>: The feasibility of completing the project according to the Applicant's proposed project schedule.
  - d. <u>Payment of Taxes</u>: All property taxes, special improvement district assessments, and other assessments on the project property must be paid to date, where applicable.



#### PROJECT NARRATIVES SECTION (CONTINUED):

- 3. Economic & Community Development Potential: Provide a brief narrative for the following. If not applicable, please note:
  - a. <u>Tax generation</u>: Describe how the project will increase the taxable valuation in the District.
  - b. <u>Relationship of Public and Private Investment</u>: Describe the relationship of private investment to public investment of a project and discuss how it is a prudent investment of public funds within the urban renewal district.
  - c. <u>Job Creation</u>: Are there any jobs created as a result of the project? Please describe.
  - d. <u>Investment Spin-off</u>: Describe any potential for investment spin-off having a positive impact on the District.
  - e. <u>Cost-Benefit Analysis of the Investment/Expenditure</u>: For projects that are \$10,000 or more, a cost-benefit analysis should be completed.
  - f. <u>Health and Safety Concerns</u>: Describe the project's impact, positive or negative, on the environment in terms of noise, dust, pollution, public safety, traffic congestion, pedestrian access, visual aesthetics, etc.
  - g. <u>Historic Preservation</u>: Describe the project's ability to preserve and protect the cultural and economic heritage and physical assets of the district.
  - h. <u>Density</u>, <u>Infill</u>, <u>and Adaptive Reuse</u>: Describe if the project increases density in the RURD through infill and adaptive reuse of existing property(s).
  - i. <u>Cost of Public Services</u>: Describe how the projects will improve public services such as water, sewer, sidewalks parking, improved traffic circulation, etc., to an area currently underserved.
  - **j**. <u>Housing Component</u>: Describe any housing components to the project. One of the main goals of the Railroad Neighborhood Plan and the Railroad URD Plan is to promote all types of housing in the area.
  - k. <u>Conformance with Requirements for TIF Fund Expenditures, per 7-15-4288, MCA</u>: Projects must cover eligible project activities stated in Montana state statutes (See Attachment A).

#### ATTACHMENT A: ELIGIBLE ACTIVITIES

As specified by state law, TIF may be used to finance redevelopment activities including the following (from 7-15-4288, M.C.A.):

- 1. Land acquisition, including acquisition of infrastructure-deficient areas and assemblage of land for development or redevelopment by private enterprise or public agencies, including sale, initial leasing, or retention by the municipality itself at fair value.
- 2. Demolition and removal of structures.
- 3. Relocation of occupants.
- 4. The acquisition, construction, and improvement of public improvements or infrastructure, including streets, roads, curbs, gutters, sidewalks, pedestrian malls, alleys, parking lots and off-street parking facilities, sewers, sewer lines, sewage treatment facilities, storm sewers, waterlines, waterways, water treatment facilities, natural gas lines, electrical lines, telecommunications lines, rail lines, rail spurs, bridges, publicly owned buildings, and any public improvements, and items of personal property to be used in connection with improvements for which the foregoing costs may be incurred.
- 5. Costs incurred in the exercise of urban renewal powers (found in 7-15-4233, MCA), including urban renewal projects as authorized by the City Commission.
- 6. Acquisition of infrastructure-deficient areas or portions of areas;
- 7. Administrative costs associated with the management of the urban renewal area or targeted economic development district;
- 8. Assemblage of land for development or redevelopment by private enterprise or public agencies, including sale, initial leasing, or retention by the local government itself at its fair value;
- 9. The compilation and analysis of pertinent information required to adequately determine the needs of the urban renewal area or targeted economic development district;
- 10. The connection of the urban renewal area or targeted economic development district to existing infrastructure outside the area or district;
- 11. The provision of direct assistance to secondary value-adding industries to assist in meeting their infrastructure and land needs within the area or district; and
- 12. The acquisition, construction, or improvement of facilities or equipment for reducing, preventing, abating, or eliminating pollution.

#### ATTACHMENT B: GOALS OF THE RAILROAD URD

#### Goal #1: Emphasize the District's Historic Importance 1. Promote the railroad depot area as a defining feature of the District. 2. Review and update as needed the 2003 Architectural Guidelines and formally adopt as quidelines. 3. Work with the BNSF and others to pursue how best to highlight the railroad's historic importance and unique potential for observing railcar operations from the depot area. 4. Develop interpretive signage with a consistent appearance. 5. Retain and restore/rehabilitate historic buildings and other historic features such as brick paving, fencing, and lighting. 6. Develop and market programs and activities that incorporate education on the area's historic importance. 7. Develop an image "brand" for the District, based on its distinctive character and history. Goal #2: Increase Property Utilization and Function 1. Provide technical assistance and planning to identify vacant and underutilized properties for redevelopment. 2. Provide for a mix of uses within the District. 3. Strive for neighborhood commercial options-places to shop and eat within walking distance of work, schools, and homes. 4. Provide for a variety of residential housing, including affordable workforce housing and special needs housing. 5. Prepare properties for redevelopment by facilitating land assemblage and property transfer. 6. Work with city planning and zoning and private interests to identify regulatory roadblocks to improving property and identify solutions. 7. Consider the unique differences in various parts of the District and identify planning and project approaches as necessary for those areas. Goal #3: Expand and Diversify the District's Economy 1. Promote and market the District as a place to do business - highlight what makes the District uniquely qualified for various businesses. 2. Upgrade and expand on existing broad-band capabilities to attract high tech businesses. 3. Develop the District's historic and proposed mix of residential, commercial and light industrial uses as a unique, identifying feature for businesses. 4. Work with business leaders and individual businesses to provide maximum opportunity, consistent with the sound needs of the municipality as a whole, for the rehabilitation or redevelopment of the Helena Railroad District by private enterprise. 5. Develop partnerships among existing property owners, new/expanding businesses and the local government to increase economic activity 6. Work with Helena College to identify training opportunities to expand and diversify District businesses. 7. Encourage projects that provide opportunities for college students to live and/or work near the campus. 8. Encourage businesses that can benefit from proximity to the college. 9. Potential for live-work building concepts, e.g., artist studios with retail and living space.

#### ATTACHMENT B: GOALS OF THE RAILROAD URD

#### Goal #4: Create an Inviting Venue

- Develop planning tools to address eight key urban design elements identified by the Urban Land Institute: imageability, enclosure, human scale, transparency, complexity, coherence, legibility and linkage.
  - Imageability Features or landmarks that make the area distinct, recognizable and memorable.
  - Enclosure Streets and public spaces that are visually defined with trees, buildings, and other vertical elements to create outdoor spaces.
  - Human Scale Building dimensions, architectural details, signage, public lighting, sidewalks, and street widths which are more intimate landscapes for pedestrians
  - Transparency Street-level storefront windows, doors and entryways, courtyards, etc. that invite passersby to look in.
  - Complexity An area with a visual richness from architectural diversity, landscape elements, street furniture, signage, and human activity.
  - Coherence A sense of visual order, influenced by consistency and complementarity of scale, character, and arrangement of buildings, landscaping, and other physical elements.
  - Legibility Ease with which people can navigate the area, including layout of streets
  - Linkage The physical and visual connections that unify various elements e.g., from building to street, one side of street to the other.
- 2. Develop "Entryways" and wayfinding signage- for example, entryway arches or other features at key intersections into the District, and distinctive signage for locating specific sites.
- 3. Promote Street art that reflects the District's historic foundations.

#### Goal #5: Address Public Infrastructure Needs

- 1. Plan and prioritize public infrastructure in coordination with the city's transportation planning system and capital improvements planning process.
- 2. Consider and plan for primary motorized access to/from the District, including:
  - a. Montana Avenue Railroad Crossing and possible potential under-over-pass;
  - b. Other Railroad Crossings;
  - c. Malfunction Junction; and
  - d. Other major connections into/within District: Lyndale, Helena, Boulder Avenue.
- 3. Plan for motorized access within the district, including:
  - e. Memorial Park transportation improvements; and
  - f. Establishing criteria for prioritizing other street improvements in the district.
- 4. Address non-motorized transportation needs, including:
  - g. Trail Systems and Non-Motorized Crossings of Montana Avenue;
  - h. Safe routes to School;
  - i. Sidewalks, Complete Streets;
  - j. Railroad crossings; and
  - k. Connections to the region-wide trail systems.
- 5. Identify and prioritize upgrades to water, sewer and stormwater drainage infrastructure.
- 6. Plan for specific parking needs of various businesses. Develop guidelines that reflect urban design elements identified in Goal #4 "Create an Inviting Venue."

#### ATTACHMENT B: GOALS OF THE RAILROAD URD

#### Goal #6: Provide for Public and Environmental Health

- 1. Promote compatible adjoining land uses and avoid adjacent uses with potential for public health or safety issues.
- 2. Reduce air, noise, and other environmental pollution problems.
- 3. Support green infrastructure/green development.
- 4. Provide recreational opportunities including trails, and "active" parks with playgrounds.
- 5. Provide complete streets with access for those with disabilities.

#### 1. Description of Project

The project is located at 1429 Helena Ave and 1437 Helena Ave. Adapting and reusing approximately 11,000 sq ft of outdated and underutilized space. This project will bring a 120 year old space into compliance with ADA, including relevant mechanical upgrades necessary to support improved utilization of existing space. Two off-street dedicated ADA parking spots are also included in this project. The TIF application is for project costs that relate to the exterior of the building: primarily ADA parking lot, accessible sidewalk and building facade.

- a. <u>Compliance with Railroad URD Plan</u>:
  - i. <u>Increase Property Utilization and Function</u>: This project will prepare for the redevelopment of underutilized space, creating an infill opportunity. This project will unlock previously vacant space and create appropriately sized spaces for businesses in the district. Much of the space in question was built out as a Grocery store (Brackmans) and was 6,550 sq ft in size. This project breaks that space into 3 suites 2 that are about 1,000 sq ft each and 1 that is 3,400 sg ft, with the remainder being common space. The project creates a common ADA accessible hallway and 2 common ADA bathrooms. The project will make the necessary investments so that additional tenant uses will be authorized within the rentable space. Through a common hallway an additional 4,500 sq ft will also be served by ADA access and ADA bathrooms.
  - ii. Expand and Diversify the District's Economy: This project will put new commercial space into the market, available for neighborhood jobs and businesses. The space will be more appropriately sized for the business mix that is currently in the district. This project makes 11,000 sq ft of space previously inaccessible space, ADA accessible. The project also creates two dedicated, off-street ADA parking spots on a city block that currently has none. This project will open up new spaces for rent that were not previously useable and will increase the allowable uses. The district is known for its diversity of businesses, this project will support and encourage new businesses to site in the district.
  - iii. <u>Emphasize the Districts Historic Importance</u>: The subject building was listed as a contributing property on the National Register of Historic Places in October of 1990. This project rehabilitates interior space without impacting the historic significance of the building (see attachment).
- b. <u>Local Zoning and Other Requirements</u>: The B-1 (neighborhood business) district provides for a compatible mixture of residential, public, and small-scale commercial uses that serve as transitions between zoning districts. This project complies with City Zoning. The plans have been submitted and approved by the City. See Attached.
- c. <u>Demolition/Deconstruction</u>: The Demolition in this project consists of primarily widening doorways and sidewalks to be ADA compliant.
- d. Dislocation: N/A

#### 2. Logistical Considerations

- a. Project Feasibility
  - i. The applicant has the financial ability to take on this project. Financing is in place.
- b. Applicant's Ability to Perform

- i. The applicant is working with Slate Architecture, IMEG (Mechanical Engineers) and Sexton Construction as the General Contractor.
- c. Timely Completion
  - i. Subcontractors are scheduled and ready to work. Project will be complete in summer of 2023
- d. <u>Payment of Taxes</u>
  - i. All taxes and assessments are current.

#### 3. Economic & Community Development Potential

- a. <u>Tax Generation:</u>
  - i. This project will increase the taxable value of the subject property. Better utilizing the existing footprint will, through the income approach to valuation, increase the taxable value.
- b. <u>Relationship of Public and Private Investment</u>:
  - i. The TIF request makes up less than 15% of the total project cost. The TIF request is for 50% of the qualified expenses. The result of this investment will be a more accessible and inclusive neighborhood core.
  - ii. In addition to the direct increase in taxable value, public investment in the improvements will continue to be a catalyst for other owners to improve their properties.
- c. Job Creation:
  - i. Previously vacant space has already been leased to new tenants which will result in job creation in the area. Also, new, previously underutilized space will become available for additional businesses to open or expand.
- d. Investment Spin-off:
  - i. Better utilization of existing space will lead to synergies in the neighborhood with new and existing businesses benefiting though increase consumer traffic and awareness.
- e. <u>Cost-Benefit Analysis of the Investment/Expenditure:</u>
  - i. This investment, along with investments made by others in the neighborhood are collectively sending a message to prospective businesses that the district is alive and open for business. With this, and other investments, there is expected to be improvements in the tax base that will pay back into the TIF, and in the future pay into the general fund of the City of Helena through increased tax collections.
- f. Health and Safety Concerns
  - i. We do not anticipate any negative health or safety concerns. We do expect that this investment will make many businesses and non-profits more accessible to those that the space was previously inaccessible to.
- g. <u>Historic Preservation</u>
  - i. I have met the Historic Preservation office on site, and they reviewed the proposed changes. This project is not expected to negatively impact the historical character of the building or neighborhood. The primary impact will be increased accessibility.
- h. Density, Infill, and Adaptive reuse

- Density infill, and adaptive reuse are where this project really shines. This
  project takes space that was vacant and unrentable, and other space that was
  underutilized due to inaccessibility, and prepares it to be utilized to its potential.
  The changes will make the space available for many more uses now that it will
  be accessible. Space that used to sit dark will now have an active business in it.
- i. <u>Cost of Public Services</u>:
  - i. All city utilities currently serve the project area. The additional infill will have no negative impact on city services, and in fact, increased utilization of existing infrastructure will occur. Two dedicated off-street ADA parking spots will also be added to a city block that currently has none. We do not anticipate any parking issues as a result of the project. The project area is blessed with parking resources that exceed current demand.
- j. Housing Component:
  - i. This project does not have a housing component.
- k. <u>Conformance with Requirements for TIF Fund Expenditures, per 7-15- 4288, MCA</u>:
  - i. This project is similar to other TIF projects funded in Helena in recent years.

### 7

not for publication: n/a

zip code: 59601

vicinity: n/a

#### **NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM** 1. Name of Property \_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_

historic name: Helena Railroad Depot Historic District

other name/site number: Sixth Ward Commercial District; Depot District ------

#### 2. Location

street & number: Roughly bounded by Railroad/Helena Avenues; Gallatin Street; North Sanders Street; and North Harris Street

city/town: Helena

state:	Montana	code

: **M**T county: Lewis and Clark code: 049

#### 3. State/Federal Agency Certification

As the designated authority under the National Historic determination of eligibility meets the documentation sta procedural and professional requirements set forth in 3 Criteria. I recommend that this property be considered comments) Signature of certifying official/Title	c Preservation Act of 1986, as amended, I hereby certify tha andards for registering properties in the National Register of 36 CFR Part 60. In my opinion, the property <u>X</u> meets <u>d</u> d significant <u>nationally</u> <u>statewide</u> <u>x</u> locally. ( <u>See c</u> <u>Notwer</u> <u>15</u> <u>2004</u> Date	t this <u>X</u> nomination <u>request</u> for Historic Places and meets the bes not meet the National Register continuation sheet for additional
Montana State Historic Preservation Office State or Federal agency or bureau		
In my opinion, the property meets does not mee	et the National Register criteria.	
Signature of commenting or other official	Date	
State or Federal agency and bureau		
4. National Park Service Certification I, hereby certify that this property is:	Signature of the Keeper	Date of Action /2//5/04

\_ removed from the National Register .....see continuation sheet

\_\_\_ other (explain): .

Ownership of Property: Multiple/Private/Local Government	Number of Resources within Property Contributing Noncontributing	
Category of Property: District	0	5
	<u>19</u>	
Number of contributing resources previously	_1	sites
listed in the National Register: $n/a$	1	structures
•	_2	objects
Name of related multiple property listing: $n/a$		5
	_23	_4_ TOTAL
6. Function or Use		
Historic Functions:	Current Function	ons:
DOMESTIC/hotel, multiple dwelling, single dwelling,	DOMESTIC/multiple dwelling, single dwelling, seconda	
secondary structure	struc	ture
COMMERCE/TRADE/business, warehouse, restaurant,	COMMERCE/TRADE/ business, warehouse, restaurant,	
specialty store	specialty store	
RELIGION/church school, religious facility	EDUCATION/school	
EDUCATION/school	LANDSCAPE	E/park
LANDSCAPE/park	TRANSPORTATION/rail-related; road-related (vehicular)	

#### 7. Description

TRANSPORTATION/rail-related; road-related (vehicular)

Architectural Classification:	Materials:
LATE 19 <sup>TH</sup> AND EARLY 20 <sup>TH</sup> CENTURY REVIVALS	foundation: STONE, CONCRETE
Colonial Revival, Classical Revival	walls: WOOD, BRICK, STUCCO, ASPHALT,
LATE 19 <sup>TH</sup> AND EARLY 20 <sup>TH</sup> CENTURY AMERICAN MOVEMENTS/	STONE
Bungalow/Craftsman	roof: ASPHALT
OTHER/False-Front Commercial; Western Commercial	other: n/a

#### **Narrative Description**

The Helena Railroad Depot Historic District consists of twenty-three buildings, one site (park), one structure (brick street) and three objects (a park bench, granite marker, and a 1902 steam locomotive) constructed between 1884 and 1956. The Northern Pacific Railway Depot, historically called "Union Station", functions as the visual and physical center or hub of the district. Other primary elements include an architect-designed Colonial Revival style church, the Larson Block at 1401-1437 Helena Avenue, and a segment of brick street with embedded trolley tracks. The street was graded by the City of Helena in 1883 in anticipation of the railroad's arrival; the brick paving was laid in 1915.<sup>1</sup> Four commercial buildings in the district retain their original false-front design, , the only examples of 1880s false front urban buildings in Helena to retain that unique form. These demonstrate the stagnation of the district and lack of financial resources to remodel and rebuild. Although the false fronts exhibit various degrees of alteration, the form remains wholly intact on each example. They are the footprints of the first 1880s buildings, constructed to serve the Northern Pacific Railroad, and today are relatively unlovely examples of an urban area whose heyday has long passed. The district also includes three residences (a gable front with Craftsman style elements, a side gable vernacular, and a Craftsman Bungalow), a masonry commercial warehouse, and outbuildings that contribute to the historic character of the district. The simple buildings included within the district boundaries and the changes that occurred in them over time during the historic period visually document the rise and decline of railway travel and the working class neighborhood that the district served. Only one minor building garage does not contribute to the historic district.

<sup>&</sup>lt;sup>1</sup> Helena Daily Herald, June 12, 1888; Montana Record Herald, July 12, 1939.

NPS Form 10-900-a (8-86)

United States Department of the Interior National Park Service

#### National Register of Historic Places Continuation Sheet

Section number 7



Helena Railroad Depot Historic District Lewis and Clark County, MT

#### OMB Approval No. 1024-0018

The Larson Block, 1401-1437 Helena Avenue (one contributing building)

The Larson Block is a commercial block bounded on the north by Helena Avenue, the east by North Sanders Street, the south by Gallatin Avenue and the west by North Roberts Street. Originally a series of individually owned and constructed storefronts and businesses, the Larson Block has been considered a single entity since 1948. That year, extensive remodeling resulted in a largely unified appearance. Ownership, function and appearance overlap over three distinct sections of the building. The western one-third of the building is two stories while the remainder is one story. The west end of the block, two stories in height, functions as a single unit at the second story, and houses ten apartments. The walls are all brick and brick veneer. Stucco covers the east, one-story end of the building and the east half of the two-story section. The Larson Block houses approximately thirteen businesses, in the same configuration as displayed on the 1950 Sanborn Map. The building rests on a concrete foundation, has a flat roof sheathed in asphalt and is roughly triangular in shape. The front elevation of the building faces north.

Westernmost section. The westernmost portion of the building is not stuccoed, and retains much of its pre-earthquake character, and original Western Commercial style elements. A row of soldier-coursed brick functions as its cornice. There are three decorative terra cotta garland panels located just below the roofline on the façade (north elevation). A centered, arched pedestrian door provides access to the building from the north elevation. This original opening contains a vintage aluminum-framed, two-light door and decorative fanlight transom. Two diamond-shaped terra cotta panels above and stone blocks on either side of the doorframe at the sidewalk further define the entry. Single, six-over-one

light double hung windows flank the entry, and feature arched fanlight transoms above. To the east, a large original storefront has been infilled with contrasting blond brick and two large plate glass windows. A five light transom is located across the original opening space, and its easternmost light has been filled. To the west of the entry are two, evenly-spaced, six-over-one light double hung windows. Eight windows within original openings span the second story. Four feature arched lintels filled with original decorative brickwork. From east to west the window styles are: a one-light casement, a one-light casement with an arched lintel, a one-over-one light double-hung with and arched lintel, three one-over-one light double-hungs, and two one-light casements with arched lintels.

The west elevation of the Larson Block features a ribbon of three modern one-light fixed windows centered within the first story and shaded by a metal awning. North of these windows, brick fills an original entry. South of the windows is a hand painted wood panel sign reading "HANK'S BARBER SHOP." The second story contains two, evenly-spaced one-light casements within original, arched window openings, similar to those on the façade. Between the windows is a large stucco panel bordered with brick. The panel reads "LARSON COMMERCAL CENTER 1400 HELENA AVENUE" in raised lettering. Additional signage includes a lighted sign, mounted perpendicular to the north side of the wall that reads "HANK'S BARBER SHOP," with a lighted, spinning barber pole beneath.

The south (rear) elevation of the westernmost portion of the Larson Block features four entries, two at both the west and east sides. The two west entries have modern two-light glass doors and transoms above. The easternmost door is paneled wood with four lights. There is no transom space above. The door immediately to the west contains a modern, wood-framed door with a single, full-length light and an infilled transom. A ribbon of three original, wood-frame, one-over-one light double hung windows is centered within the first story. Another single double-hung is located east of center. Across the second story are seven original one-over-one light double hung windows of alternating size.

Central, two-story, stuccoed section. The east side of the two-story portion of the Larson Block functions as a storefront at the first story and apartments above. The apartments are part of a larger apartment complex that includes all of the Larson Block's second story. At the first story, the north elevation is equally divided into three bays by pilasters. The two west bays each contain large display windows within original openings. The east bay contains a centered, recessed glass door entry flanked by plate-glass display windows. Glass block fills the

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United States Department of the Interior National Park Service

#### National Register of Historic Places Continuation Sheet

Section	num	ber	7
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Helena Railroad Depot Historic District Lewis and Clark County, MT Page 6

clerestory space above each of these storefronts. A smooth, concrete belt course, painted off-white in contrast to the tan stucco above, separates the two stories. Decorative concrete also caps each of the pilasters. The course and caps continue across the east two-thirds of the Larson Block, and serve as a unifying architectural feature for the building as a whole. The stuccoed second story contains seven evenly spaced windows: alternating one-light casements and one-over-one light double hungs.

The south (rear elevation) of the stuccoed two-story portion of the building features three entries. The two west entries are each flanked by stone-silled window openings. These windows and doors are boarded over. The east entry is glass and flanked by a plate glass display window. A partially in-filled window is located at the east end of the elevation. It has glass blocks on the lower zone, while the upper zone is boarded-over.

One-story, east portion. The east side of the Larson Block is one-story, and displays the same architectural features described above. This portion of the building houses a series of storefronts, each with a central, recessed entry flanked by plate glass display windows, and glass block clerestories. The concrete belt course continues across the elevation above the storefronts. The space above the course is stucco, painted tan. The entries all have modern doors with fixed, full-length fixed windows. The storefronts are delineated on the east by rough-faced stone pilasters that are remnants of the old Grand Pacific Hotel. The canted entry from the old hotel still functions as an entry on the northeast corner of the building. It is recessed, flanked by the stone pilasters and has sidelights, a glass-block transom and a modern door with a fixed, full-length window. The east elevation (facing North Sanders) has seven window openings all with glass blocks and decorative terra cotta lintels. An entry is located slightly right-of-center on the elevation; it has a steel door.

Finally, on the Gallatin Street side of the building (south, rear elevation) that is single story, the walls are comprised of brick, of which much of it is covered in stucco. All of the window openings have glass blocks, while two still have casement window units incorporated into the window openings. There are also three entries in the section. All have steel doors and are sheltered by awnings.



St. Mary's Church and School, 1421-1425 North Roberts Street (one contributing building) St. Mary's Church and School at 1425 North Roberts is a two-and-one-half-story Colonial Revival style building with a combination hip and gable roof sheathed in asphalt shingles, a concrete over granite foundation, and a stone water table. The brick veneer is clad in stucco, and the building faces west. The eaves are corniced around the entire building. The central portion of the building extends forward, forming a simple tripartite façade.

On the façade (west elevation) there is a pedimented gable with a porthole attic vent. The second floor has three sets of fixed, one-over-one double-hung windows with transoms. Some of the transoms have been boarded over. The primary entry is centered on the façade and reached by concrete steps and a stoop flanked by an iron railing. The entry has sidelights and transom sidelights that have been partially in-filled. The wood door has a single-light fixed and rounded window. A gable roofed hood with exposed brackets and rafters shelters the entryway. The entry is flanked by two paired one-over-one double-hung windows facing west. The façade of the main building has a one-over-one double-hung windows, one on the first floor and one on the second.

The north elevation has a hip-roofed dormer with soffits and decorative cornice. The dormer walls are wood shingled, and there is a centered pair of one-over-one double-hung windows. There are two groups of windows on both the second and first floors. The windows are one-over-one double-hung with transoms, and each group consists of a single window flanked by a pair. The five-window grouping thus occurs on both stories and gives a total of twenty windows on the combined floors. Some of the windows and transoms have been in-filled, but the configuration of the windows is still apparent.

The south elevation exhibits the same window pattern as the north façade and has an identical dormer. There is an entry central to the façade accessed by a wheelchair ramp. A shed-roofed vestibule of stuccoed wood frame with exposed rafters opens toward the east. There is a coal chute to the right of the entry, under the ramp. Some of the windows and transoms have been in-filled, but the configuration of the windows is still apparent.

# HELENA AVENUE RENTAL REMODEL

## JOHN IVERSON 1429 HELENA AVENUE HELENA, MT 59602

## **TEAM MEMBERS**

## **OWNER**:

## **ARCHITECT**:

JOHN IVERSON 1423 HELENA AVENUE HELENA, MT TEL: 406.459.3344



SLATE ARCHITECTURE 1470 N. ROBERTS ST. HELENA, MT 59601 TEL: 406.457.0360 CONTACT: SCOTT CROMWELL M.E.P.:

## VICINITY MAP



## **PROJECT SPECIFIC NOTES**

- THE DOCUMENTS CONSIST OF THESE DRAWINGS AND SPECIFICATIONS MANUAL EXCLUSIVELY THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NEW MATERIALS (U.N.O.) AND QUALIFIED CRAFTS PERSONS TO COMPLETE THE WORK.
- 3. DOCUMENTS SHOW THE DESIGN INTENT OF THE PROJECT AND MAY NOT SHOW MINOR DETAILS OF PROPOSED INSTALLATIONS. THE INCLUSION OF THESE MINOR DETAILS IS IMPLIED TO PROVIDE A COMPLETE PROJECT AND ARE TO BE INCLUDED AS PART OF THE BID. 4. IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO INSPECT THE SITE AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH EACH INSTALLATION OF
- PART OF THE WORK. DISCREPANCIES MUST BE REPORTED TO THE ARCHITECT PRIOR TO PROCEEDING. 5. THE GENERAL CONTRACTOR IS TO COORDINATE THE INSTALLATION OF MATERIALS AND WORK OF OTHERS WHO ARE NOT SUB-CONTRACTORS TO THE G.C YET ARE REQUIRED TO PROVIDE A COMPLETE PROJECT. AREAS OF WORK REQUIRING COORDINATION INCLUDE BUT ARE NOT LIMITED TO THOSE INDICATED
- AS N.I.C. IN THE CONSTRUCTION DOCUMENTS. DIMENSIONS ARE SHOWN ON THE DRAWINGS. DO NOT SCALE THE DRAWINGS.
- 7. ALL DIMENSIONS ARE DETERMINED AS FOLLOWS: EXISTING CONSTRUCTION: FACE OF EXISTING WALL MATERIAL. NEW CONSTRUCTION: FACE OF STUD.
- ALL HEIGHTS ARE DIMENSIONAL FROM THE TOP OF FINISHED FLOOR (A.F.F.) UNLESS NOTED OTHERWISE. 9. ALL SHOP DRAWINGS DIMENSIONS TO BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR.
- 10. IN THE CASE OF CONTRADICTIONS, ASSUME THE MORE COSTLY APPROACH FOR BIDDING PURPOSES. BRING ALL CONTRADICTIONS TO THE ATTENTION OF THE ARCHITECT 11. WHERE CONDITION OF FINISH ARISES THAT NO DETAIL OR NOTE COVERS, MATCH DETAIL TO EXISTING SITUATION OF SIMILAR CONDITION
- 12. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REPAIR AND REFINISHING OF ALL HOLES OR DAMAGE ENCOUNTERED IN WORK AS A RESULT OF NECESSARY CUTTING, PATCHING, OR DEMOLITION BY ALL TRADES PERFORMING WORK. 13. GENERAL CONTRACTOR TO PROVIDE ALL REQUIRED BLOCKING, ANCHORAGES FOR ACCESSORIES, MILLWORK, GRAB BARS, MECHANICAL AND ELECTRICAL
- ITEMS 14. WHERE COLUMNS AND STUD WALLS ALIGN, GYPSUM BOARD TO BE CONTINUOUS OVER COLUMNS 15. SEAL ALL PENETRATIONS IN FLOORS, WALLS AND ROOF TIGHT AROUND DUCTS, PIPES, VENTS, SOIL-PIPES, TRAPS, ETC. CONTRACTOR TO COORDINATE.
- 16. ALL MECHANICAL AND ELECTRICAL LINES TO BE INSTALLED TIGHT TO STRUCTURE WHERE POSSIBLE IN ALL INSTANCES. 17. IN PAINTED OR FINISHED ROOMS, ALL HORIZONTAL AND VERTICAL PIPING AND CONDUITS SHALL BE FURRED TO MATCH ROOM FINISH AS INDICATED. WHEN DUCT WORK, PIPES, MECHANICAL UNITS, JUNCTION BOXES AND CONDUIT ARE EXPOSED IN PAINTED ROOMS, PAINT TO MATCH ADJACENT FINISH

## COPYRIGHT

THESE DRAWINGS WERE PREPARED BY SLATE ARCHITECTURE FOR CONSTRUCTION OF THE BUILDING DESCRIBED WITHIN THESE CONSTRUCTION DOCUMENTS. THEY ARE THE PROPERTY OF SLATE ARCHITECTURE AND MAY NOT BE REPRODUCED, COPIED, OR USED IN ANYWAY WITHOUT PRIOR APPROVAL FROM SLATE ARCHITECTURE

Lou Antonick FIRE Larson Building LLC 1429 Helena Ave. Helena, Montana 59601 1. FIRE: All work is subject to field verification and additional items may need to be added, corrected, moved or deleted. Please call the Building Division for all inspections and system testing. 2. FIRE: Every area containing fire protection, fire detection, utilities, or other equipment used during emergency operations shall be clearly identified. Signage shall be of a durable material, permanently installed, and have a red background with white 1½ lettering. 3. FIRE: Fire extinguishers placed per 2012 International Fire Code (IFC) section 906 and National Fire Protection Association (NFPA) 10 (2010). 4. FIRE: Applicable sections of 2012 International Fire Code (IFC), Chapter 33 "Fire Safety during Construction and Demolition" 5. FIRE: The site must remain accessible to all emergency services during construction. Please post after hours contact numbers in an area accessible for emergency responders GENERAL to make contact. COVER SHEET G001 6. FIRE: For any welding or hot work ensure all applicable sections of 2012 IFC, Chapter G002 ADA STANDARDS 35 "Welding and other Hot work" is in place. G100 CODE REVIEW & 7. FIRE: The address posted per 2012 IFC, section 505. The numbers must contrast with IMEG CORP. 1003 11TH AVENUE the background and must be clearly visible from the street. SUITE A 8. FIRE: For Fire Department Access and fire protection water supply this project must HELENA, MONTANA 59601 meet all requirements in the 2012 International Fire Code (IFC), Chapter 5, and any 406.545.6429 <u>Հ</u>3∖ CONTACT: - JULIE HEITMAN, ELEC. adopted and/or associated appendices. ANDREW BYL MECH 9. FIRE: The fire alarm system must be third party reviewed. A licensed contractor must A2.1 PARTIAL SITE PLA install the system and it must meet all applicable codes and standards including, but not A3.3 FLOOR & DEMO F limited to NFPA 72 (2010) and 2012 IFC Chapter 9. If less than 20 total device changes, BUILDING SECTIO A4.1 the plans can be reviewed locally through submittal to the Building Division. 10. FIRE: For the FAAP AND FACP locations, please contact the Fire Marshal. There may need to be more than one FAAP installed for this building. 11. FIRE: As-built for the fire alarm system must be in a documentation box at the fire alarm control panel and fire sprinkler riser room. 12.FIRE: Vehicle impact protection per 2012 IFC, section 312 if required. 13. FIRE: A Knox box installed on the front address side of the building and the back of the building no higher than 5 feet off the ground. 14. FIRE: Means of egress must not be affected during this project and must be available. Occupants must evacuate during any emergency. The fire alarm and fire sprinkler system must be fully operational at the end of each day, or fire watch must be in place. 15. FIRE: Development of a plan for "fire watch" emergency notification and emergency SITE evacuation when work is being conducted. 16. FIRE: Any security and/or access control must be installed using applicable code requirements from 2021 IBC, Chapter 10. 17. FIRE: Any storage must meet 2012 IFC section 315. Combustibles can't be stored in the common lobby. ABBREVIATIO **Think Asbestos!** Before you renovate or demolish **INSPECT** for Asbestos using a Montana accredited inspect NOTIFY Montana's Department of Environmental Quali PERMIT Asbestos activities with DEQ. ABOVE FINISHED A.F.F. 406-444-5300 FI OOR https://deq.mt.gov/cleanupandrec OAHU. AIR HANDLING UNIT ALT. ALTERNATE It's the Law ALUM. ALUMINUM DEC AMP. AMPERE APPROX. APPROXIMATE APT. APARTMENT ARCH. ARCHITEC **NOTE:** Plans and specs shall not be <u>B</u> <sup>B</sup> BELOW FINIS changed, modified or altered without FLOOR B.O. BOTTOM OF authorization from The City of Building BD BOARD Division. BUILDING BLDG. BM. BEAM This permit shall be null and void if work or construction BOTTOM BOT authorized is not commenced within 180 days, or if construction BRG. BFARING or work is suspended or abandoned for a period of 180 days at BSMT. BASEMENT any time after work has commenced. NORTH BTUH BRITISH THERMAI UNIT PER HOUR Know what's **below**. The holder of this permit will be required to comply with all applicable provisions of the building code **C**.0. CLEAN OUT Call before you dig. and city ordinances in effect even if the necessity CAP. CAPACITY for compliance is discovered after issuance of the CFCI CONTRACTOR FURNISHED CONTRACTOR INSTALLED CFOI CONTRACTOR FURNISHED, OWNER INSTALLED CG CORNER GUARD CENTERLINE CL CLG. CEILING CLO. CLR. CLOSET CLEAR CMU COL. CONCRETE MASONRY UNIT COLUMN CONC. CONST. CONCRETE CONSTRUCTION CONT. CONTINUOUS CORR. CORRIDOR CPT CT CARPET CERAMIC TILE CW COLD WATER D D.S. DBL DOWNSPOU DOUBLE DEPT. DEPARTMEN DRINKING FOUNTAIN DIA..E DIAMETER DIAG. DIAGONAL DIM. DIMENSION DISP. DIST. DISPENSER BUILDING BUILDING DISTANCE DN DOWN A0.0 >1B ELEVATIONS SECTION 1D < A0.0 DTL DETAIL WALL TYPE DW DISHWASHER EAST  $\langle 1-2 \rangle$ EACH INTERIOR E.I.F.S. EXTERIOR INSULATION WALL 3 ELEVATIONS FINISH SYSTEM WINDOW TAG SECTION **A** A0.0 A0.0 E.J. EXPANSION JOINT ELEC. ELECTRICAL ELEV. ELEVATION EMERG EMERGENCY DOOR TAG (100A) DETAIL EPDM ETHYLENE PROPYLENE **4** DIENEMONOMER REFERENCE NORTH EPS A0.0 / FXTRUDED CEILING (X X'-X") POLYSTYRENE ARROW TAG EQ. EQUA EQUIP. EQUIPMENT EXIST EXISTING DETAIL **KEYNOTE** EXT. EXTERIOR ROOM NAME CALLOUT A0.0 ROOM TAG INDICATOR 100

**GRAPHIC SYMBOLS** 

ABBREVIATIONS 1/4'' = 1'-0''

RECEIVED 02/22/2023 **BUILDING DIVISION CITY OF HELENA** 

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M0.0

M1.1

M2.1

M2.2

M3.1

M4.1

M5.1

M5.2

E0.0

E1.0

E1.1

E2.1

E3.1 E4.1

E4.2

E5.1

E5.2

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FIRST FLOOR PLAN - MECHANICAL
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MECHANICAL SPECIFICATIONS

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ELECTRICAL SCHEDULES
ELECTRICAL SPECIFICATIONS
ELECTRICAL SPECIFICATIONS



F.C.C

FD

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FIN. FLR

FTG.

FURN.

G.C.O.

G.D.

GFI

GPM GWB.

G.E.J.

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INFO.

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J JAN.

K.O. KIP

**KIT** 

LAB.

LAM.

 $\underline{G}_{\text{GALV.}}^{\text{GA.}}_{\text{GALV.}}$ 

F.C.O. FD FE FEC F.F.E. FIN. FLR. FLUOR. FT. FTG. FURN. GA.	FLOOR CLEAN OUT FLOOR DRAIN FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET FINISH FLOOR ELEVATION FINISH FLOOR FLUORESCENT FOOT, FEET FOOTING FURNACE, FURNITURE GAUGE	<u>M</u>	MACH. MAINT. MAXL MECH. MEZZ. MFR. MIN. MIR MISC. MTL N N.I.C.	MACHINE MAINTENANCE MATERIAL MAXIMUM MECHANICAL MEZZANINE MANUFACTURER MINIMUM MIRROR MISCELLANEOUS METAL NORTH NOT IN CONTRACT	<u>S</u>	S. SAN. SC SCHED SD SEC. SECT. SHT SHTG SPEC. SQ. SS STC	SEALED SOUTH SANITARY SOLIDCORE SCHEDULE SOAP DISPENSER SECOND SECTION SHEET SHEETING SPECIFICATION SQUARE STAINLESS STEEL SOUND TRANSMISSION LEVEL
GALV. G.C. G.C.O. G.D. GFI GLU-LAM	GALVANIZED GENERAL CONTRACTOR GROUND CLEAN OUT GARBAGE DISPOSAL GROUND FAULT INTERRUPTER GLUE LAMINATED	<u>0</u>	N.T.S. NO.,# O.C. OFOI OFCI	NOT TO SCALE NUMBER ON CENTER OWNER FURNISHED, OWNER INSTALLED OWNER FURNISHED, CONTRACTOR INSTALLED	т	STL STRUCT. SURF. SUSP. SVF T&B	STEEL STRUCTURAL SURFACE SUSPENDED SHEET VINYL FLOORING TOP & BOTTOM
GND GPM GWB. G.E.J.	WOOD GROUND GALLONS PER MINUTE GYPSUM WALL BOARD GUTTER EXPANSION JOINT		OFF. OPNG OSB OZ. P.C. PART.	OFFICE OPENING ORIENTED STRAND BOARD OUNCE PRECAST PARTITION	÷	T.G. TEL. TEMP. TER T.F.E. T.O.	TEMPERED GLAZING TELEPHONE TEMPORARY TERRAZZO TOP OF FOOTING ELEVATION TOP OF FOOTING
HDWR. HM HORIZ. HR. HT. HVAC HW	HARDWARE HOLLOW METAL HORIZONTAL HOUR HEIGHT HEATING, VENTILATING, & AIR CONDITIONING HOT WATER		PERP. PLAM PLAS. PLY PR. PREFAB PSF	PERPENDICULAR PLASTIC LAMINATE PLASTIC PLYWOOD PAIR PREFABRICATED POUNDS PER SQUARE FOOT	<u>U</u>	TPD TV TYP. U.L.	TOILET PAPER DISPENSER TELEVISION TYPICAL UNDERWRITER'S LABORATORY
IN. INFO. INST. INSUL. INT.	INCHES INFORMATION INSTALLATION INSULATION INTERIOR	<u>Р</u> Q	PT PTD QT	POUNDS PER SQUARE INCH PAINT PAPER TOWEL DISPENSER QUARRY TILE	V	UNFIN. UNO UTIL. VAR. VB VCT VERT. VEST.	UNLESS NOTED OTHERWISI UTILITY VARIES VINYLBASE VINYL COMPOSITION TILE VERTICAL VESTIBULE
JAN. JST JT.	JANITOR JOIST JOINT	<u>R</u>	R. R.C.P.	RADIUS REFLECTED CEILING	W	W	WEST
K.O. Kip Kit.	KNOCK OUT 1000 POUNDS KITCHEN		R.O. R.O.W. RD REBAR RECEPT.	PLAN ROUGH OPENING RIGHT OF WAY ROOF DRAIN REINFORCING BAR RECEPTION	<u></u>	W/O WC WD WH WT.	WITH OUT WATER CLOSET WOOD WATER HEATER WEIGHT
LAB. LAM. LBS. LH	LABORATORY LAMINATED POUNDS LEFT HAND		REFL. REG REINF. REQ'D REV. RF RH RM RR	REFLECTED REGISTERED REINFORCED REQUIRED REVISION REFRIGERATOR RIGHT HAND ROOM RESTROOM	PR Helena I	WP W.W.F.	WALL PROTECTION WELDED WIRE FABRIC ED Division
				Approval of the violation regulation. Permit N	this docun of any sta umber:_]	nent does r ate, county, BCOM22	or city law or 2-00131
F	CITY OF HELE Building Division 447-8437 or 447-843 REFER TO RECORD C FOR REQUIRED INSPEC	38 ARD	NS	By: <u>CRN</u> Date: <u>2</u> /2 Remarks IT IS UN THIS BU FINAL IN	24/23 ::Subjec LAWFU IILDING ISPECT	t to fiel L TO OC PRIOR T ION	<u>d inspect</u> ion CUPY FO THE

## 1470 N. ROBERTS STREET HELENA, MT 59601 TEL | 406.457.0360 www.slatearchitecture.com Dec. 2,20 NO. 14855 100% CONSTRUCTION DOCUMENTS REVISIONS 01/30/2023 City Review 3 02/21/2023 City Review M RENT, Ш Ζ Ш Ш I $\mathbf{X}$ $\mathbf{O}$ O Μ Ο Ο IVER S $\mathbf{h}$ NHOL Project No. | 2022015 Issue Date | 12/02/2022



COVER SHEET







404.2.3.2

404.2.3.2

404.2.3.2 (G) LATCH APPROACH - PULL SIDE









CONDITIONS DO NOT MEET THESE REQUIREMENTS.





CONST 100% CONSTRUCTION DOCUMENTS REVISIONS 2 02/10/2023 City Review Comments 4 RENT, >С Ш ΗЩΗ OCK

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Project No. | 2022015 Issue Date | 12/02/2022



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ROOM FINISH SCHEDULE

PNT

PNT

EAST

SOUTH

PNT

PNT



CEILING

PNT

PNT

WEST

PNT

PNT

FINISH COMMENTS

	DOOMINO	DOOMNAME				SIGN
DOOR NO.	ROOM NO.	ROOM NAME	IYPE	SIGNTEXT	BRAILLE	COMMENTS
100A	100	VESTIBULE	SN3	EXIT	Yes	
102	101	CORR.	SN3,SN5	EXIT, CORR.	Yes	
104	102	WOMEN RR	SN2	WOMEN'S	Yes	
105	103	MEN RR	SN1	MEN'S	Yes	
107	01	SUITE 01	SN3, SN5	EXIT, SUITE 01	Yes	
108	02	SUITE 02	SN3, SN5, SN8	EXIT, SUITE 02, TBD	Yes	
109	03	SUITE 03	SN3, SN5	EXIT, SUITE 03	Yes	
110	04	SUITE 04	SN3, SN6	EXIT, SUITE 04	Yes	
111	03	SUITE 03	SN3	EXIT	Yes	
122	03	SUITE 03	SN3	EXIT	Yes	EXISTING DOOF
123	04	SUITE 04	SN3	EXIT	Yes	EXISTING DOOF

DESIGNATION TBD TO BE DETERMINED







PNT

FLOOR

VESTIBULE LVT VYL PNT

NUMBER ROOM NAME FINISH BASE NORTH

LVT



9 RESTROOM 104 (NORTH) 1/4" = 1'-0"







ROOM

CLOSET

100

100A



DOOR SCHEDULE								
			FRAM	GLAZI				
TYPE	THICKNESS	WIDTH	HEIGHT	MATERIAL	FINISH	MATERIAL	FINISH	TYPE
Α	1 3/4"	3' - 0"	7' - 0"	HM	PAINT	HM	PAINT	T.G.
В	1 3/4"	3' - 0"	7' - 0"	HM	PAINT	HM	PAINT	T.G.
E	1 3/4"	5' - 0"	7' - 0"	WD	STAIN	HM	PAINT	
В	1 3/4"	3' - 0"	7' - 0"	HM	PAINT	HM	PAINT	D-H-W-
D	1 3/4"	2' - 6"	7' - 0"	WD	STAIN	HM	PAINT	
D	1 3/4"	3' - 0"	7' - 0"	WD	STAIN	HM	PAINT	
D	1 3/4"	3' - 0"	7' - 0"	WD	STAIN	HM	PAINT	
В	1 3/4"	3' - 0"	7' - 0"	WD	STAIN	HM	PAINT	T.G.
В	1 3/4"	3' - 0"	7' - 0"	WD	STAIN	HM	PAINT	T.G.
В	1 3/4"	3' - 0"	7' - 0"	WD	STAIN	HM	PAINT	T.G.
В	1 3/4"	3' - 0"	7' - 0"	WD	STAIN	HM	PAINT	T.G.
A	1 3/4"	3' - 0"	7' - 0"	HM	PAINT	HM	PAINT	T.G.
	TYPE A B B D D D D D B B B B B B B A	TYPE     THICKNESS       A     1 3/4"       B     1 3/4"       E     1 3/4"       B     1 3/4"       D     1 3/4"       D     1 3/4"       D     1 3/4"       B     1 3/4"       A     1 3/4"	TYPE         THICKNESS         WIDTH           A         1 3/4"         3' - 0"           B         1 3/4"         3' - 0"           B         1 3/4"         3' - 0"           B         1 3/4"         5' - 0"           B         1 3/4"         5' - 0"           B         1 3/4"         2' - 6"           D         1 3/4"         2' - 6"           D         1 3/4"         3' - 0"           B         1 3/4"         3' - 0"	TYPE         DOOR           THICKNESS         WIDTH         HEIGHT           A         1 3/4"         3' - 0"         7' - 0"           B         1 3/4"         3' - 0"         7' - 0"           E         1 3/4"         5' - 0"         7' - 0"           B         1 3/4"         5' - 0"         7' - 0"           B         1 3/4"         3' - 0"         7' - 0"           D         1 3/4"         3' - 0"         7' - 0"           D         1 3/4"         3' - 0"         7' - 0"           D         1 3/4"         3' - 0"         7' - 0"           D         1 3/4"         3' - 0"         7' - 0"           B         1 3/4"         3' - 0"         7' - 0"           B         1 3/4"         3' - 0"         7' - 0"           B         1 3/4"         3' - 0"         7' - 0"           B         1 3/4"         3' - 0"         7' - 0"           B         1 3/4"         3' - 0"         7' - 0"           B         1 3/4"         3' - 0"         7' - 0"           B         1 3/4"         3' - 0"         7' - 0"           A         1 3/4"         3' - 0"         7' - 0"	TYPE         THICKNESS         WIDTH         HEIGHT         MATERIAL           A         1 3/4"         3' - 0"         7' - 0"         HM           B         1 3/4"         3' - 0"         7' - 0"         HM           E         1 3/4"         3' - 0"         7' - 0"         HM           B         1 3/4"         5' - 0"         7' - 0"         WD           B         1 3/4"         3' - 0"         7' - 0"         WD           B         1 3/4"         3' - 0"         7' - 0"         WD           D         1 3/4"         3' - 0"         7' - 0"         WD           D         1 3/4"         3' - 0"         7' - 0"         WD           D         1 3/4"         3' - 0"         7' - 0"         WD           B         1 3/4"         3' - 0"         7' - 0"         WD           B         1 3/4"         3' - 0"         7' - 0"         WD           B         1 3/4"         3' - 0"         7' - 0"         WD           B         1 3/4"         3' - 0"         7' - 0"         WD           B         1 3/4"         3' - 0"         7' - 0"         WD           B         1 3/4"	DOOR           TYPE         THICKNESS         WIDTH         HEIGHT         MATERIAL         FINISH           A         1 3/4"         3'-0"         7'-0"         HM         PAINT           B         1 3/4"         3'-0"         7'-0"         HM         PAINT           B         1 3/4"         3'-0"         7'-0"         HM         PAINT           E         1 3/4"         5'-0"         7'-0"         WD         STAIN           B         1 3/4"         3'-0"         7'-0"         WD         STAIN           D         1 3/4"         3'-0"         7'-0"         WD         STAIN           B         1 3/4"         3'-0"         7'-0"         WD         STAIN           B         1 3/4"         3'-0"         7'-0"         WD         STAIN           B         1 3/4"         3'-0"         7'-0"         WD         STAIN	DOOR SCHE           TYPE         THICKNESS         WIDTH         HEIGHT         MATERIAL         FINISH         MATERIAL           A         1 3/4"         3' - 0"         7' - 0"         HM         PAINT         HM           B         1 3/4"         3' - 0"         7' - 0"         HM         PAINT         HM           B         1 3/4"         3' - 0"         7' - 0"         HM         PAINT         HM           B         1 3/4"         3' - 0"         7' - 0"         WD         STAIN         HM           B         1 3/4"         3' - 0"         7' - 0"         WD         STAIN         HM           D         1 3/4"         3' - 0"         7' - 0"         WD         STAIN         HM           D         1 3/4"         3' - 0"         7' - 0"         WD         STAIN         HM           D         1 3/4"         3' - 0"         7' - 0"         WD         STAIN         HM           D         1 3/4"         3' - 0"         7' - 0"         WD         STAIN         HM           B         1 3/4"         3' - 0"         7' - 0"         WD         STAIN         HM           B         1 3/4	DOOR SCHEDULETYPEINICKNESSWIDTHHEIGHTMATERIALFINISHMATERIALFINISHA13/4"3'-0"7'-0"HMPAINTHMPAINTB13/4"3'-0"7'-0"HMPAINTHMPAINTE13/4"5'-0"7'-0"HMPAINTHMPAINTB13/4"3'-0"7'-0"WDSTAINHMPAINTD13/4"3'-0"7'-0"WDSTAINHMPAINTD13/4"3'-0"7'-0"WDSTAINHMPAINTD13/4"3'-0"7'-0"WDSTAINHMPAINTB13/4"3'-0"7'-0"WDSTAINHMPAINTB13/4"3'-0"7'-0"WDSTAINHMPAINTB13/4"3'-0"7'-0"WDSTAINHMPAINTB13/4"3'-0"7'-0"WDSTAINHMPAINTB13/4"3'-0"7'-0"WDSTAINHMPAINTB13/4"3'-0"7'-0"WDSTAINHMPAINTB13/4"3'-0"7'-0"WDSTAINHMPAINTB13/4"3'-0"7'-0"WDSTAINHMPAINTA13/4"3'-0"7'-0"WDSTAINHMPAINTA13/4"3'-0"7'-0"WDSTAINH











## MECHANICAL ABBREVIATION KEY

ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BT	BATHTUB
C	
CB CD-E	CATCH BASIN CEILING DIFFUSER - EXISTING
CFSD	CONTROL/FIRE/SMOKE DAMPER
CI	CAST IRON
СО	CLEANOUT
CS	CLINICAL SINK
DE	
DI	DUCTILE IRON
PG (0-2")	DIFFERENTIAL PRESSURE GAUGE (RANGE)
DPS	DIFFERENTIAL PRESSURE SWITCH
E	
ECFSD	EXISTING CONTROL FIRE SMOKE DAMPER
EE	EMERGENCY EYEWASH
EFD	EXISTING FIRE DAMPER
EFSD	EXISTING FIRE SMOKE DAMPER
EP	ELECTRICAL TO PNEUMATIC VALVE
ESD	EXISTING SMOKE DAMPER
ESE	EMERGENCY SHOWER/EYEWASH
EWC	ELECTRIC WATER COOLER
FCO	FLOOR CLEANOUT
FD EM	
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FS	FLOOR SINK
FSD	FIRE/SMOKE DAMPER
GD	GARBAGE DISPOSER
НВ	HOSE BIBB
I.E.	INVERT ELEVATION (FOR REFERENCE ONLY)
LAV	LAVATORY
MA	MIXED AIR
мн	MOP BASIN MANHOLE
MV	MIXING VALVE
NC	NEW CONNECTION
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	
OA	OUTSIDE AIR
OS	OIL SEPARATOR
PS	PRESSURE SWITCH
RA	
SA	SUPPLY AIR
SD	SMOKE DAMPER
SH	SHOWER
SK	
55 TAB	TERMINAL AIR BOX
TD	TRANSFER DUCT
TP	TRAP PRIMER
TYP	TYPICAL
UB	
	LINE ESS NOTED OTHERWISE
UR	URINAL
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	
vvr WH	
WMF	WASHING MACHINE FIXTURE
WM	WATER METER
WS	WATER SOFTENER
YCO	YARD CLEANOUT

SYMBOL
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## MECHANICAL SYMBOL LIST

#### MECHANICAL SYMBOL LIST NOT ALL SYMBOLS MAY APPLY. NOT ALL SYMBOLS MAY APPLY. **DESCRIPTION:** SYMBOL: DESCRIPTION: COLD WATER - POTABLE DIRECTION OF AIR FLOW · 👞 🚽 DRAIN - PLUMBING FIRE PROTECTION NATURAL GAS MANUAL VOLUME DAMPER - HOT WATER - POTABLE SANITARY DRAINAGE RISE IN DIRECTION OF AIR FLOW STORM DRAINAGE (ROOF SQUARE FOOTAGE) STORM DRAINAGE (SECONDARY) DROP IN DIRECTION OF AIR FLOW VENT DUCT CAP PIPE CAP PIPE DOWN $\left|\right\rangle$ DUCT DOWN PIPE UP OR UP/DOWN $\mathbb{N}$ DUCT UP PIPE SERVING FIXTURE ON FLOOR ABOVE FD (EXAMPLE: FD = FLOOR DRAIN) $\square$ SUPPLY/OUTSIDE AIR DUCT SECTION DIRECTION OF FLOW IN PIPE ROUTE TO DRAIN $\square$ RETURN AIR DUCT SECTION ROOF DRAIN PROPERTIES SYMBOL SIZE (ROOF SQ. FT.) $\square$ EXHAUST/RELIEF AIR DUCT SECTION NEW CONNECTION $\square$ 4-WAY DIFFUSER WITH BLANKOFF IN ONE DIRECTION DIELECTRIC CONNECTION UNION/FLANGE <u>CD-1</u> 6/115 AIR TERMINAL PROPERTIES SYMBOL NECK SIZE/CFM SHUTOFF VALVE NORMALLY OPEN SHUTOFF VALVE NORMALLY CLOSED - XX-YAIRFLOW MEASUREMENT SYMBOL XX - AHU SYMBOL THROTTLING VALVE **Y - SEQUENTIAL NUMBER** PUMP VACUUM BREAKER **VIEW KEY** "WYE" - STRAINER NAME - LEVEL NAME 10' - 0" - HEIGHT ABOVE "WYE" - STRAINER W/SHUTOFF VALVE AND HOSE CONNECTION WITH CAP ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE PROJECT 0' - 0" AUTOMATIC DRAIN VALVE SHEET AND/OR DETAIL AIR PRESSURE MAINTENANCE DEVICE INDICATES DIRECTION OF TRUE NORTH AIR SUPERVISORY SWITCH - PLAN OR DETAIL NUMBER ANGLE VALVE - PLAN OR DETAIL NAME BUTTERFLY VALVE WITH MONITOR SWITCH **VIEW NAME** INSPECTOR TEST AND DRAIN VALVE PLAN OR DETAIL SCALE OS&Y GATE VALVE OS&Y GATE VALVE WITH MONITOR SWITCH INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS CHECK VALVE DETAIL REFERRED TO BY SECTION CUT 1-1 SAFETY/RELIEF VALVE M101 PRESSURE REDUCING VALVE (LIQUID/GAS) - INDICATES SIMILAR DETAIL **BASKET STRAINER** REFERENCED IN MULTIPLE LOCATIONS FLEXIBLE CONNECTION DETAIL REFERRED TO BY ELEVATION PRESSURE/TEMPERATURE TEST PLUG \_T101- SHEET DETAIL IS LOCATED ON **REDUCER - REFERENCE SPECIFICATION** FOR CONCENTRIC/ECCENTRIC AND FOT/FOB LINE TYPE KEY: AUTOMATIC AIR VENT - NEW WORK BY THIS CONTRACTOR (DARK SOLID LINE) MANUAL AIR VENT — — — — NEW WORK UNDERFLOOR OR UNDERGROUND BY THIS CONTRACTOR (DARK LONG DASHED LINE) DRAIN VALVE WITH HOSE CONNECTION AND CAP NEW WORK BY OTHERS AND/OR EXISTING TO REMAIN ALIGNMENT GUIDE (LIGHT SOLID LINE) PIPE ANCHOR \_\_\_\_ EXISTING TO BE REMOVED BY THIS CONTRACTOR

(DARK SHORT DASHED LINE)

## **MECHANICAL GENERAL NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO PLUMBING, VENTILATION, AND HVAC.

- DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
- DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING
- WITH FABRICATION OR EQUIPMENT ORDERS. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
- ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
- EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, AND OTHER
- MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS.
- FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH
- IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES. DUCTWORK ACCESSORIES. DAMPERS. ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
- . SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL,
- PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS.
- 12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT
- EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC. 14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES.
- 15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR STARTERS, SWITCHES, AND DISCONNECTS.
- 16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT. 17. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER
- NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.

## **PLUMBING GENERAL NOTES:**

- THE SYMBOLS AND THE MATERIAL LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY QUANTITIES AND FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT.
- CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE DESCRIPTION OF MATERIAL ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL TAKES PRECEDENCE OVER THE CATALOG NUMBER. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN.
- CONTRACTOR SHALL VERIFY THAT FIXTURES SUPPLIED ARE APPROVED PER ALL APPLICABLE STATE, LOCAL AND GOVERNING AUTHORITIES. ALL FIXTURES SHALL CONFORM TO FEDERAL ACT S.3874
- VERIFY ALL INVERT ELEVATIONS BEFORE BEGINNING WORK.
- VERIFY UNDERGROUND PIPE SIZES, INVERT ELEVATIONS, AND LOCATIONS PRIOR TO BEGINNING ANY WORK.
- REFER TO THE PLUMBING ROUGH-IN SCHEDULE FOR THE SIZES OF BRANCH PIPES TO PLUMBING FIXTURES. FOR CLARITY, NOT ALL VALVES HAVE BEEN SHOWN. PROVIDE SHUTOFF VALVES IN
- DOMESTIC WATER PIPING SERVING EACH ROOM WITH FIXTURES. ANGLE STOPS SHALL NOT BE CONSIDERED SHUTOFF VALVES. . EXISTING CONDITIONS ON DEMOLITION PLANS ARE PROVIDED TO INDICATE THE GENERAL
- SCOPE OF ITEMS TO BE REMOVED. 10. P.C. SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK UNLESS NOTED OTHERWISE

## **MECHANICAL RENOVATION NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO PLUMBING, AND VENTILATION.

- 1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
- 2. NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS
- BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 3. FIELD VERIFY THE AVAILABLE CLEARANCES FOR DUCTWORK AND PIPING BEFORE
- FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
- 4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO THEIR AREA OF WORK. 5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF
- ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING
- 6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
- 7. WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.
- 8. OBTAIN PERMISSION FROM OWNER BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW SYSTEMS ARE INSTALLED.
- 9. MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR TIE IN AND SWITCHOVER. DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM OWNER BEFORE PARTIALLY OR COMPLETELY DRAINING SYSTEM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE.





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100% CONSTRUCTION DOCUMENTS

REVISIONS





PLANS TO BE ON JOB SITE

AT ALL TIMES

Sheet No.

## **GENERAL DEMO NOTES( MECHANICAL)**

- OTHERWISE NOTED.
- TEAM FOR FIELD COORDINATION.
- MANUAL AND CONTRACT DOCUMENTS. MATERIALS.
- 7





**BASEMENT DEMOLITION PLAN - MECHANICAL** 

1. ALL SYSTEMS SHOWN DASHED SHALL BE REMOVED AND NOT REUSED UNLESS

2. DRAWINGS ARE BASED ON BEST AVAILABLE INFORMATION. THESE PLANS DO NOT REPRESENT A FINAL AS-BUILT CONDITION OF THE EXISTING SYSTEM. CONTRACTORS SHALL REPORT ANY MAJOR DISCREPANCIES TO THE DESIGN

3. THE CONTRACTOR SHALL BE COGNIZANT THAT THIS IS A REMODEL PROJECT AS

SUCH CERTAIN ITEMS CANNOT BE FULLY ILLUSTRATED NOR EXPLAINED WITHOUT FIELD OBSERVATION. THEREFORE, BEFORE SUBMITTING A PROPOSAL THE CONTRACTOR SHALL VISIT AND EXAMINE THE PROJECT IN EVERY DETAIL AS PERTAINS TO THIS PROJECT AND MAKE ALLOWANCES IN THEIR PROPOSAL FOR ALL CONDITIONS THAT WILL AFFECT THE WORK INDICATED IN THE PROJECT

IT IS ABSOLUTELY NECESSARY THAT ALL TRADES COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, SPRINKLER HEADS, DIFFUSER, ELECTRICAL BOXES, EQUIPMENT AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF

5. DEMOLISHED DUCTWORK SHALL BE BROUGHT BACK TO AN ACTIVE MAIN AND CAPPED OR PREPARED FOR CONNECTION TO NEW AS REQUIRED. EXISTING SYSTEMS NOT SHOWN ARE TO REMAIN.

REMOVE FROM THE SITE AND LEGALLY DISPOSE OF ALL ITEMS DEMOLISHED AS PART OF THIS PROJECT OR ALL ITEMS GENERATED AS CONSTRUCTION DEBRIS AS A RESULT OF NEW WORK OR DEMOLITION. 8. EXISTING SYSTEMS/EQUIPMENT NOT SHOWN DASHED IS TO REMAIN.

## **KEYNOTES**

DEMO EXISTING RETURN GRILLE AND BRANCH DUCTWORK BACK TO RETURN MAIN AND CAP. RETAIN RETURN GRILLE FOR REUSE. SEE NEW MECHANICAL PLANS FOR MORE INFORMATION. DEMO EXISTING SUPPLY AIR GRILLE AND BRANCH DUCTWORK BACK TO 

DEMOLISH EXISTING WATER ENTRY, INCLUDING WATER METER AND PRV. DEMOLISH EXISTING WATER PIPING AS REQUIRED TO INSTALL NEW WATER ENTRY COMPONENTS AS INDICATED ON SHEET M2.2.

2



SHEET M3.1.

## **MECHANICAL GENERAL NOTES:**

XX-# REFERS TO EQUIPMENT DESIGNATION. SEE CORRESPONDING SPECIFICATIONS AND EQUIPMENT SCHEDULE FOR FURTHER INFORMATION.
 COORDINATE SYSTEMS IN CEILING SPACES WITH OTHER MECHANICAL AND ELECTRICAL DISCIPLINES. PROVIDE ADDITIONAL OFFSETS AS NECESSARY TO ALLOW SERVICES AND SYSTEMS TO BE INSTALLED AT THE CEILING HEIGHT INDICATED BY THE ARCHITECT.
 SEE EQUIPMENT SCHEDULES ON THE M6 SERIES OF DRAWINGS.

## **KEYNOTES**

100 EXTEND RETURN DUCTWORK AS NEEDED TO RELOCATE EXISTING RETURN GRILLE. DUCT SIZES TO MATCH EXISTING SIZES. 101 RELOCATE EXISTING RETURN GRILLE AND INSTALL IN SIDE OF RETURN DUCT. 102 ROUTE EXHAUST DUCT UP THROUGH ROOF AND TERMINATE WITH A GOOSENECK
 FITTING. EXHAUST TERMINATIONS ARE TO BE INSTALLED A MINIMUM OF 10' AWAY FROM THE EXISTING RTU AIR INTAKE, TYPICAL. SEE GOOSENECK TERMINATION DETAIL ON









## PLUMBING GENERAL NOTES:









A. DISCOU INSTALLE MFR = MA EC = ELE MC = FUR ELECTRIC MFR/EC = ELECTRIC

B. DISCO F = FUSE NF = NON

C. CONTF FV = FULI WYE = W SS = SOL MS = MAN VFD = VA VFD/B = V

D. FAN RE THE SCHI FOR FC IS

E. NO EQ PLATE RA F. MUST E

G. CURB MFR = ST GC = BY ( SAC = SO

## PLUMBING MATERIAL

	$\frown \checkmark$		$\sim\sim\sim\sim\sim$
	TAG NAME	Y Y Y Y DESCRIPTION Y Y Y Y	
	BFP-1	BACK FLOW PREVENTER - DOUBLE CHECK, LEAD FREE BRONZE	WATTS (LF007), WILKINS
<u>}</u>		STAINLESS STEEL SPRINGS SPRING I OADED CHECK VALVES BALL STYLE	(350XL), FEBCO (LF850),
		SHUT-OFE VALVES ON INLET AND OUTLET OF UNIT TEST PORTS WITH SHUT-OFE	
( )		VALVES, FACTORY TESTED, RATED FOR 175 PSI AT 33°F TO 140°F, 8 PSI	
		(MAXIMUM) PRESSURE DROP AT 10 FPS, ALL PARTS TO BE SERVICEABLE	
		WITHOUT REMOVING UNIT FROM LINE, APPROVED BY USC FCCC & HR, AWWA	
		C510-92, ASSE 1015, IAPMO AND SBCCI LISTED.	
		PROVIDE AND INSTALL BRONZE OR	
$\left( \right)$		UPSTREAM OF EACH STRAINER. FLOW PRESSURE DROP CURVES SHALL BE	
		SUBMITTED.	
	I -1	AVATORY - ACCESSIBLE WALL MOUNTED WHITE VITREOUS CHINA 20"x18" .4"	LAVATORY -
٦ (		THEN CONTENRED BACKSPLASH, SINGLA FAUGENHOLD, BRILLED FOR	AMERICANSTANDARD
1		CONCEALED ARM CARRIER.	(0356.421), KOHLER (K-2007),
			SLOAN (SS-3103), TOTO
		LAVATORY TRIM - LAVATORY TRIM - SINGLE HANDLE MIXING FAUCET, BRASS	(LT307), ZURN (Z5361)
		CONSTRUCTION, CHROME-PLATED FINISH, CONVENTIONAL SPOUT WITH	
		SUPPLIES AT 4" CENTERS, CERAMIC DISC CARTRIDGE, PERFORATED GRID	(22C631) AMERICAN
		STRAINER WITH 1-1/4" 17 GAUGE TAILPIECE.	STANDARD (6114.116.002).
			CHICAGO FAUCET
		MAXIMUM FLOW TO BE 0.5 GPM IN COMPLIANCE WITH ENERGY POLICY ACT OF	(2200-E2805ABCP), MOEN
		2005 AND ASME/ANSI STANDARD A112.18.1M. FAUCET SHALL COMPLY WITH	(8417), ZURN (Z82200-XL)
		FEDERAL ACT 5.3874. PROVIDE RESTRICTIVE DEVICE AS REQUIRED.	
		MIXING VALVE - POINT-OF-USE ANTI-SCALD THERMOSTATIC MIXING VALVE FOR	(LEUSG-B) LEONARD
		TEMPERED WATER CONTROL, ALL BRONZE/BRASS CONSTRUCTION, ROUGH	(170D-LF), LAWLER
		FINISH, THREADED INLETS, TAMPER RESISTANT SETPOINT, 3/8" COMPRESSION	(TMM-1070T), ACORN
		INLETS AND OUTLETS, COLD WATER BYPASS IF USED WITH MIXING FAUCET.	CONTROLS (ST70), APOLLO
			(34DLF), POWERS (LFE480),
		0.5 GPM OUTPUT. UNIT TO MIX 120 DEGREE F HOT WATER SUPPLY AND 40	SLUAN (MIX-135-A), SYMMUNS
		DEGREET COED WATER SOFFETTOR TO DEGREET COTEET.	(ZW3870XI T)
		UNIT SHALL BE ASSE 1070 LISTED AND APPROVED. VALVE SHALL COMPLY WITH	(2110010)(21)
		FEDERAL ACT S.3874.	INSULATION KIT - TRUEBRO
			(LAV-GUARD), BROCAR
		INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY	PRODUCTS (TRAP WRAP),
		LINES.	NICGUIRE (PROVIRAP), PLUMBEREX (PRO-EXTREME)
		ACCESSORIES - QUARTER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE	
		SUPPLY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES, DRAIN AND	
		OFFSET TAILPIECE, 1-1/4" 17 GAUGE CAST BRASS P-TRAP, SUPPORT CARRIER.	
		MOUNT LAVATORY WITH SUPPORT CARRIER BOLTED SECURELY TO FLOOR. TOP	
		STANDARD PROVIDE 29" MINIMUM CLEARANCE FROM FLOOR TO BOTTOM OF	
	$\frown \checkmark$	APRONIN COMPLIANCE WITH LATEST ANSI/117. AND ADA STANDARDS.	$\frown\frown\frown\frown\frown$
	Ŷ	<b>ΥΥΥΥΥΥΥΥΥΥΥ</b>	Y Y Y Y
<del>~ </del>	PRV-1	PRESSURE REGULATING VALVE - SELF CONTAINED TYPE UP TO 2"[51 MM] SIZE,	PRESSURE REGULATING
<u>}</u>		DIAPHRAGM ACTUATED, LEAD FREE CAST COPPER-SILICON OR BRONZE BODY,	VALVE - FISHER TYPE 95H,
		STAINLESS STEEL SPRINGS, INTEGRAL REMOVABLE STAINLESS STEEL	CASH ACME SERIES B,
(		OPERATING PRESSURE OF 300 PSICI2070 KPA1 GAUGE AND AD ILISTARI E FROM	TREPICE 021 OR 1002 WATTS
<u>}</u>		25-75PSIG[172-517KPA] NPT THREADED INI ET/OUTLET ISOLDERED	LEUSB SERIES
		INLET/OUTLET] ASSE 1003 LISTED.	
(			
<b>\</b>		NEW VALVE INLET, OUTLET, GPM, AND SIZE TO MATCH EXISTING PRV VALVE.	
	WQ-1	WATER CLOSET - ACCESSIBLE, FLOOR MOUNTED, TANK TYPE, WHITE VITREOUS	WATER CLOSET -
L L		CHINA, CLOSE COUPLED, SIPFION JEF, ELONGATED BOWE, BOLL CAPS, 12	VORN (25500), ORADE (3814)
		I EVER 16 GALLONS PER ELLISH (MAXIMUM) IN COMPLIANCE WITH ENERGY	(091-2175) GERBER (21-718)
		POLICY ACT OF 1992.	TOTO (CST744SL)
		SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID	SEAT -
		ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR	BEMIS (3155SSCT), CHURCH
		PLATED STEEL POSTS AND NUTS.	(3155C), BENEKE (533PC), OLSONITE (95), SAME AS
		ACCESSORIES - QUARTER-TURN 3/8" CHROME-PLATED HEAVY BRASS ANGLE	WATER CLOSET
		SUPPLY WITH STOP, CHROME-PLATED SOFT COPPER SUPPLY LINE.	MANUFACTURER
		TOP OF SEAT SHALL BE AT 16"-17" ABOVE FINISHED FLOOR. FLUSH HANDLE	
		SHALL BE LOCATED ON THE WIDE SIDE OF THE TOILET STALL AND OPERATE	
	WCO-1	WALL CLEANOUT - TEE, CAST IRON ACCESS BODY, GAS AND WATERTIGHT	ZURN (Z-1446), SMITH (4530),
		I HREADED PLUG, ROUND STAINLESS STEEL ACCESS COVER, EXTENDED	WADE (8560), JOSAM (58910),
			(C1460-RD)
			ZURN (7-1441) SMITH (4422)
	VV CO-2	BRONZE OR BRASS THREADED PLUG. ROUND STAINLESS STEFL ACCESS	WADE (W-8480-R/8550).
		COVER, EXTENDED MACHINE SCREW.	JOSAM (58600-CO), WATTS
			$U(CO_{380}RD)$ MIEAR

CHEDULE GENERAL NOT	ES:	FAN S	SCHE	DUI	LE							
NNECT AND CONTROLLER STARTER FURNISHEE ED BY: ANUFACTURER CTRICAL CONTRACTOR.	) AND	NOTES: 1.PROVIDE 2.EXHAUST	WITH VIBF FAN TO B	RATION E CON	N ISOLA NTROLL	TORS, CE ED BY LIG	EILING M GHTS. C	MOUNTIN COORDIN	ig kit, fle: Ate fan c	X CONNECTOR ONTROL WITH	S FOR DUC THE E.C.	T CONNECT
CAL CONTRACTOR. = FURNISHED LOOSE BY MANUFACTURER INSTA CAL CONTRACTOR	LLED BY	TAG NAME		<b>RVED</b>	<b>CFM</b>	S.P. I W.C	N. FA	N RPM OTE F)	DRIVE TYPE	MAX. AMCA SONES	<b>W</b>	VO
NNECT TYPE: D N-FUSED		EF-2	WOMEN'S 102	S RR	75	0.35	5	862	DIRECT	1.5	30.	7
ROLLER STARTER TYPE: L VOLTAGE (YE-DELTA			HEAT	ER	SC	HEDU	JLE	- ELI	ECTR	IC		
NUAL STATER NUAL STARTER ARIABLE FREQUENCY DRIVE VARIABLE FREQUENCY DRIVE WITH BYPASS		1.COORDIN 2.PROVIDE	IATE FINAL WITH MAN		OR SEL	ECTION W 'S INTEGF	/ITH AR RAL THE	CHITECT RMOSTA	- T AND DIS	CONNECT SWI	TCH.	
PM SHALL NOT EXCEED 110% OF SCHEDULED V	ALUE, WITH								HEAT	NG ELEMENT		
S ACCEPTABLE IF EFFICIENCY IS NOT LOWER.	DIA FANS							NUMBE		TOTAL KW (QT	Y * KW)	-
UIPMENT SHALL BE SELECTED ABOVE 90% OF M ATING.	IOTOR NAME				<b>CFM</b>	<b>EAT °F</b>	LAT °F	STAG	ES ES	QTY	<b>KW</b>	
BE WITHIN +/- 10% OF SCHEDULED RPM.					100	00.0	115.0			1	1.0	120
TYPE: TANDARD CURB BY MANUFACTURER GENERAL CONTRACTOR		EWH-2 EWH-3	COR. 10	01	100	60.0	115.0	1		1	1.5	120
										C	OUCT	NORK
DESCRIPTION CORROSIVE INTERNAL PARTS.	WATTS (LF007	<b>TER AND MOD</b> 7), WILKINS	)EL		S	SYSTEM		LOC	ATION	SERVICE NOTE 1	RECT	EXPC
RING-LOADED CHECK VALVES, BALL STYLE D OUTLET OF UNIT, TEST PORTS WITH SHUT-OFF ED FOR 175 PSI AT 33°F TO 140°F, 8 PSI	APOLLO (4ALF	=-100)	$\left  \right\rangle$		EXF	IAUST AIR		IND	OOR	MAIN		
FLOOR. PROVIDE AND INSTALL BRONZE OR REAM OF EACH UNIT AND ADDITIONAL VALVE FLOW PRESSURE DROP CURVES SHALL BE MOUNTED, WHITE VITREOUS CHINA, 20"x18", 4" SINGLE HANDLE MIXING FAUCET, BRASS ED FINISH, CONVENTIONAL SPOUT WITH ERLESS PUSH-PULL LEVER HANDLE WITH MIC DISC CARTRIDGE, PERFORATED GRID TAILPIECE. IN COMPLIANCE WITH ENERGY POLICY ACT OF 0 A112.18.1M. FAUCET SHALL COMPLY WITH RESTRICTIVE DEVICE AS REQUIRED. INTI-SCALD THERMOSTATIC MIXING VALVE FOR LL BRONZE/BRASS CONSTRUCTION, ROUGH PER RESISTANT SETPOINT, 3/8" COMPRESSION ITER BYPASS IF USED WITH MIXING FAUCET. 20 DEGREE F HOT WATER SUPPLY AND 40 Y FOR 110 DEGREE F OUTLET. D AND APPROVED. VALVE SHALL COMPLY WITH CTURED FOR P-TRAP, STOP VALVES AND SUPPLY I 3/8" CHROME PLATED HEAVY BRASS ANGLE ED SOFT COPPER SUPPLY LINES, DRAIN AND JGE CAST BRASS P-TRAP, SUPPORT CARRIER. RT CARRIER BOLTED SECURELY TO FLOOR. TOP	LAVATORY - AMERICAN ST (0356.421), KC SLOAN (SS-31 (LT307), ZURN LAVATORY TF (22C631), AME STANDARD (6 CHICAGO FAL (2200-E2805AF (8417), ZURN (2200-E2805AF (8417), ZURN (170D-LF), LAV (TMM-1070T), CONTROLS (S (34DLF), POW SLOAN (MIX-1 (8210CK), WIL (ZW3870XLT) INSULATION F (LAV-GUARD), PRODUCTS (T MCGUIRE (PR PLUMBEREX (	NDARD HLER (K-2007 03), TOTO I (Z5361) RIM - DELTA ERICAN 114.116.002), JCET 3CP), MOEN (Z82200-XL) E - WATTS CONARD VLER ACORN ST70), APOLLO ERS (LFE480), 35-A), SYMMO KINS (IT - TRUEBRO BROCAR RAP WRAP), OWRAP), (PRO-EXTREM	y, ons one)					<ol> <li>1) MINI</li> <li>2) DUC</li> <li>3) THE</li> <li>MEE</li> <li>CAN</li> <li>4) R-V</li> <li>5) JAC</li> <li>6) FLE:</li> <li>7) DUC</li> <li>8) MUL</li> <li>2) EXH</li> <li>OR A</li> <li>3) WRA</li> <li>DEFINI</li> <li>EXPOS</li> <li>CONCI</li> <li>MAIN 1</li> <li>TERMI</li> <li>OUTSI</li> <li>INDOC</li> <li>OUTDO</li> </ol>	MUM R-VAI T SIZES SH INSULATIC T OR EXCE NOT MEET ALUES FOF KET (PVC C XIBLE DUCT T WRAP IS TIPLE LAYE JLATION PF AUST SYST ALL DUCT V AP USED EX TIONS: SED DUCT: EALED DUC DUCT: DUC TO TERMIN/ NAL TO GR DE AIR TEM PR: DUCT LUC	UE BASED ON HOWN ARE INSI IN THICKNESS ( ED THE LISTED THIS THICKNESS WRAP SHALL I OR METAL) SHAI SHALL BE AS I ALLOWED TO E ERS OF WRAP ( ERS OF WRAP ( ERS SHALL BE VITHIN 20' OF BI KTERIOR TO TH DUCT THAT IS TERIOR TO TH DUCT THAT IS T FROM THE AI AL DUCT: THIS D DUCT: THIS I IPERED: TEMP OCATIONS WITH LOCATIONS OF	2021 IECC F DE FREE AF GIVEN MEE R-VALUE; SS TO PERF BE SHOWN L BE INSTA NOTED IN T BE BLANKE DR LINER TO DR LINE TO DI LINE	REQUIREMEN REA DIMENSION IS OR EXCERNING NSULATION ORMANCE C USING THEIF (LLED AS REA HE "AIR DUC FOR BOARD; DACHIEVE TO OR OTHER P WITH 1" WR TERIOR PEN SHALL BE P O VIEW IN O LED IN CHAS G UNIT TO FI CH DUCT; TYF H DUCT DOW SIDE AIR IS A SULATED BUP THE INSULA
UM CLEARANCE FROM FLOOR TO BOTTOM OF			$ \downarrow_{F}$									
- SELF CONTAINED TYPE UP TO 2"[51 MM] SIZE, REE CAST COPPER-SILICON OR BRONZE BODY, EGRAL REMOVABLE STAINLESS STEEL STEEL TRIM AND SEATS FOR MAXIMUM PSIG[2070 KPA] GAUGE AND ADJUSTABLE FROM READED INLET/OUTLET [SOLDERED	VALVE - FISHE CASH ACME S MASONEILAN TRERICE 921 LFU5B SERIES	EGULATING ER TYPE 95H, ERIES B, 17 SERIES, OR 1002, WAT S.	TS		S	YSTEM				INSULATION	ТҮРЕ	PLUI
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(C1450-RD)

JOSAM (58600-CO), WATTS (CO-380-RD), MIFAB

ATION					G KIT, FLEX			ONNECTIO	ON, FAN SPE	ED CONTRO	LER, BACKD	RAFT DAMPER	AND INTEGRAL	DISCONNECT.				
CON	ISOLAT FROLLE	ORS, CE D BY LIC	HTS. C	OORDIN	ATE FAN C	ONTROL WITH T	TE E.C.											
										ELEC	FRICAL (NOTI	E 1)						
	CEM	S.P. I	N. FA			MAX. AMCA	\\\/										MODEL	NOTES
03	75	0.35	5 (NC	862	DIRECT	1.5	30.7	12	20 P	1 1	MFR	NF	MFR MFR	FV	20	COOK	GC-148	1,2
7	75	0.35	5	862	DIRECT	1.5	30.7	12	20	1	MFR	NF	MFR	FV	20	COOK	GC-148	1,2
R	SCF	IFDI	ЛЕ	- FI F	-CTR	IC												
	R SELE																	
λCT	URER'S	S INTEGR	RAL THE	RMOSTA		CONNECT SWITC	ЭН.											
										E	ECTRICAL		CONTROLLER/					
				NUMBE	R OF	TOTAL KW (QTY *	* KW)			-	DISCO		STARTER BY					
D	<b>CFM</b>	EAT °F	LAT °F	STAG	ES	QTY	KW V		PHASES	<b>A</b>	(NOTE A)	(NOTE B)	(NOTE A)	WEIGHT	MANU	FACTURER	MODEL	NOTE
<u>د</u>	100	60.0	115.0	1		1	1.5	120		12.5	MFR		MFR		P	roducts	H4000 Series	5 1,2
3	100	60.0	115.0	1		1	1.5	120	1	12.5	MFR	NF	MFR	30	Marley P	roducts	/H4000 Series	5 1,2
	100	60.0	115.0	1		1	1.5	120	1	12.5	MFR	NF	MFR	30	Marley P	roducts	/H4000 Series	5 1,2
	SI	(STEM		LOCA		SERVICE NOTE 1	JCTWC RECTANG	DRK II EXPOSI ULAR	NSULA ED ROUND / OV		WRAP CONC	& LINEF		I R-VALUE		SPECIFIC NOT	ES	
	EXH	AUST AIR		INDO	DOR	MAIN										1, 2, 3		
				<ol> <li>2) DUC</li> <li>3) THE</li> <li>MEE<sup>-1</sup></li> <li>CANI</li> <li>4) R-VA</li> <li>5) JACK</li> <li>6) FLEX</li> <li>7) DUC</li> </ol>	T SIZES SH INSULATIO T OR EXCE NOT MEET ALUES FOR KET (PVC O KIBLE DUCT T WRAP IS	IOE BASED ON 20 IOWN ARE INSIDE ED THE LISTED R THIS THICKNESS R WRAP SHALL BE R METAL) SHALL SHALL BE AS NO ALLOWED TO BE	21 IECC REQ FREE AREA VEN MEETS C -VALUE; INSU TO PERFORM SHOWN USI BE INSTALLE DTED IN THE " BLANKET OR	UIREMENTS DIMENSION OR EXCEED ULATION TH MANCE COM NG THEIR II D AS REQU AIR DUCT A BOARD; CO	S. NS. LINER, W DS THE REQUI HICKNESS AN NDITION. NSTALLED CO JIRED BY THE ACCESSORIE CONTRACTOR	HERE USED, RED R-VALU D CORRESPO ONDITION RA SPECIFICAT S" SPECIFICA OPTION.	WILL NEED TO E FOR THE BA ONDING DUCT TING AS NOTE TONS. ATION.	D BE FACTOREI SIS OF DESIGN SIZE (FOR LINE ED ON THE MAN	D INTO THE DUCT (JOHNS MANVILL R) SHALL BE INC UFACTURER'S SF	SIZE. E). INSTALLED REASED FOR AL PECIFICATION SI	PRODUCT SH TERNATES TI HEET.	IALL HAT		
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1) FOR PIPING EXPOSED TO THE OUTSIDE AMBIENT CONDITIONS OR PIPING PROVIDED WITH HEAT TRACE, INCREASE THICKNESS OF INSULATION BY 1/2". 2) FOR PIPING EXPOSED TO THE OUTSIDE AMBIENT CONDITIONS PROVIDE PROTECTIVE JACKET (SEE SPECIFICATIONS). 3) ALL INSULATION EXPOSED TO UV CONDITIONS SHALL BE PROTECTED IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTRUCTIONS. 4) MINIMUM THERMAL CONDUCTIVITY "k" VALUE FOR FLEXIBLE ELASTOMERIC SHALL BE 0.27 AT 75 DEG. F 5) MINIMUM THERMAL CONDUCTIVITY "k" VALUE FOR GLASS FIBER SHALL BE 0.23 AT 75 DEG. F

SPECIFIC NOTES:

1) PROVIDE PIPE INSULATION WICKING SYSTEM ON ALL EXISTING SYTEMS THAT ARE OPERATIONAL DURING INSTALLATION.

## PLUMBING ROUGH-IN SCHEDULE

NOTES: (APPLIES TO ALL PLUMBING FIXTURES LISTED BELOW) 1) SIZES SHOWN ARE MINIMUMS. LARGER SIZES SHOWN ON THE DRAWING SHALL DICTATE THE ROUGH-IN SIZE. 2) SANITARY RISERS UP IN WALL TO FIXTURES SHALL BE A MINUMUM OF 2". 3) DOMESTIC WATER BRANCH PIPING OUTSIDE OF THE WALL/CHASE SHALL BE A MINIMUM OF 3/4" UNLESS NOTED OTHERWISE. ONLY THE FINAL RISE-DROP SHALL BE SMALLER. 4) FINAL SANITARY SIZE SHALL MATCH P-TRAP SIZE (REFER TO MATERIAL LIST).

TAG NAME DESCRIPTION L-1 LAVATORY (ACCESSIBLE) WC-1 WATER CLOSET

COLD WATER	HOT WATER	SANITARY	VENT
1/2"	1/2"	1 1/2"	1 1/2"
3/4"	-	4"	2"



NTAL BLOCN, NELENA AVE.	01/30/2023
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-ENA AVE. , MT 59601	view ents

Project No. | 2022015

Issue Date | <u>12/02/2022</u>

Sheet No.

MECHANICAL

SCHEDULES

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KEVIN G. POPE No 1379

M4.1

### 1.1 SUMMARY

A. Work shall consist of furnishing all labor and materials necessary for the installation of complete and operating plumbing systems. B. All plumbing work shall comply with current state and local building codes as required by the

authorities having jurisdiction, the International Plumbing Code, the International Fuel Gas Code, the International Mechanical Code, the International Fire Code, applicable publications of the National Fire protection Association (NFPA) such as NFPA 54 (the National Fuel Gas Code), and appropriate ASHRAE standards.

C. The contractor shall comply with the requirements of the general conditions, supplemental general conditions of the project specifications, all contract documents, and any base building specifications and building criteria included in this project

D. Drawings are diagrammatic in nature. Take all dimensions from architectural drawings, certified

equipment drawings, and from the structure itself before fabricating any work. E. The drawings indicate the location, type and sizes of various utilities within the site where known.

Any relocation or remodeling required must be approved by the architect before proceeding. Investigate all utilities such as gas and water and make arrangements with the proper authority to pay

for any charges associated with connecting those utilities.

F. Good workmanship and appearance are considered equal to proper operation. G. Provide all core drilling, channeling, cutting, patching, trenching and backfill as required for

installation of mechanical equipment. Seal holes with fireproofing and/or water proofing where

- necessary and refinish all repair work to original condition where damaged by work.
- H. Make provisions for safe delivery and secure storage of all materials.
- I. Obtain and arrange for all permits and approvals required for the execution of the work and pay all associated fees. J. All equipment and products to be thoroughly cleaned at the completion of the work with all stickers,

marking and the like shall be removed. Remove all rubbish, debris, scraps and the like from the job site 1.2 WARRANTY

A. The plumbing contractor shall provide to the owner a one (1) year (from the date of final

acceptance) warranty of all plumbing equipment and systems provided under this contract. All defective equipment or materials which appear during the warranty period shall be replaced or repaired by the contractor in a timely fashion.

#### PART 2 - PRODUCTS 2.1 GENERAL

A. The contractor shall provide all equipment and accessories necessary whether specifically stated or not to make the required plumbing systems complete and operational. B. All equipment provided shall be new except as otherwise stated on the drawings. All equipment

provided shall be acceptable for installation by the authority having jurisdiction.

C. The equipment schedules on the drawings and throughout these specifications provide manufacturer and model information. This serves as the standard of quality for equipment by different manufacturers. The specification allows for different manufacturers to be used for the equipment. However, refer to the architectural specifications for substitutions by manufacturers other than those listed in the specifications. Where no equipment specification is provided, the scheduled equipment manufacturer shall serve as the basis of design and any substitutions shall meet the quality standard set by the basis of design.

D. Contractor to be responsible for any changes and costs to accommodate any equipment except the manufacturer listed in the equipment schedules, drawing notes and/or called out within the specifications. If no schedules are included on the drawing than the first named in the specification is the standard of design.

#### 2.2 IDENTIFICATION

A. Provide pipe and equipment identification in accordance with ANSI A13.1 and or the building standards.

#### 2.3 MISCELLANEOUS SPECIALTIES

A. Sleeves and Sleeve Seals 1. Where piping passes through new masonry or concrete walls or concrete floors, provide pipe sleeves. Sleeves shall be constructed out of galvanized steel, cast iron or PVC. Set

- sleeves in forms prior to concrete placement. Sleeves in floors shall extend 2" above the finished floor elevation. Where located in exterior walls, provide water stop in sleeve. 2. Piping which passes through a rated wall shall be provided with a UL detail suitable for pipe material and size. Sleeve shall only be required if the UL detail requires the sleeve.
- Where sleeves are required as noted above, provide a UL detail that utilizes a sleeve. B. Escutcheons:

#### . Where new pipe passes through a finished wall, provide a chrome plated escutcheon. Escutcheon shall be constructed in one piece.

C. Access Doors 1 Where noted provide the type and size of access door to fully access the item that is

located with the wall or cavity. Provide fire rated doors where installed in fire rated assemblies.

PART 3 - EXECUTION 3.1 GENERAL A. Obtain and arrange for all permits and approvals required for the execution of the work and pay all

#### associated fees.

B. Provide all core drilling, channeling, cutting, patching, trenching and backfill as required for installation of plumbing equipment and or mechanical equipment. Seal holes, fireproofing where

necessary, and refinish all repair work to original condition where damaged by mechanical work. C. All equipment and products to be thoroughly cleaned at the completion of the work with all stickers, markings, and the like removed. Remove all rubbish, debris, scraps and the like from the job site.

3.2 FLUSHING AND CLEANING A. Before final connections are made in the piping systems, systems shall be blown out with air and

then completely washed out with cleaning compounds compatible with final fluid to avoid contamination. The systems shall then be flushed for the complete removal of all foreign materials. Furnish all temporary connections, valves, etc., required for this purpose.

B. After flushing, sterilize the domestic water system in accordance with AWWA standard C651-(current edition), disinfecting water mains, and all subsequent addenda. After minimum contact period, flush the system with clean water until the residual chlorine is no greater than the city water. Submit to the architect, written certification that sterilization has been performed and include a copy in operation and maintenance manuals. Provide a test analysis by the state health department of a random water sample, if requested by the architect.

#### END OF SECTION 220010

#### SECTION 220716 - PLUMBING INSULATION PART 1 - GENERAL

1.1 SUMMARY

A. Section includes insulation for plumbing piping.

#### PART 2 - PRODUCTS

2.1 INSULATION

A. Insulation shall be provided on all pressurized plumbing lines, cooling coil condensate drain lines, all horizontal storm drainage lines and those sanitary drainage lines indicated to have electric heat trace. 2.2 PROTECTIVE SHIELDING GUARDS

A. Description: Manufactured plastic wraps for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with Americans with Disabilities Act (ADA) and ANSI A117.1

#### requirements. Truebro or equivalent. 2.3 FIELD APPLIED JACKETS

A. PVC Jacket: High-impact-resistant, UV-resistant PVC complying with ASTM D 1784, Class 16354-C; thickness as scheduled; roll stock ready for shop or field cutting and forming. Thickness is indicated

in field-applied jacket schedules B. Aluminum Jacket: Comply with ASTM B 209, Alloy 3003, 3005, 3105, or 5005, Temper H-14.

1. Sheet and roll stock ready for shop or field sizing.

2. Finish and thickness are indicated in field-applied jacket schedules. 3. Moisture Barrier for Outdoor Applications: 3-mil-thick, heat-bonded polyethylene and Kraft

- 4. Factory-Fabricated Fitting Covers:
- - b. Preformed 2-piece or gore, 45- and 90-degree, short- and long-radius elbows.
  - e. End caps.
  - f. Beveled collars.
- q. Valve covers. h. Field fabricate fitting covers only if factory-fabricated fitting covers are not

#### available.

PART 3 - EXECUTION 3.1 GENERAL INSTALLATION

A. PIPING INSULATION SCHEDULE: See schedule on drawings for insulation requirements. B. Protective Shielding Guards: Install protective shielding guards on all lavatories, sinks and other

C. Handicapped fixtures

END OF SECTION 220716

PART 1 - GENERAL 1.1 SUBMITTALS Requirements 1.2 QUALITY ASSURANCE components shall be marked with "NSF-pw." PART 2 - PRODUCTS

"Lead-Free."

location provide dial type thermometer. Scale shall be 0 to 150 Deg F for domestic cold water and 0 to 250 Deg F for domestic hot water. I. Strainers: Y-pattern strainers shall be 125 psig pressure rated. Body shall be bronze for NPS 2 and smaller; cast iron for NPS 2-1/2 and larger. All components shall be certified "Lead-Free." J. Pressure and Temperature Taps: Shall be brass or stainless steel with core inserts and gasketed

with a threaded cap. Include extended stem on units to be installed in insulated piping. Thread size shall be NPS 1/2. Core insert shall be EPDM self-sealing rubber. K. Backflow Preventers: Backflow preventers are a basis-of-design product; subject to compliance with requirements, provide product indicated on drawings.

to compliance with requirements, provide product indicated on drawings. Valves shall be made of bronze and pressure rated for 150 psig. Valves shall be rated to ASSE 1003. M. Temperature-Actuated Water Mixing Valves: Mixing valves are a basis-of-design product; subject to compliance with requirements, provide product indicated on drawings. Valves shall be made of bronze and pressure rated for 125 psig. Valves shall be rated to ASSE 1017 for master mixers and

ASSE 1070 for point of use valves. N. Outlet Boxes: Icemaker/coffee machine or washing machine outlet boxes are a basis-of-design product; subject to compliance with requirements, provide product indicated on drawings. Boxes and face plate shall be plastic and fire-rated if installed in a rated assembly. Provide with integral ball valves and water hammer arrestors. All components shall be certified "Lead-Free."

O. Hose Bibbs: Hose bibbs are a basis-of-design product; subject to compliance with requirements, provide product indicated on drawings. Hose bibbs shall be bronze (chrome plated if indicated) with garden-hose thread and provided with a vacuum breaker. Provide with loose key and integral wall flange. P. Water-Hammer Arresters: Water-hammer arresters are a basis-of-design product; subject to

compliance with requirements, provide product indicated on drawings. Water-hammer arresters shall be ASSE 1010 listed metal bellows type. All components shall be certified "Lead-Free." Q. Trap-seal Primer Valves: Trap-seal primer valves are a basis-of-design product; subject to compliance with requirements, provide product indicated on drawings. Trap-seal valves shall be ASSE 1018 listed bronze type. All components shall be certified "Lead-Free." R. Flexible Connectors: Stainless-Steel-Hose Flexible Connectors: Corrugated-stainless-steel tubing

with stainless-steel wire-braid covering and ends welded to inner tubing. All components shall be certified "Lead-Free". Working-Pressure Rating: Minimum 200 psig. End Connections NPS 2 and Smaller: Threaded steel-pipe nipple. End Connections NPS 2-1/2 and Larger: Flanged steel nipple. S. Dielectric Fittings: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined. Dielectric Nipples and

propylene.

3.1 PIPING SCHEDULE A. Below Grade

B. Aboveground

otherwise indicated.

applicable plumbing fixtures as required to comply with the requirements of Americans with Disabilities

Act (ADA) and ANSI A117.1.

a. Same material, finish, and thickness as jacket. c. Tee covers. d. Flange and union covers.

### C. Field-Applied Jackets:

All fittings shall be provided with PVC jackets.

2. Provide PVC or Aluminum jackets as and where noted. Conform to building color coding for PVC jackets.

#### 3.2 DOMESTIC COLD WATER PIPE, VALVES AND FITTINGS:

A. Insulate with u.l. Approved, flame resistant, white vapor barrier jacketed, glass fiber snap-on insulation per piping insulation schedule. Insulate valves and fittings with glass fiber blanket insulation

and premolded pvc covers (covers to be u.l. 25/50 rated). Where the use of pvc covers in plenums, etc., is restricted by various codes valves and fittings shall be insulated by wrapping with blanket insulation. Cover blankets to same depth as the pipe insulation with insulating cement, troweled smooth. It is the contractor's and manufacturer's responsibility to be certain the code authority will approve any product to be installed on the project. Maximum k-value shall be 0.24 btu-in/hr-sq ft/degrees.

B. Domestic hot water piping and fittings

1. All hot water supply lines and circulating water lines insulate with u.l. Approved, flame resistant, white all service jacketed, glass fiber snap-on pipe insulation 1" thick. Insulate fittings with glass fiber blanket insulation and premolded pvc covers. Maximum k-value shall be 0.24 btu-in/hr-sq ft/degrees.

1. Insulation of pipes under handicapped lavatories: insulate angle stop assemblies and drain lines with foam insert covered with 1/8" minimum abrasive resistant exterior cover with fasteners located out of sight, brocar trap wrap kit 500r and 500hs, or equivalent.

### SECTION 221116 - DOMESTIC WATER PIPING AND SPECIALTIES

A. Submittal requirements shall be as identified in Specification Section 220010 Common Plumbing

A. Potable-water piping and components shall comply with NSF 14 and NSF 61. Plastic piping

B. All fittings shall be Lead Free (ASTM listed) and shall be made with corrosion-resistant materials. Manufacturer shall provide upon request third party certification tested in accordance with EN ISO 6509 regarding dezincification corrosion resistance and stress corrosion cracking.

#### 2.1 PIPING AND JOINT MATERIALS

A. Hard Copper Tube: ASTM B 88, Type L water tube, drawn temper.

2.2 VALVES AND DOMESTIC WATER SPECIALTIES

A. Ball Valves - Bronze: Two-piece, full-port, bronze ball valves with bronze trim. Valve shall be rated to 150 psig SWP and 600 psig CWP. Body shall be ASTM B61, B62 or B584 bronze with a chromeplated brass ball. All components shall be "Dezincification Resistant" and certified "Lead-Free." B. Ball Valves - Iron: Class 125 iron ball valves. Valve shall be rated to 200 psig CWP. Body shall be ASTM A 126 gray iron with a stainless steel ball and stem. All components shall be certified "Lead-

C. Butterfly Valves: Iron single-flange butterfly valves with EPDM seat and aluminum-bronze disc. Valve shall be rated to 200 psig CWP. Body shall be ASTM A 126 cast iron of ASTM A 536 ductile iron

with a stainless steel stem, EPDM seat and aluminum bronze disc. All components shall be certified

D. Domestic Hot Water Balancing: Provide CircuitSolver by ThemOmegaTech. E. Drain Valves: Ball-valve-type hose-end drain valves shall be rated to 400 psig CWP. Body shall be copper alloy with a chrome-plated brass ball with a threaded outlet with brass chain attached cap. F. Check Valves - Bronze: Class 150 bronze swing check valves with bronze disc. Valve shall be rated to 300 psig CWP. Body shall be ASTM B61, B62 or B584 bronze. All components shall be "Dezincification Resistant" and certified "Lead-Free.'

G. Pressure Gauges: Shall be direct-mounted dial-type with a cast aluminum or drawn steel case. Provide 4-1/2 inch nominal diameter units. Accuracy shall be plus or minus 1 percent of middle half of scale range. Scale shall be 0 to 100 psi for domestic water.

H. Thermometers: Shall be direct-mounted light-activated Deg F adjustable angle thermometers with 9-inch plastic case. Display shall be digital. Where unit is mounted in a ceiling plenum or other dark

L. Water Pressure-Reducing Valves: Pressure-reducing valves are a basis-of-design product; subject

Couplings complying with IAPMO PS 66. Electroplated steel nipple complying with ASTM F 1545. Pressure Rating and Temperature: 300 psig at 225 deg F. Lining shall be inert and noncorrosive, PART 3 - EXECUTION

1. NPS 2 and smaller

a. Hard or soft copper tube, ASTM B 88, Type K; wrought-copper, solder-joint

#### fittings; and brazed joints. 2. NPS 2-1/2 to NPS 4:

a. Push-on-joint, ductile-iron pipe; standard or compact pattern, push-on-joint; and gasketed joints.

1. NPS 2 and smaller:

a. Hard copper tube, ASTM B 88, Type L; wrought-copper, solder-joint fittings; and brazed joints.

b. Hard copper tube, ASTM B 88, Type L; copper pressure-seal-joint fittings; and pressure-sealed joints.

c. Hard copper tube, ASTM B 88, Type L; extruded-tee connections and brazed ioints

### 2. NPS 2-1/2 to NPS 4:

a. Hard copper tube, ASTM B 88, Type L; wrought-copper, solder-joint fittings; and brazed joints. b. Hard copper tube, ASTM B 88, Type L; copper pressure-seal-joint fittings; and

pressure-sealed joints.

c. Hard copper tube, ASTM B 88, Type L; grooved-joint, copper-tube

appurtenances; and grooved joints. C. Flanges and Unions: Flanges and unions may be used for aboveground piping joints unless

D. Transition and Special Fittings: Transition and special fittings with pressure ratings at least equal to

piping rating may be used unless otherwise indicated.

#### 3.2 VALVE SCHEDULE

A. Where specific valve types are not indicated, the following requirements apply: 1. Shutoff Duty and Throttling Duty: Use ball valves for piping NPS 2 and smaller. Use

butterfly or ball valves with flanged ends for piping NPS 2-1/2 and larger.

- 2. Hot-Water Circulation Piping, Balancing Duty: CicuitSolver. 3. Drain Duty: Hose-end drain valves.
- 4. Check Duty: Use bronze check valves for piping NPS 2 and smaller. Use iron check valves for NPS 2-1/2 and larger.

B. Use check valves to maintain correct direction of domestic water flow to and from equipment. C. Iron grooved-end valves may be used with grooved-end piping. END OF SECTION 221116

#### SECTION 221316 - SANITARY WASTE AND VENT PIPING AND SANITARY SEWER SPECIALTIES PART 1 - GENERAL

1.1 SUMMARY A. Section includes piping materials for sanitary sewer and vent systems as well as specialties associated with the sanitary sewer system.

#### PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Hubless, Cast Iron soil pipe and fittings. Comply with ASTM A888 or CISPI 301. 1. CISPI, Hubless-Piping Couplings: Comply with ASTM C 1277 and CISPI 310. Products shall be Stainless-steel corrugated shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop

- B. Copper Tube and Fittings: 1. Hard Copper Tube: ASTM B 88, Type L, water tube, drawn temper. Copper Pressure Fittings: Copper Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper,
  - solder-joint fittings. Furnish wrought-copper fittings if indicated.
- 2. Solder: ASTM B 32, lead free with ASTM B 813, water-flushable flux. C. Floor drains, floor sinks as scheduled or equivalent products

#### PART 3 - EXECUTION

3.1 PIPING INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.

B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas. C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right

angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise. D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

E. Install piping at indicated slopes. F. Install soil and waste drainage and vent piping at the following minimum slopes unless otherwise indicated:

1. Sanitary Drain: 2 percent (1/4 inch per foot) downward in direction of flow for piping NPS 3 and smaller; 1 percent (1/8 inch per foot) downward in direction of flow for piping NPS 4 and

2. Vent Piping: 1 percent (1/8 inch per foot) down toward vertical fixture vent or toward vent

G. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."

H. Hanger rod and spacing as required by the IPC for the size of pipe being installed. I. Test sanitary drainage and vent piping according to procedures of authorities having jurisdiction END OF SECTION 221316

SECTION 224000 - PLUMBING FIXTURES AND EQUIPMENT PART 1 - GENERAL

1.1 SUBMITTALS

A. Submittal requirements shall be as identified in Specification Section 220010 Common Plumbing Requirements.

PART 2 - PRODUCTS 2.1 COMMERCIAL MOP SERVICE BASINS

A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable by one of the following:

1. Acorn Engineering Company

2.3 CONNECTIONS

2.2 EXAMINATION A. Examine roughing-in of water supply sanitary drainage and vent piping systems to verify actual locations of piping connections before fixture installation. Examine counters, walls, and floors for suitable conditions where fixtures will be installed.

A. Connect fixtures with water supplies and soil, waste and vent piping use size fittings and transitioning fittings as required matching fixtures and fixture connection sizes as identified on

drawings. Transition fittings shall be made at the fixture. Where installing piping adjacent to fixtures, allow space for service and maintenance. Integral vacuum breakers shall be provided at all outlets with hose connections.

2.4 ADJUSTING

A. Operate and adjust fixtures and controls. Replace damaged and malfunctioning fixtures, fittings, and controls. Adjust water pressure at flushometer valves to produce proper flow. Install fresh batteries in battery-powered, electronic-sensor mechanisms,

2.5 CLEANING AND PROTECTION A. After completing installation of fixtures, inspect and repair damaged finishes. Clean fixtures and fittings with manufacturers recommended cleaning methods and materials. Install protective covering for installed fixtures and fittings. Do not allow use of fixtures for temporary facilities unless approved in writing by owner.

#### END OF SECTION 224000

SECTION 230010 - COMMON MECHANICAL REQUIREMENTS

#### PART 1 - GENERAL 1.1 SUMMARY

associated fees.

1.2 WARRANTY

2.1 GENERAL

by the mechanical in a timely fashion.

PART 2 - PRODUCTS

A. Work shall consist of furnishing all labor and materials necessary for the installation of complete and operating mechanical systems.

B. All mechanical work shall comply with current state and local building codes as required by the authorities having jurisdiction, the International Plumbing Code, the International Fuel Gas Code, the International Mechanical Code, the International Fire Code, International Energy Conservation Code and applicable publications of the National Fire protection Association (NFPA) such as NFPA 90A and

appropriate ASHRAE standards (15, 55, 62.1, 90.1, 111, 135, 189). C. The contractor shall comply with the requirements of the general conditions, supplemental general

conditions of the project specifications, all contract documents, and any base building specifications and building criteria included in this project. D. Drawings are diagrammatic in nature. Take all dimensions from architectural drawings, certified

equipment drawings, and from the structure itself before fabricating any work.

H. Make provisions for safe delivery and secure storage of all materials.

not to make the required mechanical systems complete and operational.

provided shall be acceptable for installation by the authority having jurisdiction.

other material not needed for the final product from the job site.

E. The drawings indicate the location, type and sizes of various utilities within the site where known. Any relocation or remodeling required must be approved by the architect before proceeding. Investigate all utilities such as gas and water and make arrangements with the proper authority to pay for any charges associated with connecting those utilities.

I. Obtain and arrange for all permits and approvals required for the execution of the work and pay all

J. All equipment and products to be thoroughly cleaned at the completion of the work with all stickers,

defective equipment or materials which appear during the warranty period shall be replaced or repaired

A. The contractor shall provide all equipment and accessories necessary whether specifically stated or

B. All equipment provided shall be new except as otherwise stated on the drawings. All equipment

marking, packing materials and like or similar items removed. Remove all rubbish, debris, scraps or

A. The mechanical contractor shall provide to the owner a one (1) year (from the date of final

acceptance) warranty of all mechanical equipment and systems provided under this contract. All

F. Good workmanship and appearance are considered equal to proper operation.

G. Provide all core drilling, channeling, cutting, patching, trenching and backfill as required for installation of mechanical equipment. Seal holes with fireproofing and/or water proofing where necessary and refinish all repair work to original condition where damaged by work.

C. The equipment schedules on the drawings and throughout these specifications provide manufacturer and model information. This serves as the standard of quality for equipment by different manufacturers. The specification allows for different manufacturers to be used for the equipment, however, refer to the architectural specifications for substitutions by manufacturers other than those listed in the specifications. Where no equipment specification is provided the scheduled equipment manufacturer shall serve as the basis of design and any substitutions shall meet the quality standard set by the basis of design.

D. Contractor to be responsible for any changes and costs to accommodate any equipment except the manufacturer listed in the equipment schedules, drawing notes and/or called out within the specifications. If no schedules are included on the drawing than the first named in the specification is the standard of design.

### 2.2 IDENTIFICATION

A. Provide pipe and equipment identification in accordance with ANSI A13.1 and or the building standards.

#### 2.3 MISCELLANEOUS SPECIALTIES A. Sleeves and Sleeve Seals:

- 1. Where piping passes through new masonry or concrete walls or concrete floors, provide pipe sleeves. Sleeves shall be constructed out of galvanized steel, cast iron or PVC. Set sleeves in forms prior to concrete placement. Sleeves in floors shall extend 2" above the finished floor elevation. Where located in exterior walls, provide water stop in sleeve. 2. Piping which passes through a rated wall shall be provided with a UL detail suitable for pipe material and size. Sleeve shall only be required if the UL detail requires the sleeve. Where sleeves are required as noted above, provide a UL detail that utilizes a sleeve.
- B. Escutcheons:
  - 1. Where new pipe passes through a finished wall, provide a chrome plated escutcheon. Escutcheon shall be constructed in one piece.
  - 2. Access Doors
- 3. Where noted, provide the type and size of access door to fully access the item that is located with the wall or cavity. Provide fire rated doors where installed in fire rated assemblies. PART 3 - EXECUTION

#### 3.1 GENERAL

A. Obtain and arrange for all permits and approvals required for the execution of the work and pay all

associated fees. B. Provide all core drilling, channeling, cutting, patching, trenching and backfill as required for installation of mechanical equipment. Seal holes, fireproofing where necessary, and refinish all repair

work to original condition where damaged by mechanical work. C. All equipment and products to be thoroughly cleaned at the completion of the work with all stickers, markings and the like shall be removed. Remove all rubbish, debris, scraps, and the like from the job

#### 3.2 FLUSHING AND CLEANING

A. Before final connections are made in the piping systems, systems shall be blown out with air and then completely washed out with cleaning compounds compatible with final fluid to avoid contamination. The systems shall then be flushed for the complete removal of all foreign materials. Furnish all temporary connections, valves, etc., required for this purpose

#### END OF SECTION 230010

SECTION 230713 - MECHANICAL INSULATION

#### PART 1 - GENERAL 1.1 SUMMARY

- A. See Section 233000 Metal Ducts for duct lining requirements.
- B. Section includes insulating the following duct services:
  - 1. Indoor, concealed supply and outdoor air. 2. Indoor, concealed return located in unconditioned space.
  - 3. Section includes insulating the following HVAC equipment that is not factory insulated: 4. Section includes insulating the following HVAC piping systems:
  - a. Condensate drain piping, indoors.

#### PART 2 - PRODUCTS 2.1 MINERAL FIBER

A. Mineral-Fiber Blanket Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II and ASTM C 1290, Type III with factory-applied FSK jacket or Type III with factory-applied FSP jacket.

- 1. Products: Subject to compliance with requirements, provide one of the following:
  - a. CertainTeed Corp.; SoftTouch Duct Wrap. b. Johns Manville; Microlite.
  - c. Knauf Insulation; Friendly Feel Duct Wrap.
  - d. Manson Insulation Inc.; Alley Wrap.
  - e. Owens Corning; SOFTR All-Service Duct Wrap
- 2. Mineral-Fiber, Preformed Pipe Insulation Type I, 850 deg F Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, with
- factory-applied ASJ. a. Products: Subject to compliance with requirements, provide one of the following: 1) Johns Manville; Micro-Lok
  - 2) Knauf Insulation; 1000-Degree Pipe Insulation
  - 3) Manson Insulation Inc.; Alley-K.

#### 4) Owens Corning; Fiberglas Pipe Insulation

#### PART 3 - EXECUTION 3.1 GENERAL INSTALLATION REQUIREMENTS

A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties. B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for

each item of pipe system as specified in insulation system schedules. C. Install accessories compatible with insulation materials and suitable for the service. Install

accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state. D. Install insulation with longitudinal seams at top and bottom of horizontal runs.

- E. Install multiple layers of insulation with longitudinal and end seams staggered.
- 3.2 PIPING AND DUCT INSULATION SCHEDULES
- A. All piping and duct insulation shall comply with the type and insulation thickness noted in the

schedule included on the drawings. B. Piping Insulation Schedule - For Piping Exposed to the outside ambient conditions, increase thickness of insulation by 1/2".

#### END OF SECTION 230713

#### SECTION 233000 - DUCTS AND ACCESSORIES

#### PART 1 - GENERAL 1.1 SUMMARY

- A. Section Includes:
  - 1. Single-wall rectangular ducts and fittings.
  - 2. Single-wall round ducts and fittings.
  - 3. Sheet metal materials. 4. Duct liner.
  - 5. Sealants and gaskets.
  - 6. Hangers and supports.
  - 7. Manual volume dampers.
  - 8. Flange connectors. 9. Turning vanes.
  - 10. Flexible connectors.
- PART 2 PRODUCTS

### 2.1 SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS

A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards -Metal and Flexible" based on indicated static-pressure class unless otherwise indicated.

2.2 SINGLE-WALL ROUND DUCTS AND FITTINGS

A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards -Metal and Flexible," Chapter 3, "Round, Oval, and Flexible Duct," based on indicated static-pressure class unless otherwise indicated.

### 2.3 SHEET METAL MATERIALS

A. General Material Requirements: Comply with SMACNA's "HVAC Duct Construction Standards -Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.





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Project No. | 2022015 Issue Date | 12/02/2022







- 2.4 DUCT LINER
- A. Fibrous-Glass Duct Liner: Comply with ASTM C 1071, NFPA 90A, or NFPA 90B; and with NAIMA AH124, "Fibrous Glass Duct Liner Standard."
- 2.5 HANGERS AND SUPPORTS
- A. Hanger Rods for Noncorrosive Environments: Cadmium-plated steel rods and nuts.
- B. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards Metal and Flexible," Table 5-1, "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes
- for Round Duct." C. Steel Cables for Galvanized-Steel Ducts: Galvanized steel complying with ASTM A 603.
- 2.6 MANUAL VOLUME DAMPERS
- A. Standard, Steel, Manual Volume Dampers as detailed or noted:
- 2.7 FLANGE CONNECTORS A. Description: Add-on or roll-formed, factory-fabricated, slide-on transverse flange connectors,
- gaskets, and components.
- B. Material: Galvanized steel. C. Gage and Shape: Match connecting ductwork.
- 2.8 TURNING VANES
- A. Manufactured Turning Vanes for Metal Ducts: Curved blades of galvanized sheet steel; support with bars perpendicular to blades set; set into vane runners suitable for duct mounting.
- 2.9 FLEXIBLE DUCTS A. Flexible Duct Connectors:

Clamps: Stainless-steel band with cadmium-plated hex screw to tighten band with a worm-gear action in sizes 3 through 18 inches, to suit duct size.
 PART 3 - EXECUTION

3.1 DUCT INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of duct

system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings and Coordination Drawings.

B. Install ducts according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated. 3.2 DUCT SEALING

A. Seal ducts for duct static-pressure, seal classes, and leakage classes specified in "Duct Schedule" Article contained within this specification according to SMACNA's "HVAC Duct Construction Standards -Metal and Flexible."

3.3 HANGER AND SUPPORT INSTALLATION

A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 5, "Hangers and Supports."

3.4 ACCESSORY INSTALLATION

A. Install duct accessories according to applicable details in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for metal ducts and in NAIMA AH116, "Fibrous Glass Duct Construction Standards," for fibrous-glass ducts.

END OF SECTION 233000

#### SECTION 233400 - FANS

#### PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following: PART 2 - PRODUCTS

- 2.1 FANS
- A. Provide the fan indicated in the equipment schedule or an equal by:
  1. Acme Engineering & Mfg. Corp.
  2. Aerovent; a Twin City Fan Company

  - 3. Breidert Air Products.
  - 4. Greenheck.
  - 5. Loren Cook Company.
  - 6. NuTone Inc. 7. PennBarry.
- 2.2 REFER TO SCHEDULE FOR CAPACITY AND CHARACTERISTICS
- PART 3 EXECUTION

#### 3.1 INSTALLATION 3.2 CONNECTIONS

A. Duct installation and connection requirements are specified in other Division 23 Sections. Drawings indicate general arrangement of ducts and duct accessories. Make final duct connections with flexible connectors. Flexible connectors are specified in Division 23 Section "Air Duct Accessories."

3.3 ADJUSTING

A. Adjust damper linkages for proper damper operation.

B. Adjust belt tension. C. Refer to Division 23 Section "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and

- balancing procedures.
- D. Replace fan and motor pulleys as required to achieve design airflow.

E. Lubricate bearings. END OF SECTION 233400



_				
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IMEG CORP. RESI TO THIS DRAWING AND/OR DATA AR SHALL NOT BE US WITHOUT THE EX IMEG CORP. ©20	ERVES PROPRIET 3 AND THE DATA E THE EXCLUSIVI SED OR REPRODU PRESS WRITTEN 22 IMEG CORP.	TARY RIGHTS, SHOWN THEF E PROPERTY ( JCED FOR AN I APPROVAL AI	INCLUDING COPYRIG REON. SAID DRAWIN DF IMEG CORP. AND Y OTHER PROJECT ND PARTICIPATION O	G G F
0	1	2	3	
REF. SCALE IN	INCHES	P	ROJECT #22007553.00	

### **ELECTRICAL GENERAL NOTES:**

- 1. "NL" INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT. 2. SHADED LUMINAIRE OR DEVICE INDICATES LUMINAIRE OR DEVICE IS CONNECTED TO AN
- EMERGENCY CIRCUIT OR CONTAINS INTEGRAL EMERGENCY POWER SOURCE. 3. REFER TO SHEET E6.1 FOR LUMINAIRE SCHEDULE.
- 4. {L##} DENOTES THE LIGHTING SEQUENCE OF OPERATIONS FOR THIS SPACE. REFER TO SHEET E6.1.
- 5. VACANCY/OCCUPANCY SENSOR LAYOUT: SENSORS ARE SHOWN ON THE PLANS FOR DESIGN INTENT AND MAY NOT REPRESENT EVERY DEVICE. PROVIDE MANUFACTURER SPECIFIC FLOOR PLAN LAYOUTS SHOWING LOCATION, ORIENTATION, AND COVERAGE AREA OF EACH CONTROL DEVICE, SENSOR, AND CONTROLLER/INTERFACE. AREAS REQUIRING MULTIPLE SENSOR DEVICES FOR APPROPRIATE COVERAGE, SUBMIT SPECIFIC MANUFACTURER-APPROVED SENSOR LAYOUT AS AN OVERLAY DIRECTLY ON THE PROJECT DRAWINGS, EITHER IN PRINT OR APPROVED ELECTRONIC FORM.

LUMINAIRE KEY:

	F1 = FIXTURE TAG
	1 = CIRCUIT NUMBER
	a = SWITCH DESIGNATION
LOWINAIRE	MI = SUBSCRIPT (IF APPLIC)

UBSCRIPT (IF APPLICABLE) Z = ZONE DESIGNATION

\*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: F1 / 1 / a / NL

DEVICE KEY:

DEVICE  $\Phi$  A = MOUNTING (IF APPLICABLE) 1 = CIRCUIT NUMBER

> \*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: A / 1

- ELECTRICAL MOUNTING SUBSCRIPT KEY: MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH A MOUNT AT CEILING
- MOUNT ORIENTED HORIZONTALLY EWC ELECTRIC WATER COOLER

**ELECTRICAL RENOVATION NOTES:** THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED

- TO, LIGHTING, POWER, AND SYSTEMS. 1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND
- REPORT ANY CONFLICTS BEFORE PROCEEDING. 2. NOT ALL EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS WITH NEW WORK BEFORE STARTING WORK.
- 3. FIELD VERIFY THE AVAILABLE CLEARANCES FOR CABLE TRAY, BUSWAY AND CONDUITS BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
- 4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE GENERAL CONTRACTOR CONSTRUCTION MANAGER. PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO THEIR AREA OF WORK.
- 5. WHERE EXISTING ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.

### **ELECTRICAL INSTALLATION NOTES:**

- 1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR
- ACCESSIBLE DESIGN. 2. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH
- PHASE 3. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. DEVICES MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.
- 4. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. MOUNT EXTERIOR LOCATED RECEPTACLES WITH WHILE-IN-USE COVERS AT +20" FROM FINISHED GRADE (CENTER DIMENSIONS) TO MAINTAIN INSTALLATION ADA COMPLIANCE.
- 5. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS. REFER TO 26 05 03 FOR ADDITIONAL INFORMATION AND REQUIREMENTS SPECIFIC TO FIRESTOPPING.
- 6. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE.
- 7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
- 8. ALL WELDING SHALL BE ACCORDING TO AMERICAN WELDING SOCIETY STANDARDS. CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER CERTIFICATES QUALIFYING EACH WELDER, PRIOR TO START OF WORK. THE ARCHITECT/ENGINEER RESERVES THE RIGHT TO REQUIRE QUALIFYING DEMONSTRATION, AT THE CONTRACTOR'S EXPENSE, OF ANY WELDERS ASSIGNED TO THE JOB.
- 9. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH
- 10. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES.
- 11. ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.





	ELEC	TRICAL	SYMBOL LIST
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
GB	<u>GB</u>	26 05 26	GROUND BUS
IBT	<u>IBT</u>	26 05 26	INTERSYSTEM BONDING TERMINATION
E	<u>ECONN</u>	26 05 33	ELECTRICAL CONNECTION
L C	JB	26 05 33	JUNCTION BOX
00	<u>FB-#</u> or <u>PT-#</u>	26 27 26	FLOOR BOX or POKE THROUGH
RI V	<u>RI-TECH</u>	26 05 33	TECHNOLOGY OUTLET ROUGH-IN
	RI-TECH-C	26 05 33	TECHNOLOGY ROUGH-IN, CEILING
É	<u>EPO</u>	26 09 16 26 32 13	EMERGENCY STOP / POWER OFF (N.C. AND N.O. CONTACT)
PB	<u>PB</u>	26 09 16	MOMENTARY PUSHBUTTON OPERATOR
	PANEL '###'	26 24 16	PANELBOARD - RECESS MOUNT
	<u>PANEL '###'</u>	26 24 16	PANELBOARD - SURFACE MOUNT
	<u>MX-#/MS-#</u> / <u>CB-#/CS-#</u>	26 24 19	MANUAL SWITCH / STARTER / COMBINATION STARTER/ CIRCUIT BREAKER.
	<u>ATF-#</u>	26 22 00	AUTOMATIC TRANSFER SWITCH
	<u>CB-#</u>	26 28 16	CIRCUIT BREAKER - SURFACE MOUNTED.
	<u>DS-#/FDS-#/DSS-#</u>	26 28 16	DISCONNECT. REFER TO DISC/STA SCHEDUL
HD	HD	ARCH	HAND DRYER
PP	<u>PP</u>	ARCH	PUSH PAD

## **ELECTRICAL SYMBOL LIST**

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
-	REC-DUP	26 27 26	DUPLEX RECEPTACLE, 125V
*	REC-DUP-GFI	26 27 26	DUPLEX GFI RECEPTACLE, 125V
, w¥⊖	REC-DUP-WP	26 27 26	DUPLEX GFI WEATHERPROOF RECEPTACLE
- <del>0</del>	REC-SIM-520R	26 27 26	SIMPLEX RECEPTACLE, 125V
<b>=</b> >	REC-TAMP	26 27 26	DUPLEX RECEPTACLE, TAMPER RESISTANT,
*0	REC-TAMP-GFI	26 27 26	GFI DUPLEX RECEPTACLE, TAMPER RESISTANT, 125V
<b>=⊕</b> >	REC-TAMP-QUAD	26 27 26	QUAD RECEPTACLE, TAMPER RESISTANT, 12
⇒	REC-QUAD	26 27 26	QUAD RECEPTACLE, 125V
₩ +	REC-QUAD-GFI	26 27 26	QUAD GFI RECEPTACLE, 125V
_ <b>⊕</b>	REC-QUAD-USB	26 27 26	QUAD RECEPTACLE, USB 125V
₩	REC-QUAD-WP	26 27 26	QUAD GFI WEATHERPROOF RECEPTACLE, 12

	ELEC	TRICAL	SYMBOL LIST	
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:	
s <sub>3</sub>	<u>SW-3W</u>	26 09 33	SWITCH - THREE WAY	Slate
© <sub>D</sub>	<u>SW-OC-D</u>	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY	ARCHITECTURE
\$ <sub>0</sub>	<u>SW-OC-P-O</u>	26 09 33	SWITCH - OCCUPANCY SENSOR	
				1470 N. ROBERTS STREE
				TEL   406.457.0360
	ELEC	TRICAL	SYMBOL LIST	www.slatearchitecture.cor
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:	
			LINEAR LUMINAIRES	NON14 NA
			TROFFER	* CLINT *
$\bigcirc$			WALL SCONCE LUMINAIRE	To 30608 PE
0			DOWNLIGHT LUMINAIRE	Cont CENS
$\langle O \rangle$			AIMABLE OR WALL WASH LUMINAIRE	S/ONAL EN
	REFER TO L		INDUSTRIAL LUMINAIRE	
ЧЧ	JUNEL	JOLE	WALL BRACKET LUMINAIRE	
			POLE MOUNTED LUMINAIRE	
$\otimes$			SINGLE FACE EXIT SIGN	
$\otimes$			DOUBLE FACE EXIT SIGN	
**************************************			WALL/CEILING EMERGENCY EXIT SIGN	
<u> </u>				



REVISIONS



E0.0





	KEYNOTES
2000	EXISTING PANEL TO REMAIN. NO PANEL LABEL EXISTS, LABEL SHOWN, "LB1", WILL BE PROVIDED IN THIS SCOPE OF WORK. EXACT ORIGIN AND AMPERAGE OF THIS PANEL IS UNKNOWN AND SHALL BE CIRCUIT TRACED BY EC TO IDENTIFY PANELBOARD AMPERAGE, WHERE IT IS PRESENTLY FED FROM, CIRCUIT BREAKER SIZE SERVING PANEL AND FEEDER SIZE. SUBMIT FINDINGS TO ENGINEER OF RECORD FOR REVIEW.
2001	EXISTING PANEL AND ASSOCIATED METER TO BE REMOVED. NO PANEL LABEL EXISTS, LABEL SHOWN, "LA1", WILL BE PROVIDED IN THIS SCOPE OF WORK. SAVE AND PROTECT EXISTING CIRCUITS REMAINING FOR RECONNECTION TO NEW PANELBOARD. ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE ALL CIRCUITS TO DETERMINE IF THEY ARE BEING USED AND ONLY RECONNECT THOSE CIRCUITS TO THE NEW PANEL. REMOVE ALL OLD WIRING FROM CIRCUITS NOT BEING USED. PROVIDE A PANEL DIRECTORY THAT MATCHES THE EXISTING CONDITIONS.
2002	EXISTING PANEL AND ASSOCIATED METER TO BE REMOVED. NO PANEL LABEL EXISTS, LABEL SHOWN, "LA2", WILL BE PROVIDED IN THIS SCOPE OF WORK. SAVE AND PROTECT EXISTING CIRCUITS REMAINING FOR RECONNECTION TO NEW PANELBOARD. ELECTRICAL CONTRACTOR SHALL CIRCUIT TRACE ALL CIRCUITS TO DETERMINE IF THEY ARE BEING USED AND ONLY RECONNECT THOSE CIRCUITS TO THE NEW PANEL AND REMOVE OLD WIRING FROM CIRCUITS NOT BEING USED. PROVIDE A PANEL DIRECTORY THAT MATCHES THE EXISTING CONDITIONS.
2003	EXISTING PANEL TO REMAIN. NO PANEL LABEL EXISTS, LABEL SHOWN, "LA4", IS TO BE PROVIDED IN THIS PROJECT. EXACT ORIGIN AND AMPERAGE OF THIS PANEL IS UNKNOWN AND SHALL BE CIRCUIT TRACED BY EC TO IDENTIF PANELBOARD AMPERAGE, WHERE IT IS PRESENTLY FED FROM, CIRCUIT BREAKER SIZE SERVING PANEL AND FEEDER SIZE. SUBMIT FINDINGS TO



![](_page_37_Picture_4.jpeg)

![](_page_38_Figure_0.jpeg)

![](_page_38_Picture_1.jpeg)

![](_page_38_Picture_2.jpeg)

2200	PROVIDE ENGRAVED NAME PLATE, LABELED "LB1", AND ATTACH WITH SCREWS OR RIVETS TO OUTSIDE OF PANEL DOOR, TWO SIDED TAPE NOT ALLOWED. PROVIDE NEW DIRECTORY BASED ON ACTUAL CONDITIONS.
2201	PROVIDE NEW PANEL AND RECONNECT EXISTING CIRCUITS TO REMAIN. PROVIDE ENGRAVED NAME PLATE, LABELED "LA1", AND ATTACH WITH SCREWS OR RIVETS TO OUTSIDE OF PANEL DOOR, TWO SIDED TAPE NOT ALLOWED. PROVIDE NEW DIRECTORY BASED ON ACTUAL CONDITIONS.
2202	PROVIDE NEW PANEL AND RECONNECT EXISTING CIRCUITS TO REMAIN. PROVIDE ENGRAVED NAME PLATE, LABELED "LA2", AND ATTACH WITH SCREWS OR RIVETS TO OUTSIDE OF PANEL DOOR, TWO SIDED TAPE NOT ALLOWED. PROVIDE NEW DIRECTORY BASED ON ACTUAL CONDITIONS.
2204	RECONNECT EXISTING PANEL "LA4" TO NEW PANEL "LA3". PROVIDE ENGRAVED NAME PLATE, LABELED "LA4", AND ATTACH WITH SCREWS OR RIVETS, TWO SIDED TAPE IS NOT ALLOWED.

- 22,200 AIC AT UTILITY TRANSFORMER SECONDARY HAS BEEN ESTIMATED FOR A 75kVA POLE MOUNTED TRANSFORMER WITH 1.4% IMPEDANCE. 50' EXACT AIC RATING WITH SERVING UTILITY COMPANY AND ADJUST THE INFORMATION.
- PRESENTLY FED FROM, CIRCUIT BREAKER SIZE SERVING PANEL AND FEEDER SIZE. SUBMIT FINDINGS TO ENGINEER OF RECORD FOR REVIEW.

INTERCEPT EXISTING FEEDER AND EXTEND TO NEW PANEL "LA3". NEW ADDITIONAL ELECTRICAL REQUIREMENTS.

![](_page_39_Figure_4.jpeg)

![](_page_39_Figure_5.jpeg)

![](_page_39_Figure_10.jpeg)

![](_page_39_Picture_12.jpeg)

![](_page_40_Figure_0.jpeg)

## 

LEI	D LUMINAIRE SCHEDU														
(DESC	) DOOR: DISTR	BUTION:				BEAN	WIDTH:			(	L/L) LE	NS/LOUVER:		K19 -	KSH19 .156" ACRYLIC
	FA - FLAT ALUMINUM II - AN	I/IES TYPE	2 DISTR	RIBUTION	N	NSP -	VERY N	ARROW	SPOT	Ā	A125"	ACRYLIC		M - N	IATTE DIFFUSE CLEAR
	FS - FLAT STEEL III - AN	SI/IES TYP	E 3 DISTR	RIBUTIO	N	SP - 5	POT			E	3 - BAFF	ELE/LOUVER		N - N	ONE
	RA - REGRESSED ALUMINUM IV - AN	SI/IES TYP	E 4 DISTI	RIBUTIO	N	MD - I	MEDIUM			C	C - CLEA	AR ALZAK		P - P	OLYCARBONATE
	RS - REGRESSED STEEL V - AN	SI/IES TYPI	E 5 DISTR	RIBUTIO	N	WD - Y	WIDE			F	- FRO	STED ACRYLIC		R - H	IGH IMPACT DR ACRYLIC
	FINISH:					VWD	- VERY V	VIDE		C	G - TEM	PERED GLASS		SS -	SEMI-SPECULAR CLEAR
	PAF - PAINT AFTER FABRICATION					WW -	WALL W	/ASH		٢	K - KSH	12 .125" ACRYLIC		0 - 0	THER (SEE DESCRIPTION)
	CFSA - COLOR-FINISH SELECTION BY ARCH	ITECT												[DES	IGN SPECIFIC BLANKS]
(MTG)	MOUNTING: RE - R	CESSED								(	WATT)	PER: FIX	- FIXTURE, FT	- FOOT,	LAMP
	CL - CEILING SURFACE SP - S	ISPENDED	)							(	TYPE) I	LED		RGB	- COLOR CHANGING LED
	CV - COVE SU - S	JRFACE								L	ED - LI	GHT EMITTING DI	ODE	RGB	W - COLOR CHANGING + WHITE
	FR - FLANGED RECESSED UC - U	NDER CAB	INET							г	LED - T	TUBULAR LED LAI	MP	RGB	A - COLOR CHANGING + AMBER
	P - PERIMETER WL - V	ALL								C	DLED - (	ORGANIC LED		RLED	D - RETROFIT LED
	PL - POLE O - OT	IER (SEE	DESCRIP	TION)						C	DLED - I	DYNAMIC TUNABI	E LED	WLE	D - WARM DIM LED
(TYPE	) DRIVER:					-				ŀ					
	0-10V - 0-10V DIMMING EB - E	ECTRONIC	2			HL - F	IIGH/LO\	N (100%/	/50%) STE	EP DIM				MV -	MULTI-VOLTAGE ELECTRONIC
	DALI - DIGITAL ADDRESSABLE ELV - I	LECTRON	IC LOW V	/OLTAGI	E	LINE ·	LINE V	OLTAGE	DIMMING	ì				REM	- REMOTE
	DMX - DIGITAL MULTIPLEX EM - E	<b>IERGENC</b>	Y BATTE	RY		ML - N	/ULTI-LE	EVEL SW	ITCHING					0 - 0	THER (SEE DESCRIPTION)
VERIF CONFI UNLES	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELC	NAIRE CO V, REFER	MPONEN TO ARCH	TS WITH IITECTU	I ARCHIT	ECT AN DINTERI	OR DES	IOR DES	VATIONS	SECTIO	NS ANE	DETAILS FOR A	LUMINAIRE ORI	) AND W	ALL MOUNTED LUMINAIRE
VERIF CONFI UNLES REFEF INTER	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELC R TO SPECIFICATION SECTIONS LED LIGHTIN HOR CORRELATED COLOR TEMPERATURE 35	NAIRE COI W, REFER G 26 51 19 00K, COLC	VPONEN TO ARCH	TS WITH HITECTU ERING IN	1 ARCHIT IRAL AND NDEX (CF	ECT AN D INTERI RI) AT OF	R ABOVE	IGN ELEY	ESS NOT	ED OTHE	ERWISE	DETAILS FOR A		) AND W	ALL MOUNTED LUMINAIRE
VERIF CONF UNLES REFEF INTER	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELO R TO SPECIFICATION SECTIONS LED LIGHTIN IOR CORRELATED COLOR TEMPERATURE 34	NAIRE COI W, REFER G 26 51 19 00K, COLC	MPONEN TO ARCH R RENDE		HARCHIT IRAL AND NDEX (CF DIMEN	RI) AT OF	R ABOVE		ESS NOT			ELEASE OF THE L D DETAILS FOR A E. E.		AND W	ALL MOUNTED LUMINAIRE
VERIF CONF UNLES REFEF INTER	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELC R TO SPECIFICATION SECTIONS LED LIGHTIN HOR CORRELATED COLOR TEMPERATURE 3	NAIRE CO V, REFER G 26 51 19 DOK, COLC	MPONEN TO ARCH		HARCHIT			IGN ELEY IGN ELEY E 80 UNL W/	ESS NOT			ED DELIVERED LUMENS		AND W	ALL MOUNTED LUMINAIRE
VERIF CONF UNLES REFEF INTER	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELO R TO SPECIFICATION SECTIONS LED LIGHTIN NOR CORRELATED COLOR TEMPERATURE 35 DESCRIPTION	NAIRE CO V, REFER G 26 51 19 DOK, COLC	MPONEN TO ARCH PR RENDE		HARCHIT IRAL AND NDEX (CF DIMEN		ABOVE	80 UNL	ESS NOT	ED OTHE		ED DELIVERED (MIN)			ALL MOUNTED LUMINAIRE MANUFACTURER AND MODEL
VERIF CONF UNLES REFEF INTER	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELO R TO SPECIFICATION SECTIONS LED LIGHTIN IOR CORRELATED COLOR TEMPERATURE 38 DESCRIPTION 6" STANDARD DOWNLIGHT	NAIRE COI N, REFER G 26 51 19 00K, COLC	MPONEN TO ARCH R RENDE		HARCHIT IRAL AND NDEX (CF DIMEN	ECT AN D INTERI RI) AT OF ISIONS H 9 1/2"	DINTER OR DES R ABOVE	ANSI WATTS	ATTONS ESS NOT ATT PER FIX	ED OTHE		ED DELIVERED LUMENS (MIN) 1500		2 AND W R TYPE 0-10V	ALL MOUNTED LUMINAIRE MANUFACTURER AND MODEL HALO LCR
VERIF CONF UNLES REFEF INTER D6 EM	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELC R TO SPECIFICATION SECTIONS LED LIGHTIN HOR CORRELATED COLOR TEMPERATURE 35 DESCRIPTION 6" STANDARD DOWNLIGHT EMERGENCY REMOTE HEAD,COMPATIBLE WITH 'EX2', WET LOCATION LISTED	NAIRE COI V, REFER G 26 51 19 00K, COLC L/L N O	MPONEN TO ARCH R RENDE		ARCHIT	ECT AN D INTERI RI) AT OF ISIONS H 9 1/2" 0"	DINTER OR DES R ABOVE	80 UNL 80 UNL <b>ANSI</b> <b>WATTS</b> 16 W 2 W	ATTONS ESS NOT ATT PER FIX FIX	ED OTHE	ERWISE	ED DELIVERED LUMENS (MIN) 1500 L.E.D.	DRIVER VOLTS 120 V	2 AND W 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	ALL MOUNTED LUMINAIRE MANUFACTURER AND MODEL HALO LCR SURE-LITES SRP
VERIF CONF UNLES REFEF INTER D6 EM EM1	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELC R TO SPECIFICATION SECTIONS LED LIGHTIN HOR CORRELATED COLOR TEMPERATURE 35 6" STANDARD COLOR TEMPERATURE 35 6" STANDARD DOWNLIGHT EMERGENCY REMOTE HEAD,COMPATIBLE WITH 'EX2', WET LOCATION LISTED EMERGENCY UNIT, TWO ADJUSTABLE 6 VC HEADS, WHITE THERMOPLASTIC HOUSING SELF DIAGNOSTICS OF INVERTER AND LAMPS	NAIRE COI V, REFER G 26 51 19 00K, COLC L/L N O LT O	MPONEN TO ARCH DR RENDE MTG RE WL WL	TS WITH IITECTU ERING IN U 0" 5'-0"	ARCHIT IRAL AND NDEX (CF DIMEN W 0" 6"	ECT AN D INTERI RI) AT OF ISIONS H 9 1/2" 0" 0"	DINTER OR DES R ABOVE	80 UNL 80 UNL ANSI WATTS 16 W 2 W	ATT PER FIX FIX FIX	ED OTHE	ERWISE	ED DELIVERED LUMENS (MIN) 1500 L.E.D. INCLUDED	VOLTS 120 V 120 V	TYPE 0-10V EM EM	ALL MOUNTED LUMINAIRE MANUFACTURER AND MODEL HALO LCR SURE-LITES SRP SURE-LITES APELMINI
VERIF CONF UNLES REFEF INTER D6 EM EM1 EX1	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELO R TO SPECIFICATION SECTIONS LED LIGHTIN IOR CORRELATED COLOR TEMPERATURE 35 6" STANDARD DOWNLIGHT EMERGENCY REMOTE HEAD,COMPATIBLE WITH 'EX2', WET LOCATION LISTED EMERGENCY UNIT, TWO ADJUSTABLE 6 VC HEADS, WHITE THERMOPLASTIC HOUSING SELF DIAGNOSTICS OF INVERTER AND LAMPS SINGLE FACE EXIT SIGN, WHITE THERMOPLASTIC BODY, RED LETTERS, EMERGENCY NICAD BATTERY INSIDE OF SIGN, UNIVERSAL ARROWS/MOUNTING. SE TEST & DIAGNOSTICS OF INVERTER AND LAMPS.	NAIRE COI V, REFER G 26 51 19 00K, COLC L/L N O LT O O LT O	MPONEN TO ARCH DR RENDE MTG RE WL WL	ERING IN 5'-0"	ARCHIT IRAL AND NDEX (CF DIMEN W 0" 6" 2"	ECT AN D INTERI RI) AT OF SIONS H 9 1/2" 0" 0" 0" 9"	DIA. 6" 4 1/2"	ANSI WATTS 16 W 2 W 1 W	ATT PER FIX FIX FIX FIX	TYPE LED LED LED	ERWISE	ED DELIVERED LUMENS (MIN) 1500 L.E.D. INCLUDED	VOLTS 120 V 120 V	TYPE 0-10V EM EM	ALL MOUNTED LUMINAIRE  MANUFACTURER AND MODEL HALO LCR SURE-LITES SRP SURE-LITES APELMINI SURE-LITES LPX
VERIF CONF UNLES REFEF INTER D6 EM EM1 EX1 EX1	IRM ALL COLORS AND FINISHES OF ALL LUM SS INDICATED ON LIGHTING PLANS OR BELO R TO SPECIFICATION SECTIONS LED LIGHTIN IOR CORRELATED COLOR TEMPERATURE 38 6" STANDARD DOWNLIGHT EMERGENCY REMOTE HEAD,COMPATIBLE WITH 'EX2', WET LOCATION LISTED EMERGENCY UNIT, TWO ADJUSTABLE 6 VC HEADS, WHITE THERMOPLASTIC HOUSING SELF DIAGNOSTICS OF INVERTER AND LAMPS SINGLE FACE EXIT SIGN, WHITE THERMOPLASTIC BODY, RED LETTERS, EMERGENCY NICAD BATTERY INSIDE OF SIGN, UNIVERSAL ARROWS/MOUNTING. SE TEST & DIAGNOSTICS OF INVERTER AND LAMPS. SINGLE FACE EXIT SIGN WITH INTEGRAL EMERGENCY HEADS AND EXTERIOR REMO HEAD, WHITE THERMOPLASTIC BODY, RED LAMPS. SINGLE FACE EXIT SIGN WITH INTEGRAL EMERGENCY HEADS AND EXTERIOR REMO HEAD, WHITE THERMOPLASTIC BODY, RED LAMPS. SINGLE FACE EXIT SIGN WITH INTEGRAL EMERGENCY HEADS AND EXTERIOR REMO HEAD, WHITE THERMOPLASTIC BODY, RED LATTERS, EMERGENCY NICAD BATTERY INSIDE OF SIGN, UNIVERSAL ARROWS/MOUNTING. SELF TEST & DIAGNOSTICS OF INVERTER AND LAMPS.	NAIRE COI V, REFER G 26 51 19 DOK, COLC L/L N O LT O LT O TE	MPONEN TO ARCH RENDE WL WL WL	TS WITH HITECTU ERING IN 0" 5'-0" 1'-1"	ARCHIT IRAL AND NDEX (CF DIMEN 0" 0" 6" 2"	ECT AN D INTERI RI) AT OF BIONS H 9 1/2" 0" 0" 0" 9" 9"	DIA. 6" 4 1/2"	80 UNL 80 UNL 80 UNL 2 W 2 W 1 W	ATT ESS NOT ATT FIX FIX FIX FIX FIX	TYPE LED LED LED	ERWISE	ED DELIVERED LUMENS (MIN) 1500 L.E.D. INCLUDED L.E.D. L.E.D. LED	UMINARE ORI           LL SUSPENDED           DRIVEF           VOLTS           120 V           120 V           120 V           120 V           120 V           120 V	TYPE 0-10V EM EM EM	ALL MOUNTED LUMINAIRE MANUFACTURER AND MODEL HALO LCR SURE-LITES SRP SURE-LITES APELMINI SURE-LITES LPX SURE-LITES LPXC
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## LIGHTING SEQUENCE OF OPERATION

1. {L##} DENOTES THE LIGHTING SEQUENCE OF OPERATIONS FOR THIS SPACE. 2. à = ŚWITCH DESIGNATION FOR LIGHTING CONTROL

PLAN ID

{LS1} Sequence: Switched lights are controlled in this space. ON: The lights turn on by occupancy sensor.

NOTES

ELECTRICAL CONNECTION SCHEDULE								
			APPARENT		DISCONNECT			
TAG NAME	Description	VOLTAGE	LOAD	WIRE AND RACEWAY	BY	TYPE	COMMENTS	
EF-1	EXHAUST FAN	120 V, 1Ø	0.03 kVA	2#12 & 1#12 EGC IN 3/4" C.	MFR	NF	CONNECT TO AUXILIARY DRY CONTACT ON OCCUPANCY SENSOR CONTROLLING LOCAL LIGHTING, PROVIDE A 20 MINUTE TIME DELAY OFF. MFR TO PROVIDE INTEGRAL DISCONNECT.	
EF-2	EXHAUST FAN	120 V, 1Ø	0.03 kVA	2#12 & 1#12 EGC IN 3/4" C.	MFR	NF	CONNECT TO AUXILIARY DRY CONTACT ON OCCUPANCY SENSOR CONTROLLING LOCAL LIGHTING, PROVIDE A 20 MINUTE TIME DELAY OFF. MFR TO PROVIDE INTEGRAL DISCONNECT.	
EWH-1	ELECTRIC WALL HEATER	120 V, 1Ø	1.50 kVA	2#12 & 1#12 EGC IN 3/4" C.	MFR	NF	MFR TO PROVIDE INTEGRAL DISCONNECT AND THERMOSTAT.	
EWH-2	ELECTRIC WALL HEATER	120 V, 1Ø	1.50 kVA	2#12 & 1#12 EGC IN 3/4" C.	MFR	NF	MFR TO PROVIDE INTEGRAL DISCONNECT AND THERMOSTAT.	
EWH-3	ELECTRIC WALL HEATER	120 V, 1Ø	1.50 kVA	2#12 & 1#12 EGC IN 3/4" C.	MFR	NF	MFR TO PROVIDE INTEGRAL DISCONNECT AND THERMOSTAT.	

LIGHTING SWITCHED

OFF: After the space has been vacant for 15 minutes, the lights will automatically turn off.

![](_page_40_Picture_17.jpeg)

![](_page_40_Picture_18.jpeg)

![](_page_40_Picture_19.jpeg)

	MO ENCL FEI LO	UNTING: SURFACE .OSURE: NEMA PB 1 D FROM: 100 A/2P @ METER BANK CATION:	
N	OTES:		
K E Y	CKT NO.	LOAD DESCRIPTION	OCPE AMPS
	1	SPD [3]	20 A
	3		
	5	(E) LOAD [1]	20 A
	7	(E) LOAD [1]	20 A
	9	(E) LOAD [1]	20 A
	11	(E) LOAD [1]	20 A
	13	(E) LOAD [1]	20 A
	15	(E) LOAD [1]	20 A
	17	SPARE	20 A
	19	SPARE	20 A
	21	SPARE	20 A
	23	SPARE	20 A
	25	SPARE	20 A
	27	SPARE	20 A
	29	SPARE	20 A
LOA	DCLA	SSIFICATION	CONN
	* CIRCU	TOTAL DEMAND CALCS SUBTRACT IT KEY NOTES: [1] RECONNECT EXI [2] RECONNECT EXI ELECTRICAL PLAN. [3] PROVIDE SURGE	ANY REDU ISTING LOA ISTING PAN E PROTECTI

N	IOTES:	EXIS	TING PANEL		
K E Y	CKT NO.	LO	AD DESCRIPTION		PD SPD
	1	SPACE			1
	3	(E) LOAD	[1]	20 A	1
	5	(E) LOAD	[1]	20 A	1
	7	(E) LOAD	[1]	20 A	1
	9	(E) LOAD	[1]	20 A	1
	11	(E) LOAD	[1]	20 A	1
_04	AD CLA	ASSIFICA	TION		CON

![](_page_41_Figure_3.jpeg)

![](_page_41_Figure_4.jpeg)

	MO ENCL FEI LO	UNTING: SURFACE .OSURE: NEMA PB 1 D FROM: 100 A/2P @ METER BANK CATION:				
N	OTES:					
K E Y	CKT NO.	LOAD DESCRIPTION	OCP AMPS	D P	Н	W S
	1	SPD [3]	20 A	2		
	3					
	5	(E) LOAD [1] [2]	20 A	1		
	7	(E) LOAD [1]	20 A	1		
	9	(E) LOAD [1]	20 A	1		
	11	(E) LOAD [1]	20 A	1		
	13	(E) LOAD [1]	20 A	1		
	15	(E) LOAD [1] [2]	20 A	2		
	17					
	19	SPARE	20 A	1		
	21	SPARE	20 A	1		
	23	SPARE	20 A	1		
	25	SPARE	20 A	1		
	27	SPARE	20 A	1		
	29	SPARE	20 A	1		Γ
					Тс	ota
					Tot	a
LOA		SSIFICATION	CONN	ECT	ED L	0
					NIT -	_
	CIRCU	IT KEY NOTES: [1] RECONNECT EXIS	TING LOA			$\frac{1}{2}$
		[2] EC TO FIELD VERI [3] PROVIDE SURGE	FY EXISTI PROTECT	ING E ION	3RE/ DEV	۱C

MOUNTING: SURFACE ENCLOSURE: NEMA PB 1 FED FROM: 30 A/2P @ LA1 LOCATION:							
Ν	OTES:	EXISTING PANEL					
K E Y	CKT NO.	LOAD DESCRIPTION	OCPD N AMPS P		WI Siz		
	1	(E) LOAD [1]	20 A	1			
	3	(E) LOAD [1]	20 A	1			
	5	(E) LOAD [1]	20 A	1			
	7	(E) LOAD [1]	20 A	1			
	9	(E) LOAD [1]	30 A	2			
	11						
	13	(E) LOAD GFCI [1]	20 A	1			
		-			То	tal	
					Tot	al /	
104		SSIEICATION	CONIN	ГОТ		~	
LUA		SIFICATION	CONN	EUI			
	*	TOTAL DEMAND CALCS SUBTRACT A		NDA	NT L	.OA	
	CIRCU	IT KEY NOTES: [1] RECONNECT EXIS	TING LOA	D. E	стс	) Cl	

![](_page_41_Figure_7.jpeg)

![](_page_41_Figure_8.jpeg)

NEG 1003 11TH AVE SUITE A HELENA, MT 59601 P: 406.545 6421

www.imeacorp.com

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**REF. SCALE IN INCHES** 

![](_page_41_Picture_9.jpeg)

1470 N. ROBERTS STREET

HELENA, MT 59601 TEL | 406.457.0360 www.slatearchitecture.com

**SECTION** 260500 - COMMON ELECTRICAL REQUIREMENTS PART 1 - GENERAL

#### 1.1 SUMMARY

A. Provide all labor, materials, equipment and incidentals for completion of all electrical systems described here in. All electrical equipment and material shall be installed in accordance with requirements, governing authorities, and in a neat and workmen like manner by skilled and competent electricians in conformance with the standard practices of the electrical industry. All electrical systems shall be complete and operational to the benefit of the owner.

- 1. Good workmanship and appearance are considered equal to proper operation.
- 2. The contractor shall provide all foreseeable electrical equipment and accessories
- necessary, whether specifically stated or not, to make the required electrical systems complete

and operational. B. The electrical contractor shall comply with the requirements of the general conditions, supplemental general conditions of the project specifications, any base building specifications and building criteria,

and all contract specifications and documents. C. Coordinate and order the progress of electrical work to conform to the owner's schedule and the progress of the work of the other trades.

D. Apply for and pay for all permits, fees, licenses and inspections for this division of work.

E. Provide temporary lighting and power as required. F. Visit the project before submitting a bid as no extras will be allowed for lack of knowledge of

obvious existing conditions. G. Drawings are diagrammatic in nature. Take all dimensions from architectural drawings, certified equipment drawings and from the structure itself before fabricating any work.

1.2 DEFINITIONS AND STANDARDS

A. "Provide" means contractor is responsible for the furnishing and installation of.

B. "Exposed" means where it can be seen after the building is completed such as in equipment rooms, unfinished areas, accessible tunnels, etc. Where conduit/equipment is accessible.

C. "Concealed" means where it cannot be seen after the building is completed such as in spaces as chases, trenches, above ceilings, in walls and buried where conduit/wire is inaccessible when building is completed.

D. Standards for materials: all materials shall be new except as otherwise stated, and shall conform with the current applicable industry standards, NEMA standards and underwriters' laboratories standards.

E. Comply with the latest federal, state and local codes requirements, and ordinances, with the national electrical code of the national fire protection association, and with requirements of the power and telephone companies furnishing services to the project. The following is a brief list of applicable codes

- 1. NFPA NO. 70 National Electrical Code, Latest Edition
- 2. NFPA NO. 72 Fire Alarm, Latest Edition 3. NFPA NO. 101 - Life Safety Code, Latest Edition
- 4. IBC & UBC, Latest Edition

5. Local building codes, latest edition F. Provide testing of all electrical systems and components as required by all applicable building codes and ordinances, UL, NEMA, ANSI, ICEA, NECA, etc., and as recommended by the electrical

#### equipment manufacturers.

1.3 SUBMITTALS

A. Shop drawings: submit shop drawings as required in division 1 for all materials and equipment. If the shop drawings deviate from the contract documents advise the engineer of the deviations via written format, accompanying the shop drawings. Include the reason for the deviation(s). Coordinate all required changes with the other trades affected. If the changes are occasioned by the contractor, the contractor shall pay any costs involved. Shop drawings shall include but are not limited to the following:

- 1. Product data for electrical identification.
- Product data for boxes, enclosures and cabinets.
- . Product data for wiring devices.
- Product data for lighting control devices.
- 5. Product data for Metering Equipment.
- 6. Product data and drawings for panelboards. 7. Product data for lighting.
- 8. Test reports as required.
- 9. Certificates of operation as required.

#### 1.4 WARRANTY

A. Provide a written warranty to the owner covering the entire electrical work excluding incandescent, fluorescent, and HID lamps, to be free from defective materials, equipment and workmanship for a period of one year after date of acceptance. All defective equipment or materials which appear during the warranty period shall be replaced or repaired by the electrical contractor in a timely fashion at no cost to the Owner.

#### 1.5 CLOSE OUT SUBMITTALS

nance manuals: submit number as required by division 1, typed and hard A Operation and ma bound to Architect for approval prior to scheduling any system demonstration for the owner and fifteen (15) days prior to final observation. Books shall be arranged in sequence to match the specification sections

#### PART 2 - PRODUCTS 2.1 GENERAL

A. All equipment and materials shall be new unless noted otherwise and acceptable for installation

only if labeled or listed as defined in NFPA 70, article 100, by UL or by a recognized testing laboratory where standards have been established and acceptable to the authority having jurisdiction. Labeled or listed equipment shall be installed in accordance with any instructions or labeling provided with the eauipment.

B. Make provisions for safe delivery and secure storage of all materials.

C. Should the contractor wish to have products considered other than those specified, contractor must submit those items as required in division 1. Contractor will be required to submit the total savings (anticipated savings) to the Owner.

#### PART 3 - EXECUTION

3.1 GENERAL

A. Provide all core drilling, channeling, cutting, patching, sleeves, etc. As required for installation of electrical equipment. Seal holes, fireproofing where necessary, and refinish all repair work to original condition where damaged by electrical work.

1. Coordinate core drill locations with structural prior to work.

B. Provide branch circuits to equipment provided by others and to mechanical equipment and make all connections. Temperature control equipment wiring and connections shall be provided by the mechanical contractor.

C. Provide safety switches and/or thermal overload switches as required.

D. Heater units in all motor starters shall be sized for approximately one hundred fifteen percent (115%) of full load motor current. Check and coordinate all thermal protective devices with the equipment they protect.

E. Provide for each motor, one-half (1/2) horsepower and below, a horsepower rated disconnect switch and thermal overload protection unless internally provided with the motor. Thermal overload switches for single phase motors shall be Allen-Bradley bulletin 600 or acceptable. F. Carefully coordinate all electrical work with all other applicable divisions.

#### END OF SECTION 260500

SECTION 260510 - DEMOLITION FOR REMODELING

#### PART 1 - GENERAL

1.1 SUMMARY A. This section includes selective demolition for existing spaces.

#### PART 2 - EXECUTION

#### 2.1 DEMOLITION

A. Field check all existing conditions prior to bidding and include an allowance for the removal and relocation of existing conduits, wires, devices, fixtures, or other equipment as indicated or as required to coordinate and adapt new and existing electrical systems to all other work required on this project. No extras will be allowed for alterations of a foreseeable nature required to achieve the end result as indicated on the drawings.

B. 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 and that all splices and insulations are in good condition. Provide modifications to assure that circuits, or system shall not pass through outlets or junction boxes which may be rendered inaccessible by changes to be made to the project. Existing conduits, wire, devices, etc., which shall be removed shall become the property of the owner unless otherwise noted.

C. Connect new work to existing in a manner that will assure proper raceway grounding throughout in conformance with the national electrical code.

D. Remodel work, cutting and patching: this 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, plastering, or the structures which are to be reused, resurfaced, plastered, or painted under other divisions of these specifications.

2.2 COORDINATION equipment as necessary. 2.3 OUTAGES END OF SECTION 260510

PART 1 - GENERAL 1.1 SUMMARY

PART 2 - PRODUCTS to, the following:

2.2 CONNECTORS AND SPLICES

PART 3 - EXECUTION AWG and larger.

equipment. 3.3 CONNECTIONS 3.4 FIELD QUALITY CONTROL

values.

1.1 SUMMARY complete grounding. 2.1 CONDUCTORS A. Ground Rods: Copper Clad Steel 3/4 inch by 10 feet 3.1 APPLICATIONS

3.3 EQUIPMENT GROUNDING and nonmetallic raceways. 3.4 INSTALLATION END OF SECTION 260526

PART 1 - GENERAL 1.1 SUMMARY PART 2 - PRODUCTS assembly. weight of wire in raceway.

3.1 APPLICATION

A. Carefully coordinate with the required remodeling work, cutting and patching etc., performed by other trades. Remove or relocate existing electrical conduits, wires, devices, fixtures and other

A. All outages on portions of existing electrical systems shall be minimized and shall be at a time and of a duration as accepted by the owner.

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

A. This Section includes the following: 1. Building wires and cables rated 600 V and less.

2. Connectors, splices, and terminations rated 600 V and less.

#### 2.1 CONDUCTORS AND CABLES

A. Manufacturers offering products that may be incorporated into the Work include, but are not limited

1. American Insulated Wire Corp.; a Leviton Company

2. General Cable Corporation 3. Senator Wire & Cable Company

4. Southwire Company

B. Copper Conductors: Comply with NEMA WC 70. C. Multiconductor Cable: Comply with NEMA WC 70 for metal-clad cable, Type MC with ground

A. Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

#### 3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Minimum size no. 12 AWG except for control or signal circuits, which may be no. 14 AWG or

smaller. Increase conductor size as necessary to limit branch circuit voltage drop to 3% and service/feeder voltage drop to 2%.

B. All conductors shall be copper; solid conductor for no.12 AWG and smaller, stranded for no. 10

#### C. All wiring shall be as follows:

1. Service entrance, exposed feeders, and feeders concealed in ceilings, walls and partitions: type THHN, THWN or XHHW, single conductors in raceway. 2. Feeders concealed in concrete and below slabs-on-grade: type THHN-THWN, single

conductors in raceway. 3. Branch circuits concealed in ceilings, walls, and partitions, and concealed in concrete or

below slabs-on-grade: type THHN-THWN, single conductors in raceway. 4. Class 1 control circuits: type THHN-THWN, in raceway. 5. Class 2 control circuits: type THHN-THWN, in raceway or power-limited cable, concealed

in building finishes 3.2 INSTALLATION OF CONDUCTORS AND CABLES

A. Wiring for control systems shall be installed in conjunction with mechanical and miscellaneous

B. Install conductor at each outlet, with at least 6 inches of slack to allow for connection to device.

A. Splices for No. 6 AWG and smaller shall be made with twist-on wire connectors. B. Splices for No. 4 AWG and larger shall be made with solderless or compression type CU/ALR lugs.

#### A. Testing: perform the following field quality-control testing:

1. Torque test conductor connections and terminations to manufacturer's recommended

2. Perform continuity test on all power and equipment branch circuit conductors. Verify proper

phasing connections. 3. Insulation test: measure the insulation of feeder conductors. Measurements shall be taken between conductors, and conductors and ground. Resistance shall be 1,000,000 ohms or more

when tested at 500 volts by megger without circuit loads.

B. Cables will be considered defective if they do not pass tests and inspections. END OF SECTION 260519

#### SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

A. Conduit systems, supports, cabinets, equipment, transformers, fixtures, the grounded circuit conductor, etc. Shall be properly grounded in accordance with the current issue of the national electrical code. Provide all bonding jumpers and wire, grounding bushings, clamps, etc. As required for

B. Connections shall be either bolted-pressure-type, compression type or exothermic-welded type.

#### PART 2 - PRODUCTS

A. Grounding conductor material: Copper

2.2 GROUNDING ELECTRODES

#### PART 3 - EXECUTION

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Ground all communications equipment.

C. Underground Grounding Conductors: Install bare tinned-copper conductor, No. 2 AWG minimum. Bury at least 24" below grade or below frost line, whichever is greater.

#### 3.2 GROUNDING AT THE SERVICE

A. Bond the electrical service neutral at service entrance equipment per the current issue of the national electrical code utilizing main cold water pipe, building steel, driven ground rod, concrete

encased electrode as applicable. Route grounding electrode conductors to provide the shortest and most direct path to the ground electrode system.

A. Provide a separate equipment grounding conductor in all feeder and branch circuits and all flexible

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage. Conductors shall not make more than a 90-degree bend with a minimum bending radius of 12 inches.

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

A. Provide hangers and supports for equipment, raceways and cables, including weight of wire in raceways. All systems cabling shall be supported by bridal rings or similar means.

#### 2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field B. Material: Cold-formed steel, with corrosion-resistant coating acceptable to Authorities Having

Jurisdiction and of type adequate to carry the loads of equipment, raceways and cables, including

C. Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel. D. Slotted-Steel Channel Supports: Flange edges turned toward web, and 9/16 inch diameter slotted holes at a maximum of 2 inches o.c., in webs.

E. Channel Thickness: Selected to suite structural loading.

F. Fittings and Accessories: Products of the same manufacturer as channel supports. G. Raceway and Cable Supports, 120 Volts and Above: Manufactured clevis hangers, riser clamps,

straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.

H. Cable Supports below 120 Volts: Bridle rings installed a maximum of 4 feet on center. PART 3 - EXECUTION

A. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for conduit as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter. END OF SECTION 260529

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS PART 1 - GENERAL

1.1 SUMMARY

A. Section includes metal conduits, tubing, fittings, surface raceway, and boxes. PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

A. EMT: Comply with ANSI C80.3 and UL 797. B. FMC: Comply with UL 1; zinc-coated steel.

- C. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- D. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.

#### 1. Fittings for EMT: a. Material: Steel

b. Type: Setscrew or compression.

2.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS

A. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application. B. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.

C. LFNC: Comply with UL 1660. D. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.

E. Fittings for LFNC: Comply with UL 514B. 2.3 SURFACE RACEWAYS

A. Surface metallic raceways shall be limited to only areas specifically noted and of size and type specified on the drawings.

2.4 BOXES

A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A. Four inch square or octagonal, zinc-coated sheet steel type.

#### PART 3 - EXECUTION 3.1 RACEWAY APPLICATION

A. All conductors shall be enclosed by conduit sized in accordance with chapter 9, table 4 of the national electrical code. Minimum size 1/2 inch. All conduits shall be concealed in finished areas. B. Galvanized rigid metal conduit (RMC) and intermediate metal conduit (IMC) shall be utilized for above and below grade applications in accordance with Articles 344 and 342 of the National Electrical Code. All couplings shall be threaded.

C. Electrical metallic tubing (EMT) shall be utilized for all dry, above grade or above floor feeders and branch circuit homerun applications in accordance with Article 358 of the National Electrical Code. Couplings shall be steel set screw type.

D. Metal-clad cable (MC) with separate ground conductor shall be permitted for all concealed, above grade or above floor branch circuit applications excluding homeruns in accordance with Article 330 of the National Electrical Code. Connectors shall be listed for application of service indicated. E. Flexible metal conduit shall be utilized for all connections to vibrating equipment such as motors (minimum of 2'-0", maximum of 6'-0"), connections to lay-in type light fixtures or in remodel areas

specifically noted for "fishing" in existing walls or non-accessible ceilings. F. Rigid nonmetallic conduit (PVC) shall be utilized for above and below grade applications in

accordance with Article 352 of the National Electric Code. Connections to be made by the use of a suitable solvent-type cement. G. Surface metallic raceways shall be limited to only areas specifically noted and of size and type

specified on the drawings. H. All conduits exposed or concealed shall be routed parallel or perpendicular with the building walls.

Support conduit as required by the latest edition of the National Electrical Code. I. Provide expansion type fittings for all conduits, which cross expansion joints.

3.2 BOXES

A. Outlet boxes shall be located so that transmission of sound through common walls will not occur. B. Enclosures exposed to weather or damp locations shall be weatherproof type. C. Provide covers set to come flush with finished walls.

D. Pull boxes and junction boxes: junction boxes and pull boxes will be provided as required. Size of boxes shall be in accordance with the current national electrical code requirements. 1. Enclosures shall be NEMA type suitable for the surrounding area and conditions.

END OF SECTION 260533

**SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS** 

#### PART 1 - GENERAL 1.1 SUMMARY

A. Section includes identification for conductors, raceways, equipment, and underground warning

#### PART 2 - PRODUCTS

with the equipment.

D. 120/240V System

E. Phase A Black

F. Phase B Red

G. Neutral White

H. Ground Green

I. Switch Leg Pink

by 1 inch wide.

PART 3 - EXECUTION

END OF SECTION 260553

PART 1 - GENERAL

1.1 SECTION INCLUDES

B. Overhead service entrance

1.3 QUALITY ASSURANCE

**1.5 SYSTEM DESCRIPTION** 

2.1 METERING EQUIPMENT

PART 2 - PRODUCTS

1.4 SUBMITTALS

3.1 GENERAL INSTALLATION

appropriate to the location and substrate.

SECTION 262000 - SERVICE ENTRANCE

**1.2 RELATED SECTIONS AND WORK** 

A. Utility Company: NorthWestern Energy.

B. Contact: Austin Rensmon, 406-443-8948.

A. Meter: Furnished by the Utility Company.

Milbank, Superior, Duncan, or Anchor).

C. Conductor identification shall be as follows:

2.3 EQUIPMENT IDENTIFICATION LABELS

with black letters on a white face or as required by code or Owner.

without interference with operation and maintenance of equipment.

methods recommended by manufacturer of identification device.

A. Arrangement with Utility Company for permanent electric service.

A. Refer to the One-Line Diagram for additional information.

B. Submit Utility Company prepared drawings (if applicable).

Contractor. Connections as required by the Utility Company.

A. System Voltage: 120/240 volts, single phase, three-wire, 60 Hertz.

2.1 POWER RACEWAY IDENTIFICATION MATERIALS A. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible

label laminated with a clear, weather and chemical-resistant coating. 2.2 CONDUCTOR IDENTIFICATION AND MATERIALS A. Conductors 8 AWG and smaller shall be factory color coded. Conductors 6 AWG and larger may

B. Wiring for control systems shall be color-coded in accordance with the wiring diagrams furnished

A. Provide engraved nameplates for all electrical cabinets, enclosures, panelboards, distribution

A. Location: Install identification materials and devices at locations for most convenient viewing

B. Self-Adhesive Identification Products: Clean surfaces before application, using materials and

C. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners

C. Install service entrance in accordance with Utility Company's rules and regulations.

B. Meter Base: Furnished by the Contractor, as approved by the Utility Company. (Manufacturers:

C. Exterior Mounted Metering Cabinets: Furnished and installed by the Contractor to Utility Company's

specifications. Conduit and conductors between metering cabinets and instrumentation shall be by the

A. Submit shop drawings and product data under provisions of Section 260500.

equipment, electrical equipment, boxes, etc. Nameplates shall be engraving stock, melamine plastic

laminate, minimum 1/8 inch thick for signs up to 20 square inches and 1/4 inch thick for larger sizes

1. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick

be color coded by field painting or color taping a 6-inch length of exposed end.

- D. Meter Distribution Center: See One Line Diagram on construction documents.
  - 1. Manufacturers: a. Square D EZ Meter-Pak
    - b. General Electric
    - c. Siemens d. Cutler Hammer
- 2.2 IDENTIFICATION

A. Provide a permanent plaque or sign denoting all services, feeders, and branch circuits supplying the building or structure and the area served by each. Install plaque or sign at each service disconnecting means.

#### PART 3 - EXECUTION 3.1 INSTALLATION

A. Make arrangements with Utility Company to obtain permanent electric service to the Project. B. Primary distribution equipment and pad-mounted transformers shall be furnished and installed by

the Utility Company. C. Primary conductors shall be furnished, installed, and terminated by the Utility Company. Primary conduit shall be furnished and installed by the Contractor, as shown on the drawings, to the Utility

Company's requirements. D. Overhead: Install a rigid metal weather head and service entrance conductors. Service entrance conductors shall have a 3' drip loop beyond the weather head. Overhead service shall comply with NEC 230 Part II

END OF SECTION 262000

#### SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes lighting and appliance branch circuit panelboards. 1.2 SUBMITTALS

A. For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

1.3 CLOSEOUT SUBMITTALS A. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals.

#### PART 2 - PRODUCTS

#### 2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

A. Enclosures: Flush and surface mounted cabinets as indicated on drawings. B. Front: Secured to box with screws. For surface-mounted fronts, match box dimensions; for flushmounted fronts, overlap box.

C. All spaces shall be fully bussed.

D. Panelboards shall have a grounding bus for the equipment grounding system.

E. Circuit breakers shall have a minimum interrupting capacity as follows, unless otherwise noted: F. 120/208 volts: 10,000 amperes

- G. Panelboards shall be a minimum twenty inches (20") wide.
- H. All bussing shall be tin-plated, high strength, electrical grade aluminum alloy and extend entire

length of the panelboard.

I. Each panelboard shall be provided with a typed directory card installed in a transparent protective cover on inside of door panel.

J. Enclosure: NEMA type suitable for the surrounding area and conditions. 2.2 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following: 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
  - 2. General Electric
  - 3. Siemens Energy & Automation, Inc.
- 4. Square D B. Mains: Circuit breaker or main lugs only as indicated on drawings.

C. Provide dead-front, circuit breaker type panels, size, voltage, amperage and number of branches as indicated on the drawings. Breakers shall be bolt on thermal magnetic type employing quick-make and quick-break mechanism for manual operation as well as automatic operation. Automatic tripping shall be indicated by the breaker handle assuming a distinctive position from the manual "on" and "off" multi-pole breakers shall have a common trip. Tie handles will not be permitted.

D. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. (Door-in-Door Construction Cover)

- PART 3 EXECUTION 3.1 INSTALLATION
- A. Install panelboards and accessories according to NEMA PB 1.1.

3. Install floor mounted panelboards on 4-inch-high concrete base extending a minimum of 2 inches bevond enclosure

C. Mount top of trim 74 inches above finished floor unless otherwise indicated.

D. Install filler plates in unused spaces.

E. Upon completion of installation, inspect interior and exterior of panelboards. Remove paint

splatters and other spots, dirt and debris. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Touch up scratches and marred finished to match original finish.

#### 3.2 IDENTIFICATION

- A. Panelboard Nameplates: Label each panelboard with engraved metal or laminated plastic
- nameplate with corrosion resistant screws complying with requirements for identification specified in

#### Division 26 Section "Identification for Electrical Systems."

3.3 FIELD QUALITY CONTROL

A. Testing: Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit. Test continuity of each circuit. After installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

## END OF SECTION 262416

SECTION 262726 - WIRING DEVICES PART 1 - GENERAL

#### 1.1 SUMMARY

A. This section includes receptacles, GFCI receptacles, snap switches, and occupancy sensors. PART 2 - PRODUCTS

#### 2.1 RECEPTACLES

A. Receptacles shall be 20-amp Pass & Seymour PS5362 series specification grade, or equal. GFCI and exterior receptacles shall be Pass & Seymour 2095TRWR series, or equal and if required, provide WP in use metal type cover. Provide device color as directed by the Architect, or to match base building standards, whichever is applicable.

- B. Provide special purpose outlets as required for equipment provided by others.
- 2.2 SNAP SWITCHES

A. AC quiet operating type switches shall be 120/277V, 20 amp, Pass & Seymour CS20AC1 series, or equal. Provide device color as directed by the Architect, or to match base building standards, whichever

#### is applicable 2.3 OCCUPANCY SENSORS

- A. PIR wall switch sensors shall be Watt Stopper PW-100, or equal.
- B. Dual technology wall switch sensors shall be Watt Stopper DW-100, or equal.
- 2.4 DEVICE PLATES

A. Device plates shall be high abusive nylon, color to match device, or to match base building standards, whichever is applicable.

#### PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount devices in accordance with the following schedule except where otherwise noted on the drawings or in areas with counters, baseboard heaters or in areas of block or brick construction:

- . Convenience receptacles: Long axis vertical at 1'-6" AFF to center.
- 2. Light switches: Latch side of door at 3'-6" AFF to center.
- 3. Telephone outlets: Long axis vertical at 1'-6" AFF to center.
- 4. \*Except in areas with counters, baseboard heaters, or in areas of block or brick
- construction.

B. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to

C. ADA mounting heights take precedence over scheduled mounting heights.

END OF SECTION 262726

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100% CONSTRUCTION DOCUMENTS

REVISIONS

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Project No. | 2022015 Issue Date | 12/02/2022

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SECTION 265100 - INTERIOR & EXTERIOR LIGHTING PART 1 - GENERAL

#### 1.1 SUMMARY A. This Section includes the following:

#### 1. Interior & exterior luminaires, lamps, and drivers.

#### 2. Emergency egress lighting units.

3. Exit signs.

1.2 SUBMITTALS

A. Provide a submittal for each type of luminaire, arranged in order of type designation. Include data on features, accessories, remote drivers, finishes, and the following:

- Physical description of lighting fixture including dimensions.
   Emergency lighting units including battery and charger.
   Remote drivers as designed.
- 4. Input Wattage.
- 5. Life (in hours) and energy-efficiency data of source.
- 6. Photometric data, in IESNA format, based on laboratory tests of each lighting fixture type, outfitted with lamps, drivers, and accessories identical to those indicated for the luminaire as applied in this Project.
- 7. Dimming type.
- 1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Include lighting equipment and luminaires in emergency operation, normal operation, and maintenance manuals.

#### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

A. Subject to compliance with requirements in Division 1, provide products by the manufacturers specified on the drawings or provide products from manufacturers with similar construction, installation, Wattage usage, dimming type, dimensions, certifications, finishes, CRI, CCT, and photometric characteristics. Contractor will be required to submit the total savings (anticipated savings) to the Owner.

B. Illuminated exit signs shall conform to local code requirements.

C. Interior emergency power supply units shall be self-contained, modular, battery-inverter unit factorymounted within luminaire body and shall comply with UL 924. D. Lamps shall be as manufactured by Osram/Sylvania, Phillips, G.E., Cree, TCP, or Venture. Do not

use lamps by EcoSmart. E. Color temperature for LEDs shall be as specified in the drawings.

#### PART 3 - EXECUTION

3.1 INSTALLATION

A. Set luminaires level, plumb, and square with ceiling and walls, and secure according to manufacturer's written instructions and approved submittal materials. Install lamps in each luminaire without integral lamping. Do not support luminaries to the work of other trades unless otherwise specified or noted. All luminaires shall be independently supported from structure. Provide all necessary supports and hangers to securely fasten and support all luminaires to structure. 3.2 FIELD QUALITY CONTROL

A. Inspect each installed luminaire for damage. Replace damaged luminaires and components. Verify normal operation of each luminaire after installation. Interrupt the electrical supply to verify proper operation of the emergency lighting. If luminaires are malfunctioning, then repair or replace components and retest until luminaire operates properly.

B. Properly protect luminaires from construction dust and debris until all other trades have completed their work. Clean luminaires internally and externally after installation per manufacturer's recommendations.

C. Ensure all wiring, coords, and accessories have been properly trimmed or tucked away so as not to be seen through lenses.

D. Replace any failed lamps in existing luminaires with matching lamp type and color. **END OF SECTION 265100** 

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