

September 8, 2022 – 7:00 pm Village Hall 235 Hickory Street, Pewaukee, WI 53072

- 1. <u>Call to Order and Roll Call</u>
- 2. <u>Citizen Comments</u> This is an opportunity for citizens to share their opinions with Commission Members on any topic they choose. However, due to Wisconsin Open Meeting laws, the Commission is not able to answer questions or respond to your comments. All comments should be directed to the Commission. Comments are limited to 3 minutes per speaker. Speakers are asked to use the podium and state their name and address.
- 3. <u>Approval of the Minutes</u>:
  - a. Regular Plan Commission Meeting August 11, 2022
- 4. <u>Old Business.</u>
  - a. Review and discussion on the topic of possible updates to the Village's 'Off-Street Parking Requirements' as setforth in Chapter 40, Article VII, Division 2. of the Village Code. This topic is Village initiated.
- 5. <u>New Business.</u>
  - Review, discussion and possible action on the Sign Code waiver request of Walmart, in c/o Jacob Hiatt of LK Architecture, to add multiple new wall signs to their existing building at 411 Pewaukee Road thereby increasing in the extent to which the building already exceeds (with waiver approval) the permissions of the Sign Code as to quantity and size of wall signs. This 13+/- acre property is zoned B-1 Community Business w/ PUD Planned Unit Development Overlay District. The property owner is CJM&W Investment Company LLC.
  - b. Review, discussion and possible action on the Architectural Plan Amendment request of Walmart, in c/o Jacob Hiatt of LK Architecture, to modify the exterior colors of their principal building by adding blue color in certain specific portions of the building elevations. This 13+/- acre property is zoned B-1 Community Business w/ PUD Planned Unit Development Overlay District. The property owner is CJM&W Investment Company LLC.
  - c. Review, discussion, and possible action on the Architectural Plan Amendment (i.e., exterior building color changes [adding green color in certain specific portions of the building elevations] and applying window film/decals) request of Dollar Tree, in c/o Greg and Suzanna Kelson of VWS-Viper Construction Services LLC and in c/o Sarah Goeke of Access Permits. The owner of this B-1 Community Business zoned property is 690 Westfield Way LLC in c/o Saf Sarich of the Kenmore Group.
  - d. Review, discussion and possible action on the Site and Architectural Plan Amendment request of property owner/applicant Ben Mohn to establish an outdoor dumpster storage location on this site with related screening structure, and to add elevated, exterior deck features on the north, west and south building elevations at the existing patio doors of the apartments. This +/- .9-acre site is zoned R-M Multi-Family Residential District.

6. <u>Citizen Comments.</u> – This is an opportunity for citizens to share their opinions with Commission Members on any topic they choose. However, due to Wisconsin Open Meeting laws, the Commission is not able to answer questions or respond to your comments. All comments should be directed to the Commission. Comments are limited to 3 minutes per speaker. Speakers are asked to use the podium and state their name and address.

### 7. Adjournment

Note: It is possible that members and/or possibly a quorum of members of other governmental bodies of the municipality may be in attendance at the above-stated meeting to gather information; action will not be taken by any governmental body at the above-stated meeting other than the governmental body specifically referred to above in the notice. Upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. To request such assistance, contact the Village Clerk at 262-691-5660.

Dated: September 2, 2022

## PLAN COMMISSION MINUTES August 11, 2022 – 7:00 p.m. Village Hall 235 Hickory Street, Pewaukee, WI 53072

## DRAFT-DRAFT-DRAFT-DRAFT-DRAFT-DRAFT-DRAFT-DRAFT

## 1. Call to Order and Roll Call

President Knutson called the meeting to order at approximately 7:00 p.m. Plan Commission members present: Comm. Mark Grabowski, Comm. Ryan Lange, Comm. Cheryl Mantz, Comm. Brian Belt, Trustee Craig Roberts and President Jeff Knutson. Excused: Comm. Theresa Hoff.

Also present: Village Planner, Mary Censky; Village Contracted Engineer, Tim Barbeau; Village Attorney, Matt Gralinski; Village Administrator; Scott Gosse, and Village Deputy Clerk/Treasurer, Jenna Peter.

## 2. Public Hearings:

a. On a Conditional Use Grant request of applicant/property owner 230 Sussex Street LLC in c/o Tim Knepprath, to develop approximately .46 acres of their 1.83 +/- acre, B-5 Light Industrial zoned site located at 227 Sussex Street into an outdoor POD's storage container staging area for approximately 50 such units.

Property owner, Nick Wellenstein, stated that he is open to answer any questions.

b. On a Conditional Use Grant request of applicant/property owner Cornerstone Development, in c/o Joe Orendorf and John Wahlen, and Alan Peters of True Vine Development, to develop Outlot 5 of the Glen at Pewaukee Lake Subdivision with a Clubhouse, including related parking and accessory facilities, for the benefit of the owners of the lots in the subdivision owner's association. This .69-acre outlot is zoned R-5 Single-Family Residential with Residential Infill-Redevelopment Overlay District.

None.

## **3.** Citizen Comments:

Kristin Schrank – 549 E. Potter Ave, Milwaukee; with the Alliance for Animals, asked the Commission members to pass the Draft Ordinance adding regulations/prohibitions on the sale of live dogs, cats and rabbits (companion animals) being discussed in section 6.c. on the agenda.

Trustee Jim Grabowski – 128 Park Ave, Pewaukee, would like the Commission members to consider striking the prohibited use of "offer for adoption" line out of the Draft Ordinance from Sec. 40.250.5 – Prohibited Uses.

Sandy Hoffmann – 1262 Timber Ridge, Pewaukee, spoke in favor of passing the Draft Ordinance.

Kathy Line – 350 Stone Ct, Pewaukee, spoke in favor of passing the Draft Ordinance.

- Approval of the Minutes Regular Plan Commission Meeting July 14, 2022: Comm. Mantz motioned, seconded by Comm. Belt to approve the minutes of the July 14, 2022 Regular Plan Commission meeting with the spelling correction in line one of paragraph 6.c. Motion carried 4-0-2; Members Lange and Grabowski abstained.
- 5. Old Business Item 5.a.
  - a. Review and general discussion regarding the Village's parking requirements for all business zoning districts as it relates to the apparent decline in brick-and-mortar retail shopping and the continuing practice of working remotely-away from brick-and-mortar office environments. Of particular interest is the potential for excessive parking allocations displacing underutilized otherwise useable/developable space in the Village's business areas.

Item was not discussed at this meeting.

- 6. New Business
  - a. Possible action on the Conditional Use Grant request of applicant/property owner 230 Sussex Street LLC in c/o Tim Knepprath, to develop approximately .46 acres of their 1.83+/- acre, B-5 Light Industrial zoned site located at 227 Sussex Street into an outdoor POD's storage container staging area for approximately 50 such units.

Planner Censky explained that this property was split off into a smaller lot in favor of developing mini-warehouse use to the north and west. Previously, a PODs storage area was permitted and in effect on that northwest part of this site; that use allowed for up to 30 POD containers – no stacking or racking. The applicant now proposes to set aside approximately 19,900 square feet of the newly split site, between the principal building and Maiden Lane, to establish a compacted gravel base and park/store the PODs units. Based upon the applicants' calculations, the site will still comply with the greenspace requirement – minimum 35%. At 128 sq. ft./unit for the largest units x 50 units (proposed), the cumulative coverage within this 19,900 sq.ft. space with PODs equals 6,400 sq.ft. No new landscaping or screening of the stored PODs is proposed. There is an existing vegetive growth area along both Maiden Lane and Sussex Street that generally, in the Summertime, does obscure the view. This existing vegetation is very mature and appears to be waning. Planner Censky suggested that if approved, it is recommended that the applicant be required to devise a landscaping/screening plan because of the adjoining residential uses. General operating characteristics are represented to include two – three trips inbound related to PODs per day and hours of PODs operation 8 a.m. to 5 p.m. Monday through Saturday.

## Village Planner Recommendations:

1) Full signatures and recording of the Conditional Use Grant prior to the placement of any PODs at this site;

2) Village Engineer review and approval of the grading and drainage plan to be prepared in support of this project;

3) Applicant to design and install a suitable landscaping or similar screening plan, to be installed at the perimeter edge of the proposed PODs storage area, as will ensure yearround and long-term screening of the PODs from the neighboring residential land uses. This plan shall be subject to review and approval by Village Staff. If plantings are proposed, they shall be no less than 6 feet in height at planting. The deadline for installation of the approved screening plan shall be determined and set by the Village Staff, but in no case later than 12 months from the date of recording the CUG;

4) No other materials, including for instance but not necessarily limited to boats, trailers, docks, lifts, equipment, or supplies may be parked or stored within the site plan delineated POD's area.

Engineer Barbeau explained the current site is grass/weeds. The proposal is to remove the grass area and replace it with a 19,990 sq.ft (0.46 acre) stone base. The proposed addition of the stone base is below the Village code's 0.5-acre threshold to require stormwater management facilities; therefore, none are required. He also said that the site is relatively flat and will not affect the drainage pattern. Storm run-off will flow to a floodplain area to the northwest of the site and will not affect any existing residents.

## Village Engineer recommendation:

1) Owner provides a grading plan confirming that the stone pad will sheet flow to the west.

Discussion followed as to options for screening the lot with vegetation or a fence. Trustee Roberts and President Knutson would like to see a fairly tall and opaque fence blocking the area from the road on Maiden Lane. Property owner Nick Wellenstein stated that adding a substantial fence would not be economical because they would have to cut down all the trees in order to get the fence installed. Applicant, Tim Knepprath would not be opposed to adding 6-foot pine trees inside of the existing vegetation. Comm, Lange did not think asking for an 8-foot fence would be necessary but something significant is needed to hide the area from view. Comm. Mantz agreed the site needs some sort of landscaping and screening. Comm. Belt stated that fencing might not be feasible and would like to see options that are more economical for the property owners.

Comm. Grabowski was concerned with the wording on 4) of the Planner's recommendations and feels it limits the site as far as storage because a construction company owns the lot. Property owner Wellenstein agreed that the current wording as it stands would be a hinderance because they do have trucks, trailers, and equipment that will need to be stored on the property for the business.

There were also concerns about too much storage of equipment on the property and the increased foot traffic of people going in and out of their storage units will increase the traffic on Sussex St.

President Knutson stated that he wants the screening plan to be effective right away, not in future years after the landscaping matures.

Trustee Roberts motioned, seconded by Comm. Grabowski to approve the Conditional Use Grant for POD Storage units subject to the Village Planner's recommendations with the following conditions:

- 1) Access to/from the PODs use shall only be from Sussex St.
- 2) Applicant to design and install a suitable landscaping or similar screening plan, to be installed at the perimeter edge of the proposed PODs storage area, as will ensure year-round and long-term screening of the PODs from the neighboring residential land uses. This plan shall be subject to review and approval by Village Staff. If plantings are proposed, they shall be no less than 6 feet in height at planting and must provide an immediate screening benefit. The deadline for installation of the approved screening plan shall be determined and set by the Village Staff, but in no case later than 12 months from the date of recording the CUG;
- 3) Village Engineer review and approval of the grading and drainage plan to be prepared in support of this project;
- 4) No other materials, including for instance but not necessarily limited to boats, trailers, docks, lifts, equipment, or supplies may be parked or stored within the site plan delineated POD's area.

Motion carried 5-1; President Knutson nay.

b. Possible action on the Conditional Use Grant request of applicant/property owner Cornerstone Development, in c/o Joe Orendorf and John Walen, and Alan Peters of True Vine Development, to develop Outlot 5 of the Glen at Pewaukee Lake Subdivision with a Clubhouse, including related parking and accessory facilities, for the benefit of the owners of the lots in the subdivision owner's association. This .69acre outlot is zoned R-5 Single-Family Residential with Residential Infill-Redevelopment Overlay District.

Planner Censky explained this project was originally approved 12 months ago and the time ran out on the Conditional Use Grant. She noted that the setbacks, offsets and greenspace comply with the zoning. There will also be parking provided on site along with outdoor recreational activity areas. A detailed and thorough landscaping plan has been provided.

## Village Planner Recommendations:

- 1) All items pending final review and approval as noted in the Planner Staff Report shall be completed/approved and incorporated into the CUG document prior to its release for signatures and recording;
- 2) A revision to the floor plan shall be reflected in the CUG document taking out the reference to a "pool";
- 3) Village Engineer review and approval of the overall site grading, drainage and utilities plans for this project/site prior to issuance of a building permit;
- 4) The public access and business use of this building (i.e. sales center) shall terminate upon the sale of all lots contained within this development or within 3 years of the date of recording this conditional use grant, whichever happens first;

5) Recording of the Conditional Use Grant, and issuance of any/all required building, electrical, erosion control, and similar permits, prior to the start of any site or building work in support of this project.

Engineer Barbeau stated that nothing will change from the grading plan that was approved a year ago.

Comm. Mantz motioned, seconded by Comm. Belt to approve the Conditional Use Grant as presented subject to the Village Planner's recommendations. Motioned carried unanimously

c. Discussion and possible recommendation to the Village Board on Draft Ordinance to add regulations/prohibitions on the sale of live dogs, cats, and rabbits (companion animals) by pet shops, retail businesses, or other commercial establishments located in the B-1 Community Business, B-2 Downtown Business, B-3 Office & Service Businesses, B-4 Business Park, B-5 Light Industrial, and IPS-Institutional and Public Service Zoning District.

Trustee Roberts gave the Commission members a background on the matter from the July 5 and July 19, 2022 Village Board Meetings. Trustee Jim Grabowski introduced an ordinance that banned the retail sale of dogs, cats, and rabbits, as well as, issues regarding puppy mills. Roberts explained the original ordinance at the July 5 meeting was found to have issues with wording, specifically targeting retail which is a large tax base for the Village. The Village Board reviewed the amended draft ordinance at the July 19<sup>th</sup> meeting and it was suggested that this topic might be better addressed in the zoning ordinance. The amended ordinance presented for consideration in the zoning code prohibits the breeding, retail sale, and offering for adoption of live dogs, cats, and/or rabbits, or other exotic or endangered animals. Trustee Roberts went on to explain the ordinance does not impact residential zones and will not adversely impact responsible professional home-based breeders.

Village Attorney Matt Gralinski discussed current state laws and regulations, as well as, restrictions on local Conditional Use Grant abilities.

Trustee Roberts motioned, seconded by Comm. Mantz to recommend approval as presented to the Village Board with the following edit "Individuals, businesses and/or organizations that breed, sell or offer for adoption live animals including dogs, cats, rabbits or exotic/endangered animals." to read, "Individuals, businesses and/or organizations that breed or sell dogs, cats, rabbits or exotic/endangered animals." Motion carried 5-1; Comm. Belt nay.

## 7.a. Reports:

Report to the Planning Commission regarding the Staff level approval of a Certified Survey Map combining the two adjoining lots owned by Northshore Bank FSB and Northshore Savings Bank located at 104 and 120 W. Wisconsin Avenue respectively. Together these parcels total approximately .6852 acres and they are both zoned B-2 Downtown Business District. Planner Censky stated no buildings are being added to the lot at this time. The newly created lot meets/exceeds both the minimum required lot size (i.e 7,000 sq.ft.) and the minimum required lot width (i.e. 70 feet) for the B-2 District.

Engineer Barbeau stated the surveyor has included a vision triangle at the corner of W. Wisconsin Ave and Park Ave stating that no structure or plantings greater than two (2) feet are allowed within the triangle.

No action was needed or taken.

## 8. Citizen Comments:

The members were thanked for passing the recommendation for the draft ordinance concerning the regulations/prohibitions of the sale of companion animals.

## 9. Adjournment

Comm. Belt motioned, seconded by Comm. Grabowski to adjourn the August 11, 2022, Regular Plan Commission meeting at approximately 9:05 p.m. Motion carried unanimously.

Respectfully submitted,

Jenna Peter Deputy Village Clerk/Treasurer

## **STAFF REPORT**

To: Village of Pewaukee Plan Commission

**General Information:** 

Agenda Item: **4.a.** 

**Applicant:** 

**Status of Applicant:** 

**Requested Action:** 

By: Mary Censky Date Prepared: September 8, 2022

N/A

Village initiated item

Review and general discussion regarding the Village's parking requirements for all business zoning districts as it relates to the apparent decline in brick-and-mortar retail shopping and the continuing practice of working remotely-away from brick-and-mortar office environments. Of particular interest is the potential for excessive parking allocations displacing underutilized otherwise useable/developable space in the Village's business areas.

## **Discussion:**

The Planner has had topic discussions with a couple of key area property owners who have large enough parking lots within the Village that we thought they may be helpful in researching this topic - i.e.

- Should the Village begin tweaking its parking stall count requirements at this time based upon changes surfacing in the wake of the pandemic (i.e. more online shopping/less brick mortar shopping, and more remote work arrangements vs office occupancy), and
- Do you feel you that currently possess any paved areas that could be developed into new building projects where sufficient room is available to park for the new project and to support the existing uses?

General consensus feedback was that: the Village does presently have, and has appropriately and effectively utilized, the "flexibility in application" provision in our Parking Requirements section of the Code (i.e. Section 40.426(g)); no one feels they have enough unused parking area (at this time) that they could expand into and still provide enough spaces to accommodate both the existing and any new use(s); and both agree that the "new normal" has not been arrived at in terms of retail and office occupancies post-pandemic. They continue to see things moving back toward the 'pre' conditions but are unable to forecast how far or fast that will continue to be the

case.

## **Recommendation:**

At this time the Planner recommends that this topic and related communications/findings be placed on file and revisited again at some prescribed future date for reevaluation. No changes are recommended to be implemented at this time.

## **STAFF REPORT**

To: Village of Pewaukee Plan Commission	By: Mary Censky Date Prepared: September 8, 2022
General Information:	
Agenda Item: <b>5.a.</b>	
Applicant:	Walmart, in c/o Jacob Hiatt of LK Architecture
Property Owner:	CJM&W Investment Company LLC
Requested Action:	Sign Code waiver approval.
Current Zoning:	B-1 Community Business w/ PUD - Planned Unit Development
Current Master Plan Classification:	Community Commercial
Surrounding Zoning/Land Use:	North: B-1 Community Business w/ PUD overlay (Costco) South: B-1 Community Business w/ PUD overlay (Meadow Creek Shopping Center) East: B-1 Hwy.164 West: B-1 Community Business w/ PUD overlay (Meadow Creek Shopping Center/Menards)
Lot Size:	Approximately 13.88 acres
Location:	411 Pewaukee Road

## **Discussion:**

The applicant requests approval to install 4 new illuminated wall signs, totaling 92 square feet in combined sign area, to the front (i.e., main entrance) building elevation which faces the interior parking area attendant to the use and the internal private roads of Meadow Creek development. These signs range from 14 sq. ft. to 31 sq. ft. in area and will read "HOME", "GROCERY", "PHARMACY", and "PICKUP". An additional wall sign is proposed to replace existing "Tire & Lube Express sign on this elevation.

On the left elevation, the applicant proposes to remove/replace the few existing signs above the overhead doors and add additional signs over the doors that presently have no signs (or door numbers).

The Village Sign Code permits up to one wall sign, not to exceed 40 sq. ft. in area, per building per, street frontage. In the past, the Village has treated this building as having three "street"

frontages – the front, left, and right elevations.

Sec. 70.103 of the Villages Sign Code provides as follows:

Appeals. The planning commission may, in its judgment, waive or modify the provisions of this chapter where it would further the public interest and uphold the purpose of this chapter as put forth in section 70.100. Such waiver or modification may be based on, among other things, site-specific hardships such as topographic aberrations, traffic safety, accessibility and visual encumbrances.

Section Sec. 70.100 of the Villages Sign Code provides as follows:

Purpose. The purpose of this chapter shall be to:

(1) Regulate the size, type, construction standards, maintenance and placement of signs situated within the boundaries of the Village of Pewaukee, Wisconsin.

(2) Promote the public health, safety, welfare and comfort of the general public by:

a. Reducing distractions and obstructions from signs which would adversely effect traffic safety and alleviate hazards caused by signs projecting over or encroaching upon the public right-of-way;

b. Discouraging excessive visual competition in signage and ensuring that signs aid orientation and adequately identify uses and activities to the public; and

c. Preserving or enhancing the natural beauty and unique physical characteristics of the village as a community in which to live and work by requiring new and replacement signage which is:

1. Harmonious with the building, surrounding neighborhood aesthetics and other signs in the area;

2. Appropriate to the type of activity to which it pertains;

3. Expressive of the village's identity in a manner which will not diminish property values; and

4. Complementary to the village's architectural character and unobtrusive commercial developments.

## **Recommendation:**

Given that Planning Commissions did fairly recently review but deny a similar request for the "Pick-up" sign to be added to the front elevation, it would appear that it remains the Villages intent at this time to prohibit secondary and tertiary wall signs for single use buildings such as this unless "specific hardships" warrant. The Planner doesn't find that a "specific hardship" has been articulated in this case with respect to the and so does not recommend in favor of this request for waiver as regards the proposed new "HOME", "GROCERY", "PHARMACY", and "PICKUP" signs.

With respect to the signs proposed to be removed and replaced/expanded upon in the auto service area, the Planner suggests these might be considered directional in nature and wouldn't necessarily object to allowing for the waiver as to these signs.

If the Planning Commission is inclined toward granting any approval in this matter, it is recommended that the following conditions be considered for attachment:

1) Applicant to secure a sign permit, and including any electrical permits as may be necessary, prior to the installation of any new signs at this location.

Application is due 3 weeks prior to the Meeting Date.



### Village of Pewaukee – Planning Commission Miscellaneous Approval Application Form – *Return Completed Form along with 11 copies of all materials to be reviewed.*

Address/Parcel No. of Property Involved: 411 Pewaukee Road

Zoning of Property: B1

Current Owner of Property: Walmart RE Business Trust

Applicant – Name: Jacob Hiatt - LK Architecture

Address: <u>345 Riverview, Suite 200</u> Phone: <u>316-268-0230</u> Fax:

Type of Request: Check All That Apply

Sign Plan Approval: Final Plat Approval: Certified Survey Map: Other (Describe Below):

Prelim. Plat Approval:

Exterior paint approval

Signature of Property Owner as listed on this Application:

Richard Goff 3154140FEB1041

Application will not be processed without the Owner's Signature regardless of who is listed as the Applicant. This signature authorizes the Village of Pewaukee to process the Application as it pertains to my property and further authorizes the Village or its representatives to conduct reasonable and routine inspections of my property for the purposes of evaluating this Application.

Signature of Applicant (if different than Owner):

acob Hiatt



## **PROFESSIONAL SERVICES REIMBURSEMENT NOTICE**

Pursuant to the Village of Pewaukee Code of Ordinances, the Village Board has determined that whenever the services of the Village Attorney, Village Engineer, Village Planner or any other of the Village's professional staff results in a charge to the Village for that professional's time and services and such service is not a service supplied to the Village as a whole, the Village Clerk shall charge that service for the fees incurred by the Village. Also, be advised that pursuant to the Village of Pewaukee Code of Ordinances, certain other fees, costs, and charges are the responsibility of the property owner or responsible party.

I, the undersigned, have been advised that, pursuant to the Village of Pewaukee Code of Ordinances, if the Village Attorney, Village Engineer, Village Planner or any other Village professional provides services to the Village because of my activities, whether at my request or at the request of the Village, I shall be responsible for the fees incurred by the Village. In addition, I have been advised that pursuant to the Village of Pewaukee Code of Ordinances, certain other fees, costs, and charges are my responsibility.

The Village will place fees from unpaid invoices on the real estate tax bill of the property that corresponds to the incurred services.

### **RESPONSIBLE PARTY & MAILING ADDRESS**

LK Architecture			
Name of Company and/or Individual			
345 Riverview, Suite 200 Wichita, KS 6	7203		
Street	City	State	Zip
Phone: 3162680230 Fax:	E-Mail: <u>jhiatt@</u> l	lk-architecture.c	om
Jacob yracc       J/2./22         Signature of Applicant & Date       7/21/2022         Villard Coff       7/21/2022         Signature of Property Owner & Date       7/21/2022         Village Official Accepting Form & Date       7/21/2022	SEND A SERVIO	ALL PROFESS CES INVOICE (Check One) perty Owner olicant	IONAL S TO:



LAND INFORMATION SYSTEMS DIVISION

## Walmart Site



### Notes:

273.21 Feet

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specifically admonishes and advises that if specific and precise accuracy is required, the same should be determined by procurement of certified maps, surveys, plats, Flood Insurance Studies, or orther official means. Waukesha County will not be responsible for any damages which result from third party use of the information and depictions herein, or for use which ignores this warning.

Printed: 9/1/2022

## **STAFF REPORT**

To: Village of Pewaukee Plan Commission	By: Mary Censky Date Prepared: September 8, 2022
General Information:	
Agenda Item: 5.b.	
Applicant:	Walmart, in c/o Jacob Hiatt of LK Architecture
Property Owner:	CJM&W Investment Company LLC
Requested Action:	Architectural Plan Amendment approval.
Current Zoning:	B-1 Community Business w/ PUD - Planned Unit Development
Current Master Plan Classification:	Community Commercial
Surrounding Zoning/Land Use:	North: B-1 Community Business w/ PUD overlay (Costco) South: B-1 Community Business w/ PUD overlay (Meadow Creek Shopping Center) East: B-1 Hwy.164 West: B-1 Community Business w/ PUD overlay (Meadow Creek Shopping Center/Menards)
Lot Size:	Approximately 13.88 acres
Location:	411 Pewaukee Road

## **Discussion:**

The applicant proposes to add "Walmart Blue" coloration to certain specific sections of the building elevations (see plan sheet enclosed) which are currently, as previously approved, painted principally grey and tan in color.

Section 40.447(4) of the Village Code pertaining to architectural standards and requirements for commercial buildings in the Village, provides as to "Colors", that "Buildings shall generally reflect earth tone colors. Awnings, trim and window colors are allowed greater color latitude subject to plan commission approval".

## **Recommendation:**

The Planner defers to Planning Commission determination whether the extent of the proposed Walmart Blue painting and the color of the Walmart Blue paint are satisfactory under the guidance of Section 40.477(4) as setforth above.





















PENETRATIONS PER SPECIFICATION SECTION 07900.

J. INSTALL SIGNAGE PER DETAILS.

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# 13 SIGN ATTACHMENT AT BRICK WALL ABOVE ROOF LINE

- EXISTING WATERPROOFING

MEMBRANE







A2.1a

## **STAFF REPORT**

To: Village of Pewaukee Plan Commission	By: Mary Censky Date Prepared: September 8, 2022					
General Information:						
Agenda Item: 5.C.						
Applicant:	Dollar Tree, in c/o Greg and Suzanna Kelson of VWS-Viper Construction Services LLC and in c/o Sarah Goeke of Access Permits.					
Property Owner:	690 Westfield Way LLC in c/o Saf Sarich of the Kenmore Group					
Requested Action:	Architectural Plan Amendment approval.					
Current Zoning:	B-1 Community Business					
Current Master Plan Classification:	Community Commercial					
Surrounding Zoning/Land Use:	North: R-M Multi-Family Residential South: B-1 Community Business East: B-1 Community Business West: B-1 Community Business					
Lot Size:	~4.47 acres					
Property Location:	609 Westfield Way – easternmost tenant space					

## **Discussion:**

The applicant requests, after-the-fact approval to retain the Sherwin Williams green paint color "Envy" they have added to certain specific sections of the building elevations which were, as previously approved, painted tan in color. Also, the applicant has added decals with imaging to the windows in this tenant space where the reviewed plan had called for an opaque window film. This is considered an amendment to the architectural plan as well since the original window specifications were approved as clear view glass with a recent staff level amendment given to permit an opaque film covering.

Section 40.447(4) of the Village Code pertaining to architectural standards and requirements for commercial buildings in the Village, provides as to "Colors", that "Buildings shall generally reflect earth tone colors. Awnings, trim and window colors are allowed greater color latitude subject to plan commission approval".

### **Recommendation:**

The Planner defers to Planning Commission determination whether the extent of the existing green painting and the color of the Sherwin Williams "Envy" paint is satisfactory under the guidance of Section 40.477(4) as setforth above, and whether the change from opaque window film to decals with imaging are considered acceptable in this case.



July 21, 2022

Sent via email to greg@viperwall.com & USPS

Dollar Tree c/o Viper Wall Systems, LLC ATTN: Greg 76 Westpark Road Dayton, OH 45459

Dear Greg:

The Village is aware of the recent painting of the trim green for the new Dollar Tree location at 690 Westfield Way, Pewaukee, WI (copy of photo enclosed). Please note that Village Code Section 40.438(a) requires Village Plan Commission approval prior to any changes to a commercial structure:

Section 40.438(a) No commercial, industrial, institutional, park or multifamily residential structure or facility (note: does not include single-family and two-family dwellings) shall be erected, moved, reconstructed, extended, enlarged, altered or changed until the planning commission has reviewed and approved plans for the site and structure. The planning commission shall not approve any plans unless they find after review and study of the application that the use or structure, as planned, will not violate the intent and purposes of this chapter.

You will need to submit the enclosed Business Site Plan Application form no later than Thursday, August 18, 2022 by 4:30PM CST to appear on the September 8, 2022 Plan Commission agenda for review and consideration of the change in color. In the event of noncompliance, a municipal citation can be issued. Each day that the noncompliance continues is considered a separate violation and subject to a separate forfeiture.

Thank you for your prompt attention to this matter. Please do not hesitate to contact me at 262-691-5660 or <a href="mailto:sgosse@villageofpewaukee.com">sgosse@villageofpewaukee.com</a>.

Sincerely,

Scott A. Gosse Village Administrator

Enclosures

C: Saf Sarich, The Kenmore Group, LLC; SAF@TheKenmoreGroup.com

235 Hickory Street, Pewaukee, WI 53072 • Ph: 262-691-5660 • Fax: 262-691-5664 • www.VillageOfPewaukeeWLus





## APPLICATION PROCESS FOR BUSINESS SITE PLAN APPROVAL REQUESTS

Step 1: Please read through the attached sections of the Village's Development Code that explain the process for requesting site plan approval (Section 40.437 of Land Development Code or web link:

https://library.municode.com/wi/pewaukee/codes/code\_of\_ordinances?nodeId=P TIIMUCO\_CH40LADE\_ARTIXSIPLDECR\_DIV2SIPLRECOININPAMUREDE).

Contact Village Planner Mary Censky at (262) 255-1878 to discuss your application and determine whether to proceed with a consultation or move directly to a request for action on an application for site plan approval.

The consultation process is intended to allow applicants an opportunity to conceptually discuss their plans with the Plan Commission and receive valuable feedback prior to drafting detailed plans. The Village Planner will assist the applicant in determining what type of conceptual plans, if any, to submit for this process.

Step 2: Submit a <u>fully completed</u> application form along with 13 copies (<u>and one</u> <u>digital copy</u>) of all attachments that you wish to have considered by the Plan Commission as part of your application. (Please fold all attachments so that they are 8  $\frac{1}{2}$ " x 11" size and with project name/identification visible.) Please note: Incomplete applications will not be accepted.

Please note: Applications must be submitted to Village Hall three weeks prior to the Plan Commission meeting. Plan Commission meetings are held on the second Thursday of each month at 7:00 p.m. The three week submittal requirement allows the Village time to review the application, obtain additional information from you if need be and set up a public hearing, if required.

Step 3: The Village Planner and the Village's consulting Engineer will be reviewing your application and will prepare a report for the Plan Commission, which will include recommendations for action.

Please note: Multiple Plan Commission meetings are often required prior to final project approval.

(Revised 4/12/10; 01/28/19; 6/12/19)



## Business Site Plan Application Form

Address/Parcel No. of Property Involved: 690 Westfield Way, Pewaukee WI (Lake Country Market)

Zoning of Property: B-1 Community Business

Current Owner of Property: 690 WESTFIELD WAY, LLC

Applicant – Name: Sarah Goeke

Address: N2533 Van Matre Ln. Monroe, WI 53566 Phone:815-541-7995 Fax: 815-369-4495 Email: sarah@accesspermits.com

Name of Business that Corresponds to Site Plan: Dollar Tree

Summary of Request (New Construction, Addition, Modification, etc.):

Site Plan Plan of opperations amendment of building paint colors.

Provide detailed information with your application that addresses the following:

1. Development Plans of the proposed use in sufficient detail to enable the Commission to evaluate the suitability of architectural & landscape treatment, proper placement of the building(s) on the lot, traffic generation & circulation, provision for parking, drainage, exterior lighting, control devices (when necessary) to eliminate noise, dust, odor, smoke or other objectionable operating conditions & general compatibility of the proposed use with the area in which it is located.

2. It is the responsibility of the applicant/owner to ensure that the proposed project meets the Village's Land Development Code. It is also highly recommended that the applicant/owner review the Village's adopted Land Use Plan.

3. Signage shall be determined through a sign permit process and/or a sign plan approved by the Plan Commission. Permits for individual signs may be applied for with the Village's Code Compliance Officer.

Signature of Property Owner as listed on this Application:

7/27/22

Application will not be processed without the Owner's Signature regardless of who is listed as the Applicant. This signature authorizes the Village of Pewaukee to process the Site Plan Approval Application proposed for my property and further authorizes the Village or its representatives to conduct reasonable and routine inspections of my property for the purposes of evaluating this application.

Signature of Applicant (if different than Owner):

Sarah Joeke 07/27/2022

Please return <u>Completed Application Forms</u> along with <u>**11 copies**</u> of all attachments (<u>**as well as a digital copy**</u>) you wish to have considered by the Plan Commission as part of your application to Pewaukee Village Hall, 235 Hickory Street, Pewaukee, WI 53072. If you have any questions, please call Village Hall at (262) 691-5660.

Revised - 8/16/2006; 01/28/19; 6/12/19



## PROFESSIONAL SERVICES REIMBURSEMENT NOTICE

Pursuant to the Village of Pewaukee Code of Ordinances, the Village Board has determined that whenever the services of the Village Attorney, Village Engineer, Village Planner or any other of the Village's professional staff results in a charge to the Village for that professional's time and services and such service is not a service supplied to the Village as a whole, the Village Clerk shall charge that service for the fees incurred by the Village. Also, be advised that pursuant to the Village of Pewaukee Code of Ordinances, certain other fees, costs, and charges are the responsibility of the property owner or responsible party.

I, the undersigned, have been advised that, pursuant to the Village of Pewaukee Code of Ordinances, if the Village Attorney, Village Engineer, Village Planner or any other Village professional provides services to the Village because of my activities, whether at my request or at the request of the Village, I shall be responsible for the fees incurred by the Village. In addition, I have been advised that pursuant to the Village of Pewaukee Code of Ordinances, certain other fees, costs, and charges are my responsibility.

The Village will place fees from unpaid invoices on the real estate tax bill of the property that corresponds to the incurred services.

## **RESPONSIBLE PARTY & MAILING ADDRESS**

Sarah Goeke			
Name of Company and/or Individual			
N2533 Van Matre Ln. Monroe, WI	53566		
Street	City	State	Zip
Phone: 815-541-7995 Fax: 815-369-4495	E-Mail:sara	h@accesspermits.com	1
Sarah Goeke 07/27/2022 Signature of Applicant & Date 7/27/22	SEN	ID ALL PROFESS RVICES INVOICE (Check One)	IONAL S TO:
Signature of Property Owner & Date		Property Owner	
Village Official Accepting Form		Applicant	



MAP WAUKESHA county

## Dollar Tree Site





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COMPLY WITH LANDLORD'S CRITERIA	A (UNLESS PRECLUDED BY CODE).	2. (3) 2A-10BC RATED FIRE EXTINGUISHERS TO BE	TENANT SUPPLIED. SIMILAR 14. CONTRACTOR SHALL F	REMOVE AND DISPOSE OF ANY AND ALL PREVIOUS	<ol> <li>THIS FACILITY CARRIES ONLY 100 % PRE-PACKAGED FOOD TO INCLUDE THE FREEZER/COOLER PRODUCT.</li> </ol>				
<ol> <li>ALL WOOD FRAMEWORK, WOOD BLO RETARDANT TREATED PER CODE.</li> </ol>	CKING AND PLYWOOD SHALL BE FIRI	E TO JL INDUSTRIES MODEL COSMIC 5E. LOCATE PROVIDE WALL BRACKETS AND MOUNT CONTRO	EXTINGUISHERS AS SHOWN. TENANT'S EXTERIOR S DLS AT 48" AFF MAX. REMAIN WHICH ARE DA	SIGNAGE LEFT BEHIND. ALL EXISTING MATERIALS TO AMAGED OR OTHERWISED DISTURBED BY REMOVAL	2. THIS FACILITY IS A NON DINING FACILITY. NO DINING SEATING WILL BE PROVIDED TO CUSTOMERS				
3. ALL FINISH MATERIALS SHALL MEET I	FLAME SPREAD AND SMOKE	PROVIDE "FIRE EXTINGUISHER" SIGNS ON WALL	DIRECTLY ABOVE EACH OF PREVIOUS TENANT	SIGNAGE SHALL BE PATCHED OR REPAIRED AND	3. THIS FACILITY DOES NOT PERFORM ANY TYPE OF FOOD				
4. WALL CONSTRUCTION BY THE TENAN	IT'S CONTRACTOR IS SHOWN HATCH	IED. TAGGED.	IS IMPERCEPTIBLE. CC	NTRACTORS SHALL NOT INCLUDE THIS SCOPE OF	AND/OR EMPLOYEE CONSUMPTION.				
5. THE CONTRACTOR SHALL FIELD VER CONDITIONS PRIOR TO BID TO DETER	IFY ALL DIMENSIONS AND EXISTING RMINE THE EXTENT OF WORK. THE	3. THE CONTRACTOR SHALL VERIFY THAT TOILETT FIXTURES AND ACCESSORIES (BOTH EXISTING A	ROOM(S), INCLUDING WORK IN THEIR BID AN AND NEW) MEET ALL EVALUATION IS DONE I	ND WILL BE HANDLED VIA CHANGE ORDER AFTER SITE BY WINNING BIDDER. CONTRACTOR SHALL FORWARD	<ol> <li>THIS FACILITY HAS NO FOOD EQUIPMENT WITHIN THE STORE.</li> <li>THIS FACILITY WILL HAVE 3 TO 4 EMPLOYEES PER SHIFT MAXIMUM</li> </ol>				
CONTRACTOR SHALL NOTIFY THE AR	CHITECT AND THE TENANT OF ANY	APPLICABLE LOCAL, STATE AND FEDERAL ACCE	SSIBILITY CODES AND THE EVALUATION AND	PRICE QUOTE TO THE CONSTRUCTION PM FOR	ONE STORE MANAGER, ONE TO TWO CASHIERS AND ONE STOCKER.				
<ol> <li>ALL MATERIALS INDICATED ARE NEW</li> </ol>	, UNLESS SPECIFICALLY NOTED AS	4. PROVIDE EXTERIOR LIGHT ABOVE REAR DOOR,	AS APPROVED BY 15. CONTRACTOR SHALL I	INSTALL TENANT SUPPLIED INTERIOR GRAPHICS AND	PROVIDED TO ALL EMPLOYEES, REFER TO FIXTURE PLAN FOR	RISK CLASS "LOW	/"		
EXISTING, AND SHALL BE PROVIDED / ITEMS INDICATED AS TENANT SUPPLI	AND INSTALLED BY THE CONTRACTC ED SHALL BE INSTALLED BY THE	5. PAINT ALL EXPOSED SURFACE MOUNTED COND	FEET OF REAR DOOR. SIGNS TO INCLUDE BU UIT TO MATCH ADJACENT GRAPHICS/SIGNAGE, F	IT NOT LIMITED TO PERIMETER WALL HANGING GRAPHICS/SIGNAGE AND STOREFRONT	LOCATION. 7. MOP SINK- THIS FACILITY WILL BE SUPPLIED WITH A 24"x36" FLOOR	NO SECURITY MEASURE NECESSA	\RY		
CONTRACTOR PER TENANT'S REQUIR	REMENTS AND/OR MANUFACTURER'S	6 WALL COLOR (IE WHITE OR YELLOW). 6 CONTRACTOR SHALL CALLK AROUND TOP AND		NTACT THE CONSTRUCTION PM FOR	MOUNTED MOP SINK WITH APPROVED VACUUM BREAKER FAUCET.				
7. ALL EXISTING MATERIALS TO REMAIN	I WHICH ARE DAMAGED OR OTHERW	ISE COLUMN SURROUNDS TO AVOID INJURY.	16. CONTRACTOR SHALL S	SEAL ALL EXTERIOR PENETRATIONS INCLUDING	FINISH FLOOR FOR EASY CLEANABLE SURFACE.				
REPAIRED TO MATCH THE EXISTING	ADJACENT MATERIALS, SO THAT THE	AND GLAZING, WALLS, CEILING, ETC) TO REMAIN	N TO A LIKE NEW CONDITION. SHALL SELECT MATER	S, AND EXISTING PENETRATIONS. CONTRACTOR NAL APPROPRIATE FOR CONDITION TO PROVIDE	<ol> <li>NSF, ANSI AND UL APPROVED- ALL EQUIPMENT WITHIN THIS FACILITY IS NSF. ANSI AND UL APPROVED. CUT SHEETS FOR</li> </ol>	BUILDING CODE S	SUMMARY		)RY
REPAIR IS IMPERCEPTIBLE. 8. DURING THE COURSE OF CONSTRUC	TION. IF THE CONTRACTOR UNCOVE	8. NOTIFY DOLLAR TREE'S CONSTRUCTION PM AS RS EXPOSED CONCRETE BLOCK WALL TO REMAIN (	TO THE CONDITION OF PERMANENT RODENT	-PROOF INFILL (INSULATION SPRAY FOAM IS NOT AN	EQUIPMENT AVAILABLE UPON REQUEST.				ΤΕΝΔΝΙΤ
ANY CODE VIOLATION KNOWN TO HIM	A OR ANY DISCREPANCY WITH THE	DOLLAR TREE WILL MAKE THE DETERMINATION	AS TO WHETHER THE 17. CONTRACTOR SHALL F	POST ON BULLETIN BOARD IN OFFICE FINAL	CONSTRUCTION DOCUMENTS AND LOCATED ON SHEET A4 FOR	APPLICABLE BUILDING CODE:	2015 INTERNATIONAL BUILDING CODE		DOLLAR TREE STORES
IMMEDIATELY.	T THE ARCHITECT OF SUCH	OUT WITH METAL STUDS AND GWB.	18 WALK-IN FREEZER COC	FICATE OF OCCUPANCY.	YOUR USE. 10. QUESTIONS- EXAMINER PLEASE FEEL FREE TO CONTACT THE	APPLICABLE PLUMBING CODE:	UNIFORM STATE PLUMBING CODE	LENA, IL 61048	206-3185 WILINGDON GREE BURNABY, BC V5G 4P3 CAN
9. CONTRACTOR SHALL ASSEMBLE AND STRICT ACCORDANCE WITH THE MAN	) INSTALL MATERIALS/ PRODUCTS IN IUFACTURER'S RECOMMENDATIONS	9. CONTRACTOR SHALL INSTALL TENANT SUPPLIED BUT NOT LIMITED TO CART CORRAL PERIMETER	D FIXTURES TO INCLUDE R WALL GONDOLA, FLOOR	UNIT IS SELF-CONTAINED AND DOES NOT REQUIRE A	ARCHITECT AND ENGINEERS LISTED ON SHEET CS1 WITH ANY	APPLICABLE ELECTRICAL CODE:	2015 NEC ELECTRIC CODE	PHONE (815) 369-9155 FAX (815) 369-4495	PHONE (604) 321-2550
	DARDS.	GONDOLA, BALLOON CENTER, HANGING BALLOO	ON CORRALS, HELIUM TANK	TE INTERIOR CEILING AND WALL FINISH ARE A NSF ED FINISH. THE FREEZER FLOOR IS TO HAVE AN	CONTACT STEVEN McMAHON, DIRECTOR OF ARCHITECTURAL	APPLICABLE FIRECODE:	2015 INTERNATIONAL FIRE CODE	CHAD ARIANS, PM	
ARCHITECT AND TENANT UPON DISC	OVERY.	DETAIL), GRAVITY CONVEYOR SYSTEM, AND MO	BILE FIXTURES PER ALUMINUM DIAMOND T	IREAD FINISH.	SERVICES AT 757-321-5830.	APPLICABLE MECHANICAL CODE:	2015 INTERNATIONAL MECHANICAL CODE	PLUMB, MECH, ELEC ENGINEER	
11. SMOKE AND FIRE PARTITIONS SHALL DESIGNATED UL DESIGN AND SHALL	BE CONSTRUCTED PER THE BE EXTENDED VERTICALLY TO THE	TENANT'S FIXTURE PLAN. CALIFORNIA PROJECT SHALL STRAP ALL FIXTURES AS PER THE SEISM	S ONLY, CONTRACTOR 19. PROVIDE NEW ALUMIN IC DRAWINGS PROVIDED. KAWNEER TRIFAB VG 4	451 SERIES, STICK SYSTEM FABRICATION, CLEAR			2018 INTERNATIONAL ENERGY CODE	1538 ALEXANDRIA PIKE, SUITE 11	SAF SARICH
BOTTOM OF THE STRUCTURE ABOVE	. PROVIDE FIRE STOPS AND SEAL AL		SEISMIC DRAWING WAS NOT ANODIZED FINISH. PRO	OVIDE TEMPERED 1" INSULATED LOW E GLAZING AS CTOR IS RESPONSIBLE FOR VERIFICATION OF ALL FIFLD				FORT THOMAS, KY 41705 PHONE (859) 303-3715	PHONE (773)383-5040 saf@thekenmoregroup.com
THE MINIMUM FIRE RATED REQUIREN	MENTS FOR THE PARTITION. DUCT	10. DOORS AND FRAMES (OTHER THAN THOSE LIST	ED AS EXIST) ARE TENANT CONDITIONS, AND FOR	R ALL ACCESSORY PARTS AND HARDWARE REQUIRED.		APPLICABLE ACCESSIBILITY CODE:	UURRENT WI AUGESSIBILITY CODE	SIMON GOYERT, PM	
PENETRATIONS SHALL BE PROTECTE 12. ALL INTERIOR CONCRETE SHALL BE I	D WITH SMOKE AND/OR FIRE DAMPE PORTLAND CEMENT BASED TO INCLU	IDE SUPPLIED FOR CONTRACTOR INSTALLATION. ST JDE NOTED) SHALL BE SUPPLIED AND INSTALLED BY	CONTRACTOR SHALLS	CONSTRUCTION.		USE GROUP:	M - MERCANTILE	SIGN CONTRACTOR	STRUCTURAL ENGINEER
PATCHING, FLOATING/LEVELING OF F	LOORS AND INFILLING.	REQUIRED. AUTOMATIC DOORS (WHEN NOTED)	WILL BE SUPPLIED AND DR IS RESPONSIBLE FOR			CONSTRUCTION TYPE:	II-B	JOINES SIGN 1711 SCHEURING ROAD	508 BAYLOR COURT, SUITE
SMOKE PARTITIONS SHALL BE PERM	ANENTLY IDENTIFIED WITH SIGNS OF	ELECTRICAL CONNECTION.)				NUMBER OF STORIES: SPRINKI FRED	1 YES	DE PERE, WI 54115 PHONE (800) 536-7446 FXT 1088	CHESAPEAKE, VA 23320 PHONF (757) 642-2251
STENCILING. LETTERING SHALL BE N ABOVE AN ACCESSIBLE CEILING AND	UT LESS THAN 1/2" IN HEIGHT LOCAT REPEATED IN INTERVALS NOT	נט 11. CONTRACTOR SHALL REMOVE ANY EXISTING SIG TENANT'S NAME (INTERIOR AND/OR EXTERIOR.)	GNAGE THAT HAS PREVIOUS ANY SIGNAGE THAT IS			TOTAL LEASE AREA:	9,153 S.F.	FAX (920) 983-9145	FAX (757) 436-0610
	G THE WALL OR PARTITION.		ITH DOLLAR TREE'S NAME.			OCCUPANCY LOAD	SALES AREA 7.478 /60= 125	MICKEY WISKOW	DON BROYLES, ENGINEER
ALL OPENINGS."	NE ANDIOR OMORE BARRIER-PROTE	TENANT'S SIGNAGE. IF ACCESS PANEL DOES NO	DT EXIST, INSTALL 2'-0" X 2'-0"				STOCKROOM 1,013 /300= 4		
14. ANY DETAIL WHICH MAY BE INCOMPL SPECIFICATIONS SHALL NOT CONSTI	ETE OR LACKING IN THE PLANS OR TUTE CLAIM FOR EXTRA	ACCESS PANEL EITHER INSIDE AT DOLLAR TREE CEILING (VERIFY FIRE RATINGS AND CODE REQU	E'S SPACE ABOVE THE UIREMENTS) OR IN THE				TOTAL 129		
COMPENSATION. SUCH DETAIL, IF RE	QUESTED BY THE CONTRACTOR,		JCTION AS ALLOWED BY			PROJECT ADDRESS:			
SHALL BE SUPPLIED BY THE ENGINE CONTRACTOR IN ADVANCE OF ITS RE	EQUIREMENT ON THE JOB. THE TRUE	INSTALLING.					690 WESTFIELD WAY, PEWAUKEE, WI 53072		
INTENT OF THE PLANS AND SPECIFIC	ATIONS IS TO PRODUCE A COMPLET E DETAIL WILL NOT ABROGATE THIS	E							
							N. (262)601 0770		
STAMP OF APPROVAL) AS REQUIRED							J. (202)031-0110		
JURISDICTION FOR APPROVAL BY TH	E ARCHITECT/ENGINEER OF RECORD	D.				FIRE MONITORING REQUIRED	YES		









## TYPICAL ACCESSIBILITY CONFIGURATIONS

SCALE: NOT TO SCALE



NOTE: 1. CHECKOUTS AND POWER POLES ARE TENANT SUPPLIED / CONTRACTOR INSTALLED.

- 2. CHECKOUT AISLES SHALL COMPLY WITH BUILDING CODE SECTION 1109.12.2 (PROVIDE 2 when 5 or more)
- 3. PROVIDE SIGN DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY IN BLUE AND WHITE ABOVE THE CHECKOUT AISLE IN THE SAME LOCATION AS THE CHECKOUT NUMBER OR TYPE OF CHECKOUT IDENTIFICATION.







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SHEET

ET MLS

MA

DDDLL LAKE COUNTR 690 WESTFIELD WAY NOTES AND ACCESS

CS2











## GENERAL DEMOLITION NOTES

- 1. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEM SELF WITH ALL APPLICABLE CODES, RULES, PROCEDURES, OR CONSTRAINTS OF ANY KIND PRIOR TO COMMENCEMENT OF DEMOLITION INCLUDING ANY FEDERAL, STATE, CITY, MUNICIPAL, OR LANDLORD REQUIREMENTS.
- 2. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO KEEP ORDERLY WORKING CONDITIONS WITHIN, AND AROUND THE PREMISES - REMOVE ALL DEBRIS IN THE APPROPRIATE MANNER.
- 3. SPACE IS TO BE BROOM CLEAN READY FOR BUILD OUT OF NEW SPACE & FINISHES.
- 4. GENERAL CONTRACTOR IS RESPONSIBLE FOR CONTRACTING TRASH REMOVAL SERVICE. TRASH REMOVAL MUST BE COORDINATED WITH ON-SITE PROPERTY MANAGEMENT.
- 5. CONTRACTOR TO PROTECT DEMISING WALL FRAMING & REPLACE ALL DAMAGED AREAS.
- 6. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING & PAYING FOR ALL DEMOLITION PERMITS.
- 7. THIS DRAWING REFLECTS AVAILABLE DEMOLITION INFORMATION, HOWEVER, IT SHALL BE THE RESPONSIBILITY OF ALL CONTRACTORS TO VISIT THE & REVIEW ALL CONSTRUCTION DOCUMENTS TO FULLY DETERMINE THE SCOPE & INTENT OF THE DEMOLITION ACTIVITY.
- 8. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL SPECIFIC DEMOLITION **INFORMATION & INSTRUCTION AS TO WHAT EXISTING** EQUIPMENT AND/OR CONSTRUCTION IS TO REMAIN.
- 9. CONTRACTOR IS TO INSPECT THE PREMISES PRIOR TO SUBMITTING A BID AND BE RESPONSIBLE FOR ALL DEMOLITION WORK REQUIRED FOR NEW CONSTRUCTION.

- 10. GENERAL CONTRACTOR IS TO PROVIDE ALL NECESSARY DUST & TRAFFIC BARRIERS & TEMPORARY PARTITIONS AS REQUIRED TO MAINTAIN A SAFE & CLEAN ENVIRONMENT FOR THE PUBLIC, EMPLOYEES, AND PROPERTY THROUGHOUT THE PROJECT.
- 11. ANY EXISTING EQUIPMENT TO BE ABANDONED MUST BE COMPLETELY REMOVED AND PROPERLY DISPOSED OF, AND ANY REPAIRS TO ROOFING SYSTEMS OR OTHER PARTS OF THE BUILDING MUST BE COMPLETED TO LANDLORD'S SPECIFICATIONS.
- 12. IN ALL WALLS & FIXTURES THAT ARE TO BE REMOVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION OF THE SOURCE AND REMOVING OR CAPPING ANY ELECTRICAL, PLUMBING AND/OR GAS LINES THAT ARE DISCLOSED AND NOT SCHEDULED FOR REUSE.
- 13. CONTRACTOR TO PATCH/REPAIR/REPLACE EXISTING FLOORS, WALLS, AND CEILINGS TO MATCH ADJACENT CONSTRUCTION DUE TO DEMOLITION OF FIXTURES, EQUIPMENT, AND ETC.
- 14. THE CONTRACTOR SHALL ADHERE TO PROPER RECOVERY AND DISPOSAL ALL REFRIGERANTS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COMPLIANCE WITH STATE AND FEDERAL REGULATIONS RELATING TO CLEAN AIR AND/OR VENTING OF CFC AND/OR HCFC REFRIGERANTS UNTIL THE EQUIPMENT IS TURNED OVER TO BRUNSWICK FOR OPERATION AND MAINTENANCE. THIS RESPONSIBILITY SHALL INCLUDE ALL WORK RELATING TO DISCHARGING ANY AND ALL HVAC REFRIGERANT SYSTEMS OF ANY EXISTING EQUIPMENT REUSED OR REMOVED.
- 15. G.C. SHALL PROVIDE ALL TEMPORARY SHORING, BRACING & PINNING OF WALLS REQUIRED TO MAINTAIN INTEGRITY OF WALL CONSTRUCTION DURING DEMOLITION & UNTIL WALL HAS BEEN COMPLETED.



## DEMOLITION NOTES

16 FOR REMOVAL AND/OR RELOCATION OF EXISTING ELECTRICAL PANELS AND TRANSFORMER SEE ELECTRICAL SHEETS.
17 REMOVE PORTION OF EXISTING CONCRETE SLAB AS REQUIRED TO
TRENCH FLOOR FOR RELOCATION OF PLUMBING FIXTURES.
EXTEND PLUMBING IN NEW WORK. (CONTRACTOR SHALL AVOID SALES FLOOR IF POSSIBLE.)
18 REMOVE EXISTING EQUIPMENT, CASEWORK, AND FIXTURES COMPLETE.
19 REMOVE EXIST VESTIBULE.
20 EXISTING COLUMN SURROUND COMPLETE TO REMAIN.
REMOVE PORTION OF EXTERIOR MASONRY WALL TO EXISTING SLAB
TO STRUCTURAL DWGS.
22 REMOVE PORTION OF EXISTING WALL COMPLETE.
23 REMOVE EXISTING TOILET PARTITIONS COMPLETE.
REMOVE, CAP, OR FILL EXISTING DRAIN COMPLETE. FOR MODIFICATION OF EXISTING PLUMBING SEE PLUMBING SHEETS.
25 REMOVE WALK-IN COOLER/FREEZER
26 REMOVE EXISTING OVEN. SEAL ANY PENETRATION IN ROOF.













WALL CONSTRUCTION TYPES
EXTERIOR DEMISING WALL: EXISTING WALL. PATCH AND REPAIR WALL AS REQUIRED. FINISH PER FINISH SCHEDULE, SHEET A4.
PARTITION WALL: 6" EXISTING PARTITION WALL TO DECK W/ GYP BOTH SIDES - G.C. TO CONFIRM GYP BOARD RUNS TO MINIMUM 11'-6" BOTH SIDES. PATCH/REPAIR AS REQUIRED.
37 PARTITION WALL: 3 5/8" (20 GA) METAL STUDS @ 16" OC WITH ON LAYER 5/8" GWB ON RESTROOM SIDE TO FINISHED CEILING & ON LAYER 5/8" GWB ON HALLWAY SIDE TO 6" ABOVE FINISHED CEILING. PLUMBING WALLS ON INTERIOR OF TOILETS SHALL HAV WATER RESISTANT GWB. SEE DETAIL 1/A2. FINISH PER FINISH SCHEDULE, SHEET A4.
INFILL PARTITION: 2 1/2" (20 GA) METAL STUDS @ 12" OC WITH ON LAYER 5/8" GWB ON EXPOSED SIDE. ALIGN EXIST ADJACENT SURFACES. FINISH PER FINISH SCHEDULE, SHEET A4 SEE DETA 3/A4
57 PARTITION WALL: 6" (20 GA) METAL STUDS TO DECK @ 16" OC WI ONE LAYER 5/8" GWB EACH SIDE TO 12'-0" STOCKROOM SIDE, ON LAYER 5/8" GWB TO 6" ABOVE FINISHED CEILING ON HALLWAY SII & TO FINISHED CEILING ON TOILET ROOM SIDE. PLUMBING WALLS ON INTERIOR OF TOILETS SHALL HAVE WATER RESISTANT GWB. SEE DETAIL 6/A4. FINISH PER FINISH SCHEDULE, SHEET A4.
6 PARTITION WALL: 3 5/8" (20 GAGE) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB ON EXPOSED SIDE TO 6" ABOVE FINISHED CEILING. FINISH PER FINISH SCHEDULE SHEET A4.
PARTITION WALL: 3 5/8" (20 GAGE) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH SIDE TO 8'-0" AFF. SEE DETAIL 11 & 1 ON A1.1. FINISH PER FINISH SCHEDULE SHEET A4.
PLUMBING PARTITION: 6" (20 GA) METAL STUDS @ 16" OC WITH ONE LAYER 5/8" GWB EACH EXPOSED SIDE TO FINISHED CEILING PLUMBING WALLS ON INTERIOR OF TOILETS SHALL HAVE WATER RESISTANT GWB. SEE DETAIL 4/A4. FINISH PER FINISH SCHEDULE SHEET A4.



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

2 A3.1

- APPLY OPAQUE

VINYL FILM ON

WALL.



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## TYP REAR DOOR ALARM MOUNTING DETAIL SCALE: 1/2" = 1'-0"

INSTALLED. TENANT SUPPLIED, - SIGNAGE. TENANT SUPPLIED, CONTRACTOR

SUPPLIED, CONTRACTOR — PEEP HOLE. CONTRACTOR INSTALLED.

INSTALLED. - ACTIVE DOOR.

A2

- 0 - NO FINISHED CEILING EXPOSED TO ROOF STRUCTURE ABOVE 0 ┍╾╾┪ +  $\Box$  $\uparrow$ EMPLOYEE – AREA WALLS BELOW

8'-0" AFF 🔶 🔒

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NOTE: 1.	THE E	ELECTRICIAN SHALL INSTALL ADDITIONAL #12 STRUCTURE ABOVE FOR SUPPORT OF THE LIG	WIRE TIE SI GHT FIXTUR	JPPORTS FROM THE CEILING ES CLIPPED ON THE GRID.
NOTE: 2.		RACTOR INSTALLED.	MIRROR PA	NELS (UUN) ARE TENANT SU
		NEW 2'-0"X4'-0" ACOUSTICAL CEILING TILE AND GRID- SEE FINISH NOTE 4.	$\otimes$	EXIT LIGHT
		GWB - PAINT WHITE UNLESS OTHERWISE NOTED.		SECURITY CAMERA DOME
	NL	8'-0" STRIP LED LIGHT FIXTURE WITH LAMPS ON NIGHT LIGHT CIRCUIT.	$\mathbb{D}_{\rm scd}$	SECURITY CAMERA DOME MTD ON WALL @ 10'-0" AFF.
		SURFACE MOUNT TO GWB AND ACT CEILING.	$\square$	VENTILATION FAN
		8'-0" STRIP LED LIGHT FIXTURE. SURFACE MOUNT TO GWB AND ACT	¢	Ceiling Height Above Finish Floor
			$\bigotimes$	MIRROR PANEL
	EM	LAMPS ON EMERGENCY LIGHT CIRCUIT WITH BATTERY PACK.	$\boxtimes$	DIFFUSER
		CEILING. FOR FIXTURES WITH 4 LAMPS, THE EMERGENCY BATTERY	$\square$	RETURN AIR GRILLE
		PACK WILL ONLY OPERATE 2 OF THE LAMPS.	*	SPRINKLER HEAD (SHOWN FOR INFORMATIONAL
	NL	4'-0" STRIP LED LIGHT FIXTURE WITH LAMPS ON NIGHT LIGHT CIRCUIT. SURFACE MOUNT TO TO GWB AND ACT CEILING.		PURPOSES ONLY. SPRINKLER CONTRACTOR SHALL PREPARE DRAWINGS AS REQUIRED BY CODE FOR
	0	4'-0" STRIP LED LIGHT FIXTURE. SURFACE MOUNT TO ACT AND GWB		RELOCATION OR ADDITION OF HEADS.)
		CEILING.	-	POWER POLE
-	EM	4'-0" STRIP LED LIGHT FIXTURE WITH LAMPS ON EMERGENCY LIGHT CIRCUIT WITH BATTERY PACK. SURFACE MOUNT TO TO GWB AND ACT CEILING.		CONCENTRIC DIFFUSER/RETURN
		EXIST 4'-0" STRIP LED LIGHT FIXTURE. SURFACE MOUNT TO ACT OR PER DETAIL NOTED.		
		EXIST 8'-0" STRIP LED LIGHT FIXTURE. SURFACE MOUNT TO GWB OR PER DETAIL NOTED.		

11'-0" AFF 🔶 🕁



## **REFLECTED CEILING PLAN**

## CEILING GRID TO GRID. NANT SUPPLIED /

# 









GONDOLA FIXTURE SUPPLIED BY

HOLE FROM THE TOP.

SLAB AND TENANT FLOOR FINISH

TENANT AND INSTALLED BY CONTRACTOR PER MANUF PUBLISHED STANDARDS (TYP). PROVIDE BOLTS IN UPRIGHTS AT 4th HOLE FROM BOTTOM AND 6th

TYPICAL FIXTURE ATTACHMENT DETAIL

SCALE: 1" = 1'-0"





PAINT FACADE PER COLORS NOTED: VERIFY FINAL PAINT AND SIGN RENDERING WITH CONSTRUCTION PM. PRIOR TO PAINTING. PAINT: SHERWIN WILLIAMS "ENVY" LRV 18% #2032.10 - SATIN FINISH







FINISH SCHEDU	LE						DOOR S	CHED	JLE									
SPACES	FLOORS	BASES	WALLS	CEILING	NOTES			C	OORS		D	ETAIL	S	FR	HDW	DOOR		
SALES	ENTRY CARPET TILE *POLISHED CONC	4" VINYL	GWB-PAINT YELLOW / CMU-PAINT YELLOW / FRP	ACT	1,2,4,5,6,9,11,12,14	#	ŧ W	Н	Т	MATERIAL	HEAD	JAMB	SILL		NOTES	NOTES	l	
STOCKROOM EMPLOYEE AREA	CONCRETE CONCRETE		EXISTING / GWB GWB / PLYWOOD		2,8,11 6,13	10 20	0 3'-0" 0 PR 3'-0"	6'-8" 7'-0"	1 3/4" .063"	SOLID CORE WD TEMP. ALUM ALLOY	13/A1.1 14/A1.1	13/A1.1 14/A1.1	-		100A 200A	5 2,7,10,12		
OFFICE TOILET	*POLISHED CONC SHEET VINYL	4" VINYL 6" SHEET VINYL	GWB-PAINT WHITE *FRP/EXIST FRP	 GWB	2,5,6,9,10,12 3,5,6,7,11	30 40	0 3'-0" 0 PR 3'-0"	6'-8" 7'-0"	1 3/4" 1 3/4"	SOLID CORE WD HOL METAL	13/A1.1 -	13/A1.1 -	-		300C 400A	5,6,9 4,5		
HALLWAY			GWB-PAINT WHITE / FRP	ACT	2,4,0,11,12	40 50	0 PR 3'-0"	7'-0" 7'-0"	1 3/4" 1 3/4"	EXIST STOREFRONT	-	-	-		400C 500A	5,11 1,3		
						F												
1. CARPET TILE: MAN		ACE FLOORING	7. PAINT TOILET ROOM I	EXTERIOR WALLS WH	ITE.		DOOR	NOTES	) )		HAI	RDWA	RE NO	TES				
<ul> <li>SYSTEMS AND TEI INSTALL TILES QU CRITERIA. ENTRY TILE: D CONTRACTOR SH, COORDINATE CAR</li> <li>VINYL COVE BASE EXPOSED WALLS I AREA.) VINYL COVE BASE MOP SINK AND CA</li> <li>SHEET VINYL: CLA MANUFACTURED E CORLON "PORCEL SHEET VINYL BASE BASE W/ COVE STI</li> <li>PROVIDE 2'-0" X 4'- "CORTEGA" MINAB GRID. (IN AREAS W DIFFERENTIALS PE PANELS IN PLACE.</li> <li>SLATWALL: 3/4" SL MANUFACTURER'S</li> <li>PAINT COLORS AR</li> </ul>	NANT SUPPLIED /CONTRA ARTER TURNED AND PER ECO RIB, STYLE #6786099 ALL PREPARE FLOOR SUI PET INSTALLATION W/ C/ COLOR - BLACK. (VINYL F NOT COVERED BY GONDC TO BE LOCATED IN STOC BINET ONLY UON. SSIC CORLON SERIES Y ARMSTRONG - CONNE AIN" #88724 OR EQUAL. E: INTEGRAL, 3/8" RADIUS, CK AND EXTRUDED ALUM 0" CEILING TILE EQUAL TO OARD #769, WHITE, IN A W (TH SIGNIFICANT AIR PRE ROVIDE RETENTION CLIPS ) ATWALL WITH WHITE MEL 5 DRAWINGS FOR INSTALL E AS FOLLOWS:	ACTOR INSTALLED. R TENANT'S 200. RFACE AND ARPET INSTALLER. BASE ONLY ON DLAS IN SALES CKROOM AT CCTION , 6" HIGH COVED MINUM CAP TRIM. O ARMSTRONG WHITE METAL ESSURE S TO RETAIN LAMINE FINISH. SEE LATION DETAILS.	<ol> <li>EXIST CONCRETE FLO REQUIRED TO PROVID</li> <li>SLATWALL IS TENANT INSTALLED. ALL OTHE AND INSTALLED BY C</li> <li>PROVIDE PREFORMED PRESSURE LAMINATE CABINETS PROVIDED PLAN AND OFFICE ELD</li> <li>F R P (FIBERGLASS RI FROM FLOOR TO 8'-0" STOCKROOM BEHIND ONLY, IN HALLWAY BE SHALL BE WHITE COL NOTED ON PLANS/ELD WITH "J" CHANNEL TR CONNECTORS.</li> <li>POLISHED CONCRETE OFFICE. POLISHED CO VENDOR. COORDINAT</li> <li>PAINT EMPLOYEE ARD GREEN".</li> <li>SALES AREA TO RECE FINISH TO 1'-0" BEHIN GONDOLA. TO FF EVE SHALL ALLOW 72 HOL</li> <li>PAINT 6" WIDE BAND (</li> </ol>	DOR TO REMAIN. PATO DE SMOOTH SURFACE SUPPLIED / CONTRACE SUPPLIED / CONTRACE R FINISHES SHALL BE ONTRACTOR. D COUNTER WITH WH FINISH. MOUNT TO V BY TENANT. SEE ENL EVATION. EINFORCED PANEL): II AFF SHALL BE WHITE MOP SINK AND UTILIT HIND DRINKING FOUL OR) FRP ON SALES FL EVATIONS) SHALL BE / RIM CAP AND "H" CHAN E FLOOR ON SALES FL DNCRETE FLOOR BY T TE WITH TENANT. EA WALLS TO 4'-0" AFF EIVE LEVEL 5 FINISH. F D FREEZER / COOLER RYWHERE ELSE. CON JR CURE TIME.	CH AND REPAIR AS CTOR PROVIDED ITE HIGH VALLS. FILING ARGED OFFICE N TOILET ROOM COLOR (IN TY CABINET NTAIN ONLY OOR (WHERE ALMOND COLOR INEL PANEL OOR AND ENANT'S F "FOREST PROVIDE AND ITRACTOR R AROUND	1. 2. 3. 4 5. 6 7. 8. 9. 10	PROVIDE SIDE, ON STATING: WHEN BL SHALL BE CONTRAS NEW DOC BI-SWING INSTALL / TENANT) DOOR, FF BY LANDL TO PROV OF HARD PROVIDE MOUNT @ PAINT DC SEMI-GLC INSTALL <sup>7</sup> DETAIL 2/ REINFOR CONTRAC SWEEP C WATER, M PROVIDE OF DOOR	A SIGN P OR ADJA "THIS DO JILDING IS IN LETTI STING BA DRS - SUF DORS - SUF DORS - SUF DOR SUF ALUM CO ON EXIST ALUM CO ON EXIST ALUM CO ON EXIST ALUM CO ON EXIST CON EXIST ON ALL EX ON ALL EX ON FRAM DOR FRAM	OSTED O CENT TO OR TO RI OCCUPII ERS 1" HIC CKGROUN PLIED BY W/ WINDC /ER PLAT DOORS ONTRACT NSTALL A R HARDW EP HOLE CONTRACT SUPPLIED S WITH WE PROVIDE TERIOR D OCK AT 48	N THE EGRESS THE DOOR EMAIN UNLOCKED ED." THE SIGN GH ON A ND. TENANT - ELIASON W . EXIST DOORS - E (SUPPLIED BY TO REMAIN. ARE EXISTING OR OR. CONTRACTOR NY MISSING ITEMS /ARE NOTES. TO VIEW OUT. / WHITE SIGNAGE PER OOD BLOCKING. AND INSTALL DOOR OORS TO PREVENT INFILTRATION. " AFF. ON BACK SIDE WITH SEMI-GLOSS EMAIN WITH ORIGINAL	HDW HDW HDW	# 100A 1 1/2 PAIF 1 MECHA WITH 1 CLOSEF 1 FLOOR # 200A LWP-3 AL EASY SW 9" X 30" C FLUSH H # 300C 1 1/2 PAIF 1 PRIVAC 1 CLOSEF (FLOOR/A HARDWA # 400A 3 PAIR HI NON-AL DEVICE: ' REFE DETA 2 OVERH 2 FLUSH 1 DUST P	R HINGES NICAL PU LEVER H STOP UMINUM ING HING CLEAR AC OLLOW M R HINGES Y SET WI R ALL STO RE) NGES: 4 REMOVA ARMED, I WITH STA REMOVA ARMED, I WITH STA R TO DOO IL EAD HOL BOLTS (C ROOF ST	: STAN SH BU ANDLE TRAFF E SYS RYLIC ETAL F : STAN TH LE OP IF SI 1/2" HE BLE PI NON-KI NON-KI NO AL OR ALA DERS/S ON INAC RIKE	IDARD WEIGHT ITTON LOCKSET E FIC DOOR STEM WINDOW FRAME - DRYWA IDARD WEIGHT VER HANDLE HIPPED WITH EAVY WEIGHT, INS EYED PANIC BAI ONE ALARM ARM MOUNTING STOPS CTIVE LEAF)	۲		DATE BY DESCRIPTION IONS
WHITE - YELLOW -	SHERWIN WILLIAMS SEMI-GLOSS WHITE BENJAMIN MOORE P "LEMON SORBET" #2 (EGGSHELL FINISH)	9 PRO 200 LATEX W/ B-1 PER GALLON. PRODUCT 274 2019-60	PERIMETER OF STOC MOORE "FD BM WHITE TY-43. PAINT BAND PE CLEAR FLOOR SPACE	KROOM WITH 2 COATS E" TOUGH SHIELD ACF RIOR TO PAINTING AN AREAS.	S BENJAMIN RYLIC GLOSS Y YELLOW	11	FINISH. FINISH. PROVIDE EXIT ONL 2. PROVIDE	SIGNAGE Y." SIGNAGE	E THAT RE	EADS "EMERGENCY		1 PEEP H 1 ALUM T 2 SWEEP 1 WEATH 1 RAIN DI	OLE HRESHOI S ER STRIP RIP	LD (1/2	2" MAX HEIGHT)		21	R MARK
FOREST GREEN -	BENJAMIN MOORE P "FOREST GREEN" #2 FINISH)	PRODUCT 274 2047-10 (EGGSHELL				13	ONLY." 3. PROVIDE THRESHO DRAWING	STOREFI DLD TO M GS TO LAN	RONT DOO ATCH EXI IDLORD F	ORS AND ST. PROVIDE SHOP OR APPROVAL	HDW	# 400C 1 1/2 PAIF	 GAL R HINGES	: STAN	NDARD WEIGHT,		. 21-84	ΥŌ
COAT OF PRIMER	AND A MINIMUM OF ONE C	COAT OF YELLOW				<u>-</u>	PRIOR TO	) INSTALL CAL HA	ATION. RDWA GRESS [	RE NOTES:		1 NON-AL DEVICE: ' REFE DETA	ARMED, I WITH STA R TO DOO IL.	NON-KI ND AL OR ALA	EYED PANIC BAI ONE ALARM ARM MOUNTING	2	DATE PROJECT	DRAWN CHECKEE
		BRACE SPACING BRACE SPACING (SEE TABLE) (SEE TABLE) (SEE TABLE)	PROVID DOWN F C PF SC PF SC PF SC V/ TA (2) IND EA (3) TO BLC	E (2) #12 x 3/4" SMS @ FLUTE ORRUGATED STEEL R ONSTRUCTION ROVIDE #8 WAFERHEA CREWS EA SIDE ROVIDE (20 GAGE) 2 1/ FANDARD "SLP-TRK" (S OP TRACK FOR 1" DEF 5/8" (20 GAGE) CONT B (2) #8 SMS @ EACH S BLE FOR REQUIRED L 20 GA METAL STUD B OIVIDUAL BRACING ST END) W/ (3) #8 SMS FF #8 SMS FROM GYPBO TAL PER BLOCK) - LOO OCKS AT EACH SIDE C	EA OOF DECK AD FRAMING 2" LEG SLOTTED) LECTION. RACING STUD TUD (SEE .OCATIONS) LOCKS PER UD (ONE @ ROM STUD & ARD (6 CATE DF SPLICE.	2. 3. 4. 5. 6.	ALL DOOI AND OTH INSTALLE BE "SING KEY OR S WHERE E UNLATCH MORE TH IN GENEF CONTROI BE LEVEF OPERATIO TIGHT GF THE WRIS THE FOR OF INTER GREATEF DOORS E ADJUSTE AN OPEN AT LEAST FROM TH LEADING	R HANDLI ER OPER ED 34" (MI LE-HANDI SPECIAL K GRESS D ING OF T AN ONE ( AN	ES, PULLS ATING DE N) TO 44" ED" OPER NOWLED OORS AR HE LEAF 1) OPERA WARE NO PERATINO REQUAL ONE HAN PINCHINO RED TO A ED DOOF POUNDS WITH CLO NDS TO M , MEASUF THE DOO	5, LATCHES, LOCKS VICES SHALL BE (MAX) AFF AND SHALL ABLE WITHOUT USE OF GE. 22 USED IN PAIRS, THE SHALL NOT REQUIRE TION AS MENTIONED 01E #2 ABOVE. 3 MECHANISMS SHALL 0 PROVIDING 1D AND NOT REQUIRE 3, OR TWISTING OF ACTIVATE CONTROLS RS SHALL BE NO (22.2 N). OSERS SHALL BE VEEP PERIOD FROM 0 GREES WILL TAKE 10 VE TO A POINT 3" RED FROM THE 0R.	HDW Di C R	1 PEEP H 1 ALUM T 1 SWEEP 1 WEATH 1 RAIN DI # 500A HINGES (BY G 2 CLOSE 2 PUSH F 2 PULL H 1 KABA ( 1 COMM ON S OTE: CON OES NOT LOSER DO EPLACE N	OLE HRESHO ER STRIP RIP PER STO ENERAL RS WITH PLATES (E IANDLES CYLINDER ERCIAL G ALES SID ITRACTO HAVE A H DES, THE VITH NEW	LD (1/2 REFRC CONTF STOP / BY GEN (BY GE (SUPF RADE   E (BY C R SHAL HOLD-C CONT / CLOS	2" MAX HEIGHT) ONT MANUFACTU RACTOR) ARM AND DROP NERAL CONTRA PLIED BY TENAN DEADLOCK W/ T GENERAL CONTI LL VERIFY CLOS OPEN FEATURE. RACTOR SHALL SER.	JRER PLATE CTOR) ACTOR) T) HUMB TURN RACTOR) ER IF	CALL DRAWINGS AND WRITTEN REPOPERTY OF LINGLE DESIGN COPIED, REUSED, OR DISCOS AUTHORIZATION FROM THE AR	
			AT TE 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4	TACHED WITH (2)-#12 SK SCREWS AT EACH S 5/8" (20 GAGE ) METAL DIST WITH ONE LAYER TH AND A DEFLECTION 360 AND A MAX. LOAD TOP OF JOIST BE ACCOUSTICAL CEILIN GRID INSTALL PER MA R TO REFLECTED CEI GRID LAYOUT, SHEET STUD AND GWB PAR CONSTRUCTION TYPE ON WALL: 6" (20 GA) M 16" OC WITH ONE LAY DE TO 12'-0" STOCKRO /8" GWB TO 6" ABOVE WAY SIDE & TO FINIS ROOM SIDE. PLUMBING R OF TOILETS SHALL I NT GWB. X-U (.157" Ø) SHOT PI ED INTO THE SLAB @ A 1 END OF THE INDIVID CK, TYP. - TENANT'S FLOOR FI	STUD. ST		a) <u>8'-0"</u> <u>NAY /</u> <u>OCATION</u>											LAKE COUNTRY MARKET         DRAWING       690 WESTFIELD WAY, PEWAUKEE, WI 53072         WALL SECTIONS, DETAILS, AND SCHEDULES
		WALL S CONST SCALE: 1" =	ECTION - RUCTION TYPI	EXISTING SLAB			6 A4	7										44




PROJECT NORTH

FIXTURE/EGRESS PLAN SCALE: 1/8"=1'-0"

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



- NOTES:1.NO GONDOLA UNITS, FIXTURES, OR PALLETS<br/>SHALL BE OVER 8'-0" A.F.F.2.FIXTURE PLAN IS "FOR REFERENCE ONLY".<br/>CONTRACTOR SHALL CONTACT DOLLAR TREE<br/>FOR FINAL APPROVED LAYOUT.3.CHECKOUTS ARE NOT ATTACHED TO FLOOR.







FIRE SPRINKLER DEMOLITION PLAN SCALE: 1/8" = 1'-0"





SEE SHEET FP2 FOR NOTES, DETAILS, AND SPECIFICATION

r	
SYMBOL KE	Y
<u> </u>	EXISTING PIPING TO REMAIN
/ <del>× × × ×</del> /	EXISTING PIPING TO BE DEMOLISHED
<u> </u>	NEW PIPING
ہ	1" ARM-OVER TO NEW SPRINKLER FROM EXISTI
ר <u>*</u> י ר <u>*</u> י	CONNECT TO EXISTING PIPE AND/OR FITTING
×	EXISTING SPRINKLER AND ARM-OVER TO BE DEL OUTLET ON BRANCH LINE UNLESS SHOWN OTHE
(⊕)	EXISTING CHROME RECESSED
Ħ	NEW BRASS UPRIGHT ON 1" SPRIG
×	NEW CHROME PENDENT ON 2-PIECE TELESCOPING ESCUTCHEON
•	NEW CHROME PENDENT ON 2-PIECE TELESCOPING ESCUTCHEON
ম	NEW DRY CHROME PENDENT ON 2-PIECE TELESCOPING ESCUTCHEON WITH FREEZER BOOT
50 <sup>10 ×</sup>	APPROXIMATE CENTER LINE ELEVATION OF EXISTINISHED FLOOR .
1015 A	RECOMMENDED CENTER LINE ELEVATION OF NE FINISHED FLOOR
— <del>_</del> _	RISE FROM LEFT TO RIGHT AND DROP FROM RIC
	NOT IN SCOPE

FIRE SPRINKLER DEMOLITION NOTES

INDICATED ON THE PLANS.

THEIR WORK AT NO COST TO THE OWNER.

SHUT DOWN AND DRAINING OF EXISTING SYSTEM.

- EXISTING U.G. PUBLIC WATER MAIN SUPPLIED FROM BOTH DIRECTIONS TO REMAIN

- EXISTING CURB BOX KEY VALVE TO REMAIN











SYMBOL KEY		
<u>→                                    </u>	EXISTING PIPING TO REMAIN	
/ <del>× × × ×</del> /	EXISTING PIPING TO BE DEMOLISHED	
<u> </u>	NEW PIPING	
┝╶╍╸┥ ┝╺╋╴┥	1" ARM-OVER TO NEW SPRINKLER FROM EXISTING 1	" OUTLET
ר <u>*</u> י ר <u>*</u> י	CONNECT TO EXISTING PIPE AND/OR FITTING	
×	EXISTING SPRINKLER AND ARM-OVER TO BE DEMOL OUTLET ON BRANCH LINE UNLESS SHOWN OTHERW	ISHED BACK ISE
())	EXISTING CHROME RECESSED	ORD/5.6/SF
斑	NEW BRASS UPRIGHT ON 1" SPRIG	ORD/5.6/QF
×	NEW CHROME PENDENT ON 2-PIECE TELESCOPING ESCUTCHEON	ORD/5.6/SF
•	NEW CHROME PENDENT ON 2-PIECE TELESCOPING ESCUTCHEON	ORD/5.6/QF
X	NEW DRY CHROME PENDENT ON 2-PIECE TELESCOPING ESCUTCHEON WITH FREEZER BOOT	INT/5.6/QR
500 S	APPROXIMATE CENTER LINE ELEVATION OF EXISTIN FINISHED FLOOR .	g Pipe Abo
10 <sup>10</sup>	RECOMMENDED CENTER LINE ELEVATION OF NEW F FINISHED FLOOR	PIPE ABOVE
<b>—</b> ⊙ <b>—</b>	RISE FROM LEFT TO RIGHT AND DROP FROM RIGHT	TO LEFT
	NOT IN SCOPE	
SEE SHEET	FP2 FOR NOTES, DETAILS, AND SPECIFIC	CATION

ALL ARM-OVERS TO NEW SPRINKLERS ARE 1" DIAMETER



TO REMAIN ELEVATION AT EXISTING BUILDING FIRE SPRINKLER RISER FPD1 NOT TO SCALE FP1



### SECTION 15300 - FIRE SPRINKLER SYSTEMS

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. RELATED DOCUMENTS: CONDITIONS OF THE CONTRACT, DIVISION 1 GENERAL REQUIREMENTS AND DRAWINGS APPLY TO THE WORK OF THIS SECTION.
- 1.02 DESCRIPTION OF WORK
- A. PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, TESTING AND SERVICES NECESSARY FOR A COMPLETE AND OPERATIONAL REMODELED FIRE PROTECTION SYSTEM FOR THE PROPOSED DOLLAR TREE AS HEREINAFTER DESCRIBED AND AS SHOWN ON THE ENGINEERING DRAWINGS.
- B. WORK SHALL BEGIN AT EXISTING OVERHEAD SYSTEM AND SHALL INCLUDE THE FOLLOWING:
- 1. REMODELED WET PIPE FIRE SPRINKLER SYSTEM FOR PROPOSED DOLLAR
- 2. COORDINATION OF WORK AND SCHEDULES WITH OTHER TRADES.
- C. INTERIOR WORK PROVIDE THE FOLLOWING:
- 1. OVERHEAD PIPE, FITTINGS, HANGERS AND SPRINKLERS.
- 2. AUXILIARY DRAINS.
- D. IT IS INTENDED THAT THE ENGINEERING DRAWINGS AND SPECIFICATION SHALL DESCRIBE AND PROVIDE FOR A WORKING INSTALLATION COMPLETE IN EVERY DETAIL AND ALL ITEMS NECESSARY FOR SUCH COMPLETE INSTALLATION SHALL BE PROVIDED WHETHER OR NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE ENGINEERING DRAWINGS.

#### 1.03 <u>REFERENCES</u>

- A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REFERENCED DESIGN STANDARDS:
- 1. INTERNATIONAL BUILDING CODE 2018 EDITION INTERNATIONAL FIRE CODE - 2018 EDITION

3. NFPA 13, SPRINKLER SYSTEMS - 2016 EDITION

### 1.04 SYSTEM DESCRIPTION

- A. REMODELED FIRE SPRINKLER SYSTEM DESIGN CRITERIA SHALL BE STRICTLY PER THIS SPECIFICATION.
- B. REMODELED FIRE SPRINKLER SYSTEM TO PROVIDE FIRE PROTECTION FOR THE AREAS INDICATED ON THE ENGINEERING DRAWINGS.
- C. INTERFACE REMODELED FIRE SPRINKLER SYSTEM WITH BUILDING FIRE AND SMOKE ALARM SYSTEMS

#### 1.05 SYSTEM DESCRIPTION

- A. REMODELED FIRE SPRINKLER SYSTEM DESIGN CRITERIA SHALL BE STRICTLY PER THIS SPECIFICATION.
- B. REMODELED FIRE SPRINKLER SYSTEM TO PROVIDE FIRE PROTECTION FOR THE AREAS INDICATED ON THE ENGINEERING DRAWINGS.
- C. INTERFACE REMODELED FIRE SPRINKLER SYSTEM WITH BUILDING FIRE AND SMOKE
- D. <u>OFFICE AREAS</u> (LIGHT HAZARD WET PIPE FIRE SPRINKLER SYSTEM):
- DENSITY 0.10 GPM/SQ FT

ALARM SYSTEMS.

- OPERATING AREA 1,500 SQ FT
- TEMP. CLASSIFICATION / NOMINAL K-FACTOR / RESPONSE TYPE ORD/ 5.6 /QR HOSE STREAM ALLOWANCE - 100 GPM
- DURATION 0.50 HR

### E. SALES AREA (ORDINARY HAZARD GROUP 2 WET PIPE FIRE SPRINKLER SYSTEM):

- DENSITY 0.20 GPM/SQ FT
- OPERATING AREA 1,500 SQ FT
- TEMP. CLASSIFICATION / NOMINAL K-FACTOR / RESPONSE TYPE ORD / 5.6 / SR
- HOSE STREAM ALLOWANCE 250 GPM
- DURATION 1.0 HR

F. STOCK ROOM AND RECEIVING (ORDINARY HAZARD GROUP 2 WET PIPE FIRE SPRINKLER SYSTEM):

- DENSITY 0.20 GPM/SQ FT
- OPERATING AREA 1,500 SQ FT
- TEMP. CLASSIFICATION / NOMINAL K-FACTOR / RESPONSE TYPE ORD/ 5.6 / QR
- HOSE STREAM ALLOWANCE 250 GPM
- DURATION 1.0 HR
- G. SPRINKLER SPACING SHALL BE AS SHOWN ON THE ENGINEERING DRAWINGS.
- H. PROVIDE ALL NECESSARY OFFSETS, RAISES OR DROPS IN MAIN OR BRANCH LINE PIPING AND AUXILIARY DRAINS REQUIRED BY BUILDING CONDITIONS WHETHER OR NOT SHOWN ON THE ENGINEERING DRAWINGS.
- I. PROVIDE FIRE DEPARTMENT CONNECTION AS INDICATED ON THE ENGINEERING DRAWINGS.
- J. EXAMINE THE JOB CONDITIONS AND VERIFY ALL MEASUREMENTS, DISTANCES,
- ELEVATIONS, CLEARANCES, PIPE SIZES, ETC. K. IT IS UNDERSTOOD, UNLESS SPECIFICALLY INDICATED OTHERWISE, THAT THE PIPE SIZES AS SHOWN ON THE ENGINEERING DRAWINGS WILL BE USED.

### 1.06 QUALITY ASSURANCE

A. INSTALLER QUALIFICATIONS:

- 1. INSTALLER'S RESPONSIBILITIES INCLUDE PREPARING SHOP DRAWING SUBMITTAL, FABRICATING AND INSTALLING SPRINKLER SYSTEMS. BASE CALCULATIONS ON WATER SUPPLY COORDINATES PROVIDED HEREIN.
- B. INSTALLER SHALL BE STATE AND LOCALLY LICENSED.
- C. EQUIPMENT AND COMPONENTS NOT SPECIFICALLY SPECIFIED SHALL BE LISTED BY UNDERWRITERS LABORATORIES INC. FOR FIRE PROTECTION SYSTEMS INSTALLATION.
- D. ALL FIRE SPRINKLER SYSTEM COMPONENTS SHALL BE INSTALLED FREE OF ANY RUST, CORROSION OR VISIBLE DAMAGE. ALL ITEMS NOT COMPLYING WITH THIS REQUIREMENT SHALL BE REPLACED WITHOUT COST TO THE OWNER.

- 1.07 PROJECT CONDITIONS
- A. INTERRUPTION OF EXISTING SPRINKLER SERVICE: DO NOT INTERRUPT SPRINKLER SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY SPRINKLER SERVICE ACCORDING TO REQUIREMENTS INDICATED:
- 1. NOTIFY CONSTRUCTION MANAGER IN ADVANCE OF PROPOSED INTERRUPTION OF SPRINKLER SERVICE.
- 2. DO NOT PROCEED WITH INTERRUPTION OF SPRINKLER SERVICE WITHOUT
- CONSTRUCTION MANAGER'S WRITTEN PERMISSION. 3. PROVIDE TEMPORARY PIPING, FITTINGS AND VALVES AS REQUIRED TO
- MAINTAIN SPRINKLER SERVICE. 1.08 <u>REGULATORY REQUIREMENTS</u>
- A. ALL WORK SHALL MEET THE REQUIREMENTS OF SECTION 1.03. B. THE FIRE SPRINKLER CONTRACTOR SHALL NOT PURSUE ANY APPROVALS OR
- INTERPRETATIONS OF CCI'S CONSTRUCTION DOCUMENTS EXCEPT THROUGH CCI.
- SPRINKLER PIPING SHALL NOT BE CONCEALED WHERE IT IS INACCESSIBLE UNLESS IT IS FIRST INSPECTED AND ACCEPTED BY A REPRESENTATIVE OF THE AUTHORITY HAVING JURISDICTION.
- D. ANY WORK PERFORMED PRIOR TO THE SATISFACTORY REVIEW BY CCI AND APPROVAL BY THE AUTHORITY HAVING JURISDICTION AND THE INSURANCE UNDERWRITER WILL BE SOLELY AT THE FIRE SPRINKLER CONTRACTOR'S RISK.
- E. THE SYSTEM WILL NOT BE ACCEPTABLE UNTIL FINAL TESTING AND RECEIPT OF THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE HAS BEEN OBTAINED.

### 1.09 SUBMITTALS

- A. THE ENGINEERING DRAWINGS HAVE BEEN PREPARED USING AUTOCAD. THE ENGINEERING DRAWINGS ARE 100% CAD. THESE DOCUMENTS WILL BE MADE AVAILABLE TO THE SUCCESSFUL FIRE SPRINKLER CONTRACTOR IN EITHER ELECTRONIC FORM OR HARD COPY. UTILIZATION OF THESE DOCUMENTS FOR THE DEVELOPMENT OF SHOP DRAWINGS AND SUBMITTALS DOES NOT RELIEVE THE FIRE SPRINKLER CONTRACTOR FROM ANY OF HIS RESPONSIBILITIES REQUIRED HEREIN.
- B. SUBMIT THE FOLLOWING:
- 1. SHOP DRAWINGS. SUBMIT IN .PDF FORMAT OR TWO (2) HARD COPIES OF EACH DRAWING. DRAWINGS WILL BE RETURNED IN THE SAME FORMAT RECEIVED. SUBMITTAL MUST BE COMPREHENSIVE OF ENTIRE PROJECT, COMPLETE IN ALL DETAIL AND THE SAME SCALE AS THE ENGINEERING DRAWINGS.
- 2. MANUFACTURER'S LITERATURE ON ALL SYSTEM EQUIPMENT. SUBMIT IN .PDF FORMAT OR TWO (2) HARD COPIES OF THE LITERATURE. LITERATURE WILL BE RETURN IN THE SAME FORMAT AS RECEIVED. LITERATURE SHALL CLEARLY IDENTIFY EXACTLY WHAT COMPONENTS ARE BEING PROVIDED WHICH SHALL INCLUDE: FINISH, SIZE, TYPE, OPTIONS, ETC. LITERATURE WHICH IS NOT CLEARLY IDENTIFIED WILL BE REJECTED.
- C. CCI WILL REVIEW THIS SUBMITTAL FOR CONSISTENCY WITH CCI'S CONSTRUCTION DOCUMENTS.
- D. AFTER THE SATISFACTORY REVIEW BY CCI, PROVIDE SUBMITTALS TO THE AUTHORITY HAVING JURISDICTION AND THE INSURANCE UNDERWRITER FOR APPROVAL.
- E. THE FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR RESPONDING, IN WRITING, TO ANY COMMENTS FROM THE AUTHORITY HAVING JURISDICTION OR THE INSURANCE UNDERWRITER WITHIN TEN (10) WORKING DAYS AFTER THE RECEIPT OF THEIR COMMENTS. COPIES OF THE RESPONSE SHALL BE SENT TO THE GENERAL CONTRACTOR AND CCI.

#### 1.10 AS-BUILT DRAWINGS

- A. PROVIDE AS-BUILT DRAWINGS IN ACCORDANCE WITH REQUIREMENTS OF THE GENERAL CONDITIONS OF THE CONTRACT AND NFPA 13.
- 1.11 OPERATION AND MAINTENANCE DATA
- A. PROVIDE OPERATING AND MAINTENANCE INSTRUCTIONS TO THE OWNER IN ACCORDANCE WITH REQUIREMENTS OF THE GENERAL CONDITIONS OF THE CONTRACT AND NFPA 13.

#### 1.12 WARRANTY

A. REPAIR ALL DEFECTIVE WORKMANSHIP OR REPLACE ALL DEFECTIVE MATERIALS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. WORKMANSHIP OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THAT PERIOD SHALL BE REPLACED WITHOUT COST TO THE OWNER.

### PART 2 - PRODUCTS

- 2.01 <u>PIPING</u>
- A. UNDERGROUND PIPING: NONE. B. OVERHEAD PIPE: PER LOCAL REQUIREMENTS AND NFPA 13. ALL PIPE SHALL HAVE A
- CORROSION RESISTANCE RATIO (CRR) EQUAL TO OR GREATER THAN 1.00. REFER TO THE CURRENT UL FIRE PROTECTION EQUIPMENT DIRECTORY - STEEL SPRINKLER PIPE FOR ACCEPTABLE MANUFACTURERS, SIZES, AND JOINING METHODS.
- C. ALL WET PIPE SYSTEM RISERS, FEED AND CROSS MAINS SHALL HAVE HYDRAULIC CHARACTERISTICS EQUAL TO OR GREATER THAN SCHEDULE 40 PIPE. 2.02 JOINING OF PIPE AND FITTINGS
- A. ALL PIPE SHALL BE JOINED IN ACCORDANCE WITH NFPA 13 AND MANUFACTURER'S RECOMMENDATIONS. B. FITTINGS SHALL BE 175 PSI SCREWED OR FLANGED BLACK CAST IRON OR
- APPROVED EQUAL SUCH AS MECHANICAL, GROOVED, PLAIN END OR WELDED CONNECTIONS. WHERE GROOVED FITTINGS AND COUPLINGS ARE USED TOGETHER, THEY SHALL BE OF THE SAME MANUFACTURER. C. BUSHINGS SHALL NOT BE USED.
- D. FLEXIBLE COUPLINGS SHALL BE IDENTIFIED ON THE SHOP DRAWINGS.

#### 2.03 HANGERS AND SLEEVES A. SLEEVES SHALL BE SET FOR ALL PIPES PASSING THROUGH CONCRETE FLOORS,

- FOUNDATIONS AND MASONRY WALLS.
- B. PROVIDE PRIMED ESCUTCHEON PLATES AT ALL WALL PENETRATIONS WHERE THE HOLE WOULD OTHERWISE BE EXPOSED TO VIEW.
- C. ALL HANGERS TO BE OF APPROVED MATERIALS AND SPACED IN ACCORDANCE WITH NFPA 13 AND THE PIPING MANUFACTURER'S SPECIFICATIONS.
- D. THE SECTION MODULUS REQUIRED BY NFPA 13 SHALL BE PROVIDED FOR ALL TRAPEZE MEMBERS SUPPORTING PIPING.

### 2.04 FIRE DEPARTMENT CONNECTION

- A. 5 IN. STORZ STANDARD WALL MOUNT POLISHED CHROME PLATED FINISH WITH 30 DEGREE DOWN ANGLE; THREADED CAP AND CHAIN OF SAME FINISH; IDENTIFICATION PLATE LETTERED "AUTOMATIC SPRINKLER" OF SAME FINISH.
- a. ACCEPTABLE MANUFACTURERS: CROKER, ELKHART, POTTER ROEMER OR APPROVED EQUAL.

#### 2.05 VALVES

- A. INTERIOR VALVES:
  - 1. GLOBE VALVE: BRONZE THREADED; RENEWABLE COMPOSITION DISC; 175 PSI RATED WORKING PRESSURE.
  - a. ACCEPTABLE MANUFACTURERS: CRANE, MILWAUKEE, NIBCO, STOCKHAM OR APPROVED EQUAL.
- 2.06 SPRINKLERS
- A. TYPES:
  - 1. CHROME PENDENT GLASS BULB STANDARD AND QUICK RESPONSE COVERAGE PENDENT SPRINKLER WITH POLISHED CHROME 2-PIECE TELESCOPING ESCUTCHEON
  - 2. BRASS UPRIGHT- GLASS BULB QUICK RESPONSE
  - 3. CHROME DRY PENDENT GLASS BULB QUICK RESPONSE DRY PENDENT SPRINKLER WITH POLISHED CHROME 2-PIECE TELESCOPING ESCUTCHEON WITH FREEZER BOOT
- B. ACCEPTABLE MANUFACTURERS: GLOBE, RELIABLE, TYCO, VICTAULIC AND VIKING.
- C. ONLY SPRINKLERS MANUFACTURED AFTER JANUARY 1, 2021 WILL BE ACCEPTED FOR USE.
- D. ONLY SPRINKLERS MANUFACTURED UTILIZING BELLEVILLE SPRING SEALS WILL BE ACCEPTABLE FOR USE.
- E. IF FLEXHEAD, OR A SIMILAR PRODUCT, IS USED, HYDRAULIC CALCULATIONS SHALL BE PROVIDED TO INCLUDE THE ADDITIONAL FRICTION LOSS, AND PIPE SIZES ADJUSTED IF REQUIRED AT NO ADDITIONAL COST.
- F. PROVIDE AT THE EXISTING BUILDING RISER ONE (1) SIX (6) HEAD SPARE SPRINKLER CABINET STOCKED WITH SPRINKLERS AND ESCUTCHEON ASSEMBLIES PROPORTIONATE TO THOSE PROVIDED IN THE BUILDING AND ALL NECESSARY SPRINKLER WRENCHES.

#### 2.07 <u>SIGNS</u>

- A. APPROVED ENAMELED METAL SIGNS SHALL BE SECURELY ATTACHED AT ALL MAIN DRAINS, AUXILIARY DRAINS ALARM TEST CONNECTIONS AND CONTROL VALVES. B. PROVIDE A PERMANENTLY ATTACHED PLACARD INDICATING GENERAL INFORMATION
- IN ACCORDANCE WITH NFPA 13 AND PLACED ADJACENT TO EXISTING RISER. A MOCK-UP OF PLACARD SHALL BE INCLUDED WITH EQUIPMENT LITERATURE.
- C. PROVIDE AT EXISTING BUILDING RISER A PLAN INDICATING THE LOCATION OF EACH LOW POINT OR AUXILIARY DRAIN VALVE. THE PLAN SHALL CLEARLY IDENTIFY THE SYSTEM ASSOCIATED WITH EACH LOW POINT AND AUXILIARY DRAIN VALVE. THIS PLAN SHALL BE FRAMED WITH A PLEXIGLASS COVER AND SHALL BE PERMANENTLY ATTACHED TO A WALL. PLAN SHALL BE LARGE ENOUGH TO CLEARLY DEFINE THE AREAS PROTECTED BY EACH SYSTEM.

#### PART 3 - EXECUTION

- 3.01 COORDINATION WITH OTHER TRADES
- A. COORDINATE CLOSELY WITH ALL OTHER TRADES TO EXPEDITE CONSTRUCTION AND AVOID INTERFERENCE.

### 3.02 PAINTING AND PATCHING

- A. PAINTING OF SPRINKLER PIPING IS NOT INCLUDED IN THIS CONTRACT. ALL EXPOSED SPRINKLER PIPING SHALL BE THOROUGHLY CLEANED, REMOVING ALL DIRT, OIL, ETC. AND MADE READY TO RECEIVE PAINT IN ACCORDANCE WITH THE GENERAL CONDITIONS OF THE CONTRACT.
- B. HOLES IN WALLS OR FLOORS CUT DURING THE PERFORMANCE OF THIS WORK SHALL BE PATCHED IF THE HOLES CANNOT BE COVERED BY STANDARD ESCUTCHEON PLATES SO AS TO COMPLETELY CONCEAL THE CUTS WHERE THEY WOULD OTHERWISE BE EXPOSED TO VIEW.
- C. FIRE STOP ALL PENETRATIONS OF FIRE RATED ASSEMBLIES.

#### 3.03 SYSTEM TESTS

- A. HYDROSTATICALLY TEST ENTIRE SYSTEM IN ACCORDANCE WITH NFPA 13.
- B. TEST SHALL BE WITNESSED BY THE AUTHORITY HAVING JURISDICTION AND OWNER'S AUTHORIZED AGENT.
- PRELIMINARY TESTING PROCEDURES SHALL BE CONDUCTED AS MENTIONED ABOVE TO ASSURE PROPER OPERATION WHEN THE FINAL TESTING IS PERFORMED.
- D. THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATES AS SHOWN IN NFPA 13 MUST BE COMPLETED AND SUBMITTED TO THE ENGINEER BEFORE FINAL
- ACCEPTANCE MAY BE GIVEN. WHEN THE SYSTEMS ARE INITIALLY COMMISSIONED (FILLED WITH WATER), USE THE
- MANUAL AIR VENT AND HOSE END ADAPTER AT THE END OF EACH SYSTEM, ATTACH A HOSE TO THE EXTERIOR AND OPEN THE VALVE UNTIL WATER IS DISCHARGED THROUGH THE HOSE. REPEAT THIS PROCEDURE FOR EACH SYSTEM AND ANY TIME THE SYSTEM IS DRAINED AND REFILLED.

END OF SECTION







NOT TO SCALE

#### HANGER NOTES ALL HANGERS TO BE OF APPROVED MATERIALS AND SPACED IN ACCORDANCE WITH NFPA 13 AND THE PIPING MANUFACTURER'S SPECIFICATIONS.

### SPRINKLER BELOW DUCT NOTE

PROVIDE SPRINKLER PROTECTION BELOW DUCTS IN EXPOSED STRUCTURE AREAS PER NFPA 13.

### CONSTRUCTION NOTES

- DURING CONSTRUCTION, FIRE SPRINKLER CONTRACTOR SHALL KEEP FIRE SPRINKLER SYSTEM OUT OF CONSTRUCTION AREA FULLY CHARGED AND OPERATIONAL DURING BUSINESS HOURS.
- COORDINATE REQUIRED SHUT-DOWN OF THE EXISTING SYSTEM WITH THE OWNER, INSURANCE UNDERWRITER, AND FIRE DEPARTMENT.
- PROVIDE TEMPORARY PIPING, VALVES, AND FITTINGS AS REQUIRED TO MAINTAIN SERVICE TO FIRE SPRINKLER SYSTEMS DURING CONSTRUCTION.
- 4. COORDINATE CONSTRUCTION PHASES WITH OWNER AND GENERAL CONTRACTOR.

### HYDRAULIC CALCULATIONS

HYDRAULIC CALCULATIONS ARE NOT REQUIRED PER A CONVERSATION WITH FIRE CHIEF BIERCE ON JANUARY 6, 2022 WITH THE SCOPE OF WORK CONSISTING OF RELOCATING AND DELETING SPRINKLERS FROM THE EXISTING SYSTEM. EIGHT (8) LESS SPRINKLERS ON THE EXISTING FIRE SPRINKLER SYSTEM AFTER FINAL TENANT DESIGN.

## BFAM CLAME – FIG. 100 ALL THREAD ROD ADJUSTABLE RING HANGER

#### TOP BEAM CLAMP, ROD AND RING NOT TO SCALE

### -BRANCH LINE -ROOF/FLOOR DECK <u>=</u>∓\_\_\_1" MIN. \_\_\_\_\_★ 12" MAX.

(STANDARD COVERAGE UPRIGHT ON SPRIG)

## -LOCK NUT REQ'D VIEW A-A - FIG. 65 BEAM CLAMP

------- FIG. 100 ALL THREAD ROD FIG. 200 ADJUSTABLE RING

#### STANDARD HANGER ROD PIPE 1" THROUGH 4" 3/8"





2 PIECE TELESCOPING ESCUTCHEON DETAIL NOT TO SCALE

### GENERAL NOTES

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

### MAXIMUM HANGER SPACING 1" - 1 1/4" BLACK STEEL PIPE - 12 FT MAXIMUM HANGER SPACING 1 1/2" - 3" BLACK STEEL PIPE - 15 FT MAXIMUM HANGER SPACING

## SPRINKLER NOTES

- ALL SPRINKLERS ARE AS NOTED. SPRINKLER SPACING IN LIGHT HAZARD AREAS - MAX 225 SQ FT PER SPRINKLER
- AND MAX 15 FT BETWEEN SPRINKLERS. SPRINKLER SPACING IN ORDINARY HAZARD AREAS (STANDARD COVERAGE
- SPRINKLERS) MAX 130 SQ FT PER SPRINKLER & MAX 15 FT BETWEEN SPRINKLERS.





FIRE ALARM PLAN - DEMOLITION WORK

FIRE ALARM DEM	FIRE ALAF		
1. ALL FIRE ALARM C INCLUDING CABLI REMOVED FROM	COMPONENTS ASSOCIATED WITH THE EXISTING ANSUL SYSTEM, NG/CONDUIT, SHALL BE DEMOLISHED AND COMPLETELY THE FUTURE DOLLAR TREE SPACE.	ANSUL	
2. THE EXISTING OC CABLING/CONDUI THE FUTURE DOI	CUPANT NOTIFICATION APPLIANCE AND THE ASSOCIATED T SHALL BE DEMOLISHED AND BE COMPLETELY REMOVED FROM LAR TREE SPACE		
FIRE ALARM EXIS	TING TO REMAIN KEYED NOTES (DENOTED AS 🖈 )	ୖୢୢୢୖୢ	
1. THE EXISTING FIR CURRENTLY BEIN ALARM CONTROL	RE SPRINKLER RISER SERVING THE DOLLAR TREE SPACE IS IG ELECTRONICALLY MONITORED BY THE LANDLORDS FIRE PANEL LOCATED OUTSIDE OF THE PROPOSED DOLLAR TREE	₽₫₫	
SPACE. THE PROF THAN 500 AND DO ALARM SYSTEM IS	POSED DOLLAR TREE SPACE HAS AN OCCUPANT LOAD OF LESS DES NOT REQUIRE OCCUPANT NOTIFICATION. THEREFORE, A FIRE S NOT REQUIRED AND WILL NOT BE PROVIDED WITHIN THE	B	
PROPOSED DOLL/ SHALL CONTINUE CONFIGURED	AR TREE SPACE. THE EXISTING LANDLORD FIRE ALARM SYSTEM TO MONITOR THE FIRE SPRINKLER SYSTEM AS CURRENTLY	(FS)	
2. THE EXISTING FIR REMAIN AS CURRI	RE ALARM CONTROL PANEL AND ASSOCIATED EQUIPMENT SHALL ENTLY INSTALLED TO SERVE THE FUTURE DOLLAR TREE SPACE.	( <u>ī</u> s)	
3. THE EXISTING FIR	CONTINUE REPORTING OFF-SITE AS CURRENTLY CONFIGURED.	E	
ADDRESSABLE IN REMAIN AS CURRI	PUT MODULES AND ASSOCIATED CABLING/CONDUIT SHALL ENTLY CONFIGURED.	<b>(5)</b>	
4. THE EXISTING MA REMAIN AS CURR	NUAL PULL STATION AND ASSOCIATED CABLING/CONDUIT SHALL ENTLY CONFIGURED.	B	
5. THE EXISTING OC CABLING/CONDUI	CUPANT NOTIFICATION APPLIANCES AND ASSOCIATED T SHALL REMAIN AS CURRENTLY CONFIGURED.		
6. THE EXISTING EX CABLING/CONDUI	TERIOR NOTIFICATION APPLIANCE AND ASSOCIATED T SHALL REMAIN AS CURRENTLY CONFIGURED.	2Ř.s	
7. THE EXISTING SM REMAIN AS CURRI	IOKE DETECTOR AND ASSOCIATED CABLING/CONDUIT SHALL ENTLY CONFIGURED.		
8. THE EXISTING KN	OX BOX SHALL REMAIN AS CURRENTLY CONFIGURED.		
LOCATION:	690 WESTFIELD WAY		
FIRE PROTECTION:	100% SPRINKLERED		
OCCUPANCY:	MERCANTILE (EXISTING)		
		7	
SCOPE OF WORK		]	
1. THE FIRE ALARM S EXISTING FIRE AL	SYSTEM WITHIN THE FUTURE DOLLAR TREE SHALL UTILIZE THE ARM EQUIPMENT AS NEEDED.		
2. THE EXISTING FIRE ALARM CONTROL PANEL SHALL REPORT ALL ALARM, SUPERVISORY, AND TROUBLE SIGNAL OFF-SITE AS CURRENTLY CONFIGURED.			

 THE NEW SCOPE OF WORK ON THE EXISTING FIRE ALARM SYSTEM SHALL CONSIST OF THE FOLLOWING:

 REMOVE EXISTING ANSUL SYSTEM AND ASSOCIATED WALL MOUNTED AUDIBLE/VISUAL NOTIFICATION LOCATED IN FUTURE DOLLAR TREE'S SALES FLOOR AREA

### APPLICABLE CODES

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

- 2015 INTERNATIONAL BUILDING CODE
- 2015 INTERNATIONAL FIRE CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2017 NATIONAL ELECTRICAL CODE
- 2013 EDITION NFPA 72 NATIONAL FIRE ALARM CODE
- CONFLICTS BETWEEN THE REFERENCE NFPA STANDARDS, FEDERAL OR STATE CODES, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF ENGINEER OF RECORD (CCI) FOR RESOLUTION.

IRE ALARM SYMBOL KEY		
ANSUL	EXISTING FIRE ALARM CONTROL PANEL TO BE DISCONNECTED AND REMOVED	
	EXISTING WALL MOUNTED AUDIBLE/VISUAL APPLIANCE TO BE DISCONNECTED AND REMOVED	
FACP	EXISTING FIRE ALARM CONTROL PANEL TO REMAIN (FIREWORX FX-5 (G/R)D)	
ිට	EXISTING IP/CELL COMMUNICATOR TO REMAIN	
₽Ŋ	EXISTING WALL MOUNTED AUDIBLE/VISUAL NOTIFICATION APPLIANCE TO REMAIN	
Ð	EXISTING WALL MOUNTED WATERFLOW BELL APPLIANCE TO REMAIN	
(FS)	EXISTING WATERFLOW SWITCH TO REMAIN	
<b>(</b> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u>	EXISTING TAMPER SWITCH TO REMAIN	
E	EXISTING MANUAL PULL STATION TO REMAIN	
<b>(</b> 5 <b>)</b>	EXISTING SMOKE DETECTOR TO REMAIN	
[B] WP	EXISTING EXTERIOR WALL MOUNTED WATERFLOW BELL APPLIANCE TO REMAIN (WP = WEATHER PROOF)	
	EXISTING EXTERIOR WALL MOUNTED VISUAL APPLIANCE TO REMAIN (WP = WEATHER PROOF)	
د <sup>א</sup> 7	EXISTING KNOX BOX TO REMAIN	
	FIRE ALARM PLENUM RATED CONDUCTORS (RED IN COLOR)	
J	JUNCTION BOX	
	END OF LINE RESISTOR	





## FOUNDATION - GENERAL NOTES:

- . ALL WORK SHOWN IS NEW WORK UNLESS DENOTED AS EXISTING. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO STARTING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
- 2. TOP OF EXISTING INTERIOR SLAB ELEVATION EQUALS REFERENCE ELEVATION (0'-0"). ALL ELEVATIONS ARE BASED ON THIS REFERENCE ELEVATION.
- 3. INDICATES AREA OF NEW CONCRETE SLAB.

## FOUNDATION - PLAN NOTES:

- DEMOLISH EXISTING MASONRY WALL DOWN TO (-0'-8'') BELOW FINISHED FLOOR ELEVATION AND INFILL WITH CONCRETE REINFORCED WITH (2)-#4 BARS CONTINUOUS. MATCH TOP OF FINISH FLOOR ELEVATION (0'-0''). DOWEL INTO EXISTING SLAB WITH #4 BARS AT 12" ON CENTER. SEE SECTIONS ON THIS SHEET FOR ADDITIONAL INFORMATION.
- 2. CONTRACTOR SHALL "TEETH-IN" CMU (8" MINIMUM), TO MATCH EXISTING, AT JAMB LOCATION. PROVIDE (1)-#5 VERTICAL IN END CELL AND GROUT SOLID.
- 3. INFILL PORTION OF EXISTING MASONRY OPENING TO MATCH EXISTING. SEE ELEVATION A/S2 FOR ADDITIONAL INFORMATION.
- 4. INFILL EXISTING MASONRY OPENING TO MATCH EXISTING. SEE TYPICAL CMU WALL INFILL DETAIL ON THIS SHEET FOR ADDITIONAL INFORMATION.

## **GENERAL NOTES:**

- 1. ALL ITEMS SHOWN ON THIS DRAWING ARE NEW CONSTRUCTION, UNLESS OTHERWISE NOTED AS EXISTING.
- 2. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION AND ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD.
- 3. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- 4. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO ANCHORAGE AND FLASHING AROUND MECHANICAL EQUIPMENT AND ROOF PENETRATIONS.
- 5. THE STRUCTURE WAS DESIGNED IN ACCORDANCE WITH THE WISCONSIN BUILDING CODE AND THE 2015 INTERNATIONAL BUILDING CODE (IBC 2015). THE FOLLOWING LOADS IN ADDITION TO THE LOADS OF THE PERMANENT MATERIALS AND CONSTRUCTION, WERE USED:

LIVE LOADS:	00 505
	20 PSF
GROUND FLOOR	100 PSF
SNOW LOADS:	
GROUND SNOW LOAD	30 PSF
IMPORTANCE FACTOR (I)	1.0
EXPOSURE FACTOR (Ce)	1.0
THERMAL FACTOR (C <sub>T</sub> )	1.0
FLAT ROOF SNOW LOAD (P <sub>F</sub> )	21 PSF
WIND:	
WIND (3 SECOND GUST)	V <sub>IIIT</sub> = 115 MP
	$V_{ASD} = 89 \text{ MPH}$
EXPOSURE	C
RISK CATEGORY	II
INTERNAL PRESSURE (GC <sub>PC</sub> )	±0.18
SEISMIC	
SFISMIC IMPORTANCE FACTOR (Ie)	1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS, SS	0.086a
	0.046g
	0.092a
S <sub>D1</sub>	0.074g
SITE CLASS	D
SEISMIC DESIGN CATEGORY	B
BASIC SEISMIC-FORCE RESISTING SYSTEM	ORDINARY RE
	MASONRY SH
RESPONSE MODIFICATION FACTOR (R)	2
ANALYSIS PROCEDURE USED	EQUIVALENT L
	FORCE

6. CONTRACTOR SHALL COORDINATE STRUCTURAL, ARCHITECTURAL, MECHANICAL AND CIVIL DRAWINGS PRIOR TO BEGINNING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

![](_page_42_Figure_18.jpeg)

TYPICAL CMU WALL INFILL DETAIL NOT TO SCALE

## CAST-IN-PLACE CONCRETE NOTES:

- 1. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 301 "STRUCTURAL CONCRETE FOR BUILDINGS" AND ACI 318/318R "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
- 2. CONCRETE SHALL HAVE THE FOLLOWING (28) DAY COMPRESSIVE STRENGTH AND MAXIMUM SLUMPS: A. EXTERIOR SLAB-ON-GRADE . 4,000 PSI, 4" WITH AIR B. INTERIOR SLAB-ON-GRADE . 3,500 PSI, 4" TO 5"
- NOTE: ALL SUMPS SHALL BE  $\pm \frac{1}{2}$ " (SLUMP MEASURED PRIOR TO SUPERPLASTICIZER, WHERE OCCURS)
- 3. ALL CONCRETE EXPOSED TO FREEZE/THAW CYCLE SHALL HAVE 6% (±11/2%) ENTRAINED AIR. 4. REINFORCING STEEL:
- A. DEFORMED BARS (DO NOT WELD) ASTM A615 (GRADE 60) B. WELDED WIRE REINFORCING .. ASTM A185 (FLAT SHEETS ONLY)
- 5. COVER TO REINFORCEMENT AS NOTED IN SECTIONS AND AS FOLLOWS:
- A. TOP COVER TO WWR .. B. OTHER: AS NOTED IN ACI 318.
- ADHESIVE ANCHORS SHALL CONSIST OF GRADE 60 REBAR, ASTM A307 GRADE A ALL-THREAD OR ANCHOR ROD, NUT, WASHER AND ADHESIVE. EPOXY ANCHORS SHALL BE INSTALLED USING AT LEAST MINIMUM DEPTHS, EDGE DISTANCES, SPACING (UNLESS NOTED OTHERWISE), AND INSTALLATION PROCEDURES AS RECOMMENDED BY THE MANUFACTURER. DO NOT APPLY LOAD TO ANCHOR UNTIL RESIN HAS CURED IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER.
- 7. TORCHING TO BEND REINFORCING BARS SHALL NOT BE ALLOWED.
- 8. ALL ITEMS EMBEDDED IN CONCRETE OR GROUTED CMU MUST BE TIED AND SECURED PRIOR TO PLACEMENT OF CONCRETE OR GROUT. NO "WET SETTING" IS ALLOWED.
- 9. FOR SLAB-ON-GRADE, SLAB REINFORCING SHALL BE HELD IN PLACE BY BAR SUPPORTS AND ACCESSORIES AS DESCRIBED IN CHAPTER 3 OF THE CRSI MANUAL OF STANDARD PRACTICE. BAR SUPPORTS SHALL BE SPACED A MAXIMUM OF 4'-0" ON CENTER BOTH WAYS IN STRAIGHT LINES ON THE WELDED WIRE REINFORCING GRID.

## MASONRY NOTES:

- 1. ALL MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 530, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" AND ACI 530.1, "SPECIFICATIONS FOR MASONRY STRUCTURES."
- 2. ALL LOAD-BEARING CONCRETE MASONRY UNITS SHALL BE TYPE I UNITS IN CONFORMANCE WITH ASTM C 90 AND SHALL BE MADE WITH LIGHTWEIGHT AGGREGATE.
- 3. ALL MASONRY UNITS SHALL BE IN ACCORDANCE WITH ASTM C 90. ALL ASSEMBLED CONCRETE MASONRY SHALL ATTAIN AN ULTIMATE NET AREA COMPRESSIVE STRENGTH (f'm) OF 2,000 PSI AT 28 DAYS.
- 4. ALL MORTAR SHALL BE ASTM C270, TYPE S.
- 5. ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A615, GRADE 60.
- 6. THE MASONRY CONTRACTOR SHALL BUILD, REINFORCE, AND GROUT THE WALL IN NO GREATER THAN 4'-0" LIFTS, VIBRATING GROUT IMMEDIATELY AFTER EACH LIFT.
- 7. ALL REINFORCED CELLS SHALL BE FULLY GROUTED FROM TOP TO BOTTOM. GROUT SHALL BE 3,000 PSI. ALL GROUT SHALL CONFORM TO ASTM C 476. GROUT SHALL HAVE A SLUMP BETWEEN 8 TO 10 INCHES.
- 8. UNLESS OTHERWISE NOTED OR DETAILED, CENTER REINFORCING IN BLOCK CELLS AND TIE IN PLACE AT INTERVALS OF 4'-0" ON CENTER, MAXIMUM.
- 9. PROVIDE GALVANIZED HORIZONTAL TRUSS TYPE JOINT REINFORCING WITH STANDARD LADDER TYPE NO. 9 GAGE CROSS RODS AT 16" ON CENTER ON ALL WALLS. PROVIDE HORIZONTAL JOINT REINFORCING IN TWO JOINTS IMMEDIATELY ABOVE AND BELOW ALL OPENINGS, EXTENDING A MINIMUM OF 2'-0" BEYOND THE JAMB ON EACH SIDE OF THE OPENING.
- 10. VERTICAL CELLS TO BE FILLED SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR, UNOBSTRUCTED, CONTINUOUS VERTICAL CELL MEASURING NOT LESS THAN 2 INCHES BY 3 INCHES.

REINFORCED HEAR WALLS

LATERAL

olid	

F.V. T.O. EXIST. OPNG. ELEV.

EPOXYING DOWELS (TYP.)

EPOXY INTO EXIST. SLAB W/ T.O. EXIST. SLAB

NOT TO SCALE

	CONCENTRATED LOAD FROM ANGLE SUPPORTING ROOF TOP UNIT (COORD. W/ MECH. DWGS. AND SUPPLIER)
EXIST. ROOF DECK	PROVIDE L2x2x <sup>1</sup> / <sub>4</sub> VERT. JOIST STIFF.
EXIST. ROOF JOIST	THAN 3" AWAY FROM TOP
	CHORD PANEL POINT (F.V.)
TYP. $\rightarrow 1/8$	
170 0	
LOCATIONS WHERE	CONCENTRATED
LOAD DOES NOT L	AND ON TOP
CHORD PANEL POI	NT. ANGLE SHOULD /
EXTEND DOWN TO	BOTT. CHORD /

PROVIDE L2x2x/4 AT SUPPORT ANGLE LOCATIONS WHERE CONCENTRATED LOAD DOES NOT LAND ON TOP CHORD PANEL POINT. ANGLE SHOULD EXTEND DOWN TO BOTT. CHORD PANEL POINT (F.V. ALL LOCATIONS) —	
TYPICAL JOIST REINFORCING AT	
CONCENTRATED LOAD DETAIL	
NOT TO SCALE	

![](_page_42_Figure_66.jpeg)

![](_page_42_Figure_79.jpeg)

![](_page_42_Figure_80.jpeg)

VINGS AND WRITTEN MATERIAL CONTAINED HEREIN ARE OF LINGLE DESIGN GROUP, INC. THEY MAY NOT BE REVIS EUSED, OR DISCLOSED IN ANY MANNER WITHOUT WRITTE ATION FROM THE ARCHITECT.

![](_page_42_Picture_82.jpeg)

MARK OUNTRY | LAKE CC 690 WESTFI PARTIAL FO SHEET **S1** 

![](_page_43_Figure_0.jpeg)

## **ROOF FRAMING - GENERAL NOTES:**

- 1. ALL WORK SHOWN IS NEW WORK UNLESS DENOTED AS EXISTING. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO STARTING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
- 2. SEE THE ARCHITECTURAL DRAWINGS FOR DEMOLITION NOT NOTED.

- ACTUAL FIELD CONDITIONS.

- BRIDGING TO REMAIN.
- CURB SIZE WITH MECHANICAL SUPPLIER.
- TO SUPPORTING STRUCTURE BELOW.
- REINFORCING AT CONCENTRATED LOAD DETAIL ON SHEET \$1.
- INFORMATION.
- 1". SEE STRUCTURAL NOTES FOR PAINTING.
- VERTICAL IN END CELL AND GROUT SOLID.
- ADDITIONAL INFORMATION.

![](_page_43_Figure_19.jpeg)

## STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL FOR THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE FOURTEENTH EDITION OF THE "MANUAL OF STEEL CONSTRUCTION" OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), ALLOWABLE STRESS DESIGN".

2. STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS UNLESS OTHERWISE NOTED:

A. STRUCTURAL STEEL WIDE FLANGE SHAPES - ASTM A992, GRADE 50 KSI.

![](_page_43_Figure_22.jpeg)

S2S2/

![](_page_43_Figure_34.jpeg)

![](_page_43_Figure_35.jpeg)

MARK UNTRY LD WAY, PE NG PLAN Ы Ŭ Ë 690 WEST ROOF FR

SHEET

	PLAN-VIEW LINE TYPES
	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE
	WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK
	WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK
	MECHANICAL AIR DEVICES
	SUPPLY REGISTER
	RETURN REGISTER
ER	EXHAUST REGISTER
SG 🔀	SUPPLY GRILLE
RG	RETURN GRILLE
	CEILING DIFFUSER
CD-10"Ø	2'x2' SQUARE CEILING DIFFUSER WITH 10" NECK
	ROUND CEILING DIFFUSER
	MECHANICAL DUCTWORK
- UP	SUPPLY DUCT WITH ELBOW TURNED UP
	SUPPLY DUCT WITH ELBOW TURNED DOWN
	RETURN DUCT WITH ELBOW TURNED UP
	RETURN DUCT WITH ELBOW TURNED DOWN
	EXHAUST DUCT WITH ELBOW TURNED UP
	EXHAUST DUCT WITH ELBOW TURNED DOWN
24X12 SA	SUPPLY DUCT
24X12 RA	RETURN DUCT
24X12 EA	EXHAUST DUCT
24X12 OA	OUTSIDE AIR DUCT
	1" LINED DUCTWORK
	DUCT FLEX CONNECTOR
	FLEXIBLE DUCTWORK CONNECTION
	BRANCH TAKEOFF
	REDUCER, CONCENTRIC
	REDUCER, NONCONCENTRIC
	MECHANICAL DUCTWORK ACCESSORIES
	DUCT WITH MANUAL VOLUME DAMPER
	ROUND ELBOW WITH TURNING VANES
Ē.	ELBOW WITH TURNING VANES
DSD-	DUCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C. FURNISHED BY E.C., INSTALLED BY M.C.
	MECHANICAL STATS & SENSORS
TS	TEMPERATURE SENSOR
Т	LOW VOLTAGE THERMOSTAT
R	REVERSE ACTING THERMOSTAT
	CARBON MONOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
	MECHANICAL MISCELLANOUS
•	CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)

SYMBOL

## FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS. THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER

PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

CONTRACTOR SHALL SITE VERIFY EXISTING HVAC UNIT LOCATION(S) & POTENTIAL DUCTWORK OBSTRUCTIONS (SPRINKLER LINES, STRUCTURAL BEAMS & JOIST, ETC..) PRIOR TO FABRICATING DUCTWORK. CONTRACTOR SHALL CONTACT THE DTFD CONSTRUCTION PROJECT MANAGER IF CONFLICTS BETWEEN CONSTRUCTION DOCUMENTS & EXISTING CONDITION EXIST FOR DIRECTION.

GENERAL DEMOLITION NOTE

MECHANICAL CONTRACTOR TO REMOVE EXISTING HVAC EQUIPMENT, DUCTWORK, HANGERS, INSULATION, AIR DEVICES, CONTROLS AND MISCELLANEOUS EQUIPMENT, ETC... NOT INTENDED FOR REUSE.

MECHANICAL LEGEND
DESCRIPTION
PLAN-VIEW LINE TYPES
DRK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY THERS AS APPLICABLE
ORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK
ORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK
MECHANICAL AIR DEVICES
JPPLY REGISTER
ETURN REGISTER
KHAUST REGISTER
JPPLY GRILLE
ETURN GRILLE
EILING DIFFUSER
2' SQUARE CEILING DIFFUSER WITH 10" NECK
DUND CEILING DIFFUSER
MECHANICAL DUCTWORK
JPPLY DUCT WITH ELBOW TURNED UP
JPPLY DUCT WITH ELBOW TURNED DOWN
ETURN DUCT WITH ELBOW TURNED UP
ETURN DUCT WITH ELBOW TURNED DOWN
HAUST DUCT WITH ELBOW TURNED UP
HAUST DUCT WITH ELBOW TURNED DOWN
JPPLY DUCT
ETURN DUCT
(HAUST DUCT
JTSIDE AIR DUCT
LINED DUCTWORK
JCT FLEX CONNECTOR
EXIBLE DUCTWORK CONNECTION
RANCH TAKEOFF
EDUCER, CONCENTRIC
EDUCER, NONCONCENTRIC
ECHANICAL DUCTWORK ACCESSORIES
JCT WITH MANUAL VOLUME DAMPER
DUND ELBOW WITH TURNING VANES
BOW WITH TURNING VANES
JCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C.) JRNISHED BY E.C., INSTALLED BY M.C.
MECHANICAL STATS & SENSORS
MPERATURE SENSOR
OW VOLTAGE THERMOSTAT
EVERSE ACTING THERMOSTAT
ARBON MONOXIDE SENSOR
ARBON DIOXIDE SENSOR
MECHANICAL MISCELLANOUS

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## **GENERAL DUCTWORK NOTE**

## **HVAC CONTROLS NOTE**

CONTRACTOR SHALL REFER TO THE EM SHEETS FOR INSTALLATION INSTRUCTIONS FOR THE VENDOR FURNISHED, CONTRACTOR INSTALLED HVAC CONTROL SYSTEM AND TEMPERATURE AND CO2 SENSOR LOCATIONS PRIOR TO THE INSTALLATION OF ALL RELATED ITEMS

## **KEYED NOTES**

M02	TENANTS CONTRACTOR SHALL INSTALL TENANT VENDOR PROVIDED CO SENSOR 7'-0" A.F.F. THESE SENSOR SHALL CONTROL SALES RTU'S.
M03	PROVIDE NEW ROOF MOUNTED EXHAUST FAN AND BALANCE TO THE SCHEDULED AIR FLOW. MAINTAIN A MINIMUM OF 10' 0" FROM ANY BUILDING INTAKE. ALL ROOF WORK TO BE DONE BY LANDLORD APPROVED ROOFING CONTRACTOR AT THE GENERAL CONTRACTORS EXPENSE.
M04	CONTRACTOR SHALL LOCATE BOTTOM OF STOCK ROOM DUCTWORK ABOVE LIGHTING. ANY DEVIATION TO THIS DIMENSION DUE TO INTERFERENCE WITH ANY BUILDING OBSTRUCTIONS SUCH AS STRUCTURE, OVERHEAD DOORS, ETC. SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO FABRICATING THE DUCTWORK
M05	PROVIDE 1" AIRSPACE BETWEEN BOTTOM OF DOOR AND FINISHED FLOOR FOR AIRFLOW.
M06	COVER OPEN END OF RETURN DUCT WITH 1" MESH HARDWARE CLOTH A REMOVABLE METAL FRAME.
M07	CONTRACTOR SHALL INSTALL NEW TENANT FURNISHED HVAC UNIT AS INDICATED ON PLANS, SCHEDULE AND NOTES. CONTRACTOR TO REMOVE EXISTING CURB AND PROVIDE MANUFACTURER ROOF CURB. CUT AND PATCH ROOF AS REQUIRED TO ALLOW FOR NEW FULL SIZE DUCT DROPS TO BOTTOM CHORD OF STRUCTURE.
M08	ADJUST DIFFUSER FOR FULL VERTICAL DISCHARGE INTO OFFICE BELOV
M10	INSTALL AIR CURTAIN 1" ABOVE FRONT ENTRANCE DOOR. AIR CURTAIN TO OPERATE WHEN FRONT ENTRANCE DOOR IS OPENED AND TO SHUT OFF WHEN DOOR IS CLOSED.
M11	VERIFY EXACT LOCATION OF THE RTU IN FIELD. EQUIPMENT IS TO BE A MINIMUM OF 10'-0" FROM THE ROOF EDGE. IF THE NEW UNIT IS WITHIN 10'-0" PROVIDE FALL PROTECTION PER THE IMC.

![](_page_44_Figure_19.jpeg)

![](_page_44_Figure_21.jpeg)

![](_page_44_Figure_22.jpeg)

repared by the Consultant as instruments of and other reserved rights, including, without uments pr statutory instr Iaw, OWNERSHIP OF INSTRUMENTS OF SERVICE All reports, plans, specifications, computer files, field data, notes and oth service shall remain the property of the Consultant. The Consultant shall limitation, the copyright thereto.

													DOLL	AR IREE	ROOFIC	JP UNIT
Equipment shall be braced and labeled by the equipment manufacturer to withstand the minimum scheduled available fault current value for listed equipment.																
EQUIPMENT MARK	DESCRIPTION	LOCATION	WEIGHT (lbs)	MANUFACTURER	MODEL	VOLTS	PHASE	CFM (cfm)	ESP (in WC)	OACFM (cfm)	CO2 CFM (cfm)	NOMINAL TONS	MAT CLG DB (Deg F)	MAT CLG WB (Deg F)	CLG MBH (mbh)	CLG SENS (mbh)
RTU-1	PACKAGED OUTDOOR ROOFTOP UNIT	ROOF	1400	CARRIER	48HC12	208	3	4000	0.5	1000	398	10	80	67	139	100
RTU-2	PACKAGED OUTDOOR ROOFTOP UNIT	ROOF	1800	CARRIER	48HC14	208	3	5000	0.5	1150	460	12.5	79	67	168	123
RTU-3	PACKAGED OUTDOOR ROOFTOP UNIT	ROOF	755	CARRIER	48GCEM04	208	3	1200	0.5	216		3	79	67	35	29
TOTAL TONNAGE												25.5				
														[		
															NUMBER	NAME
															101	SALES A
															101	SALES B
															102	OFFICE
															103	HALLWAY
															104	TOILET
															105	TOILET
															106	PRE-SALES
															TOTAL	

#### DOLLAR TREE HVAC ELI ABBREVIATIONS LOCAL DISCONNECT MOTOR CONTROL (POWER) DUCT SMOKE DETECTOR CONTROLS MC SD SD CN TS C/B FUSE FLA MCA CP TOGGLE SWITCH H.A.C.R. CIRCUIT BREAKER AT SOURCE PANE FUSE AT LOCAL DISCONNECT (VERIFY FIELD OPERATING FULL LOAD AMPS MINIMUM CIRCUIT AMPACITY CORD AND PLUG CONNECTION DESCRIPTION EQUIPMENT MARK AIR CURTAIN CENTRIFUGAL ROOF VENTILATOR PACKAGED OUTDOOR ROOFTOP UNIT RTU-1 RTU-2 PACKAGED OUTDOOR ROOFTOP UNIT RTU-3 WH-1 WH-2 PACKAGED OUTDOOR ROOFTOP UNIT WALL AND CEILING HEATER WALL AND CEILING HEATER Equipment shall be braced a EQUIPMENT MARK

## 

### HVAC LOAD SCHEDUL THE HEATING AND COOLING LOAD CALCULATIONS

HVAC LOADS	COOLING	LOAD BRE	AKDOWN
	CROOF CWALL CPART CGLASS CSOLAR CLIGHTS CEQUIP CPSENS		SENSII SENSII SENSII SENSII SENSII SENSII ETC. SENSII
EQUIPMENT MARK	CROOF	CWALL	CPART
RTU-1	4.9	0.3	0
RTU-2	5.7	1.3	0
RTU-3	2.3	2.1	0

![](_page_45_Picture_6.jpeg)

ELECTR			DRDINA TYPE	TION S	CHEDU			ONTROL TYPE					CONTROL TYPE			
	EC EX FC GC	ELI EX FIF GE	ECTRICAL CON ISTING RE PROTECTION NERAL CONTR/	RACTOR CONTRACTOR		C N N	CSCM MCCM MGM SM	OMBINATION S OTOR CONTR IAGNETIC STA	STARTER IOL STARTER RTER OR CONTA TER	СТ			TC TIME CPT CONT BAS BUILE LOW LOW	CLOCK FROL POWER TRAN DING AUTOMATION VOLTAGE CONTRO	ISFORMER SYSTEM DLS	
CE PANELBOARD Y FIELD RATING)	HC MFR PC	HV MA PLI	AC CONTRACTO NUFACTURER JMBING CONTR	ACTOR		N N C	VFD V MSR M DV O	ARIABLE FREC	QUENCY DRIVE TER W/ CONTROL PROTECTION	RELAY		1	LINE LINE RLINE REVE MAN MANU	VOLTAGE CONTRO RSE ACTING LINE JAL	VOLTAGE THERM	OSTAT
		00	MENONOME	10									CO CARE INT INTEG	SON MONOXIDE SE GRAL TO EQUIPME	NSOR NT	
VOLTS (V) 120 P 120	<b>PHASE</b> 1 1	BHP (HP)	HP (HP) HTG (	KW) WATTS FL	LA (A) MCA (A) 16	OCP (A) DC FUF	EC	EC N	MC TYPE MC FU	RN MC INS	T MC WIRE	CN TYPE CN LINE HC	I FURN CN INST EC	CN WIRE SD TY EC	PE AVAILABLE F	FAULT CURRENT (A)
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UNIT         208           120         120	3 1 1		1.5 1.5		21 3 12.5 12.5	30 EC EC EC	EC EC EC	EC N EC EC	/G MFR  	MFR  	MFR  	BAS OR INT MFF INT MFF	OR R MFR R MFR	OR MFR MFR	3575 2345 2015	
praced and labeled b	by the equip	ment manı	ufacturer to withs	and the minimum	scheduled availab	AR IRE	E HV	d equipment.	ANS SCH	HEDU	LE					
DESCF AIR CURTAIN CENTRIFUGAL RO	RIPTION	13 TOR 50	EIGHT (Ibs) MAN 0 POW JOHN CON	UFACTURER ERED AIRE ET/ ISON EVI TROLS	MODEL         12           A-2-72         12           D06B         12	VOLTS         PHAS           20         1           20         1	E WA1	ITS (Watts)	CFM (cfm)         ESP           302         0           00         0.5	(in WC)	HP (hp)	FLA (amp	s) MCA (am 16	ips) OCP (amp	<b>AVAILABL</b> 1284 1557	E FAULT CURRENT
SCHED	ULE															
) LAT DB (Deg F) 55	<b>LAT CLG</b> 54	WB (Deg	F) HTG MBH (m	<b>bh) LAT HTG (E</b> 81	<b>Deg F) GAS HTG I</b> 180	<b>N (mbh) GAS HT</b> 148	G OUT (mb	h) MIN GAS PF	RESSURE (in WC)	MAX GAS PR	RESSURE (in W	VC) MCA (an 53	nps) OCP (a	amps) AVAILABL 3539	E FAULT CURREN	ACCESSORIES 2,3,4,7,10,20,22
55 55	54 54		178 58	89 105	180 110	93		3 4		10.5 13		60 21	70 30	2801 3575		2,3,4,7,10,20,22 2,3,4,7,10,22
				DOLL	AR TRE	E HVAC			ION SC	HEDL	JLE					
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3788 SF 80 SF	50 57 1		7.5 7.5 5	0.12 0.12 0.06	4748 109	4000 4890 110	109 25	92	1125 25	4000 4890 110	0		0.2253	E E E	0	
83 SF 56 SF 56 SF	0 0 0 0		0 0 0	0.06 0 0	50 50 50 50	50 50 50	9 9 9		9 9 9	0 0 0	0 75 75		0.12 0 0	E N N	0 0 0	
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JLE TIONS ARE BASED	ON THE CI	TD/CLF (	COOLING LOAD	TEMPERATURE	DIFFERENCE/CC	OOLING LOAD FA	CTOR) ME	THOD. ASSUI	MPTIONS AND EX	ECUTION O	F THESE ME	THODS ARE PI	ER ASHRAE 183-2	2007		
DOWN ENSIBLE HEAT GA			WALLS		CSSENS	TOTA	AL SENSIB			N	HEATII HROO	NG LOAD BRE	AKDOWN EAT LOSS FROM	ROOF		
ENSIBLE HEAT GA ENSIBLE HEAT GA ENSIBLE HEAT GA ENSIBLE HEAT GA	AIN FROM P AIN FROM G AIN FROM S	ARITIONS	IN THROGH GL	AZING	COAS CTSENS CPLAT	SENS SENS TOTA LATE	SIBLE HEA	T GAIN FROM LE HEAT GAIN GAIN FROM PE	OUTDOOR VENT	ILATION AIR	HPART HGLAS HSLAE	T H SS H B H	EAT LOSS FROM EAT LOSS FROM EAT LOSS FROM EAT LOSS FROM	PARTITIONS GLAZING SLAB		
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CPART CGLASS	CSOLAR	CLIGHTS	CEQUIP CPS	ENS CSSENS	G CFAN	COAS CTSE	ENS C	PLAT CO		CTOT	HROOF	HWALL	HPART HGL	ASS HSLAB	HSPACE	HOA HTOT
5.2 1.5	0 1 16.3 1 5.2 7	9.8 .9	17     12.2       18.4     14.2       1.7     0	81.1 20.9	2.7         16           3.3         19           0.8         3.6	.8 99.6 .4 123 5 28.6	10.2 11.8 0	28.5 32.8 6.1	44.7 6.1	138.4       167.7       34.7	15.1 ł	1.7     0       5.9     0       9.5     0	0 34.2 10.4	4.4 9.9 8.6	19.1         84.           65.2         97           34.7         18.	4 103.5 162.3 2 52.9
	HVAC	C AC	CESSO	RIES												
A(		RIES:	R 5. IN		ATION	9. ACCESS D			13. FACE/BYP	ASS DAMF	PER	17. DUCT		21. ECO		(HAUST
2. 3. 4.	ROOF C	URB ARDS	6. V 7. Fl 8. Fl	LAT FILTER	BOX	10. FLEX CO 11. MOUNTIN 12. HOT GAS	IG COLL	AR S	15. MOTOR GI 16. GREASE T	JARD RAP		19. HUMI 20. CO2 \$	E RAIL IDIFIER SENSORS	22. ECO 23. HOT 24. SHAI	GAS REHEAT C	i BRUSHES
						HVAC	UNI	T HEA	TERS S	CHED	DULE					
Equipment shall b	e braced ar	d labeled	by the equipmen	manufacturer to	withstand the minir	num scheduled av	ailable fau	It current value	for listed equipmer	nt.				-		
EQUIPMENT MARK WH-1	DESCR WALL AND		LOCATION TOILET 104	WEIGHT (lbs 25	MANUFACTU MARKEL	RER MODE	L 120	VOLTS	PHASE	HTG MBI	H (mbh) H 1.5	ITG KW (kW)	FLA (amps)	<b>MCA (amps)</b> 12.5	OCP (amps)	AVAILABLE FAULT CURRENT 2345
WH-2	CEILING H WALL AND CEILING H	EATER	TOILET 105	25	MARKEL	E3055	120	)	1	5	1.5			12.5		2015
NOTE: CONTF	ACTOR F	ROVIDE	D, CONTRAC		ALL											
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				AB	T	ITUS	TMS TMS	24"x24 12"x12	CEILING	ST ST	EEL EEL	STANDARD STANDARD	WHITE BUTTE	RFLY RFLY	LAY IN M	OUNTING OUNTING
				C D E	T T T	ITUS ITUS ITUS	5300FL 50F 350RL	14"x6" 24"x24 12"x12	CEILING	AL ST ST	EEL EEL	STANDARD STANDARD STANDARD	WHITE (none) WHITE OPPOS	ED BLADE	LAY IN M	OUNTING OUNTING
						LI	\/^~				ויחבו					
	Equipmer	it shall be	braced and label	ed by the equipme	ent manufacturer to	withstand the min	v AU		e fault current value	e for listed eq						
	EQUIP MA	MENT RK	DESCRIPTION AIR CURTAIN	LOCATION SALES B 101	WEIGHT (Ib	os.) MANUFACT POWERED A	TURER	<b>MODEL</b> A-2-72	<b>VOLTS</b>	<b>PHA</b>	<b>SE</b> 2802	<b>CFM (cfm)</b>	FLA (amps)	<b>MCA (amps)</b>	OCP (amps)	AVAILABLE FAULT CURRENT

![](_page_45_Figure_8.jpeg)

![](_page_45_Figure_9.jpeg)

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<ol> <li>KEYI</li> <li>MAXIMU EQUALS INACCES</li> <li>INSULAT DIFFUSE</li> <li>SCOOP</li> <li>SPIN IN F DAMPEF</li> <li>INTERNA DRYWAL (PROVID</li> </ol>	
33713.00-04 CALE: NONE	4 -
233713.00-0 SCALE: NONE K = MINIMUM M = 1/2" PLUS PRESSUR	2 OF M
SEE NOTE E	<b>[]</b> ]
POSITIV	Έ
H = (1" FOR EANEGATIVE STATUS J = HALF OF HL = H + J + PIPINSULATION	ACI AT

SCALE: NONE

![](_page_46_Figure_5.jpeg)

![](_page_46_Figure_6.jpeg)

SECTION 23 05 01.00 - COMMON REQUIREMENTS FOR HVAC

General Provisions of the Contract including General and Supplementary Conditions and General Requirements apply to work of this section.

The base bid includes furnishing all materials, labor, tools, and equipment and the performance of all work required to install a complete heating and air conditioning system as outlined herein.

Guarantee The contractor shall provide a guarantee in written form stating that all work under this section shall be free of defective work, materials, or parts for a period of one year from the date of owner's final acceptance and shall repair, revise or replace at no cost to the owner any such defects occurring within the guarantee period. Contractor shall also state in written form that any items or occurrences arising during the guarantee period will be attended to in a timely manner and will in no case exceed four (4) working days from date of notification by owner.

Quality Assurance Provide a complete installation in conformance with the following standards.

AGA: American Gas Association ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers

NFPA: National Fire Protection Association SMACNA: Sheet Metal and Air Conditioning Contractors National Association.

Statewide Building Code

IMC: International Mechanical Code Permits, Fees, Inspections, Laws and Regulations Permits and fees of every nature required in connection with this work shall be obtained and paid for by this contractor who shall also pay for all the installation fees and similar charges. Laws and regulations, which bear upon or affect the various branches of this work shall be complied with by this contractor and are hereby made a part of this contract. All work, which such laws require to be inspected, shall be submitted to the proper public official for inspection and a certificate of final approval must be furnished.

Work in Existing Spaces General: Care shall be taken when working in existing spaces so as not to damage existing walls and ceilings

where work is being performed. Ceilings: Where work is being performed above ceilings, and the architectural drawings do not indicate ceiling modifications by the general contractor, it shall be the responsibility of this contractor to remove and replace existing ceilings where work is being performed. In those instances, all repair and installation of new grid, ceiling

panels, etc shall be the responsibility of this contractor. Match existing finishes. Walls & Floors: It shall be the responsibility of this contractor to patch existing walls and floors and match existing finishes where work is being removed or installed and patching is being performed, unless noted otherwise

on the architectural drawings. Demolition Any Equipment to be demolished shall also include the demolition of any and all ductwork, piping etc serving or served by the equipment, all accessories, air devices, wiring, gas piping, venting, control wiring and power wiring associated with the equipment

Demolition shall be coordinated with all trades. All materials shall be turned over to the owner or disposed at the owner's direction.

Contractor is responsible for reclaiming any refrigerant in association with the demolition in accordance with all local, state and federal regulations. Any roof or wall penetration shall be patched watertight to

the satisfaction of the architect Tests and Adjustments No ducts, piping, fixtures or equipment shall be concealed

or covered until they have been inspected and approved by the Architect and the inspector who shall be notified by the contractor when the work is ready for inspection. Work shall be completely installed, tested and leak tight before inspection is required. All tests shall be repeated to the satisfaction of those making the inspection.

Architectural coordination items Cutting and Patching: Cut and drill all openings in walls and floors required for the installation. Secure approval of Engineer before cutting and drilling. Neatly patch all openings cut

Fire Caulking: Patching through fire rated walls and enclosures shall not diminish the rating of that wall or enclosure. Patch shall be equal to rockwool, firestop,

caulk or approved "rated" patch. Access Panels and Pathways: Furnish all access panels required for proper servicing of equipment. Provide access panels for all concealed valves, vents, controls, cleanout doors, and sprinkler devices required by NFPA. Provide access panels for all fire and/or fire & smoke dampers. Provide frame as required for finish. Furnish panels to General Contractor. Exact locations to be approved by the Architect. Minimum size to be 12" x 12", units to be 16 gauge steel, locking device shall be screwdriver cam locks. project conditions

Where new HVAC systems are required to be connected to existing HVAC systems, it is the contractor's responsibility to verify the location, size, pressure, condition, and they shall verify that the existing HVAC system is indeed the correct and appropriate HVAC system before any work is done. Provide all necessary camera scoping and dye testing as necessary. If there is any need for concern, if it is determined that the existing HVAC system is not a correct or appropriate HVAC system or not connected to a correct or appropriate HVAC system, if the condition of the existing HVAC system is not viable for re-use, or any other condition that would not allow the proper functioning of the new HVAC system, the contractor shall notify the engineer in writing immediately via RFI and wait for direction before proceeding. Interruption of Existing HVAC Services: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:

Notify, Architect, Construction Manager, and Owner no fewer than seven days in advance of proposed interruption of service. Do not proceed with interruption of service without

Architect's written permission DELEGATED DESIGN

For equipment supports, this contractor shall retain a qualified professional engineer to provide support calculations of static and dynamic loading due to operating equipment weight. The signed and sealed calculations and details shall be submitted by the retained professional engineer

MECHANICAL EQUIPMENT COMMON

REQUIREMENTS INSPECTION

Examine areas and conditions under which mechanical equipment is to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer Uncrate equipment and inspect for damage. Verify that

nameplate data corresponds with unit designation. INSTALLATION General: Install mechanical equipment as indicated, and in accordance with manufacturer's installation instructions. Location: Install each unit level/plum and accurately in position indicated in relation to other work; and maintain sufficient clearance for normal service and maintenance,

but in no case less than that recommended by manufacturer. Coordinate with other trades to assure correct recess size

for recessed units. Protect interior mechanical equipment with protective covers during balance of construction.

For ducted equipment, connect ductwork to units with flexible duct connections. Provide transitions to exactly match unit duct connection size. Provide 1" acoustic duct lining on return air side a minimum of 10' from fan. Piping: Restrictors or piping changes shall be made as necessary to achieve manufacturers recommended pressure drops. The findings shall be reported to the engineer at project closeout.

Provide trap at drain piping connection to unit sized per manufacturer's recommendations. Access: Provide access space around and over mechanical equipment for service as indicated, but in no

case less than that recommended by manufacturer or required by code in effect. Access Panels: Furnish all access panels required for

proper servicing of equipment. Provide access panels for all concealed valves, vents, controls and cleanout doors, and sprinkler devices required by NFPA. Provide frame as required for finish. Furnish panels to General Contractor. Exact locations to be approved by the Architect. Minimum size to be 12" x 12", units to be 16 gauge steel, locking device shall be screwdriver cam locks. Rooftop mechanical equipment shall be installed a

minimum of 10'-0" from any roof edge regardless of location indicated on plans, unless a screen wall or railing is installed per the local building code. See the architectural plans for coordination.

Roof Curbs: Furnish roof curbs to roofing Installer for installation. Install and secure roof curb to roof structure, in accordance with National Roofing Contractor's Association (NRCA) installation recommendations and shop drawings. Install and secure units on curbs and coordinate roof penetrations and flashing. Install according to roofing manufacturer's recommendation and specifications.

ELECTRICAL COORDINATION ITEMS Electrical Wiring: Install electrical devices furnished by manufacturer but not specified to be factory-mounted. Furnish copy of manufacturer's wiring diagram submittal to Electrical Installer.

Verify that electrical wiring installation is in accordance with manufacturer's submittal and installation requirements of Division 26 sections. Do not proceed with equipment start-up until wiring installation is acceptable to equipment installer.

Install electric heating terminal units including components in accordance with equipment manufacturer's written instructions, and with recognized industry practices; complying with applicable installation requirements of

NEC and NECA's "Standard of Installation". Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for equipment

connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Std 486A. Grounding: Provide equipment grounding connections for electric heating terminals as indicated. Tighten connections to comply with tightening torque values

specified in UL Std 486A to assure permanent and effective grounding

FIELD QUALITY CONTROL

Testing: After installation has been completed, test to demonstrate proper operation of mechanical equipment at performance requirements specified. When possible, field correct malfunctioning units, then retest to demonstrate compliance. Replace units, which cannot be satisfactorily corrected. Test controls and demonstrate compliance with requirements.

Cleaning: After construction is completed, including painting, clean unit exposed surfaces, vacuum clean coils and inside of cabinets. Clean factory-finished surfaces. Repair any marred or scratched surfaces with manufacturer's touch-up paint. START-UP

Provide the services of a factory-authorized service representative to start-up rooftop units, in accordance with manufacturer's written start-up instructions. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment. TRAINING OF OWNER'S PERSONNEL

Provide services of manufacturer's technical representative for 1-half day to instruct Owner's personnel in operation and maintenance of units. Schedule training with Owner, provide at least 7-day notice to Contractor and Engineer of training date.

SPARE PARTS For belt driven equipment: Furnish to Owner, with receipt, one spare set of belts for each belt drive power ventilator. Provide one complete extra set of filters for each unit. Install new filters at completion of system work, and prior to testing, adjusting, and balancing work. Obtain receipt from Owner that new filters have been installed.

#### SECTION 23 05 03.00 - SUBMITTALS FOR HVAC General

Where submittals are required by the Contract Documents, they shall be prepared and supplied in accordance with the Contract Documents. In addition to Division 01, the Contractor is advised to review and comply with the requirements articulated within each Division and within each section of that Division. Some Divisions may include a division-specific "Submittal

Requirements for ...." section. Where this section exists, it articulates additional requirements for submittals that apply to the work of that Division. The following requirements help to identify, track and keep

the project organized for all parties involved. They are necessary to ensure a timely turnaround and an appropriate technical review. Submittals that do not conform to the administrative requirements are rejected and returned, without technical review. Requirements

Supply submittals for each section: Submittals shall be supplied on a section-by-section and type-by-type basis. For example, independent product data submittals shall be furnished for each section that requires product data submittals. Independent shop drawing submittals shall be furnished for each section that requires shop drawings. Refer to the specifications for identification of which submittals are required for the project. Separate PDF file packages shall be supplied for each section, for each submittal type, where electronic submittals are required. Each PDF shall represent a single standalone submittal. Separately bound and identified submittals shall be provided where hardcopies are required.

Include a transmittal: Transmittals shall enumerate each submittal for each section of each type and iteration. Include cover sheet / title page: The cover sheet shall include the information identified in the contract documents. It shall be included as the first page of each

electronic and/or hardcopy document-based submittal. An editable and printable PDF form created with editable fields and specification compliant appearance is available from KLH upon request. It is also downloadable from the KLH website at <u>www.klhengrs.com</u>.

Include an index: The index shall enumerate the contents of the submittal. Include checklists: Where checklists are included with the specifications, complete and include them within the

appropriate submittal. Supply complete submittals: Complete submittals of each type are required. Partial submittals will be rejected. Where a section requires a product data submittal, all product data for that section shall be supplied together, at one time, as one complete submittal. Do not send half the product data as one submittal and the other half as a separate one. When

resubmittal is required (e.g. Revise and Resubmit) the revised submittal shall be more complete, more accurate and more contract-compliant than its rejected predecessor. The submittal number (for each section and type) shall increment for each subsequent submittal (00 -

Driginal submission, 01 – First Resubmission, 02 Second Resubmission, etc...). Resubmittals shall include a copy of the reviewer's comments supplied with the prior submittal rejection and shall be amended with a description of the specific action taken to comply with the reviewer's comments. The absence of this on resubmittal

is cause for rejection. Name electronic files to match the submittal ID and cover sheet: The electronic file name of submittals shall match the submittal ID included on the submittals cover page. For example: The original/first product data submittal for Section 234116 would be labeled as "234116.00-PD-00"; the first resubmittal of same shall be labeled "234116.00-PD-01". The original/first shop drawings submittal file for the same section would be labeled "234116.00-SD-00"; the first resubmittal of same shall be labeled "234116.00-SD-01".

Use of Electronic Drawings from the Owner's Design

Plan drawings for the Project were created with AutoCAD and Revit

the creation of shop and as-built drawings.

Professional. The Request Drawings form can be accessed, filled out and submitted at the following internet address (scroll down to bottom of home page): <u>http://www.klhengrs.com</u>.

#### SECTION 23 05 29.00 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

Submittal Requirements

supported by equipment. (#16 gage) 30 or less 31 to 60 (#14 gage)

**BALANCING FOR HVAC** 

Test, adjust, and balance the following mechanical Supply air systems, all pressure ranges Return air systems Exhaust air systems. Test systems for proper sound and vibration levels. Quality Assurance Codes and Standards: AABC: "National Standards for Total System Balance". ASHRAE: ASHRAE Handbook, 2011 Applications, Chapter 38, Testing, Adjusting, and Ealancing. Qualifications

conditioning systems, to balance, adjust and test all air

Sequencing and Scheduling dry bulb temperature of minimum winter design condition. Take final temperature readings during seasonal operation

Check fan belt tension. Check fan rotation.

Air balance and testing shall not begin until the system has been completed and is in full working order. The Contractor shall put all heating, ventilating and air conditioning systems and equipment into full operation and shall continue the operation of same during each working day of testing and balancing. The contractor shall submit within 30 days after receipt of contract, 8 copies of submittal data for the testing and balancing of the air conditioning, heating, and ventilating systems. The Air Balance and Testing Agency shall provide proof of having

and scope. The air balancing contractor shall include the additional cost to change every fan factory installed sheave, pulley and/or belt of in order to obtain the design air flows. Performing Testing, Adjusting and Balancing Perform testing and balancing procedures on each system identified, in accordance with the detailed procedures outlined in the referenced standards.

Cut insulation, ductwork, and piping for installation of test probes to the minimum extent necessary to allow in operation adequate performance of procedures. Heated Air Curtain Patch insulation, ductwork, and housings, using materials Provide a line voltage wall mounted room thermostat with identical to those removed. adjustable setpoint. On a call for heating, fan shall start Seal ducts and piping, and test for and repair leaks. and coil shall activate to maintain room temperature Seal insulation to re-establish integrity of the vapor barrier. Mark equipment settings, including damper control positions; valve indicators, fan speed control levers, and Provide relays and controls to automatically shut off heat when outdoor air temperatures are greater than 45F. similar controls and devices, to show final settings. Mark with paint or other suitable, permanent identification

materials

## SECTION 23 07 13.00 - DUCT INSULATION

Submittal Requirements

minimum, whichever higher. aluminum foil, and vinyl film. all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film.

hai -S OF compu NNERSHIP OF INSTRUMEN reports, plans, specifications rvice shall remain the proper nitation, the copyright thereto.

#### If expressly permitted by the Owner and the terms of the Contract, editable electronic versions of standard-scale, AutoCAD-based plan drawings may be made available for

Upon request when available, electronic versions of standard-scale, Navisworks (.dwf) and (.nwc) or AutoCAD 36 (.dwg) files may be made available for coordination

Due to the proprietary nature of internal design systems, editable native-software versions of some drawings, including but not limited to system diagrams and details will not be made available in an editable form. In these cases, electronic versions of the drawings may be made available only in PDF, JPG or similar non-editable electronic form, at the sole discretion of the Design

> Product Data: For each type of product indicated. Shop Drawings: Fabrication and installation

Support all piping, ductwork and equipment by hangers or brackets properly from the building structure. Support from decking above is prohibited. Furnish structural steel members where required to support piping and equipment. No portion of piping or valves shall be

Ductwork - Support by means of hangers as follows: Duct Width Hanger Size and Type Max. Spacing A pair of hangers shall be located at every transverse joint and elsewhere according to the table.

SECTION 23 05 93.00 - TESTING, ADJUSTING AND

Submittal Requirements Shop Drawings: Certified Reports: Submit testing, adjusting, and balancing reports bearing the seal and signature of the Test and Balance Engineer. The reports shall be certified proof that the systems have been tested, adjusted, and balanced in accordance with the referenced standards; are an accurate representation of how the systems have been installed; are a true representation of how the systems are operating at the completion of the testing, adjusting, and balancing procedures; and are an accurate record of all final quantities measured, to establish normal operating values of the systems. Final Report: Upon verification and approval prepare final reports, type written, and organized and formatted as specified below. Submit 2 complete sets of final report to the landlord.

The contractor shall procure the services of an independent Balance and Testing Agency, approved by the Engineer, and a member of Associated Air Balance Council (AABC) or NEBB, which specializes in the balancing and testing of heating, ventilating and air

and water systems and equipment as herein specified. All work by this agency shall be done under direct supervision of a qualified heating and ventilating Engineer employed by this agency. All instruments used by this agency shall be accurately calibrated and maintained in good working

Test, adjust and balance air conditioning systems during summer season and heating systems during winter season, including at least a period of operation at outside conditions within 5 deg F wet bulb temperature of maximum summer design condition, and within 10 deg F

Check all filters for cleanliness, provide new as required. Check dampers (volume and fire) for correct and locked position, and temperature control for completeness of installation before starting fans. Place outlet dampers in full open position. Lubricate all motors and bearings.

successfully completed at least five projects of similar size

Retest, adjust, and balance systems subsequent to significant system modifications, and resubmit test results.

Product Data: For each product indicated. Shop Drawings: Include plans, elevations, sections, details and attachments to other work.

All liners, insulation and adhesives shall have a flame spread index not more than 25 and a smoke developed index of not more than 50. Insulation shall have a minimum installed thermal resistance value of R6 or code

Rigid Fiberglass Ductwork Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 612, Type IB, without facing and with vapor barrier all-service jacket manufactured from kraft paper, reinforcing scrim,

Flexible Fiberglass Ductwork Insulation: Glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II, without facing and with vapor barrier

Vapor Barrier Material for Ductwork: Paper-backed aluminum-foil, except as otherwise indicated; strength and permeability rating equivalent to factory-applied vapor

barriers on adjoining ductwork insulation, where available; with following additional construction characteristics: High Puncture Resistance: Low vapor transmission (for ducts in exposed areas: Mech. Rooms, etc.) Moderate Puncture Resistance: Medium vapor

transmission (for ducts in concealed areas). All ductwork shall be insulated except:

Double wall ductwork Fabric ductwork

Metal ducts with duct liner of sufficient thickness to comply with energy code. Factory insulated flexible ductwork

Factory insulated plenums and casings Flexible connectors

Vibration control devices Factory insulated access panels and doors

Supply ductwork exposed in conditioned spaces excluding mechanical rooms, server rooms and electric equipment Toilet exhaust, general exhaust and return ductwork in an insulated joist or attic space.

#### SECTION 23 09 93.00 – SEQUENCE OF OPERATIONS FOR HVAC CONTROLS

Submittal Requirements Product Data: Provide written sequences of

operation for each controlled system and piece of equipment.

Packaged Rooftop Unit All setpoints listed in this section are adjustable through the Building Automation System (BAS). Control & Monitoring points shall include but not be limited to the followina:

1. Startup The unit shall operate on an occupied/unoccupied cycle as controlled from the BAS. Occupancy shall be predetermined by the owner and programmed into the

During startup, the fan shall run with the dampers in the full recirculation position. Provide occupied changeover sequence with optimum start function. When the return air temperature reaches occupied setpoint (adjustable), the minimum outside air damper shall open to the controlled minimum outdoor air position.

2. Supply Fan Control The supply fan shall be two staged and modulate up and down based on a call for heating or cooling.

3. Space Temperature Control Provide 7-day programmable thermostat with digital display of space temperature and setpoint (+/- deg. F adjustable), with override feature and remote space temperature sensor

4. Minimum Outside Air Control During occupied mode, the minimum outside air damper shall be open to the scheduled minimum outdoor air flow and modulate proportionally with the supply fan speed to maintain the scheduled minimum outside airflow. When the supply fan speed is set to high, outside air damper shall be partially closed allowing minimum outside air flow as scheduled. As supply fan speed is set to low, damper

shall fully open allowing minimum outside air flow as scheduled. Provide motor operated dampers. Provide carbon dioxide sensors in the space to measure carbon dioxide levels. Outside air damper shall modulate to maintain maximum carbon dioxide level setpoint at all

times during occupied mode. CO2 levels shall be held below 1000 ppm (adjustable). When CO2 levels are below setpoint, outside air damper shall be at a minimum position, which equates to the sum of the "OA SQFT" multiplied by the room areas of each room in the "HVAC Ventilation Schedule" during occupied mode. Economizer Control

Provide dual enthalpy economizer control. Economizer control shall be enabled whenever the outside air enthalpy is lower than the return air enthalpy. Enthalpy shall be calculated from sensors which are tied to the same controller for accuracy. During economizer mode, the outside air damper shall modulate to 100% open. The economizer damper shall modulate open on a call for cooling and modulate closed on a call for heating. The return damper shall modulate inversely with the economizer damper.

6. Cooling Control Cooling shall be controlled to maintain space temperature setpoint. On a call for cooling, the heating shall be off and supply fan speed shall be low. On a further call for cooling, the economizer shall be enabled. On a further call for cooling, disable the economizer and energize first stage cooling on. On a further call for cooling, the supply fan speed shall be high and energized

second stage of cooling. 7. Heating Control Heating shall be controlled to maintain space temperature setpoint. On a call for heating, the mechanical cooling shall be off. On a further call for heating, the economizer mode shall be disabled. On a further call for heating, the supply fan shall be set to low speed and the gas heating shall be disabled. On a further call for heating, the supply fan shall be set to high speed and the

gas heating shall be staged on. Unoccupied Mode During the unoccupied mode of operation, the RTU shall go into night setback mode.

Night Setback/Shutdown At night setback/shutdown the RTU shall go to fail safe

position. Fail safe position is defined by the following: The supply fan is off, the outdoor air intake damper is closed, the heating is off and the mechanical cooling is off. The supply fan shall cycle in conjunction with either the heating or cooling system to maintain a minimum/maximum space temperature depending on the season. Toilet Exhaust Fans (Timeclock)

Exhaust fans shall be tied to timeclock, which shall be furnished, installed and wired by electrical contractor. When activated, exhaust fan motor damper shall open and fan shall start.

(Indicated by EC on HECS schedule)

Electric Wall Heater/ Unit Heater Provide a line voltage wall mounted room thermostat with adjustable setpoint. On a call for heating, fan shall start and coil shall activate to maintain room temperature

setpoin Provide relays and controls to automatically disconnect power to the electric heaters when the Cooling system is

Electrical contractor will provide power wiring. HVAC contractor shall provide all the low voltage wiring of HVAC units and controls, thermostats and controllers. Thermostat shall be by the manufacturer of the HVAC unit (heat/cool/auto/off) with night setback. Provide plastic protective cover for all thermostats.

Temperature Sensors tied to BAS

Sensors shall be furnished, installed and wired by the Temperature Control Contractor. The electrical contractor shall provide 4" square x 1- 1/2" deep wall outlet boxes at 54" above finished floor (with single-gang rings) for all thermostats/sensors. The electrical contractor shall

provide one 3/4" empty conduit from each thermostat/sensor location, turned out above accessible ceilings (in joist space or against overhead slab/deck). The Temperature Control Contractor shall provide all other necessary conduit, raceway and wiring related work. Conduit shall be identified in ceiling cavity and shall be provided with sweep bends, bushings and dragline. The HVAC/TemperatureControl Contractor shall coordinate with the General Contractor to ensure thermal envelope is maintained

at these locations. Carbon Dioxide Sensors

Carbon dioxide sensors shall be non-dispersive infrared (NIDR) type with a measurement range of 0-2000 ppm, repeatability of +/-20 ppm and a measurement accuracy of +/-75 ppm.

The recommended calibration interval shall be a minimum of 5 Space mounted applications shall utilize diffusion through an attractive, satin finish, high impact housing.

General Control Wiring Requirements and Installation

Except where specifically indicated otherwise above, the HVAC/Temperature Control Contractor shall provide all electrical work as required for all temperature control related wiring (i.e. conduit, raceway, outlet boxes, junction boxes, wiring, etc.) in accordance with Electrical Specifications requirements. All conduit shall be 3/4" minimum.

Coordinate all thermostat/sensor locations in field (case by case) with Architect, Owner and Electrical Contractor to ensure that they are placed in locations that will not interfere with furniture, equipment, artwork, wall-hung specialties, room finishes, etc. All thermostat/sensor wall locations indicated on HVAC drawings are schematic only and must be verified case-by-case prior to rough-in. All electrical work as described in this specification shall be per the latest edition of the National Electrical Code (NEC) and per applicable state and local codes. Where "free-air" installation methods (either exposed above the ceilings, in bridle rings or in cable trays) are permitted under Electrical Specifications above ceilings, provide plenum-rated cables wherever plenum ceilings (if any) exist and install as defined under Electrical Specifications. Install low voltage circuits, located in concrete slabs and masonry walls, in inaccessible locations, or exposed in occupied areas, in electrical conduit regardless of what wiring methods are permitted under Electrical Specifications.

Where cable trays or bridle rings are provided by the electrical contractor for low voltage cables, these raceways may be utilized for control wiring by this contractor (provide special color coded jackets, label cable jackets per Electrical Specifications and group control wiring cables together). Provide conduit drops from cable tray/bridle ring paths to wall outlet boxes and equipment unless directed otherwise under Electrical Specifications. Regardless of permitted methods in Electrical Specifications, all cables/wiring installed concealed by gypsum board, masonry or other inaccessible materials in walls or above ceilings shall be installed in conduit, 3/4"

All conduit, bridle rings, raceway, outlet boxes, etc. necessary for complete operational installation of control wiring shall be provided (furnished and installed) by the temperature control contractor in strict compliance with Electrical Specifications documents. Coordinate all work with all other applicable trades including the electrical contractor.

Provide all required conduit work to and between equipment in a manner compliant with that described above (i.e. between VAV boxes, to boilers, starters, condensing units, etc. as applicable). Install control wiring without splices between terminal points, color-coded. Install in neat workmanlike manner, securely fastened. Install in accordance with National Electrical Code and per Electrical Specifications. Install circuits over 25 volt with color-coded No. 12 wire in electrical metallic tubing, per Electrical Specifications. Install circuits under 25 volt with color-coded No. 18 wire with 0.031" high temperature (105 degs. F) plastic insulation on each conductor and plastic sheath over all. Install electronic circuits with color-coded No. 22 wire with 0.023" polyethylene insulation on each conductor with

plastic-jacketed copper shield over all. Motor Operated Dampers

All fresh air intakes and exhaust louvers shall have motor operated dampers. Dampers shall be low leak with blade and edge seals. All motor operated dampers shall be provided and wired by the mechanical contractor unless otherwise noted. Provide all necessary transformers, contactors, controls and wiring for interlocking equipment to motor operated dampers.

#### SECTION 23 31 13.00 - METAL DUCTS

Submittal Requirements Product Data: For liners, adhesives, sealants and

> Shop Drawings: Sheet metal thickness, reinforcing details, duct layouts indicating sizes, configuration, liner material, elevation and static pressure class.

#### Ductwork Materials

Exposed Ductwork Materials: Where ductwork is indicated to be exposed to view in occupied spaces, provide materials which are free from visual imperfections including pitting, seam marks, roller marks, stains and discolorations, and other imperfections, including those which would impair painting. Mechanical contractor shall confirm ductwork paint scope and color with architect. Exposed ductwork which is to be painted shall have paint grip applied and be oil free. Sheet Metal: Except as otherwise indicated, fabricate ductwork from galvanized sheet steel, lock forming quality;

with G 90 zinc coating and mill phosphatized for exposed locations. Minimum gauge shall be 24. Miscellaneous Ductwork Materials Volume Dampers: Provide volume dampers in all branch ducts or as required for balancing to required air flows.

Fittings: Provide radius type fittings fabricated of multiple sections with maximum 15 deg. change of direction per section. Unless specifically detailed otherwise, use 45 deg. laterals and 45 deg. elbows for branch takeoff connections. Where 90 deg. branches are indicated, provide conical type tees

Duct Sealant: Non-hardening, non-migrating mastic or liquid elastic sealant, type applicable for fabrication/installation detail, as compounded and recommended by manufacturer specifically for sealing

joints and seams in ductwork. Duct Cement: Non-hardening migrating mastic or liquid neoprene based cement, type applicable for

fabrication/installation detail, as compounded and recommended by manufacturer specifically for cementing fitting components, or longitudinal seams in ductwork. Ductwork Support Materials: Except as otherwise indicated, provide hot-dipped galvanized steel fasteners, anchors, rods, straps, trim and angles for support of ductwork

Flexible Ducts Either spiral-wound spring steel with flameproof vinyl sheathing, or corrugated aluminum. Unless specifically

mentioned, the maximum length of flex duct on the supply equals 5 feet. Flex is not allowed for return, relief or exhaust applications. The flexible ducts indicated for use in the H.V.A.C. system shall conform to the requirements of UL 181 for Class 0 or Class 1 flexible air ducts and shall be so identified. Where installed in unconditioned spaces other than return

air plenums, provide 1" thick 1-1/2 lb. continuous flexible fiberglass sheath with vinyl vapor barrier jacket. Installation is not permitted above drywall ceilings and inaccessible ceilings. Fabrication

Shop fabricate ductwork in 4, 8, 10 or 12-ft lengths, unless otherwise indicated or required to complete runs. All ductwork shall be Pittsburgh Construction with a minimum of thickness of 24 gauge. In addition, ductwork used in systems over 3" W.G. shall have cold sealant applied. Shop fabricate ductwork of gauges and reinforcement complying with SMACNA "HVAC Duct Construction Standards".

#### Lined Duct

Fabricate ductwork with duct liner in each section of duct where indicated. Laminate liner to internal surfaces of duct in accordance with instructions by manufacturers of lining and adhesive, and fasten with mechanical fasteners. Duct liner to be 3-lb density for acoustic requirements 1" thick or as noted. Size of ductwork shown on the drawings is free net area, outside dimension of ducts will need to be increased if lined duct is used. Size of ductwork shown on the drawings is free net area,

lined duct is used. Duct Liner: Fibrous glass of thickness indicated. 3-lb density. All liners, insulation and adhesives shall have a

outside dimension of ducts will need to be increased if

leveloped index of not more than 50. Duct Liner Adhesive: As recommended by insulation manufacturer and complying with NFPA 90A or NFPA 90B. Duct Liner Fasteners: Comply with SMACNA HVAC Duct Construction Standards. Installation of Metal Ductwork General: Assemble and install ductwork in accordance with recognized industry practices which will achieve airtight (5% leakage for systems rated 3" and under; 1% for systems rated over 3") and noiseless (no objectionable noise) systems, capable of performing each indicated service. Install each run with minimum number of joints. Align ductwork accurately at connections, within 1/8" misalignment tolerance and with internal surfaces smooth. Support ducts rigidly with suitable ties, braces, hangers and anchors of type which will hold ducts true-to-shape and to prevent buckling. Support vertical ducts at every

Sealing: Seal all longitudinal seams, S's and drives and all

joints with mastic or cement. Install according to SMACNA Balancing Dampers: The sheet metal contractor shall be fully responsible for installing balancing dampers in the ductwork, (whether shown on the drawing or not) in order

to arrive at the intended air flow. The balancing subcontractor shall provide direction and assistance in determining locations where dampers are required. Additional dampers, if required shall be installed at no additional cost to the owner. Wall Penetrations: Seal and pack around all ducts and piping sleeves which pass through walls that extend to bottom side of structure and rated walls. Field Fabrication: Complete fabrication of work at project as necessary to match shop-fabricated work and accommodate installation requirements. Routing: Locate ductwork runs, except as otherwise indicated, vertically and horizontally and avoid diagonal runs wherever possible. Run ductwork in shortest route which does not obstruct useable space or block access for servicing building and its equipment. Hold ducts close to

walls, overhead construction, columns, and other structural and permanent enclosure elements of building. Limit clearance to 1/2" where furring is shown for enclosure or concealment of ducts, but allow for insulation thickness, if any. Where possible, locate insulated ductwork for 1" clearance outside of insulation. Wherever possible in finished and occupied spaces, conceal ductwork from view, by locating in mechanical shafts, hollow wall construction or above suspended ceilings. Do

not encase horizontal runs in solid partitions, except as specifically shown. Coordinate layout with suspended ceiling and lighting layouts and similar finished work. Electrical Equipment Spaces: Do not route ductwork

through transformer vaults and their electrical equipment spaces and enclosures. Penetrations: Where ducts pass through interior partitions and exterior walls, and are exposed to view, conceal space between construction opening and duct or duct

Greenheck Fan Corporation

Young Regulator Company

Installation of Duct Liner

Nailor Industries

Ruskin Company

ductwork system.

shown per plans:

Transfer air ducts.

Installation of Flexible Ducts

Submittal Requirements

as specified herein

Hooded dome type.

safety switch.

insulated

Acme

CaptiveAire

Greenheck.

requirements.

form watertight units.

vertical loads.

inhibitive metal primer paint.

maximum lateral forces in addition to superimposed

Cook (Loren) Co.

Twin City Fan & Blower

Prefabricated Roof Curbs

16-ga aluminum or brass wire.

Centrifugal Roof Ventilators

ductwork.

diffuser

Overlap opening on 4 sides by at least 1-1/2". Fasten to duct and substrate. Where ducts pass through fire-rated floors, walls, or partitions, provide fire dampers and firestopping between duct and substrate, in accordance with requirements of Division-7 Section "Firestopping All dampers integral to or utilized as part of an engineered smoke control system shall be listed and comply with UL

# flame spread index not more than 25 and a smoke

insulation with sheet metal flanges of same gage as duct.

All fire dampers shall be listed and comply with UL 555. All dampers shall be low leakage with edge and blade

seals. Damper manufacturers are subject to specification compliance. Provide products by one of the following:

Coordination: Coordinate duct installations with installation of accessories, dampers, coil frames, equipment, controls and other associated work of

General: Install duct liner in accordance with SMACNA HVAC Duct Construction Standards. Size of ductwork shown on the drawings is free net area, outside dimension of ducts will need to be increased if lined duct is used. Store internally lined ductwork up off of the floor. Protect internally lined ductwork from water and dust. The following ductwork shall be lined in addition to that

Return from open ceiling plenum return to HVAC unit. Supply and return ductwork 10 feet downstream of HVAC

Butter the leading edge of all internal duct lining with the manufacturer's recommended adhesive. Inspect and repair all damaged lining prior to installation of

Maximum Length: For any duct run using flexible ductwork, do not exceed 5' - 0" extended length. Installation shall have smooth full radius turns down to Installation not permitted above inaccessible ceilings.

23 34 23.00 – HVAC POWER VENTILATORS

Product Data: For each type of product indicated. Provide centrifugal roof type, curb mounted, power ventilators of type, size, and capacity as scheduled, and

Type: Centrifugal fan, direct or belt driven as scheduled Provide aluminum, galvanized steel, or fiberglass weatherproof housings as scheduled. Provide square base to suit roof curb. Provide permanent split-capacitor

type motor for direct driven fans; capacitor-start, inductionrun type motor for belt driven fans. Provide the Following Types of Housing Design: Electrical: Provide factory-wired non-fusible type

disconnect switch at motor in fan housing. Provide thermal overload protection in fan motor. Provide conduit chase within unit for electrical connection.

Provide NEMA 1 disconnect factory mounted. For single phase fractional HP fans use a toggle type disconnect switch. On three phase integral HP fans use a NEMA 1 Bird Screens: Provide removable bird screens, 1/2" mesh

Roof Curb: Provide factory fabricated roof curb by the same manufacturer as the equipment. Roof curb to be

Manufacturer: Subject to compliance with requirements, provide centrifugal roof ventilators of one of the following:

#### General: Provide manufacturer's standard shopfabricated units, modified if necessary to comply with

Fabricate structural framing for units of structural quality sheet steel, formed to manufacturer's standard profiles for coordination with roofing, insulation and deck construction. Include 45 deg. cant strips and deck flanges with offsets to accommodate roof insulation. Weld corners and seams to

Clean and paint units with manufacturer's standard rust-Reinforce continuous runs of over 3'-0" length, by inserting welded stiffeners of heavy gage with flanges as required to provide sufficient rigidity and strength to withstand

Gage and Height: Fabricate units of metal gage and to height above roof surface as indicated. Where gage or height are not indicated, fabricate units of

14-ga metal, and nominal height of 14". Provide pressure treated wood nailer, not less than 1-5/8" thick and of width indicated, but not less than width of

support wall assembly. Anchor nailer securely to top of metal frame unit. Provide lumber pressure treated with water-borne

preservatives for "above ground" use. Insulate units inside structural support wall with rigid glass fiber insulation board of approximately 3-lb. density and 1-1/2" minimum thickness, except as otherwise indicated. Manufacturer: Subject to compliance with requirements, provide prefabricated roof curbs of one of the following: Custom Curb, Inc.

Equipment Manufacturer. MicroMetl Pate Co.

Shipman Thycurb.

INSTALLATION Coordinate ventilator work with work of roofing, walls, and ceilings, as necessary for proper interfacing. Provide access door in duct below ventilator to service

Solder bottom joints and up 2" of side joints of duct under roof ventilator to retain any moisture entering ventilator.

SECTION 23 34 33.00 – AIR CURTAINS

Submittal Requirements Product Data: For each type of product indicated.

General: Provide air doors of size and capacity as noted on drawings. Air doors shall operate at a low sound level and meet OSHA standards.

Construction: Wheels: Talc-filled polypropylene or aluminum.

#### Housing: Galvanized steel. Motorboard: Galvanized steel

Velocity Control: Provide adjustable louver damper controls for regulating rate of air flow. When louvers are completely closed air velocity shall reduce to sixty percent. Directional Control: Provide adjustable vanes at outlet nozzle for directing air where needed and readily set to compensate for possible draft conditions through door openings. Vanes shall have a forty percent girth sweep front to back.

Motors: Provide totally enclosed shaded-pole, or permanent-split capacitor motors, Class "B" insulation, resiliently mounted, tap wound with built-in thermal overload protection, and with permanently lubricated type sleeve or ball bearings. Select motors with the voltage as scheduled.

Extended Motor Oilers: Provide plastic tubes for lubricating motor bearings which are installed beneath

Motor Controls: Provide multi-speed motor control switch with OFF position, mounted behind access door. Fans: Provide double width, double inlet centrifugal fans which are balanced statically and dynamically, of indicated capacity. Select fans with single or double extended motor shaft, with fan housing and motor fastened as an integral assembly to a motorboard. Electric Air Curtains

Heating Elements: Except as otherwise indicated, provide manufacturer's standard heating elements of types, sizes, capacities and ratings for duty indicated; consisting of resistance elements enclosed in steel sheath with extended fins, or with spirally finned sheath. Electric Heating Capacity: Size elements for indicated fan speed, CFM, room heating load (BTUH), entering air temperature, and electric input (watts, voltage, phase). Internal Electrical Wiring: Provide units with high temperature, electrical heat-resistant wiring in flexible metal conduit from terminal junction box to electrical devices. Provide fusing for motor and control circuit wiring. Provide all required control transformers. Devices: Provide air doors with the following devices:

Thermally activated fan switch to keep fan motor operating until residual heat is dissipated. Disconnect switch. Automatic reset, high limit cut-out switch located in discharge air stream.

Manual "Summer-OFF-Winter" switch. Unit-mounted line voltage thermostat

Automatic door switch: Plunger type installed in door area to activate air curtain when door opens and to deactivate air curtain when door closes. Control Power Transforme

Magnetic Contactor (Relay Kit) Manufacturers: Subject to compliance with requirements. provide electric air doors of one of the following: Mars Sales Company, Inc.

#### King National Ravwall Installation

Provide disconnect at side or unit for installation in

recessed ceiling Provide trim piece to finish linear slot supply in ceiling for recessed units. Coordinate with other electrical work, including

wiring/cabling, as necessary to properly interface installation of heating terminal units with other work. Clean dust and debris from each heating terminal as it is installed to ensure cleanliness

Comb out damaged fins where bent or crushed before covering elements with enclosures. Touch-up scratched or marred heating terminal enclosure surfaces to match original finishes.

Field Quality Control Upon completion of installation of electric heating terminals, and after building circuitry has been energized, test heating terminals to demonstrate capability and

compliance with requirements Replace electric heating terminals and accessories which are damaged and remove damaged items from construction site.

23 37 13.00 – DIFFUSERS, REGISTERS AND LOUVERS Submittal Requirements

Product Data: For each type of product indicated. DIFFUSERS, GRILLES AND REGISTERS

Manufacturer: Subject to compliance with requirements. provide diffusers of one of the following:

Anemostat Products Div., Dynamics Corp. of America. Metal-Aire

Titus Products Div., Philips Industries, Inc. Tuttle and Bailey. Price

Louvers and dampers Provide louvers and dampers of size as noted. Manufacturer: Subject to compliance with requirements,

provide diffusers of one of the following: Aerolite Prefco

Greenheck Ruskin

## 23 74 33.00 – PACKAGED OUTDOOR ROOFTOP UNITS

Submittal Requirements Product Data: For each type of product indicated.

Warranty Warranty on Compressor and Heat Exchanger: Provide written warranty, signed by manufacturer, agreeing to replace/repair, within warranty period, compressors and heat exchangers with inadequate and defective materials and workmanship, including leakage, breakage, improper assembly, or failure to perform as required; provided manufacturer's instructions for handling, installing, protecting, and maintaining units have been adhered to

during warranty period. Replacement is limited to component replacement only, and does not include labor for removal and reinstallation. Warranty Period: 5 years from date of owner acceptance.

STAGED VOLUME General: Rooftop unit shall be factory-assembled and tested, designed for roof or slab installation and, consisting of compressors, condensers, evaporator coils, condenser and evaporator fans, refrigeration and temperature controls, filters, and dampers. Capacities and electrical characteristics are scheduled. Casing

manufacturer's standard casing construction, having corrosion protection coating, and exterior finish. Casings shall have removable panels or access doors for inspection and access to internal parts, a minimum of 1" thick thermal insulation, knockouts for electrical and piping connections, and an exterior condensate drain connection, and lifting lugs.

rounding

Unit casing shall be single wall construction. Roof Curbs: Manufacturer's standard construction, insulated and having corrosive protective coating, complete with factoryinstalled wood nailer and drain nipple. Construction shall be in accordance with NRCA Standards. Evaporator Fans: Forward-curved, centrifugal, belt-driven fans with adjustable sheaves; and permanently lubricated motor bearings

Condenser fans: Propeller-type, direct-driven fans with permanently lubricated bearings. Coils: Aluminum plate fin and seamless copper tube type. Fins shall have collars drawn, belled and firmly bonded to the tubes by

means of mechanical expansion of the tubes. No soldering or tinning shall be used in the bonding process. Coils shall have a galvanized steel casing. Coils shall be mounted in the coil casing with same end connections accessible for service. Coils shall be removable from the unit through the roof or through the piping enclosure. Coil section shall be completely insulated. Refrigerant cooling coils: have an equalizing type vertical distributor to ensure each coil circuit receives the same amount of refrigerant. Coils shall be proof (450 psig) and leak (300 psig) tested with air pressure under water, then cleaned, dehydrated,

and sealed with a holding charge of nitrogen. Condensate Pan: Provide IAQ steel, double sloping drain pain. Provide high condensate in primary condensate pan to deenergize unit upon detection of high condensate levels. Compressors: Serviceable, semi-hermetic, or hermetic

compressors with integral vibration isolators, and crankcase heaters, which de-energize during compressor operation. Units shall also have: Lead compressor shall be 2-stage.

#### Safety Controls:

low pressure cutout, manual reset; high pressure cutout, manual reset;

compressor motor overload protection, manual reset; anti-recycling timing device; adjustable low-ambient lockout;

oil pressure switch. Controls:

redundant gas valves; intermittent pilot ignition;

electronic spark ignition system; high limit cutout:

forced draft proving switch; flame roll-out switch.

Enthalpy Economizer Control:

Provide dual enthalpy economizer control. Provide return and outside air dampers, outside air filter, fully modulating electric control system with dry control, and adjustable mixed-air thermostat. System shall be capable of driving 100% closed for unoccupied mode, minimum outside air position and modulation to 100 percent open outside air capability. Provide automatic changeover through adjustable control device.

Heating Types: Heat exchangers: Provide manufacturer's construction of aluminized steel gas-fired heat exchangers and burners, designed for minimum of 2-stage operation. Provide single gas connection. Temperature Control: Temperature control: factory-installed, demand-oriented solid

state control system above 5 tons shall have minimum of 2 cooling steps and 2 heating steps. Controls shall include solidstate thermostats with dead-band, and sub-base with system and fan switches. Other control features include:

Barometric Relief - Shall include relief damper section with mist eliminator. Dampers open to relieve positive pressure within the building. Available only with economizer.

Provide air filters to fit in filter box, with a Maximum filter face velocity of 500 fpm, of the following type: Disposable Type: Provide 30% efficient disposable type air filters 2" thick, consisting of viscous coated fibers with filtering media encased in fiberboard cell sides having perforated metal grids on each side to provide media support Filters: Provide, 95%, efficient filters.

Provide filters with clean resistance not exceeding 0.10" w.g. at face velocity of 300 fpm, and ASHRAE weight arrestance efficiency of 70-82%, based on final operating resistance of 0.5" w.g.Options:

Hail guards protecting the condenser fins. Controls:

Self Contained: Programmable Electronic Night Setback Thermostat - Shall provide heating setback and cooling setup with 7-day, programming capability. Optional remote sensor available

Manufacturers: Subject to compliance with requirements, provide rooftop units of one of the following:

Carrier Air Conditioning, Div of Carrier Corp. Lennox Industries Inc

Trane; a division of Ingersoll Rand. Daikin

23 82 39.00 - UNIT HEATERS

Submittal Requirements Product Data: For each type of product indicated.

General: Provide unit heaters in locations as indicated, and of capacities, style, and having accessories as scheduled. Provide temperature control valves for

modulation during a call for heat and closed during Wall and ceiling unit heaters General: Provide a heavy duty fan forced wall heater

Heating grid shall be made up of rugged steel fins, copper brazed to non glowing, steel sheathed elements. Unit to have built in, tamper proof thermostat or remote thermostat, built in disconnect switch. Front cover shall be decorative 16 gauge welded bar

Thermally activated fan switch to keep fan motor operating

Manufacturers: Subject to compliance with requirements,

Fan delay and thermal cutout are standard.

Provide all required control transformers.

Provide wall heaters with the following devices:

Automatic reset, high limit cut-out switch located in

1" semi recessed mounting sleeve.

until residual heat is dissipated.

Manual "Summer-OFF-Winter" switch

Unit-mounted line voltage thermostat

possible unless otherwise indicated.

installed to ensure cleanliness.

covering elements with enclosures.

surfaces to match original finishes.

provide wall heaters of one of the following:

Hang units from building substrate, not from piping.

Mount as high as possible to maintain greatest headroon

Support units with rod-type hangers anchored to building

Protect units with protective covers during balance of

Coordinate with other electrical work, including

wiring/cabling, as necessary to properly interface

installation of heating terminal units with other work.

Clean dust and debris from each heating terminal as it is

Comb out damaged fins where bent or crushed before

Touch-up scratched or marred heating terminal enclosure

Tighten connectors and terminals, including screws and

connectors. Where manufacturer's torquing requirements

bolts, in accordance with equipment manufacturer's

published torque tightening values for equipment

Accessories

Qmark

Markel

Raywal

Trane Co

substrate

construction.

Installation

Surface mounting box.

Disconnect switch.

discharge air stream.

Installation of Heaters

Control Power Transformer

Magnetic Contactor (Relay Kit)

#### are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Std 486A. Provide equipment grounding connections for electric heating terminals as indicated. Tighten connections to comply with tightening torque values specified in UL Std 486A to assure permanent and effective grounding.

![](_page_47_Picture_266.jpeg)

## FIELD VERIFY ALL CONDITIONS

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN

INTENT.

of

![](_page_48_Figure_6.jpeg)

![](_page_48_Figure_7.jpeg)

![](_page_48_Figure_9.jpeg)

5 PLUMBING WATER ISOMETRIC

![](_page_48_Figure_11.jpeg)

![](_page_48_Figure_12.jpeg)

![](_page_48_Figure_13.jpeg)

![](_page_48_Figure_14.jpeg)

GENERAL DEMO PLUMBING NOTES		KEYED NOTES
<ul> <li>A. AT ALL LOCATIONS WHERE PLUMBING FIXTURES ARE TO BE REMOVED, PLUMBING SUBCONTRACTOR SHALL REMOVE PIPING (WATER, WASTE, VENT) TO A POINT BEYOND FINISH SURFACE AND CAP OFF. WHERE PIPING SERVING EXISTING FIXTURE TO BE REMOVED ALSO SERVES FIXTURES THAT ARE TO REMAIN, PIPING SHALL BE REROUTED AND RECONNECTED AS REQUIRED TO ACCOMMODATE REMODELED AREAS AS REQUIRED.</li> <li>B. WHERE EXISTING WALLS ARE REMOVED AND PIPING IS FOUND THAT MUST REMAIN, PLUMBING SUBCONTRACTOR SHALL REROUTE AND RECONNECT PIPING AS REQUIRED, E.G. DOMESTIC WATER PIPING, GAS, SOIL, WASTE, VENT, AND ROOF LEADER PIPING.</li> <li>C. ALL PLUMBING PIPING THAT IS FOUND TO NO LONGER SERVE ANY PURPOSE SHALL BE REMOVED AND CAPPED OFF BEYOND FINISH SUBFACE.</li> </ul>	P01 P02 P03	PROVIDE NEW 4" VENT THRU ROOF. COORDIN. REQUIREMENTS WITH LANDLORD'S ROOFING ( EXTEND EXISTING WATER SERVICE TO EXISTIN METER. FIELD VERIFY EXISTING LOCATION. CONNECT NEW SANITARY PIPING TO NEARES <sup>T</sup> VERIFY EXACT LOCATION, INVERT, DIRECTION TYPE PRIOR TO STARTING WORK. CONTACT EI DIFFERENCES OTHER THAN WHAT IS SHOWN ( SCOPING TO INSURE PIPING SIZES AND LOCAT MAY RESULT IN CONTRACTOR REPLACING PIP COST TO TENANT. (NOTE: NEW RESTROOMS A SAME LOCATION AS THE OLD RESTROOM.)
	P04	PROVIDE ELECTRIC HOT WATER HEATER ABO CLEAR TO BOTTOM OF WATER HEATER SUPPO EXPANSION TANK: AMTROL ST-5.
SUBSTITUTION NOTE	P05	PROVIDE TRAP PRIMER TO SERVE NEW FLOOF FROM NEAREST MAIN TO NEW TRAP PRIMER.
<ul> <li>PEX AND CPVC IS APPROVED FOR INTERIOR WATER PIPING.</li> <li>COORDINATE WITH LOCAL JURISDICTION PRIOR TO INSTALLATION. IF PEX AND CPVC IS NOT APPROVED BY AHJ, USE HARD COPPER TUBE, ASTM B 88, TYPE I</li> </ul>	P06	CONTRACTOR SHALL OBTAIN A COPY OF ALL F SHEETS PRIOR TO INSTALLATION OF ANY PIPI ROUGH IN PLUMBING BASED ON THE FIXTURE INSTRUCTIONS.
SCHEDULE 40 PVC PIPE AND FITTINGS CAN BE USED THROUGHOUT.     CONTRACTOR SHALL MAINTAIN INTEGRITY OF FIRE RATINGS, PIPING	P08	EXTEND AND CONNECT TO EXISTING GAS MET ABOVE ROOF.

CONTRACTOR SHALL MAINTAIN INTEGRITY OF FIRE RATINGS. PIPING SHALL NOT BE RUN IN PLENUM SPACES AND CONTRACTOR SHALL

PROVIDE INTUMESCENT COLLARS WHEN PENETRATING A RATED

WALL, FLOOR, OR OTHER ASSEMBLY

![](_page_48_Figure_16.jpeg)

### **KEYED NOTES**

![](_page_48_Figure_19.jpeg)

CONNECT TO EXISTING GAS METER. ROUTE ALL GAS PIPING

![](_page_48_Picture_21.jpeg)

![](_page_48_Picture_22.jpeg)

of g, Ľ

![](_page_49_Picture_2.jpeg)

![](_page_49_Picture_3.jpeg)

	DOLLAR TREE PLUMBING WATER HEATER SCHEDULE											
EFFICIENCY	EWT (DEG F)	LWT (DEG F)	STORAGE (GAL)	FUEL	HTG KW	VOLTS	PHASE	WEIGHT	EMERGENCY	FLA	MCA	OCP
	56	140	10	ELECTRIC	2	120	1	30				

	CONTRA	CTOR TY	PE				MOT	MOTOR CONTROL TYPE									CONTROL TYPE					
)	EC EX FC GC HC MFR PC OR	ELECT EXIST FIRE F GENE HVAC MANU PLUME OWNE	FRICAL CONTRA ING PROTECTION CO RAL CONTRACT CONTRACTOR FACTURER BING CONTRAC ER OR OTHERS	ACTOR ONTRACTO OR TOR	R		CS MCC MG MS VFD MSR OV		COMBINAT AOTOR CC IAGNETIC IANUAL S ARIABLE IANUAL S OVERCURF	ION STAR DNTROL S STARTER TARTER FREQUEN TARTER V RENT PRC	RTER TARTER R OR CONTACT NCY DRIVE V/ CONTROL REL/ DTECTION	ΑY				TC CPT BAS LOW LINE RLINE MAN FA CO INT	TIMECL CONTR BUILDIN LOW VC LINE VC REVER MANUA FIRE AL CARBO INTEGF	OCK OL POWER NG AUTOM/ DLTAGE CC DLTAGE CO SE ACTING IL .ARM N MONOXIE AL TO EQU	TRANSFOR ATION SYST NTROLS NTROLS LINE VOLT DE SENSOF	RMER TEM AGE TI		
	VOLTS (V)	PHASE	EMERGENCY	BHP (HP)	HP (HP)	HTG KW (kW)	WATTS (W)	FLA (A)	MCA (A)	OCP (A)	DC TYPE	DC FURN	DC INST	DC WIRE	MC TYPE	MC FURN	MC INST	MC WIRE	CN TYPE	CN FI		
	120	1			1/40			.52				EC	EC	EC	MG	MFR	MFR	MFR	LINE	PC		
ER	120	1				2						EC	EC	EC					INT	MFR		

## DOLLAR TREE PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	VALVE/FAUCET MFGR	VALVE/FAUCET MODEL	CW SIZE (in)	HW SIZE (in)	SAN SIZE (in)	VENT SIZE (in)	TRAP SIZE (in)	INT TRAP	ACCESSORIES
DF1	DRINKING FOUNTAIN	MURDOK	A172-UG- BF			1/2		2	1-1/2	1-1/2	NO	FURNISH STD. CABINET FINISH FOUNTAIN, SUPPLY STOP & TUBE, DRAIN KIT, AND WALL HANGER KIT
LV1	LAVATORY	ZURN	Z5344	ZURN	Z86500-XL	1/2	1/2	1-1/2	1-1/2	1-1/2	NO	FURNISH LAVATORY, LEAD FREE METERING FAUCET, WALL HANGER KIT, SUPPLY STOPS & TUBES, DRAIN, AND
MS1	MOP SINK	ZURN	Z1996-36	ZURN	Z843MI	1/2	1/2	3	1-1/2	3	NO	FURNISH VACUUM BREAKER, HOSE AND BRACKET, MOP HANGER, AND DRAIN KIT.
TP	TRAP PRIMER	SOUIX CHIEF	695-01			1/2		1 1/2				
WC1	TANK WATER CLOSET	ZURN	Z5560			1/2		3	2		YES	FURNISH ADA CLOSET & TANK, ADA OPEN FRONT SEAT, SELF SUSTAINING HINGE, FLOOR FLANGE, CLOSET BO SUPPLY STOP & TUBE. FLUSH CONTROL MUST BE LOCATED ON THE WIDE/ACCESS SIE OF THE WC (SIDE OPPC
NOTE: 1	ENANT PROVIDED	CONTRACTOR	TO INST	ALL		_		-	1		1	

## DOLLAR TREE PLUMBING DRAIN SCHEDULE

MARKDESCRIPTIONMANUFACTURERMODELTRAP PRIMERTRAP SIZE (in)SAN SIZE (in)VENT SIZE (in)ACCESSORIES/REMARKSFD1FLOOR DRAINZURNZ-415YES31-1/2TYPE "N" STRAINER. PROVIDE WITH COMPLETE BODY ASSEMBLY WITH TRAP PRIMER CONNECTION.

			PLUN	ЛE	BING G	iAS	S LOAD	SCHE	DUL	.E		
Total Equivale Pipe(F	ent Length of Feet):	178	Pressure E (inches W	Drop .C):	0.5		Delivery Pressu PRV (inc	ure After Meter & hes W.C.):	7	Gas Ty	/pe	1
MARK	HVACTYPE	DES	CRIPTION		STATUS	GAS	S HTG IN (CFH)	MIN GAS PRE	SSURE (	(IN WC)	MA	Ĺ
RTU-1	23 74 33.00.00 PACKAGED OUTDOOR ROOFTOP UNIT						180		4			-
RTU-2	23 74 33.00.0	3.00.00 PACKAGED OUTDOOR ROOFTOP UNIT					180		3			
RTU-3	23 74 33.00.0	0 PACKA OUTDC ROOFT	ged Or Op unit				110		4			
GAS LOAD:					TOTAL		470					

PLUMBI	<u>NG AB</u>	BREVIATIONS
CE VALVE	HW	
ED FLOOR	IE	INVERT ELEVATION
ED GRADE	IN WC	INCH WATER COLUMN
IONAL	KWH	KILOWATT HOUB
	LPG	LIQUID PROPANE GAS
alineers	MAU MAX	MAKEUP AIR UNIT
	MBH	1000 BTUH
DMATION SYSTEM	MH	
	MOCP	MAXIMUM OVERCURRENT
		PROTECTION
AL UNIT PER	MS MV	
/ALVE	N	NITROGEN
AIR	NC	NORMALLY CLOSED
	NIC	NUT IN CONTRACT NITROUS OXIDE
R MINUTE	NOM	NOMINAL
	NTS	NOT TO SCALE
DE	OCP	OVER CURRENT PROTECTION
PUMP	OD	OVERFLOW DRAIN
LD WATER		
TER	PRV	PRESSURE REGULATING VALVE
	PSI	POUNDS PER SQUARE INCH
	RD BH	ROOF DRAIN BOOF HYDBANT
NOZZLE	RO	REVERSE OSMOSIS
ONTRACTOR	RPZ	REDUCED PRESSURE ZONE
	RTU	ROOF TOP UNIT
ER HEATER	S	SANITARY
	SI	
OUT	SOFT	SOFT WATER
	SPEC	SPECIFICATION
OR ELEVATION PERES	SQ FT ST	SQUARE FOOT (FEET)
	TD	TRENCH DRAIN
	TEMP	
EK	TP	
OUT	UH	UNIT HEATER
	UR	
DAY	VFD	VARIABLE FREQUENCY DRIVE
HOUR	VP	VACUUM PUMP
MINUTE E REGULATOR		VENT THRU ROOF WASTE ANESTHESIA GAS
E	WB	WASHER BOX
ATER	WC	WATER CLOSET
CTOR	WCO	WALL GLEAN OUT WALL HYDRANT
	WF	WATER FILTER
	YH	YARD HYDRANT

	PLUMBING LEGEND
SYMBOL	DESCRIPTION
	PLAN-VIEW LINE TYPES
	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE
	WORK SHOWN BOLD-DASHED INDICATES SELECTIVE DEMOLITION WORK
	WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK
	DIRECTION OF FLOW
	PIPING LINE TYPES
s	SANITARY WASTE PIPING
V	SANITARY VENT PIPING
cw	DOMESTIC COLD WATER PIPING
HW	DOMESTIC HOT WATER PIPING (120 °F)
G	NATURAL GAS PIPING
	PLUMBING ACCESSORIES
Т	PIPE CAP
<u>⊢ wco o co</u>	<u>CO</u> - CLEANOUT, <u>FCO</u> - FLOOR CLEANOUT, <u>GCO</u> - GRADE CLEANOUT, <u>WCO</u> - W CLEANOUT
● <u>FD</u>	FLOOR DRAIN
Ē	EXPANSION TANK
	PIPE VALVES
	CONTROL VALVE , SHUT-OFF VALVE
	CHECK VALVE
—ТМУ	THERMOSTATIC MIXING VALVE
	PRESSURE REGULATOR VALVE
	BACKFLOW PREVENTER
—XX—	TRAP PRIMER VALVE
	PLUMBING SYMBOLS
ф	PIPE UP
ф Ф	PIPE DOWN
	PIPE TEE DOWN
	PIPE TEE UP
4	PIPE CONTINUATION
$\mathbf{\Theta}$	CONNECT TO EXISTING (FIELD VERIFY EXISTING UTILITY SERVICE TYPE, PRIOR TO MAKING CONNECTION)
O <u>VTR</u>	VENT THROUGH ROOF

![](_page_49_Figure_14.jpeg)

![](_page_49_Figure_15.jpeg)

![](_page_50_Figure_1.jpeg)

![](_page_50_Figure_2.jpeg)

![](_page_50_Figure_3.jpeg)

#### SECTION 22 05 00.00 - COMMON WORK RESULTS FOR PLUMBING GENERAL

The General Provisions of the Contract including the General and Supplemental Conditions and General Requirements apply to the work in this section. Before submitting a bid, examine documents of all other trades, visit the site and get acquainted with all conditions that may in any way affect the execution of this contract. Contractor shall obtain and pay for all permits, certificates of inspection and approvals required. Submittal of a bid indicates that the contractor has examined the drawings, specifications, and had an opportunity to visit the site to be able to provide a comprehensive complete bid to include providing all materials, labor, tools, and equipment required to provide complete plumbing systems as outlined in Division-22. Contractor shall be responsible for all the costs associated with work provided by the utility company, including tap fees, installation costs, materials, equipment, road cuts, and bores if applicable.

Clearly state all full load amps (FLA), voltages and model numbers on all submittals. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories. Provide wiring diagrams: For power, signal, and control wiring.

APPLICABLE STANDARDS

The installation of all plumbing work shall conform to all the following, but not limited, applicable local and municipal utility standards, rules and regulations, plumbing codes and statutes having jurisdiction. All plumbing fixtures, equipment, accessories, and appurtenances shall be NSF/ANSI 61-372 compliant.

Wisconsin Building Code; Wisconsin Plumbing Code;

American Society for Test Materials (ASTM); National Sanitation Foundation (NSF);

American Standards Association (ASA); Underwriters Laboratories (UL);

National Fire Protection Association (NFPA); National Electric Code (NEC);

PLANS AND SPECIFICATIONS

Obtain the latest owner design and construction standards document(s). Comply with all owner-specific requirements in addition to requirements set forth in these specifications and accompanying drawings. Should there be a conflict, the owner's standards shall take precedence, unless prevailing codes and regulations mandate otherwise.

The drawings that accompany these specifications are diagrammatic. Wherever possible make use of submittal data and verify all dimensions on site. Provide additional fittings as required by site conditions and codes at no additional cost to conform to the structure, avoid obstructions, provide required service clearances and preserve headroom. Do not scale from drawings, all measurements should be taken in the field.

EXISTING CONDITIONS Where new plumbing systems are required to be connected to existing plumbing systems, provide all camera scoping and dye testing necessary to verify the exact location, size, invert elevation, pressure, pipe integrity, and system type to ensure a proper connection is executed. The contractor shall notify the engineer immediately if it is found a proper connection cannot be executed

**CUTTING, PATCHING AND DEMOLITION** The contractor shall be responsible for damages to the grounds, walks, road, building, piping systems, electrical systems, and their equipment and contents, caused by leaks in the piping systems being installed or having been installed by him. The contractor shall repair at his expense all damaged so caused. All repair work shall be done as directed by and in such manner as satisfactory to the architect.

Owner reserves the right to make emergency repairs as required to keep equipment in operation without voiding the contractor's guarantee bond nor relieving the contractor of his responsibilities during the bonding period. Cut and drill all openings in roofs, walls, and floors required for the installation. Neatly patch all openings cut. Hold cutting and patching to a minimum by arranging with other contractors for all sleeves and openings before construction is started. When drilling/cutting concrete slabs, utilize ground penetrating radar (GPR) and/or X-ray scanning equipment to verify the location is free from obstructions, including but not limited to: structural rebar/strands/tendons, electrical conduit/wiring, and/or piping/ductwork.

**EXCAVATION AND BACKFILL** Perform all excavation and backfilling required for this

work. Contractor shall consult with utility company prior to beginning excavation. At a minimum, all piping shall be laid on a bed of sand, 6" deep, well tamped into place and properly graded to permit the pipe to have an even bearing throughout its entire length. Sand shall be installed around the piping in 6" lifts to a point 6" above the

INTERRUPTION OF EXISTING SERVICES Interruption of Existing Plumbing Services: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service

according to requirements indicated: Notify, Architect, Construction Manager, and Owner no fewer than seven days in advance of proposed interruption of service.

Do not proceed with interruption of service without Architect's written permission DELEGATED DESIGN

For equipment supports, this contractor shall retain a qualified professional engineer to provide support calculations of static and dynamic loading due to operating equipment weight. The signed and sealed calculations and details shall be submitted by the retained professional engineer.

WARRANTY This contractor shall warrant that all work under this section shall be free of defective work, materials and parts for a period of one year after acceptance of the work and shall repair, revise, and replace, at no cost to the owner, any such defects occurring within the warranty period. Use of Electronic Drawings from the Owner's Design

If expressly permitted by the Owner and the terms of the Contract, editable electronic drawings may be made available for the creation of shop and as-built drawings upon request. Drawings will be made available at the discretion of the Engineer. "Request Drawings" form can be accessed, filled out and submitted at http://www.klhengrs.com (right hand side of page -Contractor Resources). Direct access to this form can be found here: http://files.klhengrs.com/requestdrawings.html

#### 22 05 03.00 - SUBMITTALS FOR PLUMBING Provide submittals in accordance with the Contract

Documents. In addition to Division 01, the Contractor is advised to review and comply with the requirements articulated within each Division and within each section of that Division. Some Divisions may include a division-specific "Submittal Requirements for ...." section. Where this section exists, it

articulates additional reduirements for apply to the work of that Division. The following requirements help to identify, track and keep the project organized for all parties involved. They are necessary to ensure a timely turnaround and an appropriate technical review. Submittals that do not

conform to the administrative requirements are rejected and returned, without technical review. Supply submittals for each section: Submittals shall be supplied on a section-by-section and type-by-type basis. For example, independent product data submittals shall be furnished for each section that requires product data submittals. Independent shop drawing submittals shall be furnished for each section that requires shop drawings. Separate PDF file packages shall be supplied for each section, for each submittal type. Each PDF shall represent a single standalone submittal. Include a transmittal: Transmittals shall enumerate each submittal for each section of each type and iteration. Include cover sheet / title page: The cover sheet shall

include the information identified in the contract

documents. It shall be included as the first page of each electronic and/or hardcopy document-based submittal. An editable and printable PDF form created with editable fields and specification compliant appearance is available from KLH upon request. It is also downloadable from the KLH website at www.klhengrs.com. Include an index: The index shall enumerate the contents

of the submittal. Include checklists: Where checklists are included with the specifications, complete and include them within the appropriate submittal. Supply complete submittals: Complete submittals of each type are required. Partial submittals will be rejected. Where a section requires a product data submittal, all product data for that section shall be supplied together, at one time, as one complete submittal. When resubmittal is required (e.g. Revise and Resubmit) the revised submittal shall be more complete, more accurate and more contract-compliant than its rejected predecessor. The submittal number (for each section and type) shall increment for each subsequent submittal (00 – Original submission, 01 – First Resubmission, 02 – Second Resubmission, etc...). Resubmittals shall include a copy of the reviewers comments supplied with the prior submittal rejection and shall be amended with a description of the specific action taken to comply with the reviewer's comments. The

absence of this on resubmittal is cause for rejection. Name electronic files to match the submittal ID and cover sheet: The electronic file name of submittals shall match the submittal ID included on the submittals cover page. For example: The original/first product data submittal for Section 220523 would be labeled as "220523.00-PD-00"; the first resubmittal of same shall be labeled "220523.00-PD-01". The original/first shop drawings submittal file for the same section would be labeled "220523.00-SD-00";

the first resubmittal of same shall be labeled "220523.00-SD-01" If expressly permitted by the Owner and the terms of the Contract, editable electronic drawings may be made available for the creation of shop and as-built drawings upon request. Drawings will be made available at the discretion of the Engineer. "Request Drawings" form can be accessed, filled out and submitted at http://www.klhengrs.com (right hand side of page - Contractor Resources). Direct access to this form can be found here: http://files.klhengrs.com/requestdrawings.html

22 05 23.00 - GENERAL DUTY VALVES Submittal Requirements

Product Data: For each type of product indicated. GENERAL Provide stops or isolation valves on domestic water supplies to isolate hot and cold water to each fixture, including all equipment and equipment provided by others. Access shall be provided to all valves. Provide fire-rated

access panel(s) to maintain full access to concealed Ball valves - 2 inch and smaller: Lead-Free, 600 psi CWP, 100 psi at 300°F, cast bronze body, blowout-proof sterr. Butterfly Valves - 3" and up: Ductile Iron Butterfly Valve, 200 WOG, Lug Body, Lever Operator. Approved Manufacturers: Milwaukee Valve, NIBCO, and

Watts Water Technologies Co. Valves to conform to: MSS-SP-110 Type I/ MSS-SP-67 Type I, NSF/ANSI -61/372. Check valves - to be same size as system piping accompanies. Lead-free, bronze body, 250 WOG, nonshock, spring check valve. Conforms to the following standard(s): MSS-SP-80 I, NSF/ANSI -61/372

22 05 29.00 – HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT GENERAL

Provide hangers, supports, clamps, attachments, and structural steel members where required to support piping and equipment from building structure. Support of piping from the decking or equipment is

prohibited. Arrange for grouping of parallel runs of horizontal piping supported together on field-fabricated, heavy-duty trapeze hangers where possible. Trapeze hangers shall conform to: MSS SP-69, Type 59. Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation. Vertical-Piping Clamps: Provide extension pipe or Riser Clamps (MSS Type 8) for support of pipe risers. Hangers shall be sized to allow insulation to pass through

unobstructed Hanger and support types: Hangers: Provide adjustable, Steel Clevis Hangers (MSS Type 1) for suspension of noninsulated or insulated, stationary pipes. Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation. Vertical-Piping Clamps: Provide extension pipe or Riser Clamps (MSS Type 8) for support of pipe

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Hanger and support types: Hangers: Provide adjustable, Steel Clevis Hangers (MSS Type 1) for suspension of noninsulated or insulated, stationary pipes. Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation. Vertical-Piping Clamps: Provide extension pipe or

Riser Clamps (MSS Type 8) for support of pipe Horizontal-Piping Clamps: Provide Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3) for suspension of pipes requiring clamp flexibility and up to 4 inches of insulation. Vertical-Piping Clamps: Provide extension pipe or Riser Clamps (MSS Type 8) for support of pipe

risers Hangers and supports shall be placed at all changes in direction, valves and equipment. The maximum horizontal spacing of cast-iron pipe hangers can be 10' where 10-foot lengths of pipe are installed

Piping shall also be supported at each change in direction, valves and equipment. Clevis-type hangers shall and supports shall conform to: MSS SP-58, Type 1-58.

#### 22 05 53.00 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT PIPING

Provide self-adhesive pipe labels with white background and black lettering, contact type with permanent adhesive backing. Include identification of piping service using same designations or abbreviations as used on the drawings and an arrow indicating flow direction. EQUIPMENT

Provide self-adhesive plastic equipment labels with white background and black lettering, contact type with permanent adhesive backing, 160 degree F temperature. Include equipment's drawing designation and specification section number where equipment is specified.

22 07 19.00 – PLUMBING SYSTEM INSULATION GENERAL Insulation shall be listed and labeled per ASTM E 84 for plenum installations employing slip on techniques.

Provide insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.

Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application PIPING SYSTEMS REQUIRING INSULATION Insulate domestic cold water piping, associated fittings

and valves with flexible elastomeric 1/2" wall thickness insulation. Insulate domestic hot water piping, associated fittings and

valves with 1" thick flexible elastomeric, 1-1/2" thick fiberglass insulation or per local energy code, whichever Insulate domestic hot water return piping, associated

fittings and valves with 1" wall thickness insulation or per local energy code, whichever greater. Insulate waste piping above ceilings that receive condensate with 1/2" wall thickness insulation.

Insulate exposed sanitary drains, domestic water, domestic hot water, and stops for plumbing fixtures for people with disabilities. FLEXIBLE ELASTOMERIC INSULATION

Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials. Adhesives, Sealers, and Protective Finishes: As recommended by insulation manufacturer for applications

indicated. Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following: Aeroflex USA, Inc.; Aerocel., Armacell LLC; AP

Armaflex.,K-Flex USA; FIBERGLASS INSULATION Fiberglass piping insulation: ASTM C 547, Class 1 Encase pipe fittings insulation with one-piece pre-molded

PVC fitting covers. Vapor Barrier Material: Paper-backed aluminum foil, except as otherwise indicated, strength and permeability rating equivalent to adjoining pipe insulation jacketing. Staples, Bands, Wires, and Cement: As recommended by insulation manufacturer for applications indicated. Adhesives, Sealers, and Protective Finishes: As recommended by insulation manufacturer for applications

indicated. Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following: Armstrong World Industries, Inc., Owens-Corning Fiberglass Corp., Johns Manville.

## ADHESIVES

Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.

Insulation for handicap accessible fixtures All handicap lavatory p-trap and angle stop assemblies shall be insulated with trap wrap protective kit manufactured by Proflo model PF202WH or equal. Abrasion resistant, anti-microbial vinyl exterior cover shall be smooth. For traps, the insulation shall have a cleanout nut cap to allow service to the trap without disassembly. For stops, the insulation shall have a lock lid that prevents tampering but allows access without removal of the insulation. Fasteners shall remain substantially out of

Manufacturers: subject to compliance with requirements: Proflo, Truebro, Plumberex

#### 22 11 16.00 – DOMESTIC WATER PIPING Submittal Requirements

Product Data: For each type of product indicated. GENERAL Install piping concealed from view unless noted otherwise, free of sags and bends. Do not enclose, cover, or put piping into operation until it has been inspected and

approved by authorities having jurisdiction. Clean and disinfect potable domestic water piping using approved procedures by authorities having jurisdiction or AWWA C651, whichever is more rigorous. Install at right angles; diagonal runs are prohibited unless otherwise shown. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

Coordinate all piping with all other trades. Provide water pressure regulators where necessary to limit the incoming water pressure to 80 psi inside the DOMESTIC WATER PIPING ABOVE GROUND:

Hard copper tube, ASTM B 88, Type L; wrought-copper, solder-joint fittings; and soldered joints. Solder Filler Metals: ASTM B 32, lead-free alloys. Flux: ASTM B 813, water flushable. Type "L"; copper pressure-seal joint; and pressure-seal

ioint systems. CATHODIC PROTECTION Provide dielectric insulation at points where copper or brass pipe comes in contact with ferrous piping,

reinforcing steel or other dissimilar metal in structure. 22 11 19.00 – DOMESTIC WATER PIPING SPECIALTIES

Submittal Requirements Product Data: For each type of product indicated. Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following: Conbraco Industries, Inc., Watts Water Technologies Cc.,

Zurn Industries, LLC., Thermomegatech, Acorn Engineering Co., and Caleffi, N. America., MIFAB, Inc., Precision Plumbing Products, Inc., Sioux Chief Manufacturing Company, Inc., Jay R. Smith Mfg. Co., Provent Systems, Rector Seal. TRAP-SEAL PRIMER DEVICE

The plumbing contractor shall provide trap primers for all floor drains. Provide access panel in wall or ceiling for all concealed trap primers. Install trap seal primer valves with outlet piping pitched down toward drain trap a minimum of 1% and connect to floor drain body, trap or inlet fitting. Coordinate exact location with architect prior to installation

WATER HAMMER ARRESTERS Provide water-hammer arresters in water piping according

to PDI-WH 201. Standard: ASSE 1010 or PDI-WH 201. Type: Metal bellows or copper tube with piston. Size: ASSE 1010, sizes AA and A through F, or PDI-WH 201, sizes a through F.

22 11 23.00 – RECIRCULATION DOMESTIC WATER Submittal Requirements

Product Data: For each type of product indicated. GENERAL Hot-water circulating pump shall be constructed of the following: in-line wet-rotor, lead-free bronze body, plastic impeller, with ceramic bearings. Working pressure to be a minimum 125 psig with a maximum continuous operating temperature of 220° F.

Pump shall be controlled with an aquastat and timer. Aquastat: Electric; surface mounted sensing element. Adjustable temperature control of hot-water circulation from 65 to 200 °F. Timer: Electric; for control of hot-water circulation.

Programmable type, seven-day, twenty-four hour clock with manual override on-off switch. Programmable for preset times during the day for each day for seven days. Approved Manufacturers: Armstrong Pumps Inc, Bell & Gossett/Goulds Water Technology; Xylem Inc., Taco inc., Honeywell International inc. Pumps shall conform to: UL 778, NSF 61/372.

CONNECTIONS On water heating systems with separate storage tanks, interlock pump between water heater(s) and hot-water storage tank(s) with water heater burner and time-delay relav

#### 22 13 16.00 - SANITARY, WASTE AND VENT PIPING SYSTEM Submittal Requirements

Product Data: For each type of product indicated. GENERAL

Provide a complete soil, waste and vent system in the building and on the site as indicated on the drawings and as specified herein. Above ground soil, waste and vent piping within buildings

including soil stacks, vent stacks, horizontal branches, traps, and connections to fixtures and drains. Underground building drain piping including mains, branches, traps, connections to fixtures and drains, and connections to stacks, terminating at connection to existing sanitary sewer.

INTERIOR PIPING ABOVE GRADE No-Hub cast iron soil, waste, and vent piping and fittings 1-1/2" and larger shall conform to ASTM A-888. Pipe couplings shall conform to ASTM C 1277 and CISPI 310. Piping alignment shall be as indicated on the drawings using approved wye branches or eight bands for direction changes and shall be surely supported or secured to maintain such alignment.

Soil, waste and vent piping smaller than 1-1/2" shall be Type "M" copper and conform to ASTM B-306. BELOW GRADE PIPING Solid wall schedule 40 PVC pipe and fittings 2" and larger

shall conform to ASTM D 2665 / ASTM D 1785 DWV. Fittings shall conform to ASTM D 2665, made to ASTM D, DWV patterns and fit schedule 40 pipe. Piping alignment shall be as indicated on the drawings using approved wye branches or eight bands for direction

changes and shall be surely set and buried to maintain such alignment. Soil, waste and vent piping smaller 1-1/2" and smaller below grade shall not be permitted

Pitch of sanitary piping shall be uniform at a minimum of 1/8" per foot for building drains, drainage piping greater than 2" and as indicated on the drawings. Pitch of sanitary piping shall be uniform at a minimum of 1/4" per foot for drainage piping 2" and smaller and as indicated on the Protection shall be given all footings, other structural

elements during underground work adjacent to such items. Refer to architectural and/or structural drawings for locations.

Vent all fixtures, connect branch vents to main vent risers at least six inches above flood rim of fixtures. Pitch vent lines back to soil or waste pipe, free of drops and sags. Cleanouts shall be full size of pipe up to 4", and 4" for larger sizes. For underground and concealed lines, provide cleanouts in accessible positions at each right angle turn and at intervals not to exceed fifty feet. In floors, install flush with finish floor with extension pipe from cleanout wye.

#### 22 13 19.00 - SANITARY WASTE PIPING SPECIALTIES Submittal Requirements

Product Data: For each type of product indicated. CLEANOUTS Floor cleanout equal to Zurn Z-1400 adjustable floor cleanout.

Wall cleanout equal to Zurn Z-1443 with smooth nickel bronze square wall access panel and frame.

Provide a sanitary tee with threaded cap cleanout plug for changes-in-direction in aboveground horizontal waste

Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following: av R Smith MFG. Co., Watts Drainage Products Inc., Zurn Plumbing Products Group.

FLOOR DRAINS Provide floor drains in compliance with ASME A112.6.3. Provide floor drains with trap-seal primer fitting. All floor drains located in rooms with tile floors shall be provided with manufacturer's standard square grate, unless noted otherwise.

Refer to plumbing drain schedule for project specific floor drain manufacturers and models. Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the work include, and are limited to, the following: Jay R Smith MFG. Co., Watts Drainage Products Inc., Zurn Plumbing Products Group.

#### 22 16 13.00 - NATURAL GAS PIPING SYSTEMS Submittal Requirements

Product Data: For each type of product indicated. GENERAL Plumbing contractor shall be responsible for installing gas piping run-outs to all gas-fired equipment, including equipment supplied by the HVAC and electric contractors. Piping shall be installed full-size (as indicated on the drawings) to each units' gas inlet connection, burner, regulator, etc. Plumbing subcontractor shall provide gas cock and make final connections. Connections to each gas-fired equipment item shall include a drip leg and shutoff gas cock. Comply with equipment manufacturer's instruction. For connections to gas-fired rooftop equipment, plumbing contractor shall be responsible for the roof penetration and shall install the gas piping through the roof in a location that has been coordinated with the HVAC contractor. Contractor shall be responsible for all the costs associated with work provided by the utility company, including tap fees, installation costs, materials, equipment, road cuts, and bores if applicable.

BUILDING DISTRIBUTION PIPING All piping from meter/regulator to gas fired equipment connections shall be black steel.

Steel Pipe: ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B. Pipe size 2" and smaller: Malleable-Iron Threaded Fittings Malleable-Iron Threaded Fittings: ASME B16.3, Class 150, standard pattern.

Press-Connect fittings: Carbon steel, cold-pressed, ANSI LC4/CSA 6.32 Pipe size 2-1/2" and larger: Wrought-Steel Welding Fittings for butt welding and socket welding. Wrought-Steel Welding Fittings: ASTM A 234/A 234M for

butt welding and socket welding. Field prepare and paint exterior natural gas piping, fittings, etc... with alkyd anticorrosive metal primer and topcoat with exterior alkyd enamel flat. Color to match building exterior and approved by the architect GENERAL DUTY VALVES:

Metallic valves 2 inches and smaller shall comply with ASME B16.33, cold working pressure of 125 psig. Metallic valves larger than 2 inches shall comply with ASME B16.38, cold working pressure of 125 psig. Provide one-piece ball valves with bronze body, chromeplated brass ball, blowout proof stem and seat, and bronze trim complying with MSS SP-110. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, and limited to, the following:

Milwaukee valve, NIBCO, and Watts Water Technologies

#### 22 33 00.00 - COMMERCIAL ELECTRIC, DOMESTIC WATER HEATERS Submittal Requirements

Product Data: For each type of product indicated. TANK TYPE Provide commercial electric tank type water heater as scheduled. Comply with UL 1453 Standard. Provide corrosion resistant metal drain pan with raised edges at the base of the water heater and include drain

Provide field fabricated piping heat trap arrangement according to ASHRAE/IESNA 90.1. Provide combination temperature and pressure relief valve, ASME rated and stamped with relieving capacity at least as great as heat input and pressure setting less than water heater's rated operating pressure. Provide water heater stands or mounting brackets with

manufacturer's factory fabricated steel capable of supporting water heater. Provide steel pressure-rated thermal expansion tank constructed with welded joints and factory-installed butyl rubber diaphragm, pre-charged to minimum system operating pressure at tank.

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include, and are limited to, the following:

Bock Water Heaters, Bradford White Corp., Lochinvar Corp., State Industries.

#### 22 40 00.00 - PLUMBING FIXTURES Submittal Requirements

Product Data: For each type of product indicated. GENERAL Refer to plumbing fixture schedule and install per the manufacturer's installation and operation manual. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include, and are limited to, the following: American Standard, Kohler Co., Zurn Industries, LLC.

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#### ELECTRICAL SPECIFICATIONS

The General Provisions of the contract apply to the work in this section. Before submitting a bid, examine documents of all other trades, visit the site and get acquainted with all conditions that may in any way affect the execution of this contract. Include all labor, material, equipment, tools and incidental costs to provide all work in contract documents. Apply for, secure and pay for all required permits.

All materials and methods shall be in accordance with applicable codes, regulations and/or ordinances and meet the approval of local inspection authority having jurisdiction. The latest edition of NFPA 70 (National Electrical Code, NEC) and NFPA 72 shall be the minimum requirement for all work.

All materials and equipment shall be new and shall bear a UL listing or similar testing agency listing. Material and equipment shall be suitable for installed environment, temperature range, strength, durability, voltage, etc. Install all equipment with code required and manufacturer recommended minimum clearances for operation and maintenance.

Perform work under this contract in close harmony with other contractors so completed work shall present a neat and workmanlike installation. Consult all other disciplines drawings and coordinate with contractors in field before performing work so that this work will not interfere with other disciplines work.

Exposed finished materials and equipment shall be carefully cleaned and wiped to remove grease, smudges, fingerprints, dust and other spots. During the progress of the work, the electrical sub-contractor shall carefully clean the job site and shall leave the premises and all portions of the building in which he is working free of debris and in a clean and safe condition.

Neatly provide all cutting and patching required for the admission of work. Patching shall match quality of surroundings to owner's satisfaction. Seal all new floor, ceiling, wall, slab, etc. penetrations to match or exceed existing assembly fire ratings.

Provide two clean sets of contract drawings reserved for showing a complete picture of the work as actually installed at completion of project. Provide two neatly bound and tabbed copies of all maintenance books, instruction books and parts list pertaining to all equipment furnished.

All work, materials, and equipment shall have a one year warranty after acceptance of the work by the Owner. Any defective items shall be removed and replaced at the electrical sub-contractor's expense and to the satisfaction of the engineer and owner's representative. Train the owner's representatives of each system to the satisfaction of the owner's representative. Provide product data submittals for each of the following sections. Provide submittals as individual PDFs by section. Provide cover sheet

for and naming of each submittal per http://www.klhengrs.com/the-firm/contractor-resources.html

26 05 19.00 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

26 05 26.00 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS 26 05 29.00 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

26 05 33.00 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS 26 09 23.00 LIGHTING CONTROL DEVICES

26 24 16.00 PANELBOARDS 26 27 13.00 ELECTRICITY METERING

26 27 26.00 WIRING DEVICES 26 29 13.13 ACROSS-THE-LINE MOTOR CONTROLLERS

26 51 00.00 LIGHTING 28 46 21.25 FIRE ALARM SYSTEM EXTENSION

All metallic conduit, surface raceways, wireways, supports, cabinet and equipment shall be grounded per NEC.

Provide temporary lighting, power and life safety measures in areas affected by construction.

Where demolition is required, selectively demolish equipment, conduit, wiring, devices, etc. to accommodate project demolition and as required to accommodate new construction. Restore power to all downstream devices not affected by demolition. Reinstall work that is intended to be operational after demolition and construction is complete. Appropriately and legally dispose of items demolished.

Provide 600V rated conductors (#12 AWG minimum) wire with color coded insulation/jacket to identify phases, grounded conductor and grounding conductor. Insulation shall be THHN/THWN-2 unless installed underground or subject to moisture where it shall be XHHW-2. Provide copper conductors unless stated otherwise on drawings. Provide insulated equipment grounding conductor for each branch circuit. Do not share neutrals. Provide copper jumpers for final terminations of aluminum conductors where required by equipment.

Provide Type MC cable for feeders and branch circuits indoors, Schedule 40 PVC conduit for underground wiring, and EMT conduit for other applications. Conduit and cable shall be independently supported directly from structural members by approved straps, fasteners and hangers. Conduit and cables shall be neatly installed parallel and perpendicular to structural members. Noncompliant work shall be removed and replaced to satisfaction of owner. Do not support conduit or cables from roof deck or install within 4" of roof deck. Provide flexible conduit or fittings, and leave slack in cables, at all expansion joints. Provide separate raceways for normal and emergency branches of power compliant. Install raceways and cables concealed in new construction. Provide surface raceway for existing surfaces.

Recessed steel boxes shall not be less than 4" x 1-1/2" deep. No ganged boxes. Cut in box neatly. Verify all box/device mounting heights and locations in field with Owners representative.

Where technology devices shown on plan, provide 4" x 2-1/8" deep square box, with at least (1) 1" conduit (with plastic bushings or insulated throats at end fittings) to above accessible ceiling and pull string to facilitate future cable installation. Where no accessible ceiling route to technology room. Provide blank wall plates for boxes that are not immediately deviced.

Provide engraved plastic laminate naming identification for all electrical equipment and circuit identification for junction boxes and conductors. Provide accurate typed panel schedules.

Provide all necessary electrically related work as required to render all fire protection, plumbing, mechanical, electrical, technology, architectural and Owner equipment fully operational and fully compliant with manufacturer instructions and codes. Review equipment submittal data and coordinate with installing contractors to ensure the correct size, rating and quantity of conductors and overcurrent protective devices (OCP's) are provided. Provide electrical disconnect ahead of all equipment. Locate electrical equipment to maintain clearances required by respective manufacturers and by NEC 110.26. Provide boxes and conduits to controlled equipment for control and monitor devices of other trades (thermostats, other environmental control devices, alarms, etc.).

Provide exterior photocells equal to Tork 210# series for surface mount and Tork 30## for flush applications.

Provide occupancy sensor switches equal to Wattstopper DW-100-24. Provide ceiling mounted occupancy sensors equal to Wattstopper DT-300. Provide enough sensors for 100% coverage without nuisance tripping. Provide BZ-150 power packs and other accessories for a complete system.

Provide specification grade wiring devices. Provide WR type and NEMA 3R while-in-use covers for wiring devices installed outdoors and other areas exposed to water. All GFCI receptacles shall be accessible or protect the circuit with a GFCI circuit breaker. Device colors shall be ivory. Provide standard size stainless steelwall plates. Provide neutral in each switch box. Unless noted otherwise, install receptacles 18" to center and switches 46" to center. Ensure that lighting control devices are fully compatible with luminaires controlled.

Provide motor starters, manual or combination type, of sizes, ratings and control types as required per coordination schedules and per requirements of equipment that will actually be provided.

Provide luminaires and/or luminaire outlet boxes to properly support luminaire weight. All luminaires installed in suspended ceiling systems shall be independently supported directly to the building structural system. Connect all emergency lighting ahead of switching providing additional unswitched "hots" where required for operation.

Provide all work in strict compliance with all prevailing codes, standards and ordinances. Provide a complete multiplexed intelligent addressable fire alarm system throughout the building. All equipment and devices shall be UL listed and labeled. Provide the final Fire Alarm System design completed by an approved and certified Fire Alarm System contractor, who shall coordinate the final design with all national and local codes, regulations and AHJ (Authority/Authorities Having Jurisdiction). Fire alarm contractor with system manufacturer shall provide detailed shop drawings including floor plans, wiring diagrams, risers, battery calculations and product data. Demonstrate testing to AHJ as required for occupancy. Provide 120V power to new battery cabinets. Furnish and wire duct smoke detectors where shown, interlock to shutdown mechanical equipment, and programmed to report as alarm or supervisory signal to the fire alarm system and monitoring central station based on prevailing codes and direction from AHJ – verify in field with AHJ). For smoke or fire/smoke dampers, provide 120V power and smoke detector interlocked to damper. Receive, install, wire, connect and test ownerfurnished digital communicator - programmed to report to the owner's UL approved Central Station monitoring agency. Install new wiring in EMT unless special permission granted from Owner to "free-air" cable using J-hooks. Provide all specified items, plus all incidentals and required items necessary to provide a complete and working system, installed in a professional manner, and in accordance with applicable codes and industry accepted "best practices", including all monitoring and alarming associated with fire suppression systems. Provide isolation modules and wiring configurations (using Class A, or Class A and B, pathways) for fault isolation so that any one fault will not cause any part of the system to go down other than the zone of the fault; provide zoning compliant with prevailing codes, with at least one zone per floor (more if areas are subdivided into multiple zones by fire and/or smoke barriers). Initiating Device, Notification Appliance and Signaling Line Circuits: Class A or Class A and B (provide Class A for circuits that provide isolation module protection for zones). Provide power-limited cables that have a temperature rating of at least 60 degrees C; provide additional marking for conductor size and temperature ratings for cables rated in excess of 60 °C (140 °F). Program detailed device and room descriptions so that any trouble, supervisory or alarm condition clearly annunciates floor level, room number, room name, device, and indication of normal, alarm, trouble and supervisory status at fire alarm control panel(s), at fire alarm annunciator panel(s) and at the supervising central station. Provide documentation (hard-copy and digital) of fire alarm system documentation, and provide a single documentation cabinet at the main fire alarm control unit, including Chapter 7. Qualifications of system designers, installers, programming personnel, inspection personnel, testing personnel and maintenance personnel shall be trained and certified by manufacturer for installation of units required for this Project, and shall be qualified in compliance with requirements prevailing codes, standards and authorities. Refer to Division 26

and concurrent scope of work that is associated with work of this section. Provide submittals for equipment, materials and systems specified in this section. Include cuts, descriptive information, technical data, wiring diagrams, plan-view layouts, legend, point-to-point wiring, etc. Identify all information that is specific to this project. Submit to applicable authority or authorities having jurisdiction and obtain fire alarm permit prior to submitting to consultant for review.

sections for requirements associated with all electrical work not specifically defined in this section, which shall be considered additional

Provide conventional photoelectric duct smoke detector with sampling tube. Install the duct detector in an indoor accessible location. Provide sampling tube, test station and all other required accessories.

Install all duct smoke detectors in the return air duct/plenum of the respective air handling equipment, or in multiple locations of the return duct branches if necessary to meet the minimum straight distances that are required by manufacturer of smoke duct detectors. Refer to HVAC ductwork drawings, and to HVAC installer's coordination drawings, for configurations when determining actual locations and quantities of duct smoke detectors. Where more than one detector is already indicated associated with a particular piece of air handling equipment, there are special reasons for the additional detectors (i.e. split returns, return risers serving multiple floors, etc.); coordinate all locations for same with the HVAC installer. Provide all required power and control wiring so that upon detection of smoke, the following sequence of operations occurs: An alarm

signal is sent to alarm system (fire alarm system or remote test station or both as applicable); The HVAC unit shut down (including

applicable dampers); Associated smoke dampers close, if present (wired to automatically re-open on duct detector reset).

Provide keyed test/monitor station (with status/alarm/trouble indicating LED's) on the ceiling or wall (flush in finished areas) beneath the duct detector at discreet but readily visible location as determined in field unless specific location is shown on drawings. Provide engraved (or approved equivalent method) plate at each remote station to read: "#### Duct Smoke Detector", where #### is the equipment identification used on drawings. Connect to fire alarm system.

If required by authority having jurisdiction, provide identified key-operated air handler reset station on the ceiling or wall (flush in finished areas) beneath the air handler at discreet but readily visible location as determined in field unless specific location is shown on drawings. Provide engraved (or approved equivalent method) plate at each reset station to read: "#### Reset Switch to reset #### after a duct smoke detection event has been cleared and the fire alarm system has been reset.", where #### is the equipment identification used on drawings. Coordinate with authority having jurisdiction for verification of, or required modification to, the language to be engraved. Connect to fire alarm system.

Provide 20A/120VAC power as required to energize components. This requirement applies whether or not such power work is shown on the drawings. Dedicate branch circuits serving fire alarm related equipment to fire alarm related equipment only.

Properly identify system components, wiring, cabling, and terminals. Install framed instructions in a location visible from fire-alarm control unit. Provide red color on jacket of all fire alarm cables associated with the fire alarm system. Provide red-colored breaker handle and red-colored lock-on device at source circuit breakers that feed fire alarm related equipment. Provide red coloring for all fire alarm system junction boxes, along with identification.

	TECHNOLOGY LEGEND		ELECTRIC LEGEND	ELECTRIC LEGEND					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL		DESCRIPTION			
	TECHNOLOGY (ROUGH-IN ONLY)			400 M					
	ALL OUTLET BOXES FOR ROUGH-IN SHALL BE MINIMUM 2-1/4" DEEP.	••••¤¤₩©©©	LUMINAIRE (REFER TO THE LUMINAIRE SCHEDULE) NOTE THAT OTHER SHAPES MAY ALSO BE USED TO REPRESENT LUMINAIRES SHADED LUMINAIRES DENOTE THOSE CONNECTED TO EMERGENCY OR STANDBY POWER AS APPLICABLE		HEAVY DUTY DISCONNECT SWITCH (NON SIZES MAY BE SHOWN ONLY IN SCHEDULE	·FUSED)(LEFT) (FUSED)(RIG 	<b>Ι</b> Τ)		
	BOX WITH 1-GANG RING AND (1) 1" CONDUIT TO ABOVE ACCESSIBLE CEILING UNLESS NOTED OTHERWISE.		(UNSWITCHED LUMINAIRES ARE EGRESS LIGHTS AND/OR NIGHT-LIGHTS THAT OPERATE 24/7) SINGLE / DOUBLE SIDED EXIT SIGN CONNECT AHEAD OF SWITCHING & CONFIGURE ARROWS TO INDICATE DIRECTION OF EGRESS TRAVEL		SURGE PROTECTIVE DEVICE				
	GENERAL ELECTRICAL NOTES		EMERGENCY LIGHTING UNIT WITH 90-MINUTE BATTERY BACKUP AND ASSOCIATED REMOTE HEADS WHERE APPLICABLE. CONNECT TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING		WIRE / CABLE	/ RACEWAY			
	A. BEFORE SUBMITTING THE BID PROPOSAL, THE CONTRACTOR SHALL VISIT THE JOB SITE AND FULLY ACQUAINT HIMSELF WITH THE JOB		A = LUMINAIRE TYPE, NL = NIGHT-LIGHT (UNSWITCHED), a = SWITCHING DESIGNATION, EL = EGRESS LUMINAIRE (ILLUMINATES PATH OF EGRESS, ON ALL TIMES SPACE IS OCCUPIED)	LPA-1,3			(S)		
	CONDITIONS AND VERIFY SERVICE CONNECTIONS, INCLUDING ALL NECESSARY PULL BOXES, SIZE AND NUMBER OF CONDUITS AND CONDUCTORS, SWITCH GEAR, METERING, CABLE CHARGES ETC.,	\$	CEILING-MOUNTED OCCUPANCY SENSOR. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE.		CABLING / RACEWAY INSTALLED CONCEAL	LOOR OR GRADE			
	UTILITY CO. TO MAKE A COMPLETE AND OPERATING ELECTRICAL SERVICE WITHOUT ADDITIONAL COST TO THE TENANT. VERIFY	TYPE#	TYPE "IR" = INFRARED, TYPE "US" = ULTRASONIC WALL-MOUNTED OCCUPANCY SENSOR SWITCH. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "IR"-INERABED, TYPE "US"-I II TRASONIC, "V"-VACANCY SENSOR, "#" - CONTROLLED CIRCUITS		CABLE TRAY				
	B. CONTRACTOR SHALL VERIFY ALL REQUIREMENTS OF MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND SPECIFICATIONS, AND		LIGHTING CONTROL PANEL	0	JUNCTION BOX ABOVE ACCESSIBLE CEILIN JUNCTION BOX AT OVERHEAD STRUCTURE	IG E IN AREAS WITH NO CEILING	à		
	CONTRACTOR FOR COMPLETE INSTALLATION. C. VERIFY LOCATION AND REQUIREMENTS OF MECHANICAL EQUIPMENT WITH CONTRACTOR (DOOR HEATERS, LINIT HEATERS, BOOF TOP	RE	CEPTACLES AND MISCELLANEOUS OUTLETS	J	FLUSH MOUNTED JUNCTION BOX OR PULL	BOX AS APPLICABLE FOR AF	PLICATION		
	UNITS, TRANSFER FANS, ETC.). D. ELECTRICAL WORK AND MATERIALS SHALL COMPLY WITH LATEST 'N E C.' AND ALL LOCAL CODES AND OBDINANCES. IN CASES OF		GFI / GFCI RECEPTACLES	P	SINGLE-SERVICE SURFACE RACEWAY (ON	E COMPARTMENT - POWER)			
	CONFLICT AMONG REQUIREMENTS, THE MOST RESTRICTIVE SHALL APPLY.	ΦΦΦ Φ Φ Φ	ISOLATED GROUND RECEPTACLES		MULTI-SERVICE SURFACE RACEWAY (TWC	COMPARTMENT - POWER A	ND TECHNOLOGY)		
	OTHERWISE NOTED OR AS REQUIRED FOR VOLTAGE DROP (SEE SPECS.). ALL CONDUIT SHALL BE 1/2" MINIMUM EXCEPT AS OTHERWISE NOTED OB AS BEOLUBED FOR CONDUCTORS	<b>Ø</b>	FULL SWITCHED RECEPTACLES		SERVICE POLE - POWER AND TECHNOLOG	BY WHERE APPLICABLE.			
	F. TENANT'S ELECTRICAL EQUIPMENT SHALL BE RELOCATED AS REQUIRED TO MINIMIZE LENGTH OF CONDUIT/CONDUCTOR BETWEEN SERVICE DISCONNECT SWITCH AND PANEL "MDP" OBTAIN APPROVAL	● ● ●	CEILING MOUNTED RECEPTACLES	UP O DN	CONDUIT UP OR DOWN				
	FROM TENANT'S ARCHITECTURAL DEPARTMENT OF PROPOSED LOCATION PRIOR TO INSTALLATION. COST CLAIMS FOR CONDUIT/CONDUCTOR IN EXCESS OF BASE BID WILL NOT BE		RECEPTACLE ATTRIBUTES 42" = MOUNT RECEPTACLE AT THIS HEIGHT ABOVE GRADE / FINISHED FLOOR C = INSTALL ABOVE COUNTER AND BACKSPLASH		ABBREVIA	ATIONS			
	CONSIDERED IF PANEL RELOCATION IS NOT PROPOSED TO MINIMIZE THESE COSTS PRIOR TO INSTALLATION. G. TELEPHONE: FUBNISH AND INSTALL ALL NECESSARY CONDUIT. DEVICE	ው <del>ዋ</del> ወ <sup>sw</sup> ወ <sup>ւ</sup>	H = INSTALL RECEPTACLE HORIZONTALLY L = LIT (PROVIDE ILLUMINATED FACE OR INDICATOR LIGHT TO INDICATE THERE IS POWER TO RECEPTACLE) SW = SPLIT WIRED T = TAMPER-RESISTANT	(R) RELC 42" DISTA	OCATE FIXTURE, EQUIPMENT OR DEVICE ANCE ABOVE FINISHED FLOOR / GRADE /	IG ISOLATE	) GROUND ' REQUIRED STANDBY		
	BOXES AND PLATES. H. NEW TELEPHONE SERVICE TO TENANT'S SPACE. NEW TELEPHONE EQUIPMENT BOARD. COORDINATE WITH LANDLORD AND TELEPHONE		W = WEATHER PROOF WHILE IN USE COVER AND WEATHER RESISTANT RECEPTACLE	AF AMP BREA AFCI ABC-	MENT FRAME OF FUSED SWITCH OR CIRCUIT KER FAULT CIRCUIT INTERBUPTER	LSI LONG - S	HORT - INSTANTANEOU HORT - INSTANTANEOU FAULT		
	CO. AS REQUIRED FOR INSTALLING THIS SERVICE. I. FURNISH AND INSTALL 3/4" CONDUIT FROM EACH TELEPHONE OUTLET 1'-0" INTO CEILING CAVITY, OR UP TO JOIST WHERE NO CEILING IS		ELECTRIC DOOR OPERATOR MANUAL (LEFT) AUTOMATIC (RIGHT)	AIC AMPS AT AMP BREA	S INTERRUPTING CURRENT TRIP OF FUSED SWITCH OR CIRCUIT KER	MCB MAIN CIF	CUIT BREAKER CTURER		
	INSTALLED. J. FIRE ALARM SYSTEM: a. IF THERE IS NO EXISTING FIRE ALARM SYSTEM AND THE	•	PUSH PLATE FOR MANUAL CONTROL OF ELECTRIC DOOR OPERATOR	ATS AUTO	DMATIC TRANSFER SWITCH DING AUTOMATION SYSTEM	MEO MAIN LOU MTS MANUAL MW MICROW	TRANSFER SWITCH AVE OVEN		
	NATIONAL, STATE, OR LOCAL CODES, OR LOCAL FIRE AUTHORITY HAVING JURISDICTION NOW REQUIRES A FIRE ALARM SYSTEM. FURNISH AND INSTALL DEVICES,			C.T.C. WOR APPL C/B CIRCI	K UNDER DIVISION 27 OR 28 AS ICABLE UIT BREAKER	NIC NOT IN C NTS NOT TO S	ONTRACT (SHOWN FOF ONLY) SCALE		
	<ul> <li>COMPONENTS, ETC., AS DIRECTED BY ENFORCING AGENCY.</li> <li>CONNECT ALARM CONTACT(S) OF SPRINKLER SYSTEM FLOW SWITCH AND SUPERVISED VALVE AND AIR DUCT</li> </ul>	•	INDICATES DIRECT CONNECTION TO EQUIPMENT	CH COUN DW DISHV E EMEE	NTER HEIGHT OR SPECIAL HEIGHT DEVICE WASHER	OFE OWNER- OS OPTIONA	FURNISHED EQUIPMEN AND WIRED BY AL STANDBY		
	<ul> <li>DETECTORS TO FIRE ALARM SYSTEM AS REQUIRED.</li> <li>IF REQUIRED, CONNECT FIRE ALARM DEVICES (AIR DUCT DETECTORS, ETC.) AND ANY OTHER ASSOCIATED</li> </ul>	\$ \$ <sup>MS</sup> \$ <sup>MSR</sup>	MOTOR RATED TOGGLE SWITCH, MANUAL STARTER WITH PILOT LIGHT, AND MANUAL STARTER WITH PILOT LIGHT WITH EXTERNAL RELAY FOR CONTROL OR MONITORING RESPECTIVELY - ALL MAY BE KEYED "K"	E.C. WOR EMS ENEF EPO EMEF	K UNDER DIVISION 26 RGY MANAGEMENT SYSTEM RGENCY POWER OFF	P.C. WORK U	NDER DIVISION 22		
	EQUIPMENT TO DEDICATED 120V CIRCUIT.     PROVIDE LOCAL STATUS INDICATOR AND ALARM FOR ALARM DEVICES WHERE NOT CONNECTED TO FIRE		HEAVY DUTY DISCONNECT SWITCH (NON-FUSED) (LEFT) HEAVY DUTY DISCONNECT SWITCH (FUSED) (RIGHT)	- ER EQUI ERM ENEF ESP EMEF ETB EXIST	PMENT ROOM RGY REDUCTION MAINTENANCE SWITCH RGENCY STANDBY RATING TING TO REMAIN	SCCR SHORT C SPD SURGE F ST SHUNT T	IRCUIT CURRENT RATII ROTECTIVE DEVICE		
	ALARM SYSTEM. b. VERIFY ALL REQUIREMENTS AND FURNISH AND INSTALL IN ACCORDANCE WITH NFPA, NATIONAL, STATE, LOCAL CODES,	<u> </u>		EWC ELEC EX. EXIST	TRIC WATER COOLER	TAAC TO ABOV TR TAMPER	E ACCESSIBLE CEILING RESISTANT		
	LOCAL FIRE AUTHORITY HAVING JURISDICTION AND LANDLORD REQUIREMENTS.		ELECTRICAL PANELBOARD OR DISTRIBUTION BOARD	FBO FURN WIRE FIBO FURN WIRE	IISHED BY OTHERS - INSTALLED AND ED BY E.C. IISHED AND INSTALLED BY OTHERS - ED BY F.C.	TYP TYPICAL	COUNTER REFRIGERAT		
			(DIMENSIONS MAY VARY / FLUSH OR SURFACE MOUNTED AS INDICATED) OIL FILLED TRANSFORMER	FP RECE DISPI FWE FUR	EPTACLE TO BE USED FOR A FLAT PANEL LAY. JISHED WITH EQUIPMENT BY OTHERS -	UL UNDERW U.L.S.E. LISTED F UNO UNLESS	RITER'S LABORATORY OR SERVICE ENTRANC NOTED OR INDICATED ( DRAWINGS OB IN SPEC		
		T (5)	LOW VOLTAGE THERMOSTAT (LEFT) AND TEMPERATURE SENSOR (RIGHT)	GD GARE GFEP GROU	ALLED AND WIRED BY E.C. BAGE DISPOSAL JND FAULT EQUIPMENT PROTECTION	VFD / VSD VARIABL	E FREQUENCY / SPEED		
		L R	LINE VOLTAGE THERMOSTAT (LEFT) AND REVERSE ACTING THERMOSTAT (RIGHT)	GFI/GFCI GROU GND GROU		VIF VERIFY I VM VENDING VP VANDAL	N FIELD MACHINE PROOF		
			HUMIDITY STAT (LEFT) AND HUMIDITY SENSOR (RIGHT)         PRESSURE STAT (LEFT) AND PRESSURE SENSOR (RIGHT)	H.C. WOR H.O.A. "HAN	D - OFF - AUTO" SWITCH	W / WP WEATHE WG WIRE GU WR WEATHE	RPROOF ARD R RESISTANT		
		(P) (PS)			PLAN-VIEW AND GRA	APHIC LINE TY	PES		
				WORK SHOWN BOLD-C (UNLESS OTHERWISE)	CONTINUOUS INDICATES NEW WORK INDICATED)				
				WORK SHOWN FADED (UNLESS OTHERWISE I WORK SHOWN BOLD-D	INDICATES EXISTING WORK TO REMAIN OR NEV INDICATED) DASHED INDICATES SELECTIVE DEMOLITION WO	RK			
				(UNLESS OTHERWISE I	INDICATED)				
					ELECTRIC DESI	GN CRITERIA			
ONDITIONS - GENERAL NOTES	3				APPLICABLE BUI	LDING CODES	,		
<u>OF DOCUMENTS</u> : EXISTING C ATIONS AND THE REVIEW OF E INTENT OF THE ELECTRICAL	CONDITIONS SHOWN ON THE DRAWINGS ARE BASED ON VISUAL FIELD F PREVIOUS DRAWINGS THAT MAY NOT HAVE BEEN CERTIFIED "AS-BUILTS". IT IS L DOCUMENTS THAT EXISTING CONDITIONS BE ACCURATELY SHOWN. EXISTING			2015 WISCONSIN BUILDI 2017 NFPA 70 - 2017 NAT 2016 NFPA 72 - 2013 NAT	ING CODE (BASED ON THE INTERNATIONAL BUIL FIONAL ELECTRICAL CODE (NEC)	DING CODE)			
ICAL WORK IS SHOWN TO A V NG REFERENCE ONLY. <u>) SURVEY</u> : PERFORM A DETAI G STRUCTURES AND PREMISE	/ERY LIMITED EXTENT ON THE DRAWINGS AND IS SHOWN FOR GENERAL ILED PRE-BID WALK-THROUGH FIELD INSPECTION AND SURVEY TO REVIEW THE ES. TO ACCURATELY DETERMINE EXISTING CONDITIONS, AND TO DETERMINE			2015 INTERNATIONAL EP	NERGY CONSERVATION CODE (IECC)				
OF REQUIRED ELECTRICALLY SPECTION. OF REMOVED MATERIALS: DO	Y RELATED WORK. INCLUDE APPLICABLE ACCESSIBLE CEILING CAVITY AREAS IN         O NOT REUSE REMOVED ELECTRICAL MATERIALS UNLESS SPECIFICALLY         D NOT REUSE REMOVED ELECTRICAL MATERIALS UNLESS SPECIFICALLY			TES	TING/COMMISSIONING F	OR LIGHTING	CONTROLS		
ED IN PROJECT DOCUMENTS. ECT DOCUMENTS, OR AS DIRE <u>G POWER DISTRIBUTION EQU</u> ENT. COMPLETELY RE-TYPE F	EXISTING WIRING SYSTEMS MAY BE UTILIZED ONLY TO THE EXTENT INDICATED RECTED BY OWNER'S REPRESENTATIVE IN FIELD. JIPMENT: WHERE MODIFICATIONS ARE MADE TO EXISTING POWER DISTRIBUTION PANELBOARD DIRECTORIES USING ACCURATE "AS-BUILT" INFORMATION. WHEN			LIGHTING CONTROL DE PROGRAMMED, AND IN INSTALLATION CERTIFIC	VICES AND SYSTEMS SHALL BE TESTED TO ENS PROPER WORKING ORDER. INSTALLING CONTF CATES AND SHALL PROVIDE MANUALS FOR LIGH	SURE THE HARDWARE AND S ACTOR SHALL BE RESPONS TING CONTROL DEVICES TO	OFTWARE IS CALIBRAT		
COMPONENTS TO EXISTING F S) OVERCURRENT PROTECTIC ACTURER, MODEL/SERIES, SHO	POWER DISTRIBUTION EQUIPMENT, PROVIDE FULL SIZE (NO SPLIT OR TANDEM ON DEVICES (OCPs) TO MATCH THOSE ALREADY IN PLACE, INCLUDING IORT CIRCUIT CURRENT (SCCR/AIC) RATINGS. PROVIDE COMMON TRIPS (NO			CLOSE-OUT. INSTALLING FOR TESTING/COMMISS REQUIRED FUNCTIONAL	G CONTRACTOR SHALL BE RESPONSIBLE FOR C IONING OF THE LIGHTING CONTROL SYSTEMS A TESTING FORMS ARE COMPLETED AND SUBMI	ONTRACTING WITH APPROF ND SHALL BE RESPONSIBLE TTED TO THE OWNER AND L	RIATE PARTIES TO ARE FOR ENSURING ALL OCAL AHJ PRIOR TO PE		
ND HID RATINGS WHERE APPL L LOADS. <u>G BRANCH CIRCUITS</u> : MAINTAI	LICABLE FOR LOADS. PROVIDE HANDLE LOCK-ON DEVICES FOR EMERGENCY AND			UTILIT	Y COORDINATION - CON	ITRACTOR RE	SPONSIBILI <sup>-</sup>		
. UNLESS NOTED OTHERWISE MENTS, NOT EXISTING. WHER ) OR IS NOT CONSISTENT WITH I OADS TO EXISTING CIRCUITS	E, ALL CIRCUIT DESIGNATIONS SHOWN ON THE DRAWINGS INDICATE NEW CIRCUIT RE COLOR CODING OF BRANCH CIRCUIT CONDUCTORS DOES NOT COMPLY WITH TH EXISTING CONDITIONS, MODIFY TO COMPLY.			COORDINATE UTILITY COORDINATION HAS NO	Y SERVICE WORK CONTAINED WITHIN THIS DRA DT BEEN PERFORMED AS PART OF THIS DRAWIN	WING SET WITH RESPECTIVI	LOCAL UTILITY COMP LUES SHOWN ON THE I		
S WITH EXISTING LOADS, MET DES NOT EXCEED 80 PERCEN DED, NOTIFY DESIGN PROFESS	TER THE EXISTING CIRCUIT IN ADVANCE AND ENSURE THE EXISTING PLUS ADDED IT OF THE SOURCE CIRCUIT BREAKER AMPERE RATING. IF THAT LOAD IS SIONAL.			NOODWED WHEDEO DAO	OBTAIN AND COMPLY WITH ALL UTILITY INS	TALLATION DETAILS AND ST	ANDARDS.		
<u>GNMENT OF EXISTING CIRCUIT</u> ON DRAWINGS OR BASED ON PRIGINAL BREAKER, MODIFY C FFERENT LINE/PHASE THAN TH	TS: IN CASES WHERE EXISTING CIRCUITS ARE REUSED (BASED ON INFORMATION N FIELD CONDITIONS) BUT MUST BE CONNECTED TO BREAKERS OTHER THAN COLOR-CODING AS REQUIRED IF THE NEW BREAKER ASSIGNMENT IS CONNECTED THE OBIGINAL ONE, USE MEANS AND METHODS COMPLIANT WITH NEPA 70 AND			CONTAC	T 811 "CALL BEFORE YOU DIG" SERVICE PRIOR	TO COMMENCING WITH ANY	UNDERGROUND WORK		
JTHORITIES HAVING JURISDIC ICAL WORK TO REMAIN OR BE IES OR WHERE SPECIFICALLY	CTION. <u>E RELOCATED</u> : IF REQUIRED TO ACCOMMODATE CONSTRUCTION RELATED Y SHOWN ON THE DRAWINGS, TEMPORARILY REMOVE, STORE IN PROTECTED "DISCONNECT, F	ION" OR "SELECTIVE DEMOLITIC OLISH", "REMOVE" OR SIMILAR <sup>-</sup> REMOVE, DISPOSE OF, AND REM	DN" AS APPLICABLE FOR THE RESPECTIVE SCOPE OF WORK. WHERE TERMS ARE USED IN ELECTRICAL DOCUMENTS, INTERPRET TO MEAN 10VE ALL RELATED ELECTRICAL CONDUIT, RACEWAYS, WIRING,	ELECTE	RIC CONDUIT AND WIR		SCHEDUL		
ON ON SITE, AND REINSTALL C OR TO BE RELOCATED. <u>CTIVE BARRIERS</u> : PROVIDE AN IT THE SPREAD OF DUST AND	CONFLICTING ELECTRICAL EQUIPMENT, LUMINAIRES, OR DEVICES THAT ARE TO ND MAINTAIN TEMPORARY PARTITIONS AND DUST BARRIERS ADEQUATE TO DIBT TO ADJACENT FINISHED ABEAS AND OTHER SYSTEM COMPONENTS ABANDONED AN ABANDONED AN	, SUPPORTS, ETC.". <u>MMODATIONS</u> : PROVIDE ELECT D AS REQUIRED TO ACCOMMOD	TRICAL DEMOLITION WORK AS REQUIRED TO ACCOMMODATE PROJECT DATE NEW CONSTRUCTION. DISCONNECT AND REMOVE WORK TO BE	- METAL CLAD CABLE	ARC	- ALUMINUM RIGID COND			
CT ADJACENT INSTALLATIONS RS AFTER DEMOLITION OPERA ING FROM ELECTRICAL WORK	B DURING CUTTING AND PATCHING OPERATIONS. REMOVE PROTECTION AND ATIONS ARE COMPLETE. PREVENT AIRBORNE DUST AND PARTICULATE MATTER K FROM ENTERING OCCUPIED SPACES, AND FROM ENTERING AIR INTAKES TO C. <u>REMOVAL OF AE</u>	SS SPECIFICALLY NOTED OTHER INING ELECTRICAL DEMOLITION BANDONED WORK: REMOVE AC	RWISE. COORDINATE PHASING OF WORK CAREFULLY WITH OWNER I WORK. CESSIBLE ABANDONED, INACTIVE AND OBSOLETE RACEWAY SYSTEMS,	C - HEALTHCARE METAL CAR C - HEALTHCARE METAL C E - UNDERGROUND SERVI	CLAD CABLE ENT CE ENTRANCE CABLE FMC	- ELECTRIC METALLIC TU - ELECTRIC NON-METALLI - FLEXIBLE METALLIC CO	C TUBING NDUIT		
ING HVAC SYSTEMS. MEET W QUIREMENTS RELATED TO EL QUIREMENTS THAT AFFECT EL ATIONS: MAKE REQUIRED EL	LECTRICAL WORK AND ARE AFFECTED BY ELECTRICAL WORK. LECTRICAL OPENINGS THROUGH WALLS, FLOORS, ETC, IMMEDIATELY PRIOR TO	MINAIRES, DEVICES, CONDUIT, \ BEDDED IN FLOORS, WALLS, AN TIONS. THIS APPLIES FOR ALL EI YPE WORK INCLUDING ALL SU	WIRING, CABLES, BOXES, SUPPORTS, CONTROLS, ETC. ABANDONED       SE         D CEILINGS MAY REMAIN IF SUCH MATERIALS DO NOT INTERFERE WITH       UF         LECTRICAL WORK, AND ALL COMMUNICATIONS AND INFORMATION       NM         CH WORK ABOVE CEILINGS ETC. REMOVE BELATED ABANDONED       DM	- SERVICE ENTRANCE CAI - UNDERGROUND FEEDEF - NON-METALLIC SHEATH	BLE GRO	- GALVANIZED RIGID STE E - HIGH DENSITY POLYET - INTERMEDIATE METAL C	HYLENE CONDUIT		
ATION OF WORK. PROPERLY ATION OF WORK. PROVIDE TE F BE PERMANENTLY SEALED V	AND PERMANENTLY SEAL ELECTRICAL OPENINGS IMMEDIATELY AFTER EMPORARY SEALS FOR APPLICATIONS WHERE PENETRATIONS ARE MADE BUT WITHIN FOUR HOURS.	AY BACK TO THE NEAREST RES E CONFINES OF THE PROJECT A DURCES SOURCE EVEN IF SOUR	SPECTIVE "UPSTREAM" JUNCTION BOX THAT REMAINS ACTIVE EVEN IF AREA. REMOVE ABANDONED UNUSED WIRING AND CABLES BACK TO CES ARE OUTSIDE THE CONFINES OF THE PROJECT AREA.	C - RIGID NOLTAL CONDULT C - RIGID NON-METALLIC ( RC - REINFORCED THERM   - LINE ISOLATION MONITY	CONDUIT LFMC OSETTING RESIN CONDUIT SCH	40 PVC - SCHEDULE 40 PVC	NON-METALLIC CONDUI NON-METALLIC CON DLYVINYL CHLORIDE		
ING INTO CODE VIOLATIONS: INS ING INTO COMPLIANCE WITH N MMEDIATE PROJECT AREAS A APPLIES TO PRE-EXISTING GI	NFPA 70. THIS APPLIES ONLY TO THE EXTENT THAT SUCH WORK IS UNCOVERED AFFECTED BY CONSTRUCTION ACTIVITIES, AND ONLY TO THE LIMITED EXTENT ENERAL INSTALLATION METHODS SUCH AS MISSING JUNCTION BOX PLATE, OPEN	MING CONDULT: EXISTING BRAN I AND NOT CONFLICTING WITH ( N OF THE ELECTRICAL INSTALLI INDUCTORS AND CARLES HAVE	DVER CIRCUIT AND SYSTEMS CONDUIT, NOT CONFLICTING WITH NEW DVERHEAD OR CEILING CAVITY REQUIREMENTS, MAY BE RE-USED AT ER IF IT COMPLIES WITH THESE CONTRACT DOCUMENTS AFTER ALL BEEN REMOVED FROM THEM. DO NOT EXCEED NFPA 70 REQUIRED			RACEWAY TYPE	RACEWAY AND CO		
ON BOX KNOCKOUT, MINOR CO VIVE CODE OR SAFETY VIOLAT S REPRESENTATIVE (DETAILE ON THE CONSTRUCTION ACC	ONDUIT RE-ANCHORING AND MINOR EXPOSED WIRING/CONNECTIONS. IF MORE TIONS ARE DISCOVERED, IMMEDIATELY BRING THEM TO THE ATTENTION OF THE ED IN WRITING) ALONG WITH PROPOSED COST FOR CORRECTIONS AND IMPACT HED ULF	ND DO NOT INSTALL WIRING FE TO ACCOMMODATE NEW WOR WAYS, WIRING, CABLES, BOXES	D FROM DIFFERENT SOURCES IN COMMON CONDUIT. <u>K</u> : REMOVE AND RELOCATE EQUIPMENT, LUMINAIRES, DEVICES, S, SUPPORTS, ETC. THAT CONFLICT WITH CONSTRUCTION RELATED COMMODATE NEW WORK OF DESPECTIVE TRADES. DEVICORY AND	INCEALED	NON-PLENUM RATED	EMT EMT			
ARY LIGHTING AND POWER: ING CODES. PROVIDE SUFFIC OVATION SCOPE. PROVIDE G	COMPLY WITH NFPA 70 (INCLUDING ARTICLE 590), NFPA 70E AND ALL OTHER CIENT LIGHTING AND POWER CENTERS THROUGHOUT INTERIOR OF NEW WORK GFCI PROTECTION FOR ALL WORK. COORDINATE WITH GENERAL CONTRACTOR	NADES AS NECESSARY TO ACC (AY AND WIRING AS REQUIRED ECONNECT IF APPLICABLE) REM IS WHERE APPLICABLE. FOR FO	OWINDEATE NEW WORK OF RESPECTIVE TRADES. REWORK AND       EXP         TO ACCOMMODATE NEW OR RELOCATED ELECTRICAL WORK.	DWER - INDOOR					
HER TRADES, AND PROVIDE A SH TEMPORARY ELECTRIC BY SENTATIVE, TEMPORARY ELEC	ANY ADDITIONAL TEMPORARY ELECTRICAL NEEDS THAT ARE REQUIRED. FULLY Y END OF PROJECT. UPON RECEIVING WRITTEN PERMISSION FROM OWNER'S CTRICAL SERVICE(S) MAY BE DERIVED FROM EXISTING BUILDING ENERGIZED G. LUMINAIRES: FO	ATCHING: PERFORM CUTTING A REMAINING SURFACES, INCLUD DR ALL EXISTING LUMINAIRES W	AND PATCHING REQUIRED FOR DEMOLITION, RESTORED TO MATCH ING FIRE/SMOKE RATINGS. (HICH ARE SCHEDULED FOR REUSE, REMOVE FROM EXISTING CEILINGS) VER	GLING HOLLOW PARTITIONS ICEALED TICAL RISERS FROM BELOW GRA	THHN THHN THHN ADE INCLUDING XHHW-2	MC MC RMC (GRC)			
L. FROVIDE OVERCURRENT P DINGLY. PROVIDE TEMPORARY ANTED BY OWNER'S REPRESE ATED FEES FOR INSPECTIONS	DURING DEMOLI IN SECTION, DISCONNECTS, CABLES, CONDUCTORS, RACEWAY, ETC. IN SERVICE FROM UTILITY IF PERMISSION TO USE EXISTING BUILDING POWER IS SENTATIVE; ARRANGE WITH LOCAL UTILITY FOR TEMPORARY SERVICE AND PAY S, CONNECTIONS, ETC., AND PAY FOR UTILITY ELECTRIC USAGE/CONSUMPTION	GION; PROTECT DURING CONST G STANDARD) AND REINSTALL A BE REMOVED AND TURNED OVER TO MOVED AND TURNED OVER TO	AT LOCATION; GLEAN, SERVICE (IF REQUIRED), RE-LAMP (WITH LAMPS TO AT LOCATIONS INDICATED. FOR ALL EXISTING LUMINAIRES WHICH ARE ER TO OWNER, THE LUMINAIRES SHALL BE DISCONNECTED, DWNER, TRANSFER SUCH LUMINAIRES TO STORAGE AREA AS	UW INECTION TO SYSTEMS FURNITU INAIRE WHIPS IN ACCESSIBLE CE	RE THHN EILING, 72" MAX THHN	LFMC MC			
RESTORE ASSOCIATED SITE A TEMPORARY LIGHTING AND PC LIFE-SAFETY PROVISIONS: P	AND BUILDING MATERIALS TO THEIR PRE-CONSTRUCTION STATE AND CONDITION OWER IS NO LONGER NEEDED. PROVIDE INTERIM FIRE ALARM AND CODE MINIMUM LIGHTING IN DEMOLITION AND	ATERIALS: REFER TO OWNER'S TERIALS REMOVED DURING DE	CON         C	INECTION TO VIBRATING EQUIPM OSED IERGROUND	ENT, 72" MAX THHN THHN XHHW-2	LFMC EMT RNC (SCH 40 PVC)			
AUCTION AREAS. PROVIDE TEN ACTURER OR OBTAINED FROM OR MANUFACTURER, OVER E. BE EXPOSED TO CONSTRUCT	MPORARY PLASTIC COVERS, OBTAINED FROM SMOKE DETECTOR M A THIRD PARTY AND SPECIFICALLY APPROVED FOR SUCH USE BY SMOKE EXISTING SMOKE DETECTORS WITHIN PROJECT AREA, AND IN ADJACENT AREAS TION-BELATED DUST OR AIBBORNE PARTICILIATES. REMOVE ALL TEMPORARY LIFE	ER ELECTS TO RETAIN AT THE S TERIALS THAT THE OWNER ELE GIGNATED FOR SALVAGE (REMO	SITE AS DESIGNATED BY THE OWNER'S REPRESENTATIVE. LEGALLY CCTS NOT TO RETAIN. DISCONNECT AND REMOVE ELECTRICAL VAL AND REUSE, OR FOR TURNING OVER TO OWNER) UNDAMAGED.	DWER - OUTDOOR OSED	XHHW-2	BMC (GBC)			
WORK WHEN NO LONGER NE EGRESS PATH PROVISIONS: EGRESS ROUTES THAT MUST	EEDED. PROVIDE TEMPORARY UL 924 COMPLIANT EXIT AND/OR EGRESS LIGHTING REMAIN ACCESSIBLE DURING CONSTRUCTION. PROVIDE TEMPORARY FIRE	TRICAL MATERIALS TO A PROT TRICAL MATERIALS TO A PROT THEM GROUPED BY SYSTEM TY EUSED COMPONENTS: CI FAN (	B       FROM EQUIPMENT LERIMINAL POINTS. GAREFULLY TRANSPORT       EXP         'ECTED ON-SITE STORAGE LOCATION AS DIRECTED IN FIELD AND       EXP         (PE.		DF XHHW-2	RMC (GRC)			
SYSTEM PULL STATIONS AND S. REMOVE THIS SCOPE WHEN	AUDIO/VISUAL ALARM NOTIFICATION DEVICES ALONG ALL AFFECTED EGRESS	DRAWINGS. MODIFY AND EXTEN	D RELATED EXISTING WIRING IN CONDUIT ACCORDINGLY.	STING HOLLOW PARTITIONS	NON-PLENUM RATED CEILINGS NON-PLENUM RATED	EMT EMT			
			CON	IVEALED, ABOVE ACCESSIBLE CE		J-HOOKS			

		ELECTRIC LEGEND		ELECTRIC	C LEGEND		
	SYMBOL	DESCRIPTION LIGHTING AND LIGHTING CONTROLS	SYMBOL	SINGLE L	DESCRIP	TION AM	
ΞT	••\$2¤¥@@@	LUMINAIRE (REFER TO THE LUMINAIRE SCHEDULE) NOTE THAT OTHER SHAPES MAY ALSO BE USED TO REPRESENT LUMINAIRES SHADED LUMINAIRES DENOTE THOSE CONNECTED TO EMERGENCY OR STANDBY POWER AS APPLICABLE		HEAVY DUTY DISCONNECT SWITCH SIZES MAY BE SHOWN ONLY IN SCH ELECTRICAL PANELBOARD OR DIST	(NON-FUSED)(LEFT) EDULE RIBUTION BOARD	(FUSED)(RIGHT)	
		(UNSWITCHED LUMINAIRES ARE EGRESS LIGHTS AND/OR NIGHT-LIGHTS THAT OPERATE 24/7) SINGLE / DOUBLE SIDED EXIT SIGN CONNECT AHEAD OF SWITCHING & CONFIGURE ARROWS TO INDICATE DIRECTION OF EGRESS TRAVEL EMERGENCY LIGHTING UNIT WITH 90-MINUTE BATTERY BACKUP AND ASSOCIATED REMOTE HEADS WHERE APPLICABLE. CONNECT TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING		SURGE PROTECTIVE DEVICE	BLE / RACE	WAY	
		A = LUMINAIRE TYPE, NL = NIGHT-LIGHT (UNSWITCHED), a = SWITCHING DESIGNATION, EL = EGRESS LUMINAIRE (ILLUMINATES PATH OF EGRESS, ON ALL TIMES SPACE IS OCCUPIED) LIGHTING SWITCH (KEYS: 2 = 2-POLE, 3 = 3-WAY, 4 = 4-WAY, D=DIMMER, K=KEYED, LV = LOW VOLTAGE	LPA-1,3	BRANCH CIRCUIT HOME RUN WITH F	PANEL NAME AND CIRC		
	\$	M = MOMENTARY-CONTACT 1PDT W/CENTER-REST, P = SWITCH W/PILOT LIGHT, T = TIMER SWITCH) CEILING-MOUNTED OCCUPANCY SENSOR. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "IR" = INFRARED, TYPE "US" = ULTRASONIC		CABLING / RACEWAY INSTALLED BE	LOW FLOOR OR GRAD		
	LCP#	WALL-MOUNTED OCCUPANCY SENSOR SWITCH. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED BY TYPE. TYPE "IR"=INFRARED, TYPE "US"=ULTRASONIC, "V"=VACANCY SENSOR, "#" = CONTROLLED CIRCUITS. LIGHTING CONTROL PANEL	0	CABLE TRAY JUNCTION BOX ABOVE ACCESSIBLE	CEILING		
		CEPTACLES AND MISCELLANEOUS OUTLETS	Ū	FLUSH MOUNTED JUNCTION BOX OF	ICTURE IN AREAS WIT	H NO CEILING CABLE FOR APPLICATIC	)N
		SINGLE ("SIMPLEX"), DUPLEX, AND DOUBLE DUPLEX ("QUAD") RECEPTACLE RESPECTIVELY GFI / GFCI RECEPTACLES		FLUSH MOUNTED PULL BOX SINGLE-SERVICE SURFACE RACEW	AY (ONE COMPARTME	NT - POWER)	
	● <b>●</b> <del>●</del>	ISOLATED GROUND RECEPTACLES				IT - POWER AND TECH	NOLOGY)
		CEILING MOUNTED RECEPTACLES		CONDUIT UP OR DOWN			
	Φ <sup>H</sup> Φ <sup>C</sup> <sup>T</sup> Φ <sup>42"</sup> ₩ <sup>W</sup>	RECEPTACLE ATTRIBUTES 42" = MOUNT RECEPTACLE AT THIS HEIGHT ABOVE GRADE / FINISHED FLOOR C = INSTALL ABOVE COUNTER AND BACKSPLASH H = INSTALL BECEPTACLE HORIZONTALLY		ABBRI	EVIATIONS		
	Ψ <del>Φ</del> Φ <sup>sw</sup> Φ <sup>L</sup>	L = LIT (PROVIDE ILLUMINATED FACE OR INDICATOR LIGHT TO INDICATE THERE IS POWER TO RECEPTACLE) SW = SPLIT WIRED T = TAMPER-RESISTANT W = WEATHER PROOF WHILE IN USE COVER AND WEATHER RESISTANT RECEPTACLE	(R) RELOC 42" DISTAN PAVEN	ATE FIXTURE, EQUIPMENT OR DEVICE ICE ABOVE FINISHED FLOOR / GRADE / ENT	IG LR LI I SI	ISOLATED GROUN LEGALLY REQUIRI LONG - INSTANTAI LONG - SHOBT - IN	D ED STANDBY NEOUS NSTANTANFOL
		DOOR OPERATORS/DEVICES	AF AMP FI BREAK AFCI ARC-FA AIC AMPS I AT AMP TI	RAME OF FUSED SWITCH OR CIRCUIT ER AULT CIRCUIT INTERRUPTER NTERRUPTING CURRENT BIP OF FUSED SWITCH OB CIRCUIT	LSIG	LONG - SHORT - IN LONG - SHORT - IN F	ISTANTANEOU FAULT
		MANUAL (LEFT) AUTOMATIC (RIGHT) PUSH PLATE FOR MANUAL CONTROL OF ELECTRIC DOOR OPERATOR	ATS AUTOM	IATIC TRANSFER SWITCH	MFR MLO MTS MW	MANUFACTURER MAIN LUGS ONLY MANUAL TRANSFE MICROWAVE OVEI	ER SWITCH N
	¢	DOOR BELL WITH TRANSFORMER & PUSHBUTTONS	C.T.C. WORK	UNDER DIVISION 27 OR 28 AS ABLE T BREAKER	NIC NTS	NOT IN CONTRAC ( NOT TO SCALE	Г (SHOWN FOF ЭNLY)
	•	INDICATES DIRECT CONNECTION TO EQUIPMENT	CH COUNT DW DISHW	ER HEIGHT OR SPECIAL HEIGHT DEVIC ASHER SENCY	e Ofe Os	OWNER-FURNISHE A OPTIONAL STAND	ED EQUIPMENT AND WIRED BY BY
	\$ \$ <sup>MS</sup> \$ <sup>MSR</sup>	MOTOR RATED TOGGLE SWITCH, MANUAL STARTER WITH PILOT LIGHT, AND MANUAL STARTER WITH PILOT LIGHT WITH EXTERNAL RELAY FOR CONTROL OR MONITORING RESPECTIVELY - ALL MAY BE KEYED "K"	E.C. WORK EMS ENERG EPO EMERG EB EQUIPI	UNDER DIVISION 26 Y MANAGEMENT SYSTEM ENCY POWER OFF MENT ROOM	P.C. S.C.	WORK UNDER DIV WORK UNDER DIV	ISION 22 ISION 21
		HEAVY DUTY DISCONNECT SWITCH (NON-FUSED) (LEFT) HEAVY DUTY DISCONNECT SWITCH (FUSED) (RIGHT) HAND DRYER	ERM ENERG ESP EMERG ETR EXISTII EWC ELECT	Y REDUCTION MAINTENANCE SWITCH ENCY STANDBY RATING NG TO REMAIN RIC WATER COOLER	SCCR SPD ST	SHORT CIRCUIT C SURGE PROTECTI SHUNT TRIP	
		PLYWOOD EQUIPMENT BOARD	EX. EXISTII FBO FURNIS WIRED	NG SHED BY OTHERS - INSTALLED AND BY E.C.	TAAC TR TTB TYP	TO ABOVE ACCES TAMPER RESISTA TELEPHONE TERM TYPICAL	SIBLE CEILING NT /INAL BOARD
		ELECTRICAL PANELBOARD OR DISTRIBUTION BOARD (DIMENSIONS MAY VARY / FLUSH OR SURFACE MOUNTED AS INDICATED) OIL FILLED TRANSFORMER	FIBO FURNIS WIRED FP RECEP DISPLA	SHED AND INSTALLED BY OTHERS - BY E.C. TACLE TO BE USED FOR A FLAT PANEL Y.	UCR UL U.L.S.E. UNO	UNDER COUNTER UNDERWRITER'S I LISTED FOR SERV	REFRIGERATO
	T TS	LOW VOLTAGE THERMOSTAT (LEFT) AND TEMPERATURE SENSOR (RIGHT)	GD GARBA	GE DISPOSAL	VED / VSD		S OR IN SPEC
		LINE VOLTAGE THERMOSTAT (LEFT) AND REVERSE ACTING THERMOSTAT (RIGHT)	GFEP GROUN GFI/GFCI GROUN GND GROUN	ID FAULT EQUIPMENT PROTECTION ID FAULT CIRCUIT INTERRUPTER DEVIC ID	E VIF VM VP	VERIFY IN FIELD VENDING MACHINI VANDAL PROOF	E
	H         HS           P         PS	PRESSURE STAT (LEFT) AND PRESSURE SENSOR (RIGHT)	H.O.A. "HAND	- OFF - AUTO" SWITCH	W / WP WG WR	WEATHERPROOF WIRE GUARD WEATHER RESIST	ANT
			WORK SHOWN BOLD-CC	PLAN-VIEW AND	GRAPHIC L	INE TYPES	
			WORK SHOWN FADED IN (UNLESS OTHERWISE IN	DICATED) DICATES EXISTING WORK TO REMAIN ( DICATED)	DR NEW WORK BY OTH	HERS AS APPLICABLE	
			WORK SHOWN BOLD-DA (UNLESS OTHERWISE IN	SHED INDICATES SELECTIVE DEMOLITI DICATED)	ON WORK		
				ELECTRIC D	ESIGN CRI <sup>-</sup>	TERIA	
				APPLICABLE	BUILDING (	CODES	
			2013 WISCONSIN BOILDIN 2017 NFPA 70 - 2017 NATIO 2016 NFPA 72 - 2013 NATIO 2015 INTERNATIONAL ENE	DNAL ELECTRICAL CODE (NEC) DNAL FIRE ALARM AND SIGNALING COD RGY CONSERVATION CODE (IECC)	E		
			TEST	ING/COMMISSIONIN	G FOR LIG	HTING CON	TROLS
			PROGRAMMED, AND IN PF INSTALLATION CERTIFICA CLOSE-OUT. INSTALLING FOR TESTING/COMMISSIC	CES AND SYSTEMS SHALL BE TESTED ROPER WORKING ORDER. INSTALLING TES AND SHALL PROVIDE MANUALS FO CONTRACTOR SHALL BE RESPONSIBLE INING OF THE LIGHTING CONTROL SYS	IO ENSURE THE HARL CONTRACTOR SHALL R LIGHTING CONTROL FOR CONTRACTING V TEMS AND SHALL BE F	JWARE AND SOFTWAR BE RESPONSIBLE FOR . DEVICES TO OWNER WITH APPROPRIATE PA RESPONSIBLE FOR ENS	E IS CALIBRAT ALL REQUIRE PRIOR TO PRC ARTIES TO ARF SURING ALL
			REQUIRED FUNCTIONAL T CLOSE-OUT.	COORDINATION - C	SUBMITTED TO THE O	OR RESPO	NSIBILI
			COORDINATE UTILITY S COORDINATION HAS NOT ASSUMED VALUES BASE	SERVICE WORK CONTAINED WITHIN TH BEEN PERFORMED AS PART OF THIS D O N SERVICE SIZE, AND EXPECTED UT	S DRAWING SET WITH RAWING SET. FAULT ILITY TRANSFORMER	I RESPECTIVE LOCAL U CURRENT VALUES SHO SIZE. VERIFY THE AVA	JTILITY COMPA OWN ON THE D ILABLE FAULT
N	S - DEMOLITION NOTES		CONTACT	OBTAIN AND COMPLY WITH ALL UTIL 811 "CALL BEFORE YOU DIG" SERVICE F	TOF ANY DISCREPANCE	CIES. TAILS AND STANDARDS IG WITH ANY UNDERGI	3. Round Work.
DE TIC 10	<u>EMOLITION</u> : WHERE THE TERM N" OR "SELECTIVE DEMOLITIO LISH", "REMOVE" OR SIMILAR T	I "DEMOLITION" IS USED IN ELECTRICAL DOCUMENTS, INTERPRET IT TO IN" AS APPLICABLE FOR THE RESPECTIVE SCOPE OF WORK. WHERE "ERMS ARE USED IN ELECTRICAL DOCUMENTS, INTERPRET TO MEAN					
	MOVE, DISPOSE OF, AND REM SUPPORTS, ETC.". <u>MODATIONS</u> : PROVIDE ELECT AS REQUIRED TO ACCOMMOD	OVE ALL RELATED ELECTRICAL CONDUIT, RACEWAYS, WIRING,         RICAL DEMOLITION WORK AS REQUIRED TO ACCOMMODATE PROJECT         ATE NEW CONSTRUCTION. DISCONNECT AND REMOVE WORK TO BE         MC         DATE WORK OF OTHER TRADEO. IN ADEAD AFFECTED BY THE	- METAL CLAD CABLE	C CONDULT AND V		RIGID CONDUIT	
	SPECIFICALLY NOTED OTHEF IING ELECTRICAL DEMOLITION <u>NDONED WORK</u> : REMOVE AC INAIBES DEVICES CONDUIT	WISE. COORDINATE PHASING OF WORK CAREFULLY WITH OWNER WORK. CESSIBLE ABANDONED, INACTIVE AND OBSOLETE RACEWAY SYSTEMS, WIRING, CABLES, BOXES, SUPPORTS, CONTROLS, ETC. ABANDONED.	MINERAL INSULATED CABL - HEALTHCARE METAL CL - UNDERGROUND SERVIC SERVICE ENTRANCE CABI	.E AD CABLE E ENTRANCE CABLE .E	EMT - ELECTRIC M ENT - ELECTRIC M FMC - FLEXIBLE M GRC - GALVANIZEI	IETALLIC TUBING ON-METALLIC TUBIN ETALLIC CONDUIT D RIGID STEEL CONI	G DUIT
BE TIC TYI	DDED IN FLOORS, WALLS, AND DNS. THIS APPLIES FOR ALL EL PE WORK, INCLUDING ALL SUC Y BACK TO THE NEAREST RES	D CEILINGS MAY REMAIN IF SUCH MATERIALS DO NOT INTERFERE WITH ECTRICAL WORK, AND ALL COMMUNICATIONS AND INFORMATION CH WORK ABOVE CEILINGS, ETC. REMOVE RELATED ABANDONED SPECTIVE "UPSTREAM" JUNCTION BOX THAT REMAINS ACTIVE EVEN IF	UNDERGROUND FEEDER - NON-METALLIC SHEATHE C - RIGID METAL CONDUIT C - RIGID NON-METALLIC CO		HDPE - HIGH DENS IMC - INTERMEDIA LFMC - LIQUID-TIG	SITY POLYETHYLENE TE METAL CONDUIT HT FLEXIBILE METAL HT FLEXIBI F NON-M	ECONDUIT
	CONFINES OF THE PROJECT A RCES SOURCE EVEN IF SOURCE ING CONDUIT: EXISTING BRAN ND NOT CONFLICTING WITH C	REA. REMOVE ABANDONED UNUSED WIRING AND CABLES BACK TO CES ARE OUTSIDE THE CONFINES OF THE PROJECT AREA. ICH CIRCUIT AND SYSTEMS CONDUIT, NOT CONFLICTING WITH NEW VERHEAD OR CEILING CAVITY REQUIREMENTS, MAY BE RE-USED AT	C - REINFORCED THERMO	SETTING RESIN CONDUIT	SCH 40 PVC - SCH SCH 80 PVC - SCH	EDULE 40 POLYVINY EDULE 80 POLYVINY	L CHLORIDE L CHLORIDE
N NI NI S T	OF THE ELECTRICAL INSTALLE IDUCTORS AND CABLES HAVE D DO NOT INSTALL WIRING FEL O ACCOMMODATE NEW WORP ING CABLES BOXES	ER IF IT COMPLIES WITH THESE CONTRACT DOCUMENTS AFTER ALL BEEN REMOVED FROM THEM. DO NOT EXCEED NFPA 70 REQUIRED D FROM DIFFERENT SOURCES IN COMMON CONDUIT. (: REMOVE AND RELOCATE EQUIPMENT, LUMINAIRES, DEVICES, SUPPORTS ETC. THAT CONFLICT WITH CONSTRUCTION BELATED	CONDUIT APPLICATIO E ALARM TING HOLLOW PARTITIONS CEALED	NON-PLENUM RATED	TYPE RA		SEWAY AND CO
R/ /A E	ADES AS NECESSARY TO ACCO Y AND WIRING AS REQUIRED T CONNECT IF APPLICABLE) REM WHERE APPLICABLE, FOR FO	DMMODATE NEW WORK OF RESPECTIVE TRADES. REWORK AND TO ACCOMMODATE NEW OR RELOCATED ELECTRICAL WORK. MAINING WIRING. PROVIDE ELECTRICAL DISCONNECTIONS, AND UIPMENT TO BE REMOVED (OR RELOCATED) BY OTHER TRADES.	WER - INDOOR	NON-PLENUM RATED	EMT		
AT RI DF	CCHING: PERFORM CUTTING A EMAINING SURFACES, INCLUDI ALL EXISTING LUMINAIRES W ION; PROTECT DURING CONST	ND PATCHING REQUIRED FOR DEMOLITION, RESTORED TO MATCH NG FIRE/SMOKE RATINGS. HICH ARE SCHEDULED FOR REUSE, REMOVE FROM EXISTING CEILINGS RUCTION; CLEAN, SERVICE (IF REQUIRED), RE-LAMP (WITH LAMPS TO	ING HOLLOW PARTITIONS CEALED ICAL RISERS FROM BELOW GRAD	THHN THHN E INCLUDING XHHW-2	MC MC RMC (GR	C)	
G B M(	STANDARD) AND REINSTALL A REMOVED AND TURNED OVE DVED AND TURNED OVER TO C D.	T LOCATIONS INDICATED. FOR ALL EXISTING LUMINAIRES WHICH ARE ER TO OWNER, THE LUMINAIRES SHALL BE DISCONNECTED, DWNER. TRANSFER SUCH LUMINAIRES TO STORAGE AREA AS	VECTION TO SYSTEMS FURNITURE NAIRE WHIPS IN ACCESSIBLE CEIL VECTION TO VIBRATING EQUIPMEN	THHN ING, 72" MAX THHN IT, 72" MAX THHN	LFMC MC LFMC		
	<u>TERIALS</u> : REFER TO OWNER'S ERIALS REMOVED DURING DEN R ELECTS TO RETAIN AT THE S ERIALS THAT THE OWNER ELF	REPRESENTATIVE FOR DISPOSAL INSTRUCTIONS FOR ABANDONED       EXPC         MOLITION AND THEREAFTER. NEATLY STORE ELECTRICAL MATERIALS       UNDE         VITE AS DESIGNATED BY THE OWNER'S REPRESENTATIVE. LEGALLY       UNDE         CTS NOT TO RETAIN. DISCONNECT AND REMOVE ELECTRICAL       UNDE	RGROUND	THHN XHHW-2	EMT RNC (SCI	H 40 PVC)	
SIC NE CT TI	BNATED FOR SALVAGE (REMO D REMOVE WIRING AND "WHIPS RICAL MATERIALS TO A PROT HEM GROUPED BY SYSTEM TY	VAL AND REUSE, OR FOR TURNING OVER TO OWNER) UNDAMAGED.  S" FROM EQUIPMENT TERMINAL POINTS. CAREFULLY TRANSPORT ECTED ON-SITE STORAGE LOCATION AS DIRECTED IN FIELD AND PE.	SED TO DIRECT SUNLIGHT, ROOF	XHHW-2 XHHW-2	RMC (GR RMC (GR	C)	
<u>El</u> DR	JSED COMPONENTS: CLEAN C AWINGS. MODIFY AND EXTENI	D RELATED EXISTING WIRING IN CONDUIT ACCORDINGLY.	CHNOLOGY TING HOLLOW PARTITIONS CEALED, ABOVE INACCESSIBLE CE	ILINGS DI ENUM PATED	EMT EMT		

#### EXISTING CC <u>INTENT</u> OBSER NOT THE ELECTR PLANNIN <u>PRE-BID</u> EXISTIN SCOPE THIS INS REUSE ( INDICAT IN PROJ <u>EXISTIN</u> EQUIPMI ADDING DEVICE MANUFA FIELD-INS CRITICAL EXISTING REMAIN. ASSIGN NFPA 70 ADDED CIRCUIT LOAD DO EXCEED REASSION SHOWN THEIR O TO A DIF WITH AL ELECTR ACTIVITI LOCATIO REMAIN PROTEC PREVEN PROTEC RESULT OPERATI (IAQ) REQ IAQ REQI PENETF INSTALL INSTALL CANNO PRE-EX IN THE I ΤΗΑΤ ΙΤ EXTENS OWNER'S (IF ANY) TEMPOF PREVAIL OR RENC AND OT DEMOLI REPRES SERVICE NOT GR ASSOCIA COSTS. AFTER 1. <u>INTERIM</u> CONSTR MANUFA

DETECTO THAT AR SAFETY I<u>NTERIM</u> ALONG E ALARM ROUTES

![](_page_52_Figure_55.jpeg)

![](_page_52_Figure_56.jpeg)

![](_page_53_Figure_0.jpeg)

OWNERSHIP OF INSTRUMENTS OF SERVICE All reports, plans, specifications, computer files, field data, notes and service shall remain the property of the Consultant. The Consultant s, limitation, the copyright thereto.

TS
vel IS 1200. Provide CK-up.
VEL IS 1200. PROVIDE CK-UP.
INUTE REMOTE SIDE.
1.

	LIGHT FIXTU
	GENER
<b>A</b> .	DESIGNATED FIXTURE SHA
3.	CUT INSULATION (WHEN B SHIELD AROUND FIXTURE INSULATION A MINIMUM O
С.	ATTACH FIXTURE TO T-BA PROVIDE "CADDY" CLIP #C AUTHORITY AND SEISMIC
Э.	FIXTURE PROVIDED WITH SUPPLY. VERIFY VOLTAGE
Ξ.	LIGHT FIXTURES DENOTED
₹.	WITH NO FINISHED CEILIN AREA SHALL BE SUSPEND IN THE STOCKROOM AREA
Э.	EXTERIOR FIXTURES SHALL LOCATION AND COLD WEA
Η.	LIGHT FIXTURES ARE TO E VENDOR UNLESS OTHERV

![](_page_53_Picture_5.jpeg)

![](_page_53_Figure_7.jpeg)

![](_page_53_Picture_10.jpeg)

![](_page_53_Picture_11.jpeg)

ABBREVIATIO	ONS			CONTRA	ACTOR TYPE						MOTOR	CONTROL	L TYPE	=					C	ONTROL T	YPE				
DC L MC M SD E CN C TS T C/B H FUSE F FLA C MCA M CP C	OCAL DISCONNECT AOTOR CONTROL (POV DUCT SMOKE DETECTO CONTROLS TOGGLE SWITCH 4.A.C.R. CIRCUIT BREA USE AT LOCAL DISCO DERATING FULL LOAL MINIMUM CIRCUIT AMP CORD AND PLUG CONN	VER) DR KER AT SOURCE PAI NNECT (VERIFY FIEL AMPS ACITY IECTION	NELBOARD D RATING)	EC EX FC GC HC MFR PC OR	ELECTRICA EXISTING FIRE PROT GENERAL O HVAC CON MANUFACT PLUMBING OWNER OF	L CONTRA ECTION CC CONTRACT TRACTOR URER CONTRAC CONTRAC OTHERS	ONTRACTOR OR TOR				CS MCC MG MS VFD MSR OV	COMBIN. MOTOR ( MAGNET MANUAL VARIABL MANUAL OVERCU	IATION CONTI TIC ST/ L STAR LE FRE L STAR JRREN	NSTARTER ROL STAF ARTER OF RTER EQUENCY RTER W/ C NT PROTE	RTER RCONTAC DRIVE ONTROLI CTION	T			F B LC LII RL M F C C IN	C PT AS DW NE LINE AN AN A D T	TIMECLC CONTRO BUILDING LOW VOI LINE VOL REVERSI MANUAL FIRE ALA CARBON INTEGRA	DCK DL POW AUTC TAGE TAGE ARM MONO L TO E	ER TRANSF OMATION SY CONTROLS CONTROLS NG LINE VO XIDE SENS QUIPMENT	ORMER (STEM) LTAGE THEF OR	٦MC
EQUIPMENT	MARK DES	CRIPTION	VOLTS (V)	PHASE BH	IP (HP) HP (HP)	HTG (kW)	WATTS FLA	(A) MC	A (A) OCP	(A) DC FU	RN DC	INST DC	WIRE	MC TYPE	MC FUR	N MC INST	T MC WIRE	CN TYP	PE CN F	URN CN	INST CN	WIRE	SD TYPE	AVAILABL	E F
AC-1	AIR CURTAIN		120 1					16		EC	EC	EC		MG	MFR	MFR	MFR	LINE	HC	EC	EC			1284	
EF-1	CENTRIFUGAL R		120 1				71	50		EC	EC	EC		MG	MFR	MFR	MFR	TC	EC	EC	EC			1557	
RTU-1			208 3					53 60	70	EC	EC	EC		MG		MER	MER	BAS	OR					2801	
BTU-3			208 3					21	30	FC	FC	FC		MG	MFR	MFR	MFR	BAS	OR	OR	OR			3575	
WH-1	WALL AND CEILIN	IG HEATER	120 1			1.5		12.5		EC	EC	EC						INT	MFR	MFF	R MFF	3		2345	
WH-2	WALL AND CEILIN	IG HEATER	120 1			1.5		12.5		EC	EC	EC						INT	MFR	MFF	R MFF	۲		2015	
DOLL	AR TREE I		G ELE	CTRIC	CAL CC	DORE		N S	CHE	DULE															
	ONS			CONTR						M											CONTR		DE		
ABBREVIATIO							0705																		
DC L MC M SD E CN C TS T C/B H FUSE F FLA C MCA M CP C	OCAL DISCONNECT MOTOR CONTROL (POV DUCT SMOKE DETECTO CONTROLS TOGGLE SWITCH 1.A.C.R. CIRCUIT BREA USE AT LOCAL DISCO DPERATING FULL LOAL MINIMUM CIRCUIT AMP CORD AND PLUG CONN	VER) DR KER AT SOURCE PAI NNECT (VERIFY FIEL MAPS ACITY IECTION	NELBOARD D RATING)	EC EX FC GC HC MFR PC OR	ELECTRICA EXISTING FIRE PROT GENERAL ( HVAC CON MANUFACT PLUMBING OWNER OF	AL CONTRA CONTRACT TRACTOR TURER CONTRAC CONTRAC CONTRAC	ACTOR DNTRACTOR TOR			C M M V M O	S CC G S F D S R V	Combi Motoi Magni Manu/ Variai Manu/ Overc	INATIC R CON IETIC S AL STA BLE FF AL STA CURRE	DN START NTROL ST/ STARTER ( ARTER REQUENC ARTER W/ ENT PROT	ER ARTER DR CONT/ Y DRIVE CONTRO ECTION	ACT _ RELAY					TC CPT BAS LOW LINE RLINE MAN FA CO INT	TIN CC BU LO LIN RE MA FIF CA INT	MECLOCK DNTROL POV HILDING AUT WW VOLTAGI JE VOLTAGI VERSE ACT NUAL RE ALARM RBON MON FEGRAL TO	WER TRANS OMATION S E CONTROLS CONTROLS ING LINE VC OXIDE SENS EQUIPMENT	FOF YST 3 3 3 2LT 3 SOF
EQUIPMEN	T MARK	DESCRIPTION		VOLTS (V)	PHASE EMI	ERGENCY	BHP (HP) HF	(HP) H	TG KW (kW	) WATTS (	N) FLA	A (A) MCA	A (A)	OCP (A)	DC TYP	E DC	FURN DC	INST DO	WIRE	MC TYPE	MC FURM	MCI	NST MC W	IRE CN TYF	'n
CP1		RECIRCULATING PUMP		120	1		1/4	)			.52					EC	EC	EC	N	ЛG	MFR	MFR	MFR		
		ECTRIC TAINK-TIFE W		120	1			2								EU			-						
	DOLLA	R TREE E	ELECT	RIC F	REFRIG	ERA	TION S	CHE	EDUL	E					ELE	CTR		QUIP	ME	NT S	UPF	۲J	SCH	EDUL	.E
FIXTURE I	D DESCRIPTION	LOAD	POLES	VOLT	AGE O	СР		C	OMMENTS									AVA	AILABLE						
FREEZER	WALK-IN FREEZER	5719 VA 2		208 V	30	PR CO TEF DIS PR RE	DVIDE 4"X4" JUN NNECTION TO E RMINATE AT THIS CONNECT FOR DVIDE NEUTRAL PRESENTATIVE ' IIPMENT DISCO	CTION BO QUIPMENT JUNCTIO FREEZER F FOR BRAN WILL MAKE	X AT 120" A T. NOTE ALL ON BOX. PRO REFRIGERA NCH CIRCU E THE FINAL T TIME OF 5	FF WITH 10' V WALK-IN CIF DVIDE LOCAL TION EQUIPI IT. THE MANU CONNECTIC	VHIP FOR RCUITS T MENT. JFACTUF N TO TH	r O Rer's Ie	AC- CP1 EF-1 RTU	UIPMENT MARK 1 1 J-1	SUPPLY FROM P P P MDP	CKT E 4 8 2 13,15,17	EMERG. (k 1.7 0.0 0.0 17	DAD         F           VA)         CU           73         1284           96         1781           97         1557           .18         3539	FAULT IRRENT	VOLTS         I           120 V         1           120 V         1           120 V         1           200 V         1		<b>G</b> <b>W WA</b> 1	TT HP (/	A         MCA (A)         F OC           16	iQD ;P (/
COOLER	WALK-IN COOLER	1548 VA 1		120 V	20	RE	ER TO FREEZE		NTS.				RTU	J-2	MDP	19,21,23	19	.45 2801		208 V 3				60 70	
2DRC	REACH-IN 2-DR	3391 VA 2		208 V	20	PR	OVIDE NEUTRAL	FOR BRAN	NCH CIRCU	IT. VENDOR F	ROVIDE	S	RTU	J-3	MDP	25,27,29	6.8	31 3575	5	208 V 3				21 30	
	COOLER					DIS PRI EQ THI DIS	CONNECT FOR DVIDE 15' LONG JIPMENT. THE M E FINAL CONNEC CONNECTS AT T	JNIT. PRO' WHIP FRO ANUFACTI TION TO T IME OF ST	VIDE JUNCT DM BOX FOF URER'S REF THE INTEGF TART-UP.	FION BOX AT CONNECTIC PRESENTATI AL EQUIPME	100" AFF N TO /E WILL NT	MAKE	WH <sup>-</sup> WH- WH-	1  -1  -2	P P P	6 10 12	2.0 1.5 1.5	00 3029 50 2345 50 2015	) 5 5	120 V 1 120 V 1 120 V 1	2 1.5 1.5			12.5 12.5	
	REACH-IN 3-DR	3432 VA 2		208 V	20	PR		FOR BRAN		T. VENDOR	ROVIDE	S													
3DRC	UUULII					DIS PRI EQ THI DIS	OVIDE 15' LONG JIPMENT. THE M FINAL CONNEC CONNECTS AT 1	WHIP FRO ANUFACTI TION TO T IME OF ST	M BOX FOF URER'S REF THE INTEGF TART-UP.	CONNECTION RESENTATI AL EQUIPME	100" AFF N TO /E WILL NT	MAKE													

THE FINAL CONNECTION TO THE INTEGRAL EQUIPMENT

DISCONNECTS AT TIME OF START-UP.

					CONTRO	OL TYF	ΡE								
ACT	LAY				TC CPT BAS LOW LINE RLINE MAN FA CO INT	TII CC BL LC LII RE M/ FII C/	MECLOC ONTROL JILDING DW VOLT NE VOLT EVERSE ANUAL RE ALAF ARBON M TEGRAL	AUTOM AUTOM AGE CO AGE CO ACTINO M MONOX TO EQ	R TRA IATIC ONTF ONTF G LINI IDE S UIPM	ANSFOR N SYSTI ROLS ROLS E VOLTA GENSOR IENT	MER EM .GE THERM	OSTAT			
URN	MC INST	MC WIR	E CN 1		I FURN	CN IN	ST   CN V	VIRE	SD T	YPE /	VAILABLE	AULT CURR	ENT (A)		
	MFR	MFR	LINE	HC		EC	EC			1		. ,			
	MFR	MFR	TC	EC		EC	EC			1	557				
	MFR	MFR	BAS	OR		OR	OR			3	539				
	MFR	MFR	BAS	OR		OR	OR			2	801				
	MFR MFR BAS				OR OR		OR				3575				
			INT	MF	R	MFR	MFR			2	345				
			INT	MF	R	MFR	MFR			2	015				
ITAC	T						CONTRC TC CPT BAS LOW LINE RLINE	DL TYPE TIME CON BUIL LOW LINE REV	ECLO TROI DING VOL VOL ERSE	CK L POWEI A AUTOM TAGE CO TAGE CO E ACTINO	R TRANSFO ATION SYS ONTROLS ONTROLS à LINE VOLT	RMER TEM TAGE THERI	MOSTAT		
e Rol F N	RELAY						MAN FA CO INT	MAN FIRE CAR INTE	UAL ALA BON GRA	RM MONOXI L TO EQ	DE SENSOI UIPMENT	R			
e Rol F N	RELAY	URN DC	INST	DC WIRE	МС ТҮ	PE   M	MAN FA CO INT I <b>C FURN</b>	MAN FIRE CAR INTE	UAL ALA BON GRA	RM MONOXI L TO EQ MC WIRE	DE SENSO UIPMENT	R	CN INST	CN V	
E Rol F N	RELAY	URN DC EC	INST	DC WIRE	MC TY MG	PE M	MAN FA CO INT IC FURN FR	MAN FIRE CAR INTE <b>MC IN</b> S	UAL ALA BON GRA ST N	RM MONOXI L TO EQ <b>MC WIRE</b> IFR	DE SENSO UIPMENT CN TYPE LINE	R CN FURN PC	CN INST PC	CN V PC	

CKT | EMERG. (KVA) | CURRENT | VOLTS | POLE | KW | WATT | HP | (A) | (A) | OCP (A) | RATING (A)

FLA MCA RQD BREAKER

Α.	BEFOR VISIT T CONDI	E SUBMITTING THE BID PROPOSAL, THE CONTRACTOR SHALL HE JOB SITE AND FULLY ACQUAINT HIMSELF WITH THE JOB TIONS AND VERIFY SERVICE CONNECTIONS, INCLUDING ALL
		SARY PULL BOXES, SIZE AND NUMBER OF CONDUITS AND
	WHETH	IER SHOWN ON DRAWINGS OR NOT BUT REQUIRED BY SERVI
	UTILITY	CO. TO MAKE A COMPLETE AND OPERATING ELECTRICAL
	SERVIC	CES AND CHARGES WITH POWER AND TELEPHONE COMPANIE
3.	CONTR	ACTOR SHALL VERIFY ALL REQUIREMENTS OF MECHANICAL
	EQUIP	MENT WITH MECHANICAL DRAWINGS AND SPECIFICATIONS, AI
	SHALL	FURNISH AND INSTALL ALL ITEMS REQUIRED BY THE
<b>D</b> .	VERIFY	LOCATION AND REQUIREMENTS OF MECHANICAL EQUIPMEN
	WITH C	CONTRACTOR, (DOOR HEATERS, UNIT HEATERS, ROOF TOP
<b>`</b>	UNITS,	TRANSFER FANS, ETC.).
J.	'N F C '	AND ALL LOCAL CODES AND ORDINANCES IN CASES OF
	CONFL	ICT AMONG REQUIREMENTS, THE MOST RESTRICTIVE SHALL
_	APPLY.	
=.		NDUCTORS SHALL BE # 12 AWG COPPER. EXCEPT AS
	SPECS	.). ALL CONDUIT SHALL BE 1/2" MINIMUM EXCEPT AS OTHERW
	NOTED	OR AS REQUIRED FOR CONDUCTORS.
	TENAN	T'S ELECTRICAL EQUIPMENT SHALL BE RELOCATED AS
	SERVIC	RED TO MINIMIZE LENGTH OF CONDULT/CONDUCTOR BETWEE
	FROM	TENANT'S ARCHITECTURAL DEPARTMENT OF PROPOSED
	LOCAT	ION PRIOR TO INSTALLATION. COST CLAIMS FOR
	CONDL	JIT/CONDUCTOR IN EXCESS OF BASE BID WILL NOT BE
	THESE	COSTS PRIOR TO INSTALLATION.
G.	TELEPH	HONE: FURNISH AND INSTALL ALL NECESSARY CONDUIT, DEVI
	BOXES	AND PLATES.
۹.		ELEPHONE SERVICE TO TENANT'S SPACE. NEW TELEPHONE MENT BOARD, COORDINATE WITH LANDLORD AND TELEPHONE
	CO. AS	REQUIRED FOR INSTALLING THIS SERVICE.
	FURNIS	SH AND INSTALL 3/4" CONDUIT FROM EACH TELEPHONE OUTLE
	1'-0" IN	TO CEILING CAVITY, OR UP TO JOIST WHERE NO CEILING IS
I.	FIRE AL	ABM SYSTEM:
	a.	IF THERE IS NO EXISTING FIRE ALARM SYSTEM AND THE
		NATIONAL, STATE, OR LOCAL CODES, OR LOCAL FIRE
		AUTHORITY HAVING JURISDICTION NOW REQUIRES A FIRE
		COMPONENTS, ETC., AS DIRECTED BY ENFORCING AGENCY.
		CONNECT ALARM CONTACT(S) OF SPRINKLER SYSTE
		FLOW SWITCH AND SUPERVISED VALVE AND AIR DUC
		IF REQUIRED CONNECT FIRE ALARM DEVICES (AIR
		DUCT DETECTORS, ETC.) AND ANY OTHER ASSOCIAT
		EQUIPMENT TO DEDICATED 120V CIRCUIT.
		PROVIDE LOCAL STATUS INDICATOR AND ALARM FOF
		ALARM DEVICES WHERE NOT CONNECTED TO FIRE
	b.	VERIFY ALL REQUIREMENTS AND FURNISH AND INSTALL IN
		ACCORDANCE WITH NFPA, NATIONAL, STATE, LOCAL CODES
		LOGAL FIRE AUTHORITY HAVING JURISDICTION AND LANDLO
		TEGOTIEMENTO.

-	E01) P- 1 TTB P- 26 MDP P	8 P- 20
0.1 FT	L P-1 EMS	E0
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	000	MDF
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## GENERAL ELECTRICAL NOTES

- JAINT HIMSELF WITH THE JOB ONNECTIONS, INCLUDING ALL NUMBER OF CONDUITS AND RING, CABLE CHARGES ETC., R NOT BUT REQUIRED BY SERVICE ND OPERATING ELECTRICAL TO THE TENANT. VERIFY 'ER AND TELEPHONE COMPANIES. QUIREMENTS OF MECHANICAL WINGS AND SPECIFICATIONS, AND EMS REQUIRED BY THE
- LLATION. ITS OF MECHANICAL EQUIPMENT S, UNIT HEATERS, ROOF TOP SHALL COMPLY WITH LATEST ORDINANCES. IN CASES OF THE MOST RESTRICTIVE SHALL
- G COPPER. EXCEPT AS D FOR VOLTAGE DROP (SEE " MINIMUM EXCEPT AS OTHERWISE JCTORS.
- SHALL BE RELOCATED AS CONDUIT/CONDUCTOR BETWEEN PANEL "MDP". OBTAIN APPROVAL EPARTMENT OF PROPOSED COST CLAIMS FOR BASE BID WILL NOT BE IS NOT PROPOSED TO MINIMIZE
- ALL NECESSARY CONDUIT, DEVICE NT'S SPACE. NEW TELEPHONE ITH LANDLORD AND TELEPHONE THIS SERVICE.

#### FROM EACH TELEPHONE OUTLET JOIST WHERE NO CEILING IS E ALARM SYSTEM AND THE CODES, OR LOCAL FIRE

![](_page_54_Figure_13.jpeg)

## **GENERAL POWER PLAN NOTES**

- A. <u>EQUIPMENT COORDINATION SCHEDULES</u>: REFER TO EQUIPMENT COORDINATION SCHEDULES FOR REQUIREMENTS ASSOCIATED WITH EQUIPMENT CIRCUITING, CONNECTIONS, ANCILLARY DEVICES AND EQUIPMENT, ETC. COORDINATE LOCATIONS AND REQUIREMENTS FOR ALL EQUIPMENT WITH RESPECTIVE EQUIPMENT SUPPLIERS AND INSTALLERS PRIOR TO ORDERING ANY RELATED MATERIALS OR COMMENCING WITH ANY RELATED ROUGH-IN WORK.
- TECHNOLOGY SYSTEMS: PROVIDE RACEWAY AND PATHWAY SYSTEMS FOR ALL TECHNOLOGY WORK. INCLUDE OUTLET BOXES, CONDUITS, RACEWAYS, J-HOOKS, CABLE TRAY, ETC. AS REQUIRED FOR COMPLETE OPERATIONAL SYSTEMS. COORDINATE ALL RELATED WORK (INCLUDING ASSOCIATED POWER) WITH OWNER (INCLUDING OWNER'S PROJECT MANAGER), FIELD CONDITIONS, FURNITURE INSTALLER(S), TECHNOLOGY INSTALLER(S) AND WORK OF OTHER TRADES AND SUPPLIERS/INSTALLERS AS APPLICABLE. TERMINATE ALL CONDUITS FROM OUTLET BOXES TO NEAREST ACCESSIBLE CEILING CAVITY, OR TO OVERHEAD STRUCTURAL SPACE FOR AREAS WITH NO CEILINGS. PROVIDE CONDUITS WITH SWEEP BENDS,
- PULL STRINGS, PLASTIC BUSHINGS AND IDENTIFICATION AT OVERHEAD ENDS. PROVIDE BLANK WALL PLATES TO MATCH WIRING DEVICE WALL PLATES. STOREFRONT WINDOWS: INSTALL RECEPTACLE(S) INDICATED ABOVE STOREFRONT WINDOWS WITHIN 18 INCHES OF THE TOP OF STOREFRONT WINDOWS, AND INSTALL COMPLIANT WITH NEC, INCLUDING ARTICLE 210.62. <u>GFCI PROTECTION:</u> PROVIDE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL FOR ALL SINGLE-PHASE RECEPTACLES RATED 150
- VOLTS TO GROUND OR LESS, 50 AMPERES OR LESS AND THREE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPERES OR LESS INSTALLED IN/FOR THE FOLLOWING LOCATIONS/APPLICATIONS: BATHROOMS, KITCHENS, ROOFTOPS, OUTDOORS, SINKS (WHERE RECEPTACLES ARE INSTALLED WITHIN 6 FEET FROM THE TOP INSIDE EDGE OF THE BOWL OF THE SINK), INDOOR WET LOCATIONS, VENDING MACHINES AND AREAS, ELECTRIC WATER COOLERS, LOCKER BOOMS WITH ASSOCIATED SHOWERING FACILITIES, AND GARAGES. SERVICE BAYS, AND SIMILAR AREAS OTHER THAN VEHICLE EXHIBITION HALLS AND SHOWROOMS. PROVIDE GFCI RECEPTACLES AT LOCATIONS THAT ARE AND WILL REMAIN READILY ACCESSIBLE. ELSEWHERE PROVIDE GFCI PROTECTION AT THE RESPECTIVE SOURCE CIRCUIT BREAKER.
- <u>TRIM AND DOOR FINISHES</u>: PROVIDE FACTORY-PAINTED OR FIELD-PAINTED TRIMS AND DOORS TO MATCH WALL FINISH COLOR FOR ALL PANELBOARDS AND SIMILAR EQUIPMENT THAT ARE INSTALLED RECESSED IN FINISHED WALLS. IF FIELD-PAINTED, PAINT ALL SIDES AND EDGES WITH TWO COATS OF PAINT BEFORE INSTALLATION, AND LET DRY BEFORE INSTALLING THEM. SIGNAGE: COORDINATE ALL SIGNAGE REQUIREMENTS WITH OWNER (INCLUDING OWNER'S PROJECT MANAGER), SIGNAGE SUPPLIERS AND INSTALLERS, AND ARCHITECT TO DETERMINE SPECIFICS REGARDING LOCATIONS, POWER, CONTROL, AND OTHER PERTINENT INFORMATION, PROVIDE POWER (ON DEDICATED CIRCUIT(S)) FOR SIGNAGE REQUIRING POWER CONNECTIONS. PROVIDE PHOTOCELL AND TIME-BASED CONTROL. CONFIGURED AS DIRECTED BY OWNER. PROVIDE ALL ELECTRICAL WORK. INCLUDING DISCONNECTING MEANS, COMPLIANT WITH ARTICLE 600 OF NFPA

70. COMPLY WITH LANDLORD REQUIREMENTS WHERE APPLICABLE.

#### SIGNAL SYSTEMS: REAR DOOR BELL AND PUSH-BUTTO INSTALL AN EDWARDS #55-6G5, 24V AC "ADAPT-A-BEL AND A #852 WEATHERPROOF PUSH-BUTTON IN FLUSH SWITCH BOX AT TENANT SPACE BACK DOOR. CONNEC SOUNDS WHEN PUSH-BUTTON IS PRESSED. PROVIDE ROUGH IN FOR TENANT STOREFRONT SIGN E03 APPLICABLE. FINAL CONNECTIONS WILL BE FURNISHE BY TENANT'S SIGN CONTRACTOR. FURNISH AND INSTA AND JUNCTION BOXES W/6' WHIP ON INTERIOR WALL A CEILING. WHERE INSTALLED OUTDOORS PROVIDE WE INSULATED JUNCTION BOX AND WEATHERPROOF DISC CONTRACTOR SHALL COORDINATE FINAL EXTERIOR LOCATION WITH SIGN VENDOR. JUNCTION BOXES NEE FEET OF SIGN FOR SIGN VENDOR TO MAKE FINAL ELE CONNECTION. IF STORE HAS ADDITIONAL SIDE OR REA CONTRACTOR SHALL COORDINATE WITH THE SIGN VE ADDITIONAL EXTERIOR SIGNAGE AND THE ASSOCIATE REQUIREMENTS. AFTER THE ELECTRICAL DESIGN IS C BE DETERMINED THAT CERTAIN SITES REQUIRE SIDE E04 MOUNT ON FLOOR AND MAKE MC CONNECTION TO DU INSTALLED IN FIXTURE KICK PLATE. ASSEMBLE JUNCT INSTALLED FIXTURE. E05 CONTRACTOR SHALL BE RESPONSIBLE FOR COORDIN LANDLORD AND/OR LOCAL UTILITY COMPANY REQUIR

E01

**KEYED NOTES** 

- BRINGING A COMPLETE TELEPHONE SERVICE INTO TE E06 DO NOT CONNECT "ISOLATED" GROUND WIRE TO RAC CONDUIT AND BOX SHALL BE METAL AND METAL-TO-M CONNECTORS SHALL BE USED (NO FLEX CONDUIT) TO GROUND PATH FOR BOX AND RACEWAY. DO NOT RUN WITH CASH REGISTER OR COMPUTER (IG) CIRCUITS. DATA SYSTEM CABLE SHALL BE FURNISHED AND INST E07 THREE-CHANNEL TELEPOWER POLE WITH DIVIDER FO
- TELEPHONE/DATA, ISOLATED POWER, AND NORMAL TELEPOWER POLE AS SHOWN AT CHECKOUT AREA, V SET. POWER POLE WILL BE FURNISHED WITH (1) ISOLA TWIST LOCK RECEPTACLE (CONNECT ISOLATED GRO THIS RECEPTACLE) AND (1) DUPLEX RECEPTACLE (CO POWER CIRCUIT TÓ THIS RECEPTACLE). CONTRACTOR SHALL REFER TO EMS SHEETS FOR INS E08
- RESPONSIBILITIES FOR INSTALLING TENANT SUPPLIED MANAGEMENT SYSTEM PRIOR TO BIDDING AND INSTA POWER POLES ARE OWNER FURNISHED AND CONTRA E10 PROVIDE ALL NECESSARY MATERIAL TO PROVIDE A C INSTALLATION. CONTRACTOR SHALL REFER TO FINAL SNACK ZONE, CHECKOUT AND ANY OTHER FIXTURE T

![](_page_54_Figure_24.jpeg)

SIGNAL SYSTEMS: REAR DOOR BELL AND PUSH-BUTTON: FURNISH AND INSTALL AN EDWARDS #55-6G5, 24V AC "ADAPT-A-BELL" ABOVE CEILING AND A #852 WEATHERPROOF PUSH-BUTTON IN FLUSH (NEW CONST.) SWITCH BOX AT TENANT SPACE BACK DOOR. CONNECT SO THAT BELL SOUNDS WHEN PUSH-BUTTON IS PRESSED. PROVIDE ROUGH IN FOR TENANT STOREFRONT SIGN(S) WHERE APPLICABLE. FINAL CONNECTIONS WILL BE FURNISHED AND INSTALLED BY TENANT'S SIGN CONTRACTOR. FURNISH AND INSTALL DISCONNECT AND JUNCTION BOXES W/6' WHIP ON INTERIOR WALL ABOVE ACCESSIBLE CEILING. WHERE INSTALLED OUTDOORS PROVIDE WEATHERPROOF, INSULATED JUNCTION BOX AND WEATHERPROOF DISCONNECT. CONTRACTOR SHALL COORDINATE FINAL EXTERIOR JUNCTION BOX LOCATION WITH SIGN VENDOR. JUNCTION BOXES NEED TO BE WITHIN 5 FEET OF SIGN FOR SIGN VENDOR TO MAKE FINAL ELECTRICAL CONNECTION. IF STORE HAS ADDITIONAL SIDE OR REAR SIGNAGE THE CONTRACTOR SHALL COORDINATE WITH THE SIGN VENDOR FOR ANY ADDITIONAL EXTERIOR SIGNAGE AND THE ASSOCIATED ELECTRICAL REQUIREMENTS. AFTER THE ELECTRICAL DESIGN IS COMPLETE, IT MAY BE DETERMINED THAT CERTAIN SITES REQUIRE SIDE OR REAR SIGNAGE.
MOUNT ON FLOOR AND MAKE MC CONNECTION TO DUPLEX RECEPTACLE INSTALLED IN FIXTURE KICK PLATE. ASSEMBLE JUNCTION BOX AROUND INSTALLED FIXTURE.
CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH LANDLORD AND/OR LOCAL UTILITY COMPANY REQUIREMENTS FOR BRINGING A COMPLETE TELEPHONE SERVICE INTO TENANT SPACE. DO NOT CONNECT "ISOLATED" GROUND WIRE TO RACEWAY OR BOX. CONDUIT AND BOX SHALL BE METAL AND METAL-TO-METAL CONNECTORS SHALL BE USED (NO FLEX CONDUIT) TO ESTABLISH GROUND PATH FOR BOX AND RACEWAY. DO NOT RUN ANY CIRCUITS WITH CASH REGISTER OR COMPUTER (IG) CIRCUITS. CASH REGISTER DATA SYSTEM CABLE SHALL BE FURNISHED AND INSTALLED BY OTHERS. THREE-CHANNEL TELEPOWER POLE WITH DIVIDER FOR TELEPHONE/DATA, ISOLATED POWER, AND NORMAL POWER. INSTALL TELEPOWER POLE AS SHOWN AT CHECKOUT AREA, WHEN COUNTER IS SET. POWER POLE WILL BE FURNISHED WITH (1) ISOLATED GROUND TWIST LOCK RECEPTACLE (CONNECT ISOLATED GROUND CIRCUIT TO THIS RECEPTACLE) AND (1) DUPLEX RECEPTACLE (CONNECT (1) NORMAL POWER CIRCUIT TO THIS RECEPTACLE). CONTRACTOR SHALL REFER TO EMS SHEETS FOR INSTRUCTION AND RESPONSIBILITIES FOR INSTALLING TENANT SUPPLIED ENERGY MANAGEMENT SYSTEM PRIOR TO BIDDING AND INSTALLATION. POWER POLES ARE OWNER ELIBNISHED AND CONTRACTOR INSTALL ED
POWER POLES ARE OWNER FURNISHED AND CONTRACTOR INSTALLED. PROVIDE ALL NECESSARY MATERIAL TO PROVIDE A COMPLETE INSTALLATION. CONTRACTOR SHALL REFER TO FINAL FIXTURE PLAN FOR SNACK ZONE, CHECKOUT AND ANY OTHER FIXTURE THAT REQUIRES POWER PRIOR TO INSTALLING ELECTRICAL AND DATA.

![](_page_54_Figure_27.jpeg)

![](_page_54_Picture_28.jpeg)

![](_page_55_Figure_0.jpeg)

![](_page_55_Figure_1.jpeg)

![](_page_55_Figure_2.jpeg)

![](_page_55_Figure_4.jpeg)

1 ENLARGED POWER OFFICE1/4" = 1'-0"

![](_page_55_Figure_7.jpeg)

![](_page_55_Figure_8.jpeg)

![](_page_55_Figure_9.jpeg)

![](_page_55_Figure_10.jpeg)

![](_page_55_Figure_11.jpeg)

![](_page_55_Figure_12.jpeg)

![](_page_55_Figure_13.jpeg)

- A. FURNISH AND INSTALL AN INSULATED. ISOLATED GROUND BAR IN PANEL INSTALL AN INSULATED "ISOLATED" GROUND WIRE IN EACH BRANCH CIRCUIT "HOMERUN" TO PANELBOARD. CONNECT GROUND WIRE FOR CASH REGISTER AND COMPUTER CIRCUITS TO ISOLATED GROUND BAR IN PANELBOARD AND DIRECTLY TO ISOLATED GROUND LUG/SCREW ON ISOLATED GROUND RECEPTACLES.
- B. DO NOT CONNECT "ISOLATED" GROUND WIRE TO RACEWAY OR BOX. CONDUIT AND BOX SHALL BE METAL AND METAL-TO-METAL CONNECTORS SHALL BE USED (NO FLEX CONDUIT) TO ESTABLISH GROUND PATH FOR BOX AND RACEWAY.
- C. CASH REGISTER DATA SYSTEM CABLE SHALL BE FURNISHED AND INSTALLED BY OTHERS. FURNISH AND INSTALL JUNCTION BOX IN OFFICE AND 1" CONDUIT WITH PULL WIRE TO SALES AREA CEILING CAVITY.
- D. DO NOT RUN CASH REGISTER CIRCUITS WITH OTHER CIRCUITS.
- 6 CASH REGISTER GROUNDING DIAGRAM

![](_page_55_Figure_19.jpeg)

4 <u>TELCO BACKBOARD</u> SCALE: NONE

![](_page_55_Figure_21.jpeg)

![](_page_56_Picture_0.jpeg)

EXISTING CIRCUIT TO REMAIN NEW CIRCUIT TO EXISTING CIRCUIT BREAKER PROVIDE GROUND-FAULT CIRCUIT INTERRUPTER (GFCI) CIRCUIT BREAKER

PROVIDE GROUND-FAULT EQUIPMENT PROTECTION (GFEP) CIRCUIT BREAKER

PROVIDE SHUNT TRIP CIRCUIT BREAKER PROVIDE ARC FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKER

PROVIDE LOCK-ON DEVICE

PROVIDE LOCK-OUT/TAG-OUT DEVICE (LT) = (->) = = \*\* =

SL

=

REQUIRED. WIRE SIZED TO COMPENSATE FOR VOLTAGE DROP REFER TO DRAWINGS FOR SPECIFICATIONS

	PANEL NAM	E: P																		PHASE: Existing	
	SUPPLY FRO	<b>DM:</b> MDP			MAIN	IS RAT	ING (A):	225				F/	ULT CL	JRRENT	( <b>A):</b> 179	922			SI	JRGE SUPRESSION:	
	LOCATI	ON: PRE-SALES 106				MAIN	S TYPE:	MAIN	LUGS	ONLY		SHORT C	RCUIT	RATING	( <b>A):</b> 220	000				ULSE:	
	DISTRIBUTION SYST	EM: 208/120V 3PH 4W				FEE	DER ID:	2301-4	4C				I	UGS TY	PE:					200% NEUTRAL:	
	FEED	ER: (4) #4/0 AWG CU, (2) #4 A	AWG (	CU GN	D. IN 2	-1/2" C	ONDUIT	75C R	ATED				ENCLOS	SURE TY	PE: NE	MA 1			I	SOLATED GROUND: Yes	
СКТ	CIRCUIT D	DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE		A	В	C	POL	.E FRAM	e trip	GND	AWG	VD%		CIRCUIT DESCRIPTION	СКТ
1	(L) NON-CONTINUOUS PF	RE-SALES 106	0.052	#12	#12	20 A	20 A	1	0.20	0.07			1	20 A	20 A	#12	#12	0.085	(#) EF-1   M	IOTOR SALES A 101	2
3	WALK-IN COOLER   NON-	CONTINUOUS PRE-SALES	2.569	#12	#12	20 A	20 A	1			1.55 1.73		1	20 A	20 A	*#8	*#8	2.547	(#) AC-1   N	10TOR SALES B 101	4
5	WALK-IN FREEZER   NON	I-CONTINUOUS PRE-SALES	0 1 2 2	#10	#10	20.4	20 4	2				2.86 2.	00 1	25 A	25 A	#10	#10	1.12	WH1   CON	TINUOUS PRE-SALES 106	6
7	106		2.133	#10	#10	30 A	30 A	2	2.86	0.06			1	20 A	20 A	#12	#12	0.064	(#) CP1   M	OTOR PRE-SALES 106	8
9	(#) RECEPTACLE PRE-SA	LES 106	0.395	#12	#12	20 A	20 A	1			0.18 1.50		1	20 A	20 A	#12	#12	1.136	(#) WH-1   ŀ	HEATING TOILET 104	10
11	(#) RECEPTACLE PRE-SA	LES 106	0.395	#12	#12	20 A	20 A	1				0.18 1.	50 1	20 A	20 A	#12	#12	1.349	(#) WH-2   ŀ	HEATING TOILET 105	12
13	(#) EMPLOYEE AREA PLU	IGMOLD	0.901	#12	#12	20 A	20 A	1	0.40	1.80			1	20 A	20 A	#12	#12	1.326	(#)(G)(LT) H	AND DRYER   NON-CONTINUOUS TOILE	. 14
15	REACH-IN 2-DR COOLER	NON-CONTINUOUS SALES	0.040	#40	#40	00.4	00.4	_			1.70 1.80		1	20 A	20 A	#12	#12	1.126	(#)(G)(LT) H	AND DRYER   NON-CONTINUOUS TOILE	. 16
17	A 101	•	2.249	#12	#12	20 A	20 A	2				1.70 0.	)3 1	20 A	20 A	#12	#12	0.008	(#) PUSHBI	JTTON	18
19	REACH-IN 3-DR COOLER	NON-CONTINUOUS SALES	0.540	#40	#40	00.4	00.4	_	1.72	0.72			1	20 A	20 A	#12	#12	2.04	(#) SHOW \	WINDOW   RECEPTACLE SALES B 101	20
21	A 101	•	2.516	#12	#12	20 A	20 A	2			1.72 0.00		1		20 A				SPARE		22
23	REACH-IN 4-DR FREEZEF	R I NON-CONTINUOUS		*//0	*//0			_				3.10 1.	)8 1	20 A	20 A	*#10	*#10	0.999	(#) RECEPT	FACLE 101,101	24
25	SALES A 101		2.043	^#8	^#8	30 A	30 A	2	3.10	0.36			1	20 A	20 A	#12	#12	0.093	(#) (IG) TTE	RECEPTACLE PRE-SALES 106	26
27											0.20 0.54		1	20 A	20 A	#12	#12	0.355	(#) RECEPT	FACLE 106,101,101	28
29	(IG) CHECK LANE   NON-(	CONTINUOUS	0.408	#12	#12	20 A	20 A	2				0.20 0.	0 1		20 A				(EX) SPARI	=	30
31								_	0.20	0.00			1		20 A				SPARE		32
33	(IG) CHECK LANE   NON-(	CONTINUOUS	0.378	#12	#12	20 A	20 A	2			0.20 0.00		1		20 A				SPARE		34
35												0.20 0.	0 1		20 A				SPARE		36
37	(IG) CHECK LANE   NON-(	CONTINUOUS	0.349	#12	#12	20 A	20 A	2	0.20	0.00			1		20 A				SPARE		38
39	(EX) SPARE					20 A		1			0.00 0.00		1		20 A				SPARE		40
41	(EX) SPARE					20 A		1				0.00 0.	0 1		20 A				(EX) SPARI		42
			1	1	OTAL	CONN	ECTED I	OAD:	11.7	′ kVA	11.1 kVA	12.8 kV	4						,		-
LOAD	O CLASSIFICATION	CONNECTED LOAD	)			DEI	MAND FA	ACTOP	र		ESTI	MATED DI	MAND						PA	NEL TOTALS	
Conti	nuous	2000 VA					125.00	%				2500 VA			E	EXISTI	IG COI	NEC	TED LOAD:		
Coolii	ng	0 VA					0.00%	)				0 VA			EXIST	ING LO	DAD DE	MAN	) FACTOR:		
Eleva	tor	0 VA					0.00%	)				0 VA				ADD	ED CO	NEC	TED LOAD:	35639 VA	
Heati	ng	3000 VA					100.00	%				3000 VA			DEI	MAND	CALCL	JLATIO	ON NOTES:		
Kitche	en Equipment	0 VA					0.00%	)				0 VA						OTAL	DEMAND		
Lighti	ng	U VA					102.01%	) )/				0 VA						OTAL	DEMAND:	36571.4 VA	
Non-(	Continuous	1001 VA 25718 \/Δ					100 00	/0				2293 VA				-				102 Δ	
Rece	otacle	3060 VA					100.00	%				3060 \/A	•			I	UTAL				
NOTE	-S·	0000 1/1					100.00	, ,					(NFW								
PRO	/IDE PANEL WITH ISOLAT	ED GROUND BAR								(	7) 20A / 1P,	(1) 20A / 1	P(L), (	5) 20A / 2	P, (1) 2	25A / 1F	P, (2) 3	30A / 2	Р		

	PANEL NAM	E: L																						PHASE: Existing		
		om: MDP			MAIN	IS RAT	ING (A):	100						FAUL	T CUF	RENT (A	<b>A):</b> 158	45					SUR	GE SUPRESSION:		
	LOCATI	ON: PRE-SALES 106				MAIN	S TYPE:	MAIN	LUGS	ONLY			SHOR		UIT R	ATING (A	, (): 220	00						ULSE:		
	DISTRIBUTION SYST	EM: 208/120V 3PH 4W				FEE	DER ID:	100I-4	С						LL	JGS TYP	E:							200% NEUTRAL:		
	FEED	ER: (4) #3 AWG CU, (2) #8 A	WG CL	J GND	IN 1-1	/4" CO	NDUIT 7	5C RAT	ED					EN	CLOSI	JRE TYP	E: NEM	<i>I</i> A 1					ISO	LATED GROUND: Yes		
СК	T CIRCUIT I	DESCRIPTION	VD%	AWG	GND	TRIP	FRAME	POLE		A	E	В		c 🥻	POLE	PRAME	TRIP	6119	*****	<b>2 VE</b>	<b>5%</b> ~			CIRCUTADESORIPPION	~ ekt	F-A
1	LIGHTING SALES B 101		1.221	#12	#12	20 A	20 A	1	0.58	0.20					1	20 A	20 A	#12	#12	2 0.4	423 S	NACK Z	ZONE	NON-CONTINUOUS	2	
3	LIGHTING 101,101		0.901	#12	#12	20 A	20 A	1			0.58	0.20			1	20 A	20 A	#12	#12	2 0.4	426 S	NACK Z	ZONE	NON-CONTINUOUS SALES B 101	4	1
5	LIGHTING SALES A 101		0.895	#12	#12	20 A	20 A	1					0.58	0.00	M	سيد	20 A	ير	سيم	ų.	يهمير	PARE	ىرىر			J.
7	LIGHTING SALES A 101		1.089	#12	#12	20 A	20 A	1	0.54	0.00					1		20 A			-	(E	EX) SPA	٩RE		8	
9	(#) LIGHTING SALES A 10	)1	0.647	#12	#12	20 A	20 A	1			0.29	0.00			1		20 A			-	(E	EX) SPA	٩RE		10	
11	I (#) LIGHTING 101,101		1.385	#12	#12	20 A	20 A	1					0.58	0.00	1		20 A			-	S	PARE			12	
13	3 (#) LIGHTING 101,101		0.86	#12	#12	20 A	20 A	1	0.76	0.00					1		20 A			-	S	PARE			14	
15	5 LIGHTING 106,103,105,10	4	0.226	#12	#12	20 A	20 A	1			0.43	0.00			1		20 A			-	S	PARE			16	
17	RECEPTACLE 101,101		1.508	#12	#12	20 A	20 A	1					1.08	0.00	1		20 A			-	S	PARE			18	
19	) (#) LIGHTING 106,103,101	,101	0.019	#12	#12	20 A	20 A	1	0.03	0.00					1		20 A			-	S	PARE			20	
21	I SPARE					20 A		1			0.00	0.00			1		20 A			-	S	PARE			22	
23	3 (#)(G) REF.   MOTOR		2.364	#12	#12	20 A	20 A	1					0.80	0.00	1		20 A			-	S	PARE			24	
25	5 (#) EXTERIOR SIGN		2.68	*#10	*#10	20 A	20 A	1	1.20	0.00					1		20 A			-	S	PARE			26	
27	7 (#) DOORBELL   NON-CO	NTINUOUS SALES B 101	0.284	#12	#12	20 A	20 A	1			0.23	0.00			1		20 A			-	S	PARE			28	
29	9 SPARE					20 A		1					0.00	0.00	1		20 A			-	S	PARE			30	
31			0 325	#12	#12	20 4	20 A	2	0.20	0.00					1		20 A			-	S	PARE			32	
33			0.020	#12	<i>π</i> 12	20 7	20 7	2			0.20	0.00			1		20 A			-	S	PARE			34	
35	5 (#) (IG)   RECEPTACLE O	FFICE 102	0.402	#12	#12	20 A	20 A	1					0.18	0.00	1		20 A			-	S	PARE			36	
37	(IG)   RECEPTACLE OFFI	CE 102	0.442	#12	#12	20 A	20 A	1	0.18	0.00					1		20 A			-	S	PARE			38	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<b>╮ੑੑੑ५</b> ᢏ <del>)</del> ↓₽ <b>⋤</b> ⋩⋤₽∓ <b>⋬</b> ⋦∖⋤-Q5F↓	GE 192	0.438	#12-	#12-	284	$\sim$	$\mathbf{h}$	<b>\</b>		0.18	0.00			1		20 A			-	S	PARE			40	
41	SNACK ZONE   NON-CON	ITINUOUS	0.389	#12	#12	20 A	20 A	1	3				0.20	0.00	1		20 A			-	S	PARE			42	
			<u> </u>		TOTAL	CONN	IECTED I	OAD:	3.7	kVA	2.1	kVA	3.4	kVA												
LO			D			DE	MAND FA	ACTOR	2			ESTIN		D DEM	AND			VIOTU		-	FOTE	F		L TOTALS		_
Co	ntinuous	1200 VA					125.00	%					1500	0 VA //			EVICTI						D: D.			_
Fle	vator						0.00%						0.0	/Δ			ENIGTI				FCTE		n. n. 920			-
Hea	ating	0 VA					0.00%	,					0 V	/A										50 V/ (		-
Kito	chen Equipment	0 VA					0.00%	)					0 \	/A			DEN	IAND	CALC	CULA	ATION	NOTES	S:			
Lig	hting	4350 VA					125.00	%					5438	S VA						TOT	TAL D	EMAN	D: 10	787.5 VA		
Mo	tor	800 VA					125.00	%	-				1000	VA	-											7
No	n-Continuous	1050 VA					100.00	%					1050	VA				-	ΓΟΤΑΙ	L DE	MAN	D AMPS	s: 30	Α		
Re	ceptacle	1800 VA					100.00	%					1800	VA												
NO	TES:										BREAK		JANTI	TIES (N	IEW O	NLY)										
PR	OVIDE PANEL WITH ISOLAT	ED GROUND BAR								(	30) 20/	Α/1P,	(1) 20	JA / 2P												

NOTES: ALL CONDUIT SIZES ACCOMMODATE CC "CU" = COPPER COM	S INDICATED ARE N NDUCTOR PULLIN NDUCTOR, "AL" = A	MINIMUM SIZES. INCREASE SIZES A IG EASE, FIELD CONDITIONS, ETC. LUMINUM CONDUCTOR	AS REQUIRED T	O 1 - 2 - 3 - 4 -	PICAL EQUIPMENT NAME POWER DISTRIBUTION S' DESCRIPTION (H - 480Y/2 FLOOR / LEVEL SEQUENCE	NOMENCLATUR YSTEM (BLANK - 177V, L - 208Y/120	IE: ∙ NORMAI DV)	_, E - EME	RGENCY, S - STAN	DOLLAF	<b>ξ Τ</b> .fety;
EQUIPMENT	PHASE	EQUIPMENT TYPE	SUPPLY FROM	SPACE NUMBER	SPACE NAME	VOLTAGE	POLES	WIRES	DEMAND (kVA)	DEMAND (A)	N
UTILITY	Existing	Pad Mounted				208	3				-
D1	New Construction	Fused Switch	UTILITY			208	3	4	95.1 kVA	264 A	600
MDP	Existing	Distribution Panelboard	D1	106	PRE-SALES	208	3	4	95.1 kVA	264 A	600
L	Existing	Branch Panelboard	MDP	106	PRE-SALES	208	3	4	10.8 kVA	30 A	100
P	Existing	Branch Panelboard	MDP	106	PRE-SALES	208	3	4	36.6 kVA	102 A	225

#### CONNECT BRANCH CIRCUIT, WHICH WAS DISCONNECTED FROM ANOTHER SOURCE AS PART OF SELECTIVE DEMOLITION, TO POLE SPACE(S) INDICATED, Δ DETERMINE EXACT POLE ASSIGNMENT(S) BASED ON EXISTING COLOR-CODING OF THE BRANCH CIRCUIT CONDUCTOR INSULATION. PROVIDE NEW BREAKER IF

SEE THE SINGLE LINE DIAGRAM / SCHEDULE FOR WIRE SIZE AND VOLTAGE DROP

#### PANEL SCHEDULE GENERAL NOTES PROVIDE HACR RATED BREAKERS ON ALL MOTOR LOADS.

ALL CONDUCTORS SHOWN ARE COPPER. ALL VOLTAGE DROP CALCULATIONS AND COMPENSATED WIRE SIZES ARE BASED ON RIGHT ANGLE CIRCUIT LENGTHS. ACTUAL VOLTAGE DROP MAY VARY BASED ON INSTALLED WIRE LENGTH. VOLTAGE DROP CALCULATIONS AND WIRE SIZES SHOWN IN THE PANEL SCHEDULES ARE FOR HOMERUN CONDUCTORS ONLY. FOR CIRCUITS WITH MORE THAN 1 DEVICE, THESE SIZES ASSUME THE CONDUCTORS DOWNSTREAM OF THE HOMERUN DEVICE ARE THE MINIMUM SIZE REQUIRED BY THE NEC BASED ON THE RATING OF THE CIRCUIT. WHERE THIS IS NOT THE CASE, IT HAS BEEN INDICATED ON THE DRAWINGS. VOLTAGE DROP TO THE FARTHEST DEVICE HAS BEEN CALCULATED TO NEVER EXCEED 5%. RECEPTACLE LOADS CALCULATED AT 100% OF FIRST 10kVA, 50% OF REMAINDER. MOTOR LOADS CALCULATED AT 125% OF THE LARGEST MOTOR. 100% OF ALL OTHER MOTORS.

	PANEL NAM	E: MDP																				
	SUPPLY FRO	<b>DM</b> : D1			MAIN	IS RAT	'ING (A):	600						FAUL	T CUR	RENT (A	<b>):</b> 184	45			S	
	LOCATI	ON: PRE-SALES 106				MAIN	S TYPE:	MAIN	LUGS	ONLY			SHOR	T CIRC	CUIT RA	ATING (A	): 220	00				
	DISTRIBUTION SYST	EM: 208/120V 3PH 4W				FEE	DER ID:	620-40	0						LU	GS TYP	E:					200% NE
	FEED	ER: (2) SETS OF (4) #350 KC		J, (1) #	1 AW0	G CU G	GND. IN 3'	" CONE		ACH 7	5C RAT	ΓED		EN	CLOSU	RE TYP	E: NEM	/A 1	1			SOLATED GI
CKT	CIRCUIT DESCRIPTION			AWG	GND	TRIP	FRAME	POLE		4	E	3	(		POLE	FRAME	TRIP	GND	AWG	VD%		CIRCUIT
1	_								11.69	0.00					1		20 A				SPARE	
3	(#) P		SL	SL	SL	225 A	225 A	3			11.11	0.00			1		20 A				SPARE	
5													12.84	0.00	1		20 A				SPARE	
7									3.68	0.00					1		20 A				(EX) SPAR	E
9	(#) L		SL	SL	SL	100 A	100 A	3			2.11	0.00			1		20 A				(EX) SPAR	E
11	-												3.41	0.00	1		20 A				(EX) SPAR	E
13									5.73	0.00					1		20 A				(EX) SPAR	E
15	RTU-1   MOTOR SALES A	101	1.331	#4	#10	60 A	60 A	3			5.73	0.00			1		20 A				(EX) SPAR	E
17													5.73	0.00	1		20 A				(EX) SPAR	E
19									6.48	0.00					1		20 A				(EX) SPAR	E
21	RTU-2   MOTOR SALES B	101	1.999	#4	#8	70 A	70 A	3			6.48	0.00			1		20 A				(EX) SPAR	E
23	-												6.48	0.00	1		20 A				(EX) SPAR	E
25									2.27	0.00					1		20 A				SPARE	
27	RTU-3   MOTOR PRE-SAL	ES 106	0.522	#10	#10	30 A	A 30 A	A 3			2.27	0.00			1		20 A				SPARE	
29													2 27	0.00	1		20 A				SPARE	
31									0.02	0.00				0.00	1		20 A				SPARE	
33	PHASE LOSS MONITOR	NON-CONTINUOUS	0.002	#12	#12	20 A	20 A	3	0.02	0.00	0.02	0.00			1		20 A				SPARE	
35	PRE-SALES 106			"12	// 12	2071					0.02	0.00	0.02	0.00	1		20 A				SPARE	
37	SPARE					20 4		1	0.00	0.00			0.02	0.00	1		20 A				SPARE	
30	SPARE					20 A		1	0.00	0.00	0.00	0.00			1		20 A				SPARE	
/11	SPARE					20 A		1			0.00	0.00	0.00	0.00	1		20 A					
41								· ۱۰ ۵۸	20.0	K)/A	27.7	K)/A	30.8	6.00	1		20 7					
	D CLASSIFICATION		ח						20.0		21.1	FSTI			ΔΝΠ						PΔ	
Cont	inuous	3200 VA					125.00	%				2011	4000	VA			E	XISTIN	IG COI	NNEC	ED LOAD:	
Cooli	ing	0 VA					0.00%	)					0 V	A			EXISTI	NG LC	AD DE	MAN	D FACTOR:	
Eleva	ator	0 VA					0.00%	)					0 V	A				ADD	ED CO	NNEC	ED LOAD:	88336 VA
Heat	ing	3000 VA					100.00	%					3000	VA			DEN					
Kitch	Kitchen Equipment 0 VA						0.00%	)					0 V	A			DEN	IAND	CALCU	JLATIC	ON NOTES:	
Light	Lighting 4350 VA						125.00	%			5438 VA						TOTAL DEMAND: 95087.4				95087.4 VA	
Moto	r	46108 VA					110.55	%					50972	2 VA			TOTAL DEMAND AMPS: 264 A					
Non-	Continuous	26818 VA					100.00	%					26818	3 VA							264 A	
Rece	ptacle	4860 VA					100.00	%					4860	VA								
NOT	ES:									E	BREAK	ER QI	JANTI	TIES (N	NEW ON	NLY)						
										(	15) 204	A / 1P,	(1) 20	)a / 3p	, (1) 30	DA/3P,	(1) 604	4/3P,	(1) 70	)a / 3p		

SEE NOTE H NEUTRAL BA GROUND BAF BONDING JUMPER GROUNDING - SYSTEM BONDING JUMPER CONDUCTOR -

![](_page_56_Figure_18.jpeg)

260526.00-01 - GROUND DETAIL - SERVICE SCALE: NONE

LECTRODE

GROUNDIN

ELECTROD

CONDUCT

RE	EELE	ECTRIC SINGLE	LINE E	EQUIPMENT SCHEDULE												
n)	<ul> <li>* - INDICATES FEEDER SIZED TO COMPENSATE FOR VOLTAGE DROP</li> <li>1 - GROUND TYPE (MAY BE BLANK)</li> <li>U = EQUIPMENT GROUND CONDUCTOR REMOVED FOR SERVICE ENTRANCE FROM UTILITY</li> <li>P = PARITY-SIZED EQUIPMENT GROUND CONDUCTOR</li> <li>X = EXISTING FEEDER TO REMAIN UNLESS OTHERWISE NOTED</li> <li>T = UPSIZED GROUND CONDUCTORS FOR TRANSFORMER SECONDARY</li> </ul>			VOLTAGE DROP FOR SERVICE ENTRANCE FROM UTILITY TOR WISE NOTED FORMER SECONDARY	2 - CONDUCTOR AMPAG 3 - TOTAL NUMBER OF I 4 - CONDUCTOR MATEF 5 - SPECIAL (MAY BE BL I = ISOLATED GROUN RESPECTIVE UPSTREA	CITY PHASE ANE RIAL: C = CC ANK) D (PROVID M SERVICE	GROUNDE OPPER, A = 4 E CONTINU( ENTRANCE	ED ("NEUT ALUMINU OUS INSL E OR DER	RAL") M JLATEI IVED S	CONDUC D ISOLAT SYSTEM (	tors Ed Equip Broundir	MENT GRONG ELECTI	DUNDING C RODE CON	ONDUCTOR DUCTOR AS	R(S) FROM IN S APPLICABL	SULATED ISOLATED GROUND BAR(S) TO E.
MAINS TING (A)	MAINS FRA RATING (A	ME A) MAINS TYPE	FEEDER ID	FEEDER	VE	% LUG	STYPE	SPD UL	SE G	EC T	LOSURE	200% NEUTRAL	K-RATING	FAULT CURRENT (A)	SHORT CIRCUIT RATING (A)	NOTES
		-								NEMA	3R			48983		
	600	FUSED	U620-4C	(2) SETS OF (4) #350 KCMIL CU IN 3" CONDUIT EACH 75C RATED	0.6	3		Yes	Ye	s NEMA	3R			26155	42000	
	600	MAIN LUGS ONLY	620-4C	(2) SETS OF (4) #350 KCMIL CU, (1) #1 AWG CU GND. IN 3" CONDU	IT EACH 75C RATED 1.12	25				NEMA	.1			18445	22000	
	100	MAIN LUGS ONLY	100I-4C	(4) #3 AWG CU, (2) #8 AWG CU GND. IN 1-1/4" CONDUIT 75C RATE	D 1.18	3				NEMA	.1			15845	22000	PROVIDE PANEL WITH ISOLATED GROUND BAR
	225	MAIN LUGS ONLY	230I-4C	(4) #4/0 AWG CU, (2) #4 AWG CU GND. IN 2-1/2" CONDUIT 75C RAT	ED 1.18	17				NEMA	.1			17922	22000	PROVIDE PANEL WITH ISOLATED GROUND BAR

#### FAULT CURRENT CALCULATIONS FAULT CURRENT CALCULATIONS ARE BASED ON A 300KVA UTILITY TRANSFORMER AT 1.7% IMPEDANCE. VERIFY THE AVAILABLE FAULT CURRENT AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

![](_page_56_Figure_22.jpeg)

GENERAL ELECTRICAL POWER DISTRIBUTION NOTES

NEVERTHELESS

В.

D.

E.

G.

PHASE: Existing

ULSE:

CIRCUIT DESCRIPTION

SURGE SUPRESSION:

ISOLATED GROUND:

200% NEUTRAL:

PARALLEL CONDUCTOR SETS: CUT PARALLEL SERVICE/FEEDER CONDUCTORS TO EXACTLY THE SAME LENGTHS AND USE CONDUCTORS FROM THE SAME FACTORY RUN. TORQUE ALL

OVERCURRENT PROTECTION RATINGS: UNLESS INDICATED OTHERWISE, PROVIDE FULLY-RATED OR SERIES-RATED OVERCURRENT PROTECTION (OCP) AS REQUIRED TO COMPLY WITH ALL

EXCEED THE AVAILABLE SERIES-RATED FAULT CURRENT AT THE RESPECTIVE NODE IN THE POWER DISTRIBUTION SYSTEM. SERIES-RATED BREAKERS/SYSTEMS ARE NOT PERMITTED WHERE

PROHIBITED BY PREVAILING CODES AND STANDARDS, INCLUDING APPLICATIONS INVOLVING MOTOR CONTRIBUTION AS ADDRESSED IN ARTICLE 240.86(C) OF NEPA 70. FUBNISH ELECTRONIC COPIES OF THE ELECTRICAL DOCUMENTS TO THE MANUFACTURER'S REPRESENTATIVE AND/OR EQUIPMENT

SUPPLIER SO THAT PROPERLY RATED AND BRACED EQUIPMENT IS PROVIDED UNDER BASE BID. IF

GROUNDING ELECTRODE CONDUCTOR SYSTEM: PROVIDE GROUNDING ELECTRODE CONDUCTOR SYSTEM IN STRICT COMPLIANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL

ELECTRICAL CODE (NFPA 70), INCLUDING ARTICLE 250 AND TABLE 250.66. THESE CONDUCTORS MAY OR MAY NOT BE INDICATED ON SINGLE-LINE DIAGRAMS, BUT SHALL BE PROVIDED UNDER BASE BID

FLUSH MOUNTED EQUIPMENT: PROVIDE FLUSH MOUNTED POWER DISTRIBUTION AND RELATED

QUIPMENT FOR APPLICATIONS IN FINISHED AREAS AND COORDINATE THESE LOCATIONS AND INSTALLATIONS WITH ARCHITECT, OWNER AND AFFECTED TRADES. ELSEWHERE PROVIDE SURFACE MOUNTED EQUIPMENT UNLESS FLUSH MOUNTED EQUIPMENT IS SHOWN ON DRAWINGS

<u>POWER DISTRIBUTION EQUIPMENT LABELS</u>: IN ADDITION TO LABELS REQUIRED WITHIN THE SPECIFICATIONS, INCLUDE CORRESPONDING MAXIMUM AIC (AVAILABLE INRUSH CURRENT) AND

SHORT-CIRCUIT CURRENT RATING (SCCB) FOR EACH PIECE OF POWER DISTRIBUTION EQUIPMENT. ALONG WITH ARC FLASH LABELS COMPLIANT WITH ARTICLE 110.16 OF NFPA 70. ALSO INCLUDE CONDUCTOR COLOR CODING FOR THE BUILDING AND PHASE ROTATION AS APPLICABLE.

CONDUCTOR TERMINATIONS: IN CASES WHERE CONDUCTOR SIZES ARE TOO LARGE TO FIT INTO UGS/TERMINALS, PROVIDE APPROPRIATE FACTORY LUG KITS FOR AFFECTED EQUIPMENT IF

SIZED TO FIT LUGS/TERMINALS. PROVIDE SPLICES IN SEPARATE BOXES IF REQUIRED BASED ON FIELD CONDITIONS, BOX SIZE LIMITATIONS, ETC. CONCEAL BOXES IN ACCESSIBLE OVERHEAD JOIST

<u>ALUMINUM CONDUCTORS</u>: PROVIDE THE FOLLOWING SUPPLEMENTAL WORK FOR ALUMINUM-CONDUCTOR ELECTRICAL EQUIPMENT CONNECTIONS, REGARDLESS OF WHO FURNISHES THE

CONDUCTORS FROM LOAD-SIDE LUGS/TERMINALS OF THE DISCONNECT SWITCH TO THE

AVAILABLE, ELSEWHERE, PROVIDE INSULATED BUTT-SPLICES OR EQUIVALENT METHOD, WITH TAILS

EQUIPMENT: REVIEW EQUIPMENT SUBMITTALS, INSTALLATION DOCUMENTS AND NAMEPLATES TO DETERMINE IF THERE ARE ANY WARBANTY OR UL LIMITATIONS REGARDING COPPER VERSUS

ALUMINUM WIRING CONNECTIONS AT EQUIPMENT: IF THERE ARE ANY LIMITATIONS, PROVIDE LOCAL DISCONNECT AT OR NEAR EQUIPMENT (EXTERNAL TO THE EQUIPMENT) AND TERMINATE ALUMINUM CONDUCTORS TO THE LINE-SIDE LUGS/TERMINALS OF THE DISCONNECT SWITCH; PROVIDE COPPER

RESPECTIVE EQUIPMENT FACTORY DISCONNECT OR LUG/TERMINALS AS APPLICABLE; COORDINATE

FAULT CURRENT VALUES ARE NOT INDICATED ON PLANS, ALSO PROVIDE FAULT CURRENT

CALCULATIONS AND FURNISH RESULTS WITH EQUIPMENT SUBMITTALS.

OR UNLESS NEEDED TO ACCOMMODATE UNUSUAL CONDITIONS.

SPACES IN FINISHED REGULARLY OCCUPIED AREAS.

ALL RELATED WORK WITH ALL AFFECTED INSTALLERS.

APPLICABLE REQUIREMENTS OF NFPA 70. PROVIDE EQUIPMENT AND OCP RATED TO MEET OR

CONNECTIONS FOR PARALLEL SERVICE/FEEDER CONDUCTORS TO IDENTICAL VALUES.

![](_page_56_Figure_23.jpeg)

COMcheck Software Version 4.1.5.1 Interior Lighting Compliance Certificate √`

Project Information Energy Code: Project Title: Project Type:

2015 IECC LAKE COUNTRY MARKET Alteration

Construction Site: 690 WESTFIELD WAY PEWAUKEE, WI 53072	Designer/Contractor: KLH Engineers 1538 Alexandria Pike Fort Thomas, KY 41075						
Allowed Interior Lighting	g Power						
	A Area Category	B Floor Area (ft2)	C Allowed Watts / ft	Allo 2	D wed Watts (B X C)		
6-SALES A 101 (Retail:Sales Ar	ea)	3318	1.59		5275		
5-PRE-SALES 106 (Common Sp	pace Types:Storage)	1352	0.63		852		
2-HALLWAY 103 (Common Spa	ce Types:Corridor/Transition >=8 ft wide)	83	0.66		55		
1-SALES B 101 (Retail:Sales Ar	ea)	3788	1.59		6024		
4-TOILET 105 (Common Space	Types:Restrooms)	56	0.98		55		
3-TOILET 104 (Common Space	Types:Restrooms)	56	0.98		55		
		То	tal Allowed W	/atts =	12315		
Proposed Interior Lighting	ng Power						
Fixture ID : Des	A cription / Lamp / Wattage Per Lamp / Ballast	B Lamps∕ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)		
SALES A 101 (Retail:Sales	Area 3318 sg.ft.)						
F4: F4: 4'0" STRIP LIGHT: Of	ther:	2	1	36	36		
F8: F8: 8'0" STRIP LIGHT: Of	ther:	2	48	36	1728		
F4-EMB: F4-EMB: 4'0" STRIF	PLIGHT EMERGENCY LIG: Other:	2	1	36	36		
F8-EMB: F8-EMB: 8'0" STRIF	P LIGHT EMERGENCY LIG: Other:	2	8	36	288		
PRE-SALES 106 ( Common	Space Types:Storage 1352 sq.ft.)						
F8: F8: 8'0" STRIP LIGHT: Of	ther:	2	5	36	180		
F8-EMB: F8-EMB: 80° STRIF	LIGHT EMERGENCY LIG: Other:	2	4	36	144		
HALLWAY 103 (Common S	pace Types:Corridor/Transition >=8 ft wide 83 sq.ft.	.t		00	00		
F8-EMB: F8-EMB: 80 STRIF	LIGHT EMERGENCY LIG: Other:	2	1	36	30		
SALES B 101 ( Retail:Sales )	Area 3/88 sq.ft.)	0		00	1507		
F8: F8: 80" STRIP LIGHT: O		2	44	30	1584		
		2	0	30	210		
F4-EMB: F4-EMB: 4'0" STRIF	LIGHT EMERGENCY LIG: Other:	2	1	36	36		
TOILET 104 ( Common Spac	ce Types:Restrooms 56 sq.ft.)						
F4-EMB: F4-EMB: 4'0" STRIF	P LIGHT EMERGENCY LIG: Other:	2	1	36	36		
			Total Propos	ed Watts =	4320		

Project Title: LAKE COUNTRY MARKET Report date: 01/07/22 Data filename: \\klhfs01.klhengrs.com\g\23000-23999\23700-23799\23732\Project Data\Energy\Compliance\Electric.cck Page 1 of 6

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5. 2 [FI17] <sup>3</sup>	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.4.1 [FI18] <sup>1</sup>	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	□Complies □Does Not □Not Observable □Not Applicable	See the Interior Lighting fixture schedule for values.
C408.2.5. 1 [FI16] <sup>3</sup>	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C408.3 [FI33] <sup>1</sup>	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

 
 1
 High Impact (Tier 1)
 2
 Medium Impact (Tier 2)
 3
 Low Impact (Tier 3)
 Project Title: LAKE COUNTRY MARKET Data filename: \\klhfs01.klhengrs.com\g\23000-23999\23700-23799\23732\Project Data\Energy\Compliance\Electric.cck

Report date: 01/07/22 Page 5 of 6

			٥.	COMcheck Softw	are Versi	on 4.1.5.1
Interior Lighting Compliance Statemen	at		лч <b>У</b>	Inspection	Check	lict
Compliance Statement: The proposed interio	nt or lighting alteration project represented in this docu	ment is consistent with the		inspection	CHECK	list
building plans, specifications, and other calcu systems have been designed to meet the 201	ulations submitted with this permit application. The p 15 IECC requirements in COM <i>check</i> Version 4.1.5.1 a	proposed interior lighting and to comply with any		Energy Code: 2015 IE	CC	
applicable mandatory requirements listed in t	the Inspection Checklist.		Requireme Text in the	nts: 100.0% were addressed "Comments/Assumptions" colum	directly in the C n is provided by t	OM <i>check</i> software
Name - Title	Signature	Date	requiremen is being cla	t, the user certifies that a code re imed. Where compliance is itemi	equirement will b red in a separate	e met and how that is do table, a reference to tha
			Section	Plan Poview	Complias?	Commo
			& Req.ID			Device and will be not
			[PR4] <sup>1</sup> c	lans, specifications, and/or alculations provide all information		Requirement will be met.
			d	etermined for the interior lighting	Not Observable	
			a	nd document where exceptions to		
			p	rovided should include interior		
			b	ulbs and ballasts, transformers and		
			Additional	Comments/Assumptions:	1	6
				1 High Impact (Tier 1)	2 Medium Imp	act (Tier 2) 3 Low Im
Project Title: LAKE COUNTRY MARKET		Report date: 01/07/22	Project Title:	LAKE COUNTRY MARKET	C. J. M. LAW	0.212.0
Data filename: \\klhfs01.klhengrs.com\g\230 Data\Energy\Compliance\Elec	100-23999\23700-23799\23732\Project ctric.cck	Page 2 of 6	Data filename	a: \\klhfs01.klhengrs.com\g\23000-2: Data\Energy\Compliance\Electric.c	999\23700-23799 ck	23732\Project

## ..5.1

k software in the COMcheck Requirements screen. For each nd how that is documented, or that an exception reference to that table is provided.

Comments/Assumptions

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.1 [EL15] <sup>1</sup>	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C405.2.1 [EL18] <sup>1</sup>	Occupancy sensors installed in required spaces.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C405.2.1, C405.2.2. 3 [EL23] <sup>2</sup>	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	□Complies □Does Not □Not Observable □Not Applicable	<b>Exception:</b> Areas such as security or emergency areas than need continuous lighting.
C405.2.2. 1 [EL22] <sup>2</sup>	Automatic controls to shut off all building lighting installed in all buildings.	Complies Does Not Not Observable Not Applicable	<b>Exception:</b> Areas such as security or emergency areas than need continuous lighting.
C405.2.3 [EL16] <sup>2</sup>	Daylight zones provided with individual controls that control the lights independent of general area lighting.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C405.2.3, C405.2.3. 1, C405.2.3. 2 [EL20] <sup>1</sup>	Primary sidelighted areas are equipped with required lighting controls.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C405.2.3, C405.2.3. 1, C405.2.3. 3 [EL21] <sup>1</sup>	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C405.2.4 [EL4] <sup>1</sup>	Separate lighting control devices for specific uses installed per approved lighting plans.	Complies Does Not Not Observable	Requirement will be met.
C405.2.4 [EL8] <sup>1</sup>	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C405.3 [EL6] <sup>1</sup>	Exit signs do not exceed 5 watts per face.	Complies Does Not Not Observable Not Applicable	Requirement will be met.

3 Low Impact (Tier 3) Report date: 01/07/22

Page 3 of 6

 
 1
 High Impact (Tier 1)
 2
 Medium Impact (Tier 2)
 3
 Low Impact (Tier 3)
 Project Title: LAKE COUNTRY MARKET Report date: 01/07/22 Page 4 of 6

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![](_page_57_Figure_17.jpeg)

ut of

![](_page_58_Picture_1.jpeg)

Energy Code: Project Title: Location: Climate Zone: Project Type:

Construction Site: 690 Westfield Way Pewaukee, WI 53072

Mechani	cal Systems List
Quantity	System Type & Description
1	RTU 12.5-Ton (Single Zone): Heating: 1 each - Central Furnac Proposed Efficiency = 80.00% Cooling: 1 each - Single Package Proposed Efficiency = 12.20 E Fan System: FAN SYSTEM 1
	Fans: FAN 1 Supply, Single-Zone VA
1	RTU 10-Ton (Single Zone):

1 Water Heater 1: Project Title: Dollar Tree Data filename: G:\23000-23999\23700-23799\23732\Project Data\Energy\Compliance\Mechanical 2015 IECC.c Page 1 of 11 Section # Plumbing Rough-& Req.ID C404.5, Heated water supply pi C404.5.1, to pipe length and volu C404.5.2 requirements. Refer to [PL6]<sup>3</sup> C404.5, C404.5.1, C404.5.2 [PL6]<sup>3</sup> Heated water supply pip to pipe length and volum requirements. Refer to s C404.5, Heated water supply pi C404.5.1, to pipe length and volu C404.5.2 requirements. Refer to [PL6]<sup>3</sup>

C404.5, Heated water supply p C404.5.1, to pipe length and volu C404.5.2 requirements. Refer to [PL6]<sup>3</sup> C404.6.1, Automatic time switch C404.6.2 automatically switch off [PL3]<sup>1</sup> recirculating hot-water s trace. C404.6.3 Pumps that circulate w [PL7]<sup>3</sup> heater and storage tar that limit operation f <= 5 minutes after end cycle. C404.6.3 Pumps that circulate [PL7]<sup>3</sup> heater and storage ta that limit operation fro <= 5 minutes after end cycle. C404.6.3 Pumps that circulate v [PL7]<sup>3</sup> heater and storage ta that limit operation fi <= 5 minutes after end cycle. C404.6.3 Pumps that circulate v [PL7]<sup>3</sup> heater and storage ta that limit operation f <= 5 minutes after en cycle. C404.7 Water distribution sys [PL8]<sup>3</sup> water from a heated-w pipe back to the heate through a cold-water s demand recirculation Pumps within this sys controls that start the receiving a signal from user of a fixture or app limits the temperature entering the cold-water 104°F.

Section Final Inspection # & Req.ID C303.3, Furnished O&M manuals fo C408.2.5. systems within 90 days of acceptance. [FI8]<sup>3</sup> C403.2.2 HVAC systems and equipn [FI27]<sup>3</sup> capacity does not exceed of loads. C403.2.4. Heating and cooling to ead 1 controlled by a thermostat [FI47]<sup>3</sup> Minimum one humidity co per installed humidification/dehumidification system. C403.2.4. Heating and cooling to eac controlled by a thermosta [FI47]<sup>3</sup> Minimum one humidity con per installed humidification/dehumidi system. C403.2.4. Heating and cooling to eac 1 controlled by a thermostat [FI47]<sup>3</sup> Minimum one humidity co per installed humidification/dehumidifica system. C403.2.4. Thermostatic controls have deadband. [FI38]<sup>3</sup> C403.2.4. Temperature controls have overlap restrictions. 1.3 [FI20]<sup>3</sup> C403.2.4. Each zone equipped with 2 controls using automatic ti [FI39]<sup>3</sup> programmable control syst C403.2.4. Automatic Controls: Setba (heat) and 85°F (cool); 7-d C403.2.4. hour occupant override, 1 backup [FI40]<sup>3</sup> C403.2.4. Systems include optimum controls. [FI41]<sup>3</sup> C403.2.4. Systems include optimum s controls. [FI41]<sup>3</sup> C403.2.4. Systems include optimum controls. [FI41]<sup>3</sup> 1 High Imp Project Title: Dollar Tree

COMcheck Software Version 4.1.5.3 Mechanical Compliance Certificate

> 2015 IECC Dollar Tree Pewaukee, Wisconsin 6a Alteration

> > Owner/Agent:

Designer/Contractor: KLH Engineers 1538 Alexandria Pike Suite 11 Fort Thomas, KY 41075 859.442.8050

Report date: 01/10/22

Mechanical Compliance Statement

Name - Title

Project Title: Dollar Tree

Project Title: Dollar Tree

Section

requirements listed in the Inspection Checklist.

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been

Date

Report date: 01/10/22

Report date: 01/10/22

designed to meet the 2015 IECC requirements in COMcheck Version 4.1.5.3 and to comply with any applicable mandatory

Signature

e Zone): entral Furnace, Gas, Capacity = 178 kBtu/h ncy = 80.00% Et, Required Efficiency: 80.00 % Et or 78% AFUE ingle Package DX Unit, Capacity = 168 kBtu/h, Air-Cooled Condenser, Air Economizer y = 12.20 EER, Required Efficiency: 10.80 EER + 12.2 IEER STEM 1 -- Compliance (Motor nameplate HP method) : Passes

ngle-Zone VAV, 5000 CFM, 2.9 motor nameplate hp, 80.0 fan efficiency grade Heating: 1 each - Central Furnace, Gas, Capacity = 114 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 78% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 139 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 12.00 EER, Required Efficiency: 10.80 EER + 12.2 IEER Fan System: FAN SYSTEM 2 -- Compliance (Motor nameplate HP method) : Passes

FAN 2 Supply, Single-Zone VAV, 4000 CFM, 2.4 motor nameplate hp, 80.0 fan efficiency grade 1 RTU 3-Ton (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 58 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency: 80.00 % Et or 78% AFUE Cooling: 1 each - Single Package DX Unit, Capacity = 29 kBtu/h, Air-Cooled Condenser, Air Economizer

Proposed Efficiency = 15.00 SEER, Required Efficiency: 14.00 SEER Fan System: FAN SYSTEM 3 -- Compliance (Motor nameplate HP method) : Passes FAN 3 Supply, Single-Zone VAV, 1200 CFM, 1.2 motor nameplate hp, 80.0 fan efficiency grade

Electric Storage Water Heater, Capacity: 10 gallons w/ Circulation Pump Proposed Efficiency: 0.98 SL, %/h (if > 12 kW), Required Efficiency: 3.00 SL, %/h (if > 12 kW)

In Inspection	Complies?	Comments/Assumptions
piping conforms lume to section details.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
piping conforms lume to section details.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
piping conforms lume to section details.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
piping conforms lume to section details.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
hes installed to off the er system or heat	Complies Does Not Not Observable Not Applicable	Requirement will be met.
water between a ank have controls rom startup to nd of heating	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
water between a ank have controls rom startup to nd of heating	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
water between a ank have controls rom startup to nd of heating	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
water between a ank have controls rom startup to nd of heating	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
stem that pumps water supply ed-water source supply pipe is a water system. the have e pump upon m the action of a opliance and e of the water ter piping to	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.

# & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.7 [PL8] <sup>3</sup>	Water distribution system that pumps water from a heated-water supply pipe back to the heated-water source through a cold-water supply pipe is a demand recirculation water system. Pumps within this system have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C404.7 [PL8] <sup>3</sup>	Water distribution system that pumps water from a heated-water supply pipe back to the heated-water source through a cold-water supply pipe is a demand recirculation water system. Pumps within this system have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C404.7 [PL8] <sup>3</sup>	Water distribution system that pumps water from a heated-water supply pipe back to the heated-water source through a cold-water supply pipe is a demand recirculation water system. Pumps within this system have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
Additiona	al Comments/Assumptions:		

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	1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project Title:	Dollar Tree Report date: 01/10/22
Data filename:	G:\23000-23999\23700-23799\23732\Project Data\Energy\Compliance\Mechanical 2015 IECC.c Page 5 of 11

ion         Complies?         Comments/Assumptions           for HVAC         Complies         Requirement will be met.           in to Observable         Not Observable         Requirement will be met.           in to Observable         Does Not         Policable           in to Observable         Requirement will be met.         Does Not           in to Observable         Requirement will be met.         Does Not           in to ontrol device         Complies         Requirement will be met.           in to Observable         Not Observable         Requirement will be met.           in to ontrol device         Does Not         Policable           in to ontrol device         Complies         Requirement will be met.           in to ontrol device         Does Not         Policable           in to ontrol device         Does Not         Requirement will be met.           in to Observable         Not Observable         Policable           ve a 5 "F         Complies         Requirement will be met.           Not Observable         Not Observable         Policable           ve a 5 "F         Complies         Requirement will be met.           Not Observable         Not Observable         Policable           setback         Complies         Re								
for HVAC f system Comples Not Not Observable ment Comples Requirement will be met. Comples Requirement will be met. Not Observable Not Obser	ion	Complies?	Comments/Assumptions					
ment       Complies Does Not       Requirement will be met.         calculated       Not Observable Not Applicable       Requirement will be met.         ach zone is at control.       Complies Not Applicable       Requirement will be met.         ach zone is at control.       Complies Not Applicable       Requirement will be met.         ach zone is at control.       Complies Not Applicable       Requirement will be met.         ach zone is at control.       Complies Not Applicable       Requirement will be met.         ach zone is at control.       Complies Not Observable       Requirement will be met.         ach zone is at control.       Complies Not Observable       Requirement will be met.         we a 5 °F       Complies Does Not Not Observable       Requirement will be met.         we as 5 °F       Complies Does Not Not Observable       Requirement will be met.         Not Observable Not Applicable       Not Observable         Not Observable Not Applicable       Requirement will be met.         Not Observable Not Applicable       Not Observable         Not Observable Not Applicable       Requirement will be met. <td>for HVAC of system</td> <td>□Complies □Does Not □Not Observable □Not Applicable</td> <td>Requirement will be met.</td>	for HVAC of system	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.					
ach zone is at control. ontrol device ication       Complies  Not Observable  Not Observable       Requirement will be met.         ach zone is at control. ontrol device ication       Complies  Does Not       Requirement will be met.         ach zone is at control. ontrol device ication       Complies  Does Not       Requirement will be met.         ication       Complies  Does Not       Requirement will be met.         ication       Complies  Does Not       Requirement will be met.         we a 5 °F       Complies  Does Not       Requirement will be met.         we a 5 °F       Complies  Does Not       Requirement will be met.         we a 5 °F       Complies  Does Not       Requirement will be met.         we a 5 °F       Complies  Does Not       Requirement will be met.         we setpoint       Complies  Does Not       Requirement will be met.         we setpoint       Complies  Does Not       Requirement will be met.         we setpoint       Complies  Does Not       Requirement will be met.         wot Observable       Not Observable       Not Observable         n	ment d calculated	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.					
ach zone is at control. ontrol device ication       Complies Does Not Observable       Requirement will be met.         ach zone is at control. ontrol device ication       Complies Does Not Does Not Does Not       Requirement will be met.         we a 5 °F       Complies Does Not       Requirement will be met.         Not Observable ication       Complies Does Not       Requirement will be met.         Not Observable Does Not       Complies         Not Observable Does Not       Requirement will be met.         Does Not       Does Not         Not Observable       Requirement will be met.         Does Not       Does Not         Not Observable       Requirement will be met.         In start       Complies Does Not         Not Observable       Requirement will be met.         Not Observable       Not Observable         Not Observable       Not Observable         Not Observable       Not Observable         Not Observable       Does Not         Not Observable       Does Not         N	ach zone is at control. ontrol device ication	Complies Does Not Not Observable Not Applicable	Requirement will be met.					
ach zone is at control. ontrol device ication       Complies Does Not Does Not       Requirement will be met.         We a 5 °F       Complies Does Not       Requirement will be met.         Not Observable Not Observable       Requirement will be met.         Not Observable       Does Not         Not Observable       Requirement will be met.         Not Observable       Does Not         Not Applicable       Requirement will be met.         Not Observable       Does Not         Not Observable       Not Observable         Not Observable       Requirement will be met.         Not Observable       Does Not         Not Applicable       Requirement will be met.         Not Observable       Not Applicable         Not Observable       Requirement will be met.         Does Not       Not Observable         Not Observable       Requirement will be met.         Does Not       Not Observable         Not Observable       Not Applicable <td>ach zone is at control. ontrol device ication</td> <td>Complies Does Not Not Observable Not Applicable</td> <td>Requirement will be met.</td>	ach zone is at control. ontrol device ication	Complies Does Not Not Observable Not Applicable	Requirement will be met.					
ve a 5 °F       Complies Does Not       Requirement will be met.         Not Observable Not Applicable       Complies       Requirement will be met.         Ve setpoint       Complies Does Not       Requirement will be met.         Setback time clock or stem.       Complies Does Not       Requirement will be met.         Not Observable Not Applicable       Requirement will be met.         Setback time clock or stem.       Complies Does Not       Requirement will be met.         Not Observable Not Applicable       Requirement will be met.       Setback         ID-hour       Complies Not Applicable       Requirement will be met.         Not Observable Not Applicable       Requirement will be met.       Setback         ID-hour       Complies Not Applicable       Requirement will be met.       Setback         ID-boes Not Not Observable       Requirement will be met.       Setback       Setback         ID-boes Not Not Observable	ach zone is at control. ontrol device ication	Complies Does Not Not Observable Not Applicable	Requirement will be met.					
we setpoint       Complies Does Not Not Observable       Requirement will be met.         Setback time clock or stem.       Complies Does Not Does Not       Requirement will be met.         Not Observable       Requirement will be met.       Requirement will be met.         Not Observable       Not Observable       Requirement will be met.         Not Observable       Not Observable       Requirement will be met.         In start       Complies Does Not Not Observable       Requirement will be met.         In start       Complies Does Not Does Not       Requirement will be met.         In start       Complies Does Not Does Not       Requirement will be met.         In start       Complies Does Not       Requirement will be met.         In start       Complies Does Not       Requirement will be met.         In start       Complies Does Not       Requirement will be met.         In start       Does Not Does Not       Requirement will be met.         In start       Does Not Does Not       Requirement will be met.         In start       Complies Does Not       Requirement will be met.         In start       Does Not Does Not       Not Observable	ve a 5 °F	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.					
setback time clock or stem.       Complies Does Not       Requirement will be met.         Not Observable       Not Observable         Not Applicable       Requirement will be met.         ack to 55°F day clock, 2- 10-hour       Complies Does Not         Not Observable       Requirement will be met.         In start       Complies Does Not         Not Observable       Requirement will be met.         In start       Complies Does Not	ve setpoint	Complies Does Not Not Observable Not Applicable	Requirement will be met.					
ack to 55°F day clock, 2- I0-hour Not Observable Not Applicable Not Applicable Not Observable Does Not Not Observable Not Observable Not Applicable Not Applicable Not Observable Not Observable	setback time clock or stem.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.					
n start Complies Requirement will be met. Does Not Not Observable Not Applicable n start Complies Requirement will be met. Does Not Not Observable Not Applicable n start Complies Requirement will be met. Does Not Not Observable	ack to 55°F day clock, 2- 10-hour	Complies Does Not Not Observable Not Applicable	Requirement will be met.					
n start Complies Requirement will be met.	n start	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.					
n start Complies Requirement will be met. Does Not Not Observable	n start	Complies Does Not Not Observable Not Applicable	Requirement will be met.					
Not Applicable	n start	Complies Does Not Not Observable Not Applicable	Requirement will be met.					
pact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)	act (Tier 1)	2 Medium Imp	act (Tier 2) 3 Low Impact (Tier 3)					

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# & Reg.ID	Final Inspection	Complies?	Comments/Assumptions	
2404.3 FI11] <sup>3</sup>	Heat traps installed on supply and discharge piping of non-circulating systems.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.	
2404.4 FI25] <sup>2</sup>	All piping insulated in accordance with section details and Table C403.2.10.	Complies Does Not Not Observable Not Applicable	Requirement will be met.	
2404.6.1 FI12] <sup>3</sup>	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank. System return pipe is a dedicated return pipe or a cold water supply pipe.	Complies Does Not Not Observable Not Applicable	Requirement will be met.	
2408.2.1 FI28] <sup>1</sup>	Commissioning plan developed by registered design professional or approved agency.	Complies Does Not Not Observable Not Applicable	Requirement will be met.	
2408.2.3. FI31] <sup>1</sup>	HVAC equipment has been tested to ensure proper operation.	Complies Does Not Not Observable Not Applicable	Requirement will be met.	
2408.2.3. FI10] <sup>1</sup>	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	Complies Does Not Not Observable	Requirement will be met.	
(408.2.3. FI32] <sup>1</sup>	Economizers have been tested to ensure proper operation.	Complies Does Not Not Observable Not Applicable	Requirement will be met.	
2408.2.4 FI29] <sup>1</sup>	Preliminary commissioning report completed and certified by registered design professional or approved agency.	Complies Does Not Not Observable Not Applicable	Requirement will be met.	
C408.2.5. FI7] <sup>3</sup>	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	Complies Does Not Not Observable Not Applicable	Requirement will be met.	
(408.2.5. FI43] <sup>1</sup>	An air and/or hydronic system balancing report is provided for HVAC systems.	Complies Does Not Not Observable Not Applicable	Requirement will be met.	
2408.2.5. FI30] <sup>1</sup>	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	Complies Does Not Not Observable	Requirement will be met.	

 1
 High Impact (Tier 1)
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 Low Impact (Tier 3)

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 1
 High Impact (Tier 1)
 2
 Medium Impact (Tier 2)
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 Low Impact (Tier 3)
 Report date: 01/10/22 Project Title: Dollar Tree Data filename: G:\23000-23999\23700-23799\23732\Project Data\Energy\Compliance\Mechanical 2015 IECC.c Page 10 of 11

![](_page_58_Picture_23.jpeg)

Project Title: Dollar Tree

Project Title: Dollar Tree

### ▲ COMcheck Software Version 4.1.5.3 **Inspection Checklist** Energy Code: 2015 IECC

Requirements: 100.0% were addressed directly in the COMcheck software Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR2] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C103.2 [PR3] <sup>1</sup>	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing quide.	Complies Does Not Not Observable Not Applicable	Requirement will be met.

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comme
C403.2.4. 5, C403.2.4. 6 [FO9] <sup>3</sup>	Snow/ice melting system sensors for future connection to controls. Freeze protection systems have automatic controls installed.	Complies Does Not Not Observable Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

Project Title: Dollar Tree

Section # & Reg.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 [ME41] <sup>3</sup>	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	Complies Does Not Not Observable	Requirement will be met.
C403.2.13 [ME71] <sup>2</sup>	Unenclosed spaces that are heated use only radiant heat.	Complies Does Not Not Observable	Exception: Requirement does not apply.
C403.2.3 [ME55] <sup>2</sup>	HVAC equipment efficiency verified.	Complies Does Not Not Observable Not Applicable	See the Mechanical Systems list for values.
C403.2.4. 7 [ME113] <sup>2</sup>	Fault detection and diagnostics installed with air-cooled unitary DX units having economizers.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C403.2.4. 7 [ME113] <sup>2</sup>	Fault detection and diagnostics installed with air-cooled unitary DX units having economizers.	Complies Does Not Not Observable	Requirement will be met.
C403.2.6. 1 [ME59] <sup>1</sup>	Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.6. 2 [ME115] <sup>3</sup>	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	Complies Does Not Not Observable Not Applicable	Exception: Requirement does not apply.
C403.2.7 [ME57] <sup>1</sup>	Exhaust air energy recovery on systems meeting Table C403.2.7(1) and C403.2.7(2).	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.2.8 [ME116] <sup>3</sup>	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C403.2.9 [ME60] <sup>2</sup>	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	□Complies □Does Not □Not Observable □Not Applicable	Exception: Requirement does not apply.
C403.2.9 [ME10] <sup>2</sup>	Ducts and plenums sealed based on static pressure and location.	□Complies □Does Not □Not Observable □Not Applicable	Requirement will be met.
C403.2.9. 1.3 [ME11] <sup>3</sup>	Ductwork operating >3 in. water column requires air leakage testing.	Complies Does Not Not Observable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Data filename: G:\23000-23999\23700-23799\23732\Project Data\Energy\Compliance\Mechanical 2015 IECC.c Page 3 of 11

Report date: 01/10/22

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.2.9.	Ductwork operating >3 in. water column requires air leakage testing.	□Complies □Does Not	Requirement will be met.
[MEII] <sup>3</sup>		□Not Observable □Not Applicable	
C403.2.9.	Ductwork operating >3 in. water column requires air leakage testing.	□Complies □Does Not	Requirement will be met.
[MEII]2		□Not Observable □Not Applicable	
C403.3 [ME62] <sup>1</sup>	Air economizers provided where required, meet the requirements for	□Complies □Does Not	Requirement will be met.
	ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	□Not Observable □Not Applicable	
C403.3 [ME62] <sup>1</sup>	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	Complies Does Not Not Observable Not Applicable	Requirement will be met.
C403.4.4. 6	Multiple zone VAV systems with DDC of individual zone boxes have static	Complies Does Not	Exception: Requirement does not apply.
[ME110] <sup>3</sup>	pressure setpoint reset controls.	□Not Observable □Not Applicable	See the Mechanical Systems list for values.
C403.4.4. 6	Multiple zone VAV systems with DDC of individual zone boxes have static	Complies Does Not	Exception: Requirement does not apply.
[ME110] <sup>3</sup>	pressure setpoint reset controls.	□Not Observable □Not Applicable	See the Mechanical Systems list for values.
C403.4.4. 6	Multiple zone VAV systems with DDC of individual zone boxes have static	Complies Does Not	Exception: Requirement does not apply.
[ME110] <sup>3</sup>	pressure setpoint reset controls.	□Not Observable □Not Applicable	See the Mechanical Systems list for values.
C408.2.2.	Air outlets and zone terminal devices have means for air balancing.	Complies Does Not	Requirement will be met.
[ME53] <sup>3</sup>		□Not Observable □Not Applicable	
C403.5, C403.5.1,	Refrigerated display cases, walk-in coolers or walk-in freezers served by	Complies Does Not	Requirement will be met.
(ME123) <sup>3</sup>	condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2	□Not Observable □Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Report date: 01/10/22 Project Title: Dollar Tree Data filename: G:\23000-23999\23700-23799\23732\Project Data\Energy\Compliance\Mechanical 2015 IECC.c Page 7 of 11 Data filename: G:\23000-23999\23700-23799\23732\Project Data\Energy\Compliance\Mechanical 2015 IECC.c Page 8 of 11

## COMMISSIONING NOTE

HVAC AND PLUMBING SYSTEMS SHALL BE TESTED TO ENSURE THE EQUIPMENT IS PROPERLY INSTALLED AND CONTROLLED, AND IN PROPER WORKING ORDER. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED INSTALLATION CERTIFICATES AND SHALL PROVIDE MANUALS FOR EQUIPMENT TO OWNER PRIOR TO PROJECT CLOSE-OUT. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR CONTRACTING WITH APPROPRIATE PARTIES TO ARRANGE FOR TESTING/COMMISSIONING OF THE HVAC AND PLUMBING SYSTEMS AND SHALL BE RESPONSIBLE FOR ENSURING ALL REQUIRED FUNCTIONAL TESTING FORMS ARE COMPLETED AND

![](_page_58_Picture_34.jpeg)

![](_page_58_Picture_35.jpeg)

Report date: 01/10/22

![](_page_58_Picture_37.jpeg)

![](_page_58_Figure_38.jpeg)

## <u>Reach-in freezer/cooler unit</u>

![](_page_59_Figure_1.jpeg)

by description
mark date revisions
FOR INFORMATION ONLY
project REFRIGERATION SPECIFICATIONS drawing REACH-IN UNITS DETAILS AND SPECIFICATIONS
DS1

NSF LABEL (NSF)N.S.F. LISTED (STD #7) N.S.F. GASKET @ ALL PANEL JOINTS 12'-6" O.D. 3'-6" COOLER 9'-0" FREEZER CONDENSING & COIL UNIT ABOVE & COIL UNIT ABOVE 0 16 -\_\_\_\_\_\_ S \_\_\_\_\_ <u>COOLER</u> <u>FREEZER</u> 1/8" 0 3'-2" RAMP – SEE DETAIL THIS SHEET  $\sim$ •• 3'-6" 3'-0" 3'-0" 3'-0" <u>Plan view</u>

> Allow 2 feet clearance above refrig. unit to remove top panel and to allow service access.

![](_page_60_Figure_2.jpeg)

![](_page_60_Figure_3.jpeg)

![](_page_60_Figure_4.jpeg)

![](_page_60_Figure_5.jpeg)

NOTE: Packaged refrigeration systems need proper ventilation to operate correctly. A minimum of 1,000 cfm per compressor horsepower of make up air and exhaust air is required for proper cooling. Failing to provide adequate ventilation can cause premature compressor failure and may void compressor warranty. Contact manufacturer for additional details.

![](_page_60_Figure_7.jpeg)

### SPECIFICATIONS Indoor freezer (with floor)

Vinyl NSF gasket (1/16" joint thickness), Cam-lock layout SN1

## SPECIAL INSTRUCTIONS Standard crating

WALL PANELS

Construction: 4" urethane Exterior Finish: Stucco galvalume

Interior Finish: Stucco galvalume

Ceiling connections: Camlock Floor connections: Camlock

CEILING PANELS

Construction: 4" high density urethane Exterior Finish: Metal

Interior Finish: Stucco galvalume

Ceiling Caps: Factory mounted Live Load: 10 psf

FLOOR PANELS

Model: Hand—Truck Floor panels model #HTFN (NSF)

Construction: 3 1/2" high density urethane w/ .063 aluminum diamond tread (low profile) @ interior

- over 1/2"plywood
- w/ Metal @ exterior

DOORS

[A]: 36" x 75 1/4" flush model G3 self-closing freezer door \*\*\* ELECTRICAL COMPONENTS PRE-WIRED \*\*\*

- Frame: 4" high density urethane, 3-sided
  - w/ Stucco galvalume both sides
  - w/ 24 ga. stainless steel 430 (magnetic) liners
  - w/ 4-sided heat cable in frame [FL-4-116W]
- (24'-11 1/2" x 5 ohms/ft (125 total ohms) @ 4.7 watts/ft + Pepi 120V, 1A) Leaf: 4" thick, 3-side lap, raised 1/4"
  - w/ Stucco galvalume both sides
- w/ Magnetic gasket (2) Component Hardware #W59 spring assisted adjustable hinge
- (1) Kason #1229 handle only
- (1) Kason #1094 hydraulic door closer

(1) Weiss XWA11V temperature monitor w/ external buzzer

- (2) Terminal J-box @ int.
- (1) Kason 1832 heated air vent (23W, 120V, .2A) (1) .080 smooth aluminum threshold for interior ramp

REFRIGERATION

(1) ea. Freezer — Indoor R404a self—contained system

- 7059 BTU/H @ 10°F TD with 14.7 hr runtime @ -10°F inside/95°F outside room
- 95¶ @ cond. unit, 1289ft altitude (1) Climate Control R404a air cooled self contained unit #PTN052L6BE
  - 208–230V/1ø/60Hz/3HP Pro3 compressor MCA=24, MOPD =30

  - 42W x 52D x 19H x 280lbs.
  - Opening: 25W x 38.5D

<u>Notes</u> Meets 2009 Federal Energy Independence and Security Act Requirements.

### STANDARD NOTES

1. To prevent condensation, a minimum 2" from the walk—in exterior surface is required. High humidity conditions may require force ventilation in addition to clearance.

- 2. Installation site floor must be true and level within 3/16" per 10' or additional costs may be incurred.
- 3. Imperial Brown's sliding and vertical lift doors shall not be considered means of egress. Check code egress requirements for your application.

<u>ELECTRICAL</u> Field electrician to verify maximum acceptable load for light switches.If load is too high, then relay type controls should be used.

After wiring devices, ALL conduits must be sealed to stop moisture transfer through electrical raceways. Failure to seal device per NEC codes WILL VOID WARRANTY.

<u>revisions</u>

01 05/22/2019 process order

![](_page_60_Figure_56.jpeg)

![](_page_60_Picture_58.jpeg)

![](_page_61_Figure_0.jpeg)

FEATURES	COMPONENTS	DIMMING
<ul> <li>120° wide beam angle</li> <li>High efficacy</li> <li>Frosted cover: 100lm/W</li> <li>Clear cover: 115lm/W</li> <li>P65</li> <li>High lumen maintenance: 80%</li> <li>@36,000 hours</li> <li>Aluminum main part, good for heat dissipation</li> <li>Flexible installation: suspended or surface mounted</li> </ul>	<ul> <li>LEDs: SMD2835(LM80)</li> <li>6063 Aluminum heat sink, housing and side caps</li> <li>Polycarbonate cover (Frosted/Clear)</li> <li>Flaming rating of polycarbonate cover: UL94-V2</li> <li>Internal isolated driver</li> </ul>	Protocol of PWM     0-10V dimming     (optional)

	LD-TL-B024-RX/ RD-XXY	LD-TL-B030-RX/ RD-XXY	LD-TL-B040-RX/ RD-XXY	LD-TL-B050-RX/ RD-XXY	LD-TL-B060-R RD-XXY	
d/Clear	2400/2760	3000/3450	4000/4600	5000/5750	6000/6900	
ed/Clear	100/115	100/115	100/115	100/115	100/115	
e CCT		2800-350	DOK/3800-4500K/55	00-6500K		
e (L70)			>50,000 hours			
ex (CRI)			>80			
		1200				
tion	24W	30W	40W	50 W	60W	
	>0.9					
V)	120/277V/100-240VAC					
ı(mm)	600x96x83mm (2ft)/1200x96x83mm (4ft)					
CS	1.2	1.2	2.1	2.1	2.1	
n(mm)	712×4	27×267		1312×427×267		
			6pcs/CTN			
rton	3	8 14				
	<u> </u>	Aluminum + Polycarbonate				
ature		-20°C to 40°C				
	10% - 90% RH, non condensing					
		1) Suspended 2)Surface mounted				

![](_page_61_Figure_5.jpeg)

<u>GENERAL NOTES:</u>

1. THE PROPOSED FREEZER/COOLER UNIT SIZE

IS INDICATED ON FLOOR PLAN.

3. INSTALLATION OF THESE NSF, ETL & UL

LISTED UNITS SHALL COMPLY WITH ALL

STATE AND LOCAL CODES PER APPROVED

mark date by description revisions
FOR INFORMATION ONLY
project REFR/GERATION SPEC/F/CATIONS drawing WALK-IN SPECIFICATIONS
DS3

FOR REFERENCE ONLY

C II. F	<ul> <li>Confirm CRS Survey Form is fully completed and EMAILED to CRS National Account Team at <u>Surveys</u></li> <li>EMS Commissioning dates cannot be scheduled until fully completed EMS Installation Surveys have be</li> <li>Schedule remote EMS commissioning <u>24 hours prior</u> to the requested commissioning date.</li> </ul>
··· <u>-</u>	<u>Power to all</u> a. Provide all labor and installation material, as required, for a complete and operational EMS for this DT stor
() () () () () () () () () () () () () (	c. The EMS equipment will be supplied by CRS and installed by an approved DT contractor. d. Review the entire set of plans, perform a job site survey and inventory the CRS equipment to ensure the p e. If any material is missing or additional equipment is required, immediately call CRS at (888) 211-6789 to re f. Approved Contractor shall verify number of controlled lighting circuits against the design, report discrepance g. Coordinate the EMS installation with the Mechanical Contractor to avoid any interference that may delay p
r j ŀ r	<ul> <li>All EMS cables are to be installed per National and Local Codes. It is the Electrical Contractor's responsible.</li> <li>EMT connectors and bushings are to be installed at the top of every conduit sleeve and threaded connectors.</li> <li>All cables are to be clearly and distinctly labeled within one foot of both ends.</li> <li>Furnish and install all required conduit, boxes, wire ways, fittings, straps, hangers and wiring for a complete m.Furnish and install a dedicated 120 VAC circuit with breaker lock for the EMS Panel.</li> </ul>
i r (	i. Confirm wiring is completed as per this documentation package before applying power. Improper wiring wind the EMS Panel adjacent to the electrical panels. b. Install an Ethernet cable run from the eSCi RJ-45 jack located in the EMS Panel to the network switch spe
k c r s t i i	<ul> <li>Call CRS at 888.211.6789 to verify Network Connectivity before proceeding with the EMS installation.</li> <li>Install and terminate the CRS BACnet communication trunk, in a daisy chain fashion, from the EMS Panel</li> <li>When applicable, mount the Auxiliary I/O Panel adjacent to the EMS Panel and ensure both panels are constant.</li> <li>When applicable, ensure the Auxiliary I/O panel is connected in series with the other BACnet devices on the Mount and terminate the Outdoor Sensor Assembly (OSA) on the HVAC unit that resides closest to the EMS.</li> <li>Mounted on a 1" rigid riser with an 'LB' secured to the back of the OSA (Refer to OTS/OLS Detail as shown in Mounted 3 feet above the HVAC unit</li> </ul>
i i V	<ul> <li>Mounted facing north, away from the combustion heat blower and condenser fan</li> <li>V. Weather-proofed</li> <li>V. Mounted with the white PVC sensor pointed downward</li> </ul>
	vi.Positioned to allow the Outdoor Light Sensor exposure to full ambient daylight but is not shadowed or expo J. When applicable, mount and terminate the CO2 Sensor as per the location specified by the DT drawings a v. Mount and terminate the Override Button assembly as per the location specified by the DT drawings and t w. Do not adjust the DIP Switches for the EMS Override Buttons. They are factory preset for: . MSTP Address = 35 i. Baud Rate = 19200 ii. Notwork Termination - Off
i i	<ul> <li>When applicable, mount and terminate the Indoor Ambient Light Sensor(s) as per the location specified by</li> <li>Install and wire load sides of lighting contactors for designated lighting loads and zones as required by DT</li> <li>Employee Zone = 40% of Sales floor and 100% of all Stockroom areas</li> <li>Customer Zone = Remaining 60% of Sales Floor</li> <li>Exterior Zone = Building Exterior and Parking lights</li> </ul>
1 2 2 2	v. When applicable, Daylight Zone = First two (2) rows of lights along the store-front windows. z. Furnish and install a 3-pole, 20-amp breaker/disconnect at the Main Electrical Distribution Panel (MDP) for aa.When applicable, furnish and install a 3-pole, 20-amp breaker/disconnect at each Electrical Distribution P b.Terminate wiring as specified in this documentation package.
i i 0 0 0	. Label Main Electrical Distribution Panel breaker/disconnect: DO NOT TURN OFF / PHASE FAILURE & El i. When applicable, label auxiliary Electrical Distribution Panel breaker/disconnect: DO NOT TURN OFF / P ii. Confirm wiring is completed as per this documentation package before applying power. Improper wiring w cc. Install and terminate the CRS Modbus communication trunk from the eSCi Controller to the Energy Meter dd.Permanently mount and terminate the Electrical Meter in close proximity to the main utility power feed. ee.Permanently mount the 3 Current Sensors, one each, around the 3 phases of the main utility feed. If Terminate the 3 Current Sensors to the Energy Meter.
	gg.Using the OEM Instructions, configure the EMS Energy Meter for: . Proper Current Transformer (CT) Ratio - Current Sensor Primary (Ct) = 400 - 1500 Amp i. Nominal Line to Line Voltage = 480 Vac ii. Baud Rate = 19200 v. Address = 1 v. Voltage Input Mode = True 3 Phase
Note: ł i j i	vi.CT Auto Rotation = Auto Rotate The EMS is designed to monitor a single primary 3 phase power feed. Contact CRS for support when atten h.Provide a technician, on site, for an approximate 2-hour remote telephone checkout with CRS. i. Coordinate with the Mechanical Contractor to verify HVAC control during the CRS remote telephone chec j. Prior to scheduling the Remote Commissioning Checkout, the Electrical Contractor will: . Confirm CRS Survey Form is completed and EMAILED to CRS National Account Team at <u>Surveys@Cylo</u> i. Confirm the Mechanical Contractor will be present during the CRS Remote Commissioning Checkout.
III. <u>N</u>	MECHANICAL RESPONSIBILITIES:
	a. Provide labor and installation material, as required, for a complete and operational EMS for this DT store I b. Verify number and type of HVAC units against the design, report discrepancies, which cannot be resolved c. Perform all work in accordance with all National, State and Local Codes for this project. d. Mount and terminate the SimpleSTAT module(s) as per the location(s) specified by the DT drawings and t
i i f i	. Terminate C, R, G, Y1, Y2, W1 and W2 on the HVAC unit for control of fan, cooling and heating. i. Terminate the communications cables to the SimpleSTAT(s) as shown in this documentation package. f. Set address on the SimpleSTAT module, as shown in the SimpleSTAT installation instructions. When cor . Default Cooling Setpoint = 72.0 $^{\circ}$ F i. Default Heating Setpoint = 68.0 $^{\circ}$ F
i i i i	<ul> <li>In close proximity to the zone return air grille and away from supply air drafts.</li> <li>Install and secure the Remote Temperature Sensor wire to the Thermostat Controller.</li> <li>Mount the Supply Duct Temperature sensor of each HVAC unit.</li> <li>The remote Supply Duct Temperature Sensor should be mounted in the main Supply Air Duct on the interior</li> <li>Utilizing 18/2 wire, terminate the supply duct temperature sensor wire sensor wire to the Thermostat Controller.</li> </ul>
i j ŀ	<ul> <li>Provide Electrical Contractor with roof plan layout, showing location of HVAC Units on the roof.</li> <li>Provide a technician, on site, for an approximate 2-hour remote telephone checkout with CRS.</li> <li>Coordinate with the Electrical Contractor to verify proper HVAC control during the CRS Remote Commissing CYLON RETAIL SOLUTIONS RESPONSIBILITIES:</li> </ul>
; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	<ul> <li>a. The following services will be supplied by CRS:</li> <li>Shipping of all contracted EMS components for the job.</li> <li>i. Programming and downloading of CRS equipment and software.</li> <li>ii. Provide telephone technical support at (888) 211-6789.</li> <li>v. Remote system checkout with installing contractor</li> <li>b. Verification of proper operation of the following items by exercising the controlled load:</li> </ul>
	<ul> <li>Timed operation of all applicable EMS lighting loads - Interior and Exterior.</li> <li>Outside light level control of all applicable EMS lighting loads - Interior and Exterior.</li> <li>Operation of HVAC heating stages, as indoor environment allows.</li> <li>V. Operation of HVAC cooling stages, as indoor and outdoor environments allow.</li> <li>V. Verification of HVAC unit sensor readings - space and supply temperatures.</li> </ul>
(	EMS.

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<u>Óylon.com</u> or FAXED to (855) 224-0879, <u>24 Hours Prior to scheduling the EMS</u> Commissioning. received and approved by the CRS National Deployment Team.

Sequipment and devices must be OFF while terminations are made. ocation.

r equipment has been ordered and received for a complete and operational CRS EMS.

est an order. s, which cannot be resolved in the field, to the CRS National Account Support Team at (888) 211-6789 and wait for resolution instructions. ress during construction.

y to determine if National and Local Codes permit Class 2 cables to be installed exposed within the building structure or if a full conduit system is required. To protect EMS cables from abrasions.

nd operational EMS as required.

cause damage to equipment.

ed by the DT networking team.

each of the Thermostat Controls and all other BACnet devices. (see this documentation package for requirements) ected to the same Earth Ground.

BACnet communications trunk. Panel. When installing, make sure OSA enclosure is: n EM-4)

ed to any artificial illumination this documentation package. documentation package.

e DT drawings and the Special Instructions in this documentation package. d this documentation package

e Phase Loss Power Monitor and Energy Meter. I for each additional Phase Loss Power Monitor

## IGY METER SE FAILURE

ause damage to equipment. Refer to OEM instructions and this documentation package for requirements)

elationships.

ng to monitor multiple power feeds

om or FAXED to (855) 224-0879, 24 Hours Prior to scheduling the EMS Commissioning.

S equipment and devices must be OFF while terminations are made.

ion the field, to the CRS National Account Support Team at (888) 211-6789 and wait for resolution instructions.

documentation package.

inications to the EMS is in a failed state, the SimpleSTAT will operate 24/7 as a stand-alone STAT using the following temperature setpoints:

section of this documentation package, mount and terminate the Remote Space Temperature Sensor(s) as per the location(s) specified by the DT drawings.

## side of the HVAC unit's building penetration. this documentation package.

g Checkout.

easons, CRS will verify the proper operation of the EMS control devices (e.g. contactors, discrete I/O) leading up to the unit, in order to fully verify the operations of the

![](_page_62_Figure_31.jpeg)

					REVISION:
KEV	SIZE	TVPF	MEG	MEG PART #	DATE:
				IVIT G. I ATTI $\pi$	
(10)	18/2	SHIELDED PLENUM	WINDY CITY	# 002320-S	
					<b>REVISION:</b>
(12)	18/4	SHIELDED	WINDY CITY	# 002340-S	DATE:
		PLENUM			
(14)	18/8	NON SHIELDED	WINDY CITY	# 002392-S	
		PLENUM			REVISION:
(16)	18/10	NON SHIELDED	WINDY CITY	# 002393-S	DATE:
		PLENUM			
10	01/0	CAT5 E	WINDY CITY	# 5556140-S	
	24/ð	PLENUM			
					DRAWN:WPC

![](_page_62_Figure_33.jpeg)

![](_page_63_Figure_0.jpeg)

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![](_page_63_Figure_2.jpeg)

![](_page_64_Figure_0.jpeg)

![](_page_64_Figure_1.jpeg)

![](_page_64_Figure_3.jpeg)

![](_page_65_Figure_0.jpeg)

CABLING: 18/2 (Electrical Install)

· Weather-proofed

downward

HVAC Unit.

MOUNTING LOCATION: On the north/northeast side of

INSTALLATION: When installing make sure enclosure is:

Mounted with the white PVC sensor pointed

Positioned to allow the Outdoor Light Sensor

exposure to full ambient daylight but is not

Not mounted on any removable access door or

shadowed or exposed to any artificial illumination.

FROM: eSCi Terminals

the building.

![](_page_65_Figure_1.jpeg)

FOR STORES LOCATED IN CANADA OR ALASKA, MOUNT ON NORTHEAST SIDE OF BUILDING

OTS/OLS WIRING DETAIL

SCALE: None

36" A.F.F.

CONTROL RTU

![](_page_65_Figure_2.jpeg)

![](_page_65_Figure_3.jpeg)

24 VAC + 24 VAC COM

![](_page_65_Figure_4.jpeg)

![](_page_65_Figure_5.jpeg)

![](_page_65_Figure_6.jpeg)

![](_page_65_Figure_7.jpeg)

![](_page_65_Figure_8.jpeg)

![](_page_65_Figure_9.jpeg)

![](_page_65_Figure_10.jpeg)

![](_page_65_Picture_11.jpeg)

![](_page_65_Picture_12.jpeg)

REVISION: 1	
DATE: 06/05/20	E
LOOSE DT OPTION	N
REVISION:	
DATE:	E
REVISION:	
DATE:	E
REVISION:	
DATE:	E
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PART #:94-402	0
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	_ I \
	11

![](_page_65_Figure_14.jpeg)

#### **STAFF REPORT**

To: Village of Pewaukee Plan Commission	By: Mary Censky Date Prepared: September 8, 2022		
<b>General Information:</b>			
Agenda Item: 5.d.			
Applicant:	Ben Mohns		
Property Owner:	Ben and Nancy Mohns		
Requested Action:	Approval of Site and Architectural Plan Amendment to add an outdoor dumpster location w/ related screening structure, and to add elevated decks to the apartments with elevated north, west, and east facing patio doors.		
Existing Zoning:	R-M Multi-Family Residential		
Surrounding Zoning/Land Use:	North: R-M Multi-Family Residential South: City of Pewaukee East: P-1 Park and Recreation West: Hwy. 16		
Existing Master Plan Classification:	Multi-Family Residential		
Location:	357 Morris Street		
Lot Size:	.9024 +/- acres		

#### **Discussion:**

The applicant proposes to add nine elevated decks to serve the nine (out of 10 total) apartments in this building with elevated patio doors. Each 13.5 ft. wide x 5 ft. deep (i.e., 67.5 sq. ft.) deck will supported by posts-to-ground and the entire system will be constructed of treated wood materials. These decks are proposed to be painted white/tan to match other existing painted features of this building such as the trim and the east/west gable ends. A 13.5 ft. x 5 ft. patio will be installed at grade for the  $10^{\text{th}}$  unit where the patio doors open at grade on the west side of the building.

The applicant also proposes to place an outdoor dumpster at this site with a related 10 ft. wide x 8 ft. deep x 6 ft. tall screening structure constructed of treated wood materials and painted brown to blend in with the surroundings. A thorough landscaping screening plan is also proposed to be installed around the exterior of this proposed new enclosure. This structure does include operable doors. The combined

new impervious surface to serve this dumpster location and access thereto is approximately 175 sq. ft. in area. The maximum combined area of the site that can be covered in buildings, structures and paved area in this district is 30%.

The required minimum building and structure setback for this district (including any attached building elements such as the decks and any accessory structures like the proposed new dumpster screening corral) is 35 feet to the ultimate right-of-way line of any public street, road or highway. The required minimum offset for the principal building to the side lot line is 10 feet and to the rear lot line it is 25 feet. Storage related accessory structures (such as the dumpster corral) must maintain a minimum 10-foot offset from side or rear lot lines.

It does not appear that the decks proposed on the south building elevation will meet the required 35-foot setback from the south property line. Also, it does not appear that the proposed dumpster screening structure will be able to meet *both* the required 35-foot setback from the west property line, and the required 10 foot offset from the east property line.

#### **Recommendation:**

The Planner feels that there is merit in the requests presented by the applicant, such as getting the garbage out of the below-grade parking area of this building as a sanitary and odor matter, as well as improving the fire safety access to tenants of the apartments with above grade floor elevations, for instance. The following conditions are recommended to be considered for attachment to any approval the Commission may be inclined toward granting at this time:

1) Applicant to complete the requisite survey of the property and to depict the proposed new modifications/improvements thereon. In the event this survey detail reveals that the greenspace will be reduced to below 30%, or if any of the proposed new structures will not comply with the required setbacks/offsets, then the applicant must secure a variance for each digression from the Board of Zoning Appeals before being permitted to proceed with that element of the project; and 2) Applicant to secure all required building permits and grading/paving plan approvals from the inspections and/or public works/engineering departments prior to the start of any work in support of this project.

August 16, 2022

Village of Pewaukee Planning Commission

RE: 357 Morris Street, Pewaukee, WI 53072

**To Plan Commission Members** 

This submittal is for the addition of decks to the above listed project as well as a dumpster corral. After talking with Chief Bierce in February of this year he concurred the decks would be advantageous for emergency egress. While at the same time providing an enhancement for the tenants occupying the space.

The decks will be constructed out of pressure treated lumber and then painted white after the osmose treatment evaporates (within 9 months or so) as shown on page T1.0 the south side of the building is 40.75' from the fence at the shortest point which would leave 35.75' to the fence after construction.

I am seeing approval on the 3 sets of decks that are certain to fall within the set back requirements and approval of the other 2 sets of decks pending the survey for staff review or if not in compliance with the setbacks an approval pending acceptance or approval from the zoning appeals board.

The approval request for the dumpster enclosure and placement are shown on T1. The location of the dumpster was originally approved located in the interior lower level parking area. Due to summer heat and smells we are asking to relocate this. While the proposed location is heavily screened by natural foliage it is mainly deciduous trees and we are proposing coniferous screening. Please see additional details on page A2.1

Thank you for your consideration.

Ben Mohns

## **MORRIS STREET APARTMENTS - RENOVATION**

## **357 MORRIS STREET PEWAUKEE, WISCONSIN**

**OWNER: BEN AND NANCY MOHNS** 2285 HAMMOCK HILL LANE **BROOKFIELD, WI 53045** 

![](_page_69_Picture_3.jpeg)

![](_page_69_Figure_4.jpeg)

![](_page_69_Figure_5.jpeg)

#### DEVELOPMENT INFOR

#### PARKING:

2 SPACES PER UNIT = 20 REQUIRED PARKING REQUIRED: XTERIOR SPACES PARKING PROVIDED:

OTAL SPACES

#### TRASH:

TRASH STORAGE PROPOSED IN UPPER LEVEL PARKING

#### SHEET INDEX:

TI.O SITE PLAN /TITLE PAGE SI EXISTING SURVEY FROM FIL AZ ELEVATIONS A 2.1 ELEVATIONS & DETAILS

BUILDING: AREA LOWER LEVEL (PARKING): 7027 S.F. FIRST LEVEL: 7027 S.F. SECOND LEVEL: 7027 S.F. TOTAL AREA: 21081 S.F. UNITS FIRST LEVEL: 5 UNITS (2 BR) SECOND LEVEL: 5 UNITS (2 BR) 10 UNITS (2 BR)	W22377 GREEN RD., SUITTE B JKESHA, WI 53186 NE: 262-522-6585 FAX: 262-522-658 NE: 262-522-6585 FAX: 262-522-658 NE: 242-522-6585 FAX: 262-522-658 NE: 41-243-98 NE: 41-243-988 ME: 41-243-988 ME: 41-243-988
E	MOHNS       N30         WAL       WAL         BUILDING ON QUALITY SINCE 1978       N40         BUILDING ON QUALITY SINCE 1978       N40         * GENERAL CONTRACTORS       100         * SPACE PLANNING       100         * CONSTRUCTION MANAGERS       100
NR & GUITTER TO REMARK	MORRIS STREET APARTMENTS RENOVATIONS 357 MORRIS STREET PEWAUKEE, WI 53072
17 STALLS	DATE:02/21/22
1	DRAWN BY: ADV
· · · · · · · · · · · · · · · · · · ·	APPROVED BY: BCM JOB NUMBER: REV:

![](_page_70_Figure_0.jpeg)

STATE OF WISCONSIN COUNTY OF WAUKESHA I hereby certify that I have surveyed the above described property and the above map is a true representation and shows the size and location of the property, its exterior boundaries, the location of all visible structures and dimensions of all principle buildings thereon, boundary fences, apparent easements, roadways and visible encroachments, if any. This survey is made for the present owners of the property, and also those who purchase, mortgage or guarantee the title thereof within one (1) year from this date thereof. \_, this <u>1374</u> dzy of <u>NOVEMBER</u> 1987 REGISTERED LAND SURVEYOR. DATED AT PEWAUKEE Recertified 5TORM MH. \* 33-14 RIM EL.= 869.54 18" INV. N. \$ 9. = 862.05 8" INV. W. = 863.73 All that part of the Northeast 1/4 (NE 1/4) of Section 16, Town 7 North, Range 19 East, Town of Pewaukee, Waukeaha County, Wisconsin, bounded and described as follow: Commencing at the Southwest corner of Valley Porge, a subdivision of part of said Northeast 1/4 (NE 1/4) of Section 16, thence North 66°00'56" East along the South 11m of Outlot One, Block three of Valley Porge, 92.70 feet to the place of beginning, said point lying on the East line of U.S.H. "16"; thence North 86°00'56" East along the South line of Outlot One, 36.15 feet; thence South 3'50'104" East along the Messel line of Lot 8, Block 3 of Valley Porge, 51.72 feet; thence North 86°00'56" East along the South 11m of Lot 8, 239.11 feet to a point on the West line of Morris Street; Jhence South 3'30'17" East along the Messel line of Morris Street 143-12 feet to a point on the North line of C.T.H. "JJ"; thence South 88°10'18" West along the North Line of C.T.H. "JJ"; thence South 88°10'18" Hest along the North Line of Lot 7, 23'26" West along the East line of U.S.H. "16"; 187.27 feet to the place of beginning; containing 0.9016 acres of land. SITE BENCHMARK SANITARY MH. # IGNEIB -RIM ELEV.=100.00 (ASSUMED) -RIM ELEV.=869.34 (CITY DATUM) STORM MH . # 33-15 RIM EL. = 875.74 -CONVERSION FACTOR FOR ALL ELEVATION = 769.34 VILLAGE OF PEWAUKEE AMERICAN SURVEYING COMPANY, INC. REVISIONS . 11931 Hwy, "K" NKSVILLE, WISCONISIN L.NO. (414) 835-4774 1285 SUNNYRIDGE PEWAUKEE, WISCONSIN TEL. NO. (414) 691-4335 BUILDING STAKEOUT & TOPO Prepared for; DONALD E. FORBES and the BM/JTW PLB 11/13/87 DATE Sheet S

![](_page_71_Figure_0.jpeg)

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	MOHNS N30 W22377 GREEN RD., SUITE B WAUKESHA, WI 53186 PHONE: 262-522-6585 FAX: 262-522-6584	BUILDING ON QUALITY SINCE 1978 IN COLLABORATION WITH: + GENERAL CONTRACTORS LONG DRAFTING & DESIGN SERVICES + SPACE PLANNING AP39 N. 55TH STREET + SPACE PLANNING PHONE: 414-243-998 + CONSTRUCTION MANAGERS EMALE: LONGDRAFTING@YAHOO.COM
	MORRIS STREET APARTMENTS RENOVATIONS	357 MORRIS STREET PEWAUKEE, WI 53072
	DATE: 02 EXTERIOR ELEVATIO DRAWN BY: APPROVED BY: JOB NUMBER: REV: SHEET NUMBER:	/21/22 NS ADL BCM 3463 2.0
:		




LAND INFORMATION SYSTEMS DIVISION

## Mohns Site

