AGENDA
REGULAR PLANNING COMMISSION MEETING

OAK PARK, MICHIGAN
MAY 4, 2026
6:00 PM

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1. CALL TO ORDER

2. ROLL CALL

3. APPROVAL OF AGENDA

4. APPROVAL OF MINUTES

A. Planning Commission Meeting Minutes 4-6-2026

5. COMMUNICATIONS/CORRESPONDENCE

A. Administrative Review, Northend Auto Clinic, 8510 Northend Ave.

B. Site Plan Approval Amendment and Extension, Toras Chaim Synagogue, 14631, 14641, & 14651 Balfour Ave.

6. PUBLIC HEARINGS

A. Public Hearing to consider a proposed amendment to the City of Oak Park Zoning Ordinance to add regulations regarding Electric Vehicle (EV) Charging Stations. The proposed amendment will also include revisions to Article 4, Division 4: Signs.

B. Planning Commission action regarding a proposed zoning amendment to the City of Oak Park Zoning Ordinance to add regulations regarding Electric Vehicle (EV) Charging Stations. The proposed amendment also includes revisions to Article 4, Division 4: Signs.

7. MATTERS FOR CONSIDERATION

A. OLD BUSINESS

1. Capital Improvement Plan (CIP) 2026-2027 Annual Budget

B. NEW BUSINESS

1. Site Plan Review, iONNA - Electric Vehicle Charging Station, 21500 Greenfield Rd.

8. PLANNING COMMISSION MATTERS FOR DISCUSSION - (FROM MEMBERS ONLY)

9. PUBLIC COMMENT ON ITEMS NOT SCHEDULED FOR PUBLIC HEARING

10. ADJOURNMENT

CITY OF OAK PARK PLANNING COMMISSION
REGULAR MEETING, MONDAY, APRIL 6, 2026

MINUTES

The meeting was called to order at 6:00 p.m. in the City Council Chambers, 14000 Oak Park Blvd, Oak Park, MI 48237, by Chairperson Torgow and roll call was made.

PRESENT:	Chairperson Torgow Vice Chairperson Brown Commissioner Tungate
ABSENT:	Commissioner Eizelman Commissioner Seligson Commissioner Tkatch Commissioner McClellan Commissioner Whitehead Commissioner Walters-Gill
	QUORUM WAS NOT MET
OTHERS PRESENT:	Economic Development & Planning Specialist, Salam Habhab Deputy City Clerk, Jo Lynn Williams-Elliott Director of Municipal Services, Kim Marrone

ONLY NON- VOTING MATTERS WERE DISCUSSED

5. COMMUNICATIONS/CORRESPONDENCE:

A. Administrative Review, Detroit Diamond District, 21850 Greenfield Rd. - Received into the record

This is an Administrative Approval for Detroit Diamond District at 21850 Greenfield Rd, Oak Park, MI 48237, Parcel ID # 52-25-31-155-001. The project includes exterior facade enhancement, site improvements, and ADA accessibility upgrades. The building is intended to be used for a jewelry store, optical retail and lab, and office use.

The site plan shows a total of 48 new 24-inch green velvet boxwoods. The landscape maintenance summary states that the existing irrigation system will be used to water and maintain these plants as needed.

After reviewing the information provided, the Economic Development and Planning Department has administratively approved your request and the related Site Plan.

The approval is conditioned on the following:

1. The site plan does not depict a waste receptacle/enclosure. If a dumpster is needed, the applicant will be required to provide a dumpster with the required enclosure in accordance with Article 1, Division 1, Section 333 of the Zoning Ordinance. A detailed plan for the dumpster enclosure showing the location, orientation, design, building material, and any relevant details shall be submitted as part of the building permit application. It is the applicant's responsibility to contact the waste management company before finalizing the dumpster's location and orientation to ensure there are no accessibility issues.
2. All landscaped areas and plant materials shall be kept free from refuse and debris. Plant materials, including lawns, shall be maintained in a healthy growing condition, neat and orderly in appearance in accordance with the approved site plan/landscape plan. If any plant material dies or becomes diseased, it shall be replaced with 30 days' written notice from the City or within an extended time period as specified in said notice.
3. Any modifications to the access drive on Greenfield Rd. shall require obtaining permits/approval from the Road Commission for Oakland County and the City of Oak Park Engineering Department.
4. All proposed rooftop or ground-level equipment must be screened as required by the zoning ordinance.
5. Any existing or proposed exterior lighting should be shielded and downward casting to eliminate the possibility of nuisance to the adjoining properties as required by the zoning ordinance.
6. No signs are approved as part of the Administrative Approval. A separate permit must be requested for the inclusion of any signs at this site.
7. This review is from the Economic Development and Planning Department only. The Site Plan shall comply with the requirements of the City of Oak Park Engineering, Building, and Fire Departments, as applicable.

This approval will expire on September 30, 2027, unless actual physical construction of a substantial nature of the improvements included in the approved site plan has been commenced and proceeded meaningfully toward completion during this period. If you require an extension of time, you may do so in writing before the expiration date, subject to the regulations of Article 5 Division 1 of the zoning ordinance.

B. Administrative Review, Ever and Ever Wedding Studio, 23120 & 23130 Coolidge Hwy. Received into the record.

This is an Administrative Approval for Ever & Ever Wedding Studio at 23120 to 23130 Coolidge Hwy., Oak Park, MI 48237, Parcel ID # 52-25-29-352-001. The existing business at 23120 Coolidge, which offers wedding retail, planning services, and same-day nuptial services, including occasional brief wedding ceremonies, will expand into 23130 Coolidge to include an event facility. As outlined in the application and previous correspondence with the applicant, the activities are

limited to community or private parties, gatherings or charity events, weddings, wedding receptions, showers, and business function, with a maximum occupancy of 49 people, including guests and employees. Special event hours of operation are limited to between 9 am to 11 pm by appointment only.

After reviewing the information that you provided, the Economic Development and Planning Department has administratively approved your request and the related Site Plan, as described below.

The approval is conditioned on the following:

1. The event space shall be limited to hosting activities such as community or private parties, gatherings or charity events, weddings, wedding receptions, showers, and business functions. Other similar events may also be included at the discretion of the City.
2. Special event hours of operation shall be limited to between 9 am and 11 pm.
3. The operation of the event space shall comply with all applicable provisions of the Noise Ordinance of Chapter 38, Article II of the City's Code of Ordinances and shall not cause a noise disturbance to any surrounding businesses or residential areas.
4. Caterers who may offer food and drink services in the event facility should operate in compliance with the remote services rules and regulations of the Oakland County Health Department.
5. The applicant must adhere to the Michigan Liquor Control Commission (MLCC) rules and regulations for offering alcoholic liquor in the event facility and obtain any necessary permits from the local and state levels.
6. The applicant shall notify the Municipal Services Department of any changes to the services provided and ensure compliance with any local, county, state, or federal laws and regulations as mentioned above.
7. The applicant is responsible for providing documentation and information to demonstrate that the requirements for any state licenses or registration have been met, and copies of such documentation shall be provided and kept on file with the Municipal Services Department.
8. All proposed roof-top or ground-level equipment must be screened as required by the zoning ordinance.
9. Any existing or proposed exterior lighting should be shielded and downward casting to eliminate the possibility of nuisance to the adjoining properties.
10. No signs are approved as part of the Administrative Approval review. A separate permit must be requested for the inclusion of any signs at this site.
11. This review is from the Economic Development and Planning Department only. The Site Plan shall comply with City of Oak Park Engineering, Building and Fire Departments requirements, as applicable.

This approval will expire on September 30, 2027, unless actual physical construction of a substantial nature of the improvements included in the approved site plan has been commenced and proceeded meaningfully toward completion during this period. If you require an extension of

time, you may do so in writing before the expiration date, subject to the regulations of Article 5 Division 1 of the zoning ordinance.

7. PUBLIC HEARING

A. Public Hearing to consider a proposed amendment to the City of Oak Park Zoning Ordinance to add regulations regarding Electric Vehicle (EV) Charging Stations. The proposed amendment will also include revisions to Article 4, Division 4: Signs.

The public hearing was opened at 6:16 and rescheduled to May 4th.

8. MATTTERS FOR CONSIDERATION

A. OLD BUSINESS

1. Master Plan Update - Community Engagement: Habhab shared that the first open house was held March 23rd and that the master plan boards for resident input will be displayed until April 10th in City Hall and then moved to be displayed April 13th through April 26th in the library. Concurrently, while being available on the web for online engagement.

B. NEW BUSINESS

2. Capital Improvement Plan (CIP) 2026-2027 Annual Budget- Commissioner Tungate highlighted a few items from the 6-year plan (3-year budget).

9. PLANNING COMMISSION MATTERS FOR DISCUSSION – None

10. PUBLIC COMMENT – None

11. ADJOURNMENT

There being no further business, Chairperson Torgow adjourned the meeting at 6:17 p.m.

_____

Jo Lynn Williams-Elliott, Deputy City Clerk

April 21, 2026

Moamar Nagi
8336 Suzanne
Detroit, MI 48234

RE: Northend Auto Clinic – 8510 Northend Ave.

Dear Moamar Nagi,

This letter is in regard to your request for Administrative Approval for Northend Auto Clinic, a minor auto repair shop at 8510 Northend Ave., Oak Park, MI 48237, Parcel ID # 52-25-33-152-050.
After reviewing the information that you provided, the Economic Development and Planning Department has administratively approved your request and the related Site Plan, as described below.

Site/Sketch Plan provided for Administrative Approval Review		
Title	Sheet	Date
Site Plan	-	Received 3/26/26
Waste & Refuse Management Plan	-	Received 4/16/2026

Please be advised that the approval is conditioned on the following:

1. No vehicles awaiting service shall remain on-site for more than 36 hours.
2. All repair services shall be conducted indoors. Outdoor services are not permitted.
3. Old parts such as tires, mufflers, pipes, and the like shall be kept inside an enclosure and shall not be permitted to accumulate for periods longer than one week unless stored within the building.
4. The applicant has submitted a shared-use agreement with the adjacent property at 8600 Northend to use their dumpster. Should this agreement be terminated and an on-site dumpster become necessary, the applicant will be required to provide a dumpster with the required enclosure in accordance with Article 1, Division 1, Section 333 of the Zoning Ordinance. A detailed plan for the dumpster enclosure showing the location, orientation, design, building materials, and any relevant details shall be submitted as part of the building permit application. It is the applicant's responsibility to contact the waste management company before finalizing the dumpster's location and orientation to ensure there are no accessibility issues.
5. All landscaped areas and plant materials shall be kept free from refuse and debris. Plant materials, including lawns, shall be maintained in a healthy growing condition, neat and orderly in appearance in accordance with the approved site plan/landscape plan. If any plant material dies or becomes diseased, it shall be replaced with 30 days' written notice from the City or within an extended time period as specified in said notice.

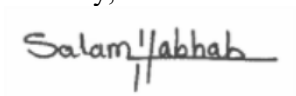
6. Any modifications to the access drive on Northend. shall require obtaining permits/approval from the City of Oak Park Engineering Department.
7. All proposed rooftop or ground-level equipment must be screened as required by the zoning ordinance.
8. Any existing or proposed exterior lighting should be shielded and downward casting to eliminate the possibility of nuisance to adjoining properties as required by the zoning ordinance.
9. No signs are approved as part of the Administrative Approval. A separate permit must be requested for the inclusion of any signs at this site.
10. This review is from the Economic Development and Planning Department only. The Site Plan shall comply with the requirements of the City of Oak Park Engineering, Building, and Fire Departments, as applicable.

You may now proceed to obtain a building permit, a business license, or any other permits required to complete this project. It is your responsibility to read and understand approved plans, conditions, and additional approvals required to obtain a building permit or any other additional approvals required to complete this project.

This approval will expire on October 21, 2027, unless actual physical construction of a substantial nature of the improvements included in the approved site plan has commenced and proceeded meaningfully toward completion during this period. If you require an extension of time, you may do so in writing before the expiration date, subject to the regulations of Article 5 Division 1 of the zoning ordinance.

If you have any questions, please do not hesitate to contact me.

Sincerely,



Salam Habhab,
Economic Development and Planning Specialist
City of Oak Park
14300 Oak Park Blvd.
Oak Park, MI 48237
(248) 691-7455
shabhab@oakparkmi.gov

Waste & Refuse Management Plan

Business Name: Northend Auto Clinic
Address: 8510 Northend Ave, Oak Park, MI 48237
Owner/Manager: Moamar Nagi

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1. Used Oil & Liquid Waste Management

All automotive fluids are managed as **Liquid Industrial By-products** per Michigan EGLE Part 121 regulations to ensure zero environmental contamination.

- **Storage:** Used oil and antifreeze are stored in dedicated tanks or drums with secondary containment.
- **Labeling:** Every container is clearly marked with the words **"Used Oil"** or **"Used Antifreeze."**
- **Disposal:** All liquid waste is collected by a licensed Michigan liquid waste hauler.
- **Manifests:** Shipping documents and pickup receipts are kept on-site for a minimum of **three years** for city or state inspection.

2. Solid Waste & Trash Management

- **Dumpster Access:** We utilize a shared commercial dumpster located at **8600 Northend Ave, Oak Park, MI 48237** per a shared-use agreement with the property owner, **Michael VanOverbeke**.
- **Schedule:** Waste is collected weekly by a certified commercial waste provider.
- **Containment:** All trash is bagged before disposal, and the dumpster lids remain closed at all times to prevent litter.
- **Prohibited Items:** No liquid waste, hazardous chemicals, or lead-acid batteries are ever placed in the general trash dumpster.

3. Specialized Automotive Waste

- **Scrap Metal:** Metal parts (rotors, exhaust, etc.) are stored in a dedicated bin and hauled to a local scrap metal processor.
- **Shop Textiles:** Dirty shop rags are managed through a professional industrial laundry service to ensure proper cleaning and oil extraction

SHARED DUMPSTER USE AGREEMENT

Date: April 16, 2026

Parties:
Owner/Grantor: Michael VanOverbeke
Property Address: 8600 Northend Ave, Oak Park, MI 48237
User/Grantee: Moamar Nagi (Northend Auto Clinic)
Property Address: 8510 Northend Ave, Oak Park, MI 48237

Agreement:
I, Michael VanOverbeke, owner of the property located at 8600 Northend Ave, hereby grant permission to Moamar Nagi of Northend Auto Clinic to utilize the commercial dumpster located on my premises for the disposal of standard shop trash.

Terms of Use:

1. Approved Waste: Only bagged general refuse and solid waste may be disposed of.
2. Prohibited Items: No liquid waste (oil, antifreeze), hazardous chemicals, lead-acid batteries, or tires are permitted in the dumpster.
3. Maintenance: Northend Auto Clinic agrees to keep the area clean and ensure all dumpster lids are closed after use.
4. Duration: This agreement remains in effect until terminated by either party with 30 days' notice.

Signatures:

Michael VanOverbeke (Property Owner)

Moamar Nagi (Northend Auto Clinic)

CITY OF OAK PARK
MUNICIPAL SERVICES
ECONOMIC DEVELOPMENT & PLANNING DIVISION
14300 Oak Park Blvd,
Oak Park, Michigan 48237

APPLICATION FOR SITE PLAN REVIEW

FEES

☐Site Plan Review	$750.00
☐Special Land Use and Public Hearing (including Site Plan Review)	$1,000.00
☒Administrative Review	$300.00
☐Text or Zoning Amendments (rezoning*)	$600.00
☐Planning Commission Special Meeting (in addition to other fees)	$600.00
☐Deviation from Approved Site Plan (major modifications)	$300.00

Date Received	Fee Paid	Site Plan No.
3/26/2026	$300.00	PPC26-010

Site Plan Review
Site Plan Review is the process of reviewing drawings that illustrate the layout of land and structures for conformance with ordinance requirements and both on-site and off-site impacts. These requirements may include ingress/egress, traffic flow, landscaping, storm drainage, soil erosion, grading of land, parking, and signage.

Site Plan Reviews are conducted and approved by the Planning Commission, with the exception of the Administrative Review. We encourage you to request a conceptual site plan review meeting. This service is free of charge and helps to expedite the approval process. Please contact the Economic Development and Planning Department to schedule a meeting at (248) 691-7455.

Notice to Applicant
Completed Applications must be submitted to the Economic Development and Planning Department (30) days prior to the Planning Commission meeting at which the application will be considered.

Complete sets must include the following:
- ❑ Application
- ❑ Review Fee
- ❑ Plans (15 sets) (folded)
- ❑ Electronic Copy of all Plans

The Planning Commission meets the second Monday of the month at 7:00 PM in the City Council Chamber at the City Hall, 14000 Oak Park Blvd. Oak Park, MI 48237

PROPERTY INFORMATION

Name of Proposed Development	Northend Auto Clinic		
Property Address	8510 Northend Ave		
Parcel Number | Sidwell Number	25-33-152-050		
Legal Description			
Existing Land Use	Light Industrial		
Proposed Land Use/ Text or Zoning Amendments (Detailed Description).			
Auto Repair Shop			
Estimated Monetary Investment	$ 10K to 20K	Projected Number of Employees	2 to 3

PROPERTY OWNER INFORMATION

Owner Name							
Owner Address	2343 Norwalk						
City	Hamtramck	State	MI	Zip	48212	Phone	[redacted]
Signature of ~~Property Owner~~				Print Name		Mohamed Majed	
Email Address							

APPLICANT INFORMATION

Applicant Name and Role	Moamar Nagi						
Applicant Address	8336 Suzanne						
City	Detroit	State	MI	Zip	48234	Phone	[redacted]
Signature of Applicant				Print Name		Moamar Nagi	
Email Address	[redacted]						

N: T&P/PLANNING/APPLICATIONS & PERMITS/ FINAL APPLICATIONS/ SPR APPLICATION 2025

ADJACENT BUILDING

FENCE

SIDE LOT

AIR COMPRESSOR

GARAGE/SHOP

FENCE

100FT

RESTROOM
7 FT x 6 FT

11 FT X 6 FT
RESTROOM

6 FT x 5FT
CLOSET

11 x 10 FT
OFFICE

18 x 11 FT
WAITING ROOM

GARAGE DOOR

48FT

PARKING LOT

50FT

PARKING LOT

SIDEWALK

NOT TO BE USED AS CONSTRUCTION DRAWINGS

03/23/2026

NORTHEND AUTO CLINIC - 8510 NORTHEND OAK PARK, MI 48237

FLOOR PLAN

RECEIVED
MAR 26 2026
By PPC 26-010

CITY OF OAK PARK

DEPARTMENT OF ECONOMIC DEVELOPMENT & PLANNING

MEMORANDUM

TO:	Planning Commission Members	DATE:	April 24, 2025
FROM:	Kimberly Marrone, Municipal Services Director Salam Habhab, Economic Development and Planning Specialist	FILE:	APLNCOM/ SPR Extension & Amendment_TorasChaim_14631Balfour

SUBJECT: Request for Amendment and Extension for Site Plan Approval, Toras Chaim Synagogue – 14631-14641-14651 Balfour Ave.

BACKGROUND

On January 22, 2025, the Planning Commission approved a Site Plan Review for the proposed construction of the Toras Chaim Synagogue located at 14631, 14641, and 14651 Balfour Ave. The project site consists of three separate parcels. The synagogue building is proposed to be constructed on one parcel (14631 Balfour Ave), while the remaining two parcels (14641 and 14651 Balfour Ave) are proposed to be developed with a parking lot and associated landscaping.

The Site Plan Approval is contingent upon the combination of the three parcels into a single parcel. Following approval, the applicant initiated the parcel combination process with the Assessing Department. During that process, it was determined that the parcels at 14631 and 14641 Balfour Ave are located within one school district, while the parcel at 14651 Balfour Ave is located within a different school district. Because parcels within different school districts cannot be combined, the parcel combination cannot be completed as originally approved.

The approved Site Plan Approval is currently set to expire on July 22, 2026.

REQUEST FOR AMENDMENT AND EXTENSION TO SITE PLAN APPROVAL

Site Plan Approval Amendment

The applicant is requesting an amendment to the Site Plan Approval to modify the parcel combination requirement. Economic Development and Planning staff recommends amending the approval to allow the combination of the two parcels located at 14631 and 14641 Balfour Ave only, and to require the execution and recordation of a Declaration of Restriction on the third parcel located at 14651 Balfour Ave.

The Declaration of Restriction would limit the use of the third parcel to parking in support of the synagogue and require that any future use or development of the parcel be subject to review and approval by the City. The applicant has submitted a Declaration of Restriction, which has been reviewed and approved by the City's legal counsel.

Site plan Approval Extension

In addition, the applicant has requested a twelve-month extension of the Site Plan Approval. The applicant indicated that the extension is necessary to allow adequate time to complete the parcel combination process, execute and record the Declaration of Restriction, secure construction financing, and address any unforeseen delays or complications associated with completion of the project.

Pursuant to Section 510 of the Zoning Ordinance, a site plan is valid for a period of 18 months. Upon written application filed prior to the expiration of the site plan review period, the City Planner may authorize a single extension of the time limit for approval for a further period of not more than 12 months. Such an extension shall only be granted based on evidence from the applicant that the development has a likelihood of commencing construction within the extension period.

Based upon the evidence provided, Economic Development and Planning Staff approves the extension of the site plan for an additional 12 months. **The extension will expire on July 22, 2027.**

Attachment:

- Request for Site Plan Approval Amendment and Extension

ZAUSMER, P.C.
32255 Northwestern Highway, Suite 225
Farmington Hills, MI 48334-1574
(248) 851-4111 · Fax (248) 851-0100

STEPHEN R. ESTEY
Shareholder
sestey@zausmer.com

April 6, 2026

City of Oak Park
ATTN: Chair of the Planning Commission
c/o Salam Habhab, Economic Development and Planning Specialist
14300 Oak Park Blvd.
Oak Park, MI 48237

Re: Toras Chaim Synagogue – Request for Site Plan Approval Amendment and Extension

Dear Ms. Habhab:

We represent Toras Chaim Synagogue ("Applicant"), with regard to the above referenced conditional use permit and site plan approval.

I. Background

The City of Oak Park ("City") Planning Commission voted unanimously to approve the Applicant's site plan conditional use permit on January 22, 2025. *See* **Exhibit 1.** Pursuant to the City of Oak Park Zoning Ordinance (Ordinance), the actual physical construction of a substantial nature of the improvements under the current site plan is required to be commenced and proceeded meaningfully toward completion by July 22, 2026. As originally approved, the Site Plan included a condition to combine three parcels into a single parcel for the construction of a two-story synagogue with a basement and an adjacent parking area ("Project").

II. Application for Amendment and Extension of Site Plan Approval

During the implementation process, it was determined that the parcels are located within different school districts. Specifically, Parcel 14651 Balfour Ave. is located within the City of Oak Park School District, while Parcels 14631 Balfour Ave. and 14641 Balfour Ave. are located within the Berkley School District. The City, therefore, denied the land combination application submitted by the Applicant to combine the three parcels and stated that parcels situated in different school district boundaries cannot be combined. *See* **Exhibit 2.** In light of this issue, the Planning Commission has indicated support for an amended approach by approving a revised site plan that combines only two of the parcels (14631 Balfour Ave. and 14641 Balfour Ave.), while addressing the third parcel through a Declaration of Restriction rather than full combination. This solution allows the Project to move forward while in full compliance with the Ordinance.

Since the July 22, 2026 deadline is only three months away, the Applicant wants to be proactive and secure an extension of Site Plan approval through July 22, 2027. The extension

would ensure that the Applicant can complete the land combination approval process for the two parcels; execute declaration of restriction for the third parcel; secure construction financing; and have adequate time to deal with any other unforeseen delays or complications in order to complete the Project. Accordingly, we respectfully request the following:

1. ***Removal of the condition in the Site Plan Approval requiring the combination of all three parcels;***
2. ***Approval of the amended Site Plan reflecting the combination of two parcels and a declaration of restriction for the third parcel;***
3. ***A one-year extension of the existing Site Plan Approval to allow sufficient time to finalize and implement these changes.***

III. Applicable Law for Site Plan Approval Extension

Article 5 Division 1 Section 510(b) of the Ordinance states that, upon a written application submitted before the expiration of the 18-month site plan approval period, a site plan approval may be granted a single extension of up to one year (not to exceed 12 months). Given the unforeseen amendment to the site plan limiting the project to the combination of only two parcels, along with documented delays in the land combination approval process that are beyond the Applicant's control, we respectfully request a one-year extension of the site plan approval period, from July 22, 2026, to July 22, 2027.

IV. Conclusion

The Applicant respectfully requests that the City review and consider the foregoing and attached materials, and approve an amendment to the Site Plan Approval to permit the combination of two parcels, with a declaration of restriction applied to the third parcel. The Applicant further requests that the expiration date of the Site Plan Approval be extended for an additional one year period. On behalf of the Applicant, we thank you in advance for your timely attention to this Application and look forward to working with the City throughout the approval process.

Sincerely,

ZAUSMER, P.C.

SRE/IW
Enclosures
cc: Client

Stephen R. Estey

EXHIBIT 1

January 23, 2025

PEA Group
Amie Ackerman, Project Manager
1849 Pond Run
Auburn Hills, MI 48326

Re: Site Plan Approval
Toras Chaim Synagogue – 14631, 14641, 14651 Balfour Ave.
Parcel ID #52-25-19-326-007, 52-25-19-326-006, 52-25-19-326-005.

On January 22, 2025, the Planning Commission, at their meeting, **unanimously** approved a site plan review for constructing a new synagogue at 14631-14651 Balfour Ave. This approval is subject to the information and conditions presented in the staff report dated January 16, 2025, any new information, conditions, or findings discussed during the review, and any plans or other information submitted with the application.

Conditions of Site Plan Approval:

1. The Site Plan Review approval is contingent upon combining the parcels into one parcel in accordance with the requirements of the State Land Division Act and the City of Oak Park Code of Ordinance, and other applicable statutes and ordinances.
2. The Site Plan approval is contingent upon receiving dimensional variances from the Zoning Board of Appeals (ZBA), as follows:
    a. A waiver from the requirements of Sec. 544.g.1.b to allow the parking lot to extend in the front building setback area. The zoning ordinance states parking shall not be provided in the front building setback area.
    b. A waiver from the requirements of Sec. 544.g.1.d to reduce the east side yard setback to 4 feet. The zoning ordinance requires 50 feet.
    c. A waiver from the requirements of Sec. 544.g.1.d to reduce the rear (south) yard setback to 10.76 feet. The zoning ordinance requires 50 feet.
    d. A waiver from the requirements of Sec. 215.d to allow impervious surfaces of 84%. The zoning ordinance requires a total area of all impervious surfaces to not exceed 70% of the lot area.
3. The Site Plan approval is contingent upon submitting a professional parking study to the Planning Commission, in compliance with the requirements of the zoning ordinance. If the parking study submitted is determined to be insufficient to meet the requirements of the zoning ordinance, the applicant shall be required to provide parking in accordance with Sec. 401 or obtain a variance from the Zoning Board of Appeals.
4. Landscaped areas and plant materials shall be kept free from refuse and debris. Plant materials, including lawns, shall be maintained in a healthy growing condition, neat and orderly in appearance in accordance with the approved site plan/landscape plan. If any plant material dies or

becomes diseased, it shall be replaced with 30 days written notice from the City or within an extended time period as specified in said notice."

5. The applicant shall obtain Public Works Department approval for removing a city, right-of-way tree and planting at least three (3) new 3" caliper trees on-site or at another location around the city as approved by the Public Works Department.
6. The applicant shall obtain permits/approvals from the City of Oak Park Engineering Department for the proposed modifications to the accesses on Balfour Ave.
7. The site plan does not depict a dumpster and dumpster enclosure. The applicant indicated that interior facilities are provided. If the need for a dumpster becomes necessary, the applicant will be required to provide a dumpster with the required enclosure in compliance with Article 1 Division 1 Section 333 of the Zoning Ordinance.
8. Any existing or proposed exterior light fixtures should be shielded and downward cast to eliminate the possibility of nuisance to the adjoining properties. The intensity of light within a site shall not exceed one (1) footcandle at any property line, except where it abuts a service drive or other public right-of-way in compliance with the provision of Article 4, Division 5 Lighting Standards.
9. All ground or mounted mechanical equipment shall be screened in compliance with the provisions of Article 3, Division 1, Sec.318 Mechanical Equipment.
10. No signs are approved as part of the Site Plan Review. A separate permit must be requested for the inclusion of any signs at this site.
11. The site plan must comply with the requirements of the City of Oak Park Engineering, Building, and Fire Departments.

You may proceed to obtain a building permit, a business license, or any other permits required to complete this project. It is your responsibility to read and understand the approved plans, conditions, and additional approvals required to obtain a building permit or any other additional approvals required to complete this project.

This approval will expire on July 22, 2026, unless actual physical construction of a substantial nature of the improvements included in the approved site plan has been commenced and proceeded meaningfully toward completion during this period. If you require an extension, you may do so in writing before the expiration date.

Article 5 Division 1 Section 510 of the Zoning Ordinance states that a single extension for a further period of not more than (12) months may be authorized by the city planner, upon written application filed before the termination of the 18-month review period. Such extension shall only be granted based on evidence from the applicant that the development is likely to commence construction within the extension period, the length of which shall be determined by the City planner but shall not exceed 12 months.

If you should have any questions, please contact me.

Sincerely,

Salam Habhab

Salam Habhab
Economic Development and Planning Specialist

EXHIBIT 2

Balfour Community Fund
333 W Fort St Ste 1350
Detroit, MI 48226

March 2, 2026

Re: Lot Combination Request
Parent Parcel 52-25-19-326-005, 25-19-326-006 and 25-19-326-007

Dear applicant,

We regret to inform you that your request to combine the above parcels has been denied. Two of the parcels are located within one school district, while the third parcel is in a different district. Parcels that fall within different school district boundaries cannot be combined.

You will not be required to reapply for this combination if a solution to the school district boundary issue gets resolved.

If you have any questions or need further clarification, please feel free to contact our office.

Kind Regards,

Dawn Scheitz
Assessing Division

Cc: Indra Pandiyaraj – 32255 Northwestern Highway Suite 225, Farmington Hills, MI 48334

CITY OF OAK PARK

DEPARTMENT OF ECONOMIC DEVELOPMENT AND PLANNING

MEMORANDUM

TO:	Planning Commission Members	DATE:	April 1, 2026
FROM:	Kimberly Marrone, Municipal Services Director Salam Habhab, Economic Development & Planning Specialist	FILE:	APLNCOM/ORD 2026-04 Zoning Text Amendments

SUBJECT: ORD 2026-04 – Proposed Text Amendments to Appendix A - Zoning Ordinance of the Code of Ordinances of the City of Oak Park, MI

In an effort to enhance the City's ability to achieve its goals, the Economic Development and Planning staff has identified areas for improvement in specific sections of the Zoning Ordinance. The proposed text amendments introduce regulations for Electric Vehicle (EV) Charging Stations and update the sign ordinance. These changes address emerging land use trends and respond to feedback and needs.

Staff has prepared a proposed ordinance section to regulate EV charging stations, along with guidelines to inform future infrastructure development. The ordinance provisions are regulatory, while the guidelines are advisory and intended to provide direction and outline best practices.

The proposed text amendments and EV charging station guidelines are attached to this memo for review and consideration of approval.

RECOMMENDATION

Planning Commission to recommend approval of the proposed text amendments to the City Council.

ORD 2026-04 – PROPOSED TEXT AMENDMENTS TO APPENDIX A - ZONING ORDINANCE OF THE CODE OF ORDINANCES OF THE CITY OF OAK PARK, MI

Staff proposes incorporating the EV Charging Station regulations into the reserved Section 302. While this placement does not strictly follow the alphabetical sequence of the ordinance, it avoids the need to renumber subsequent sections and minimizes potential inconsistencies with existing cross-references.

ARTICLE 3. DIVISION 1. GENERAL PROVISIONS

Add the new section to the reserved Section 302.

Sec. 302. Electric Vehicle (EV) Charging Stations

A. Purpose and Intent

The purpose of this section is to regulate the installation, location, design, and operation of electric vehicle (EV) charging stations to promote public safety, accessibility, and compatibility with surrounding land uses, while supporting the City's long-term EV readiness goals. These provisions align with widely used best practices in Michigan communities and the State of Michigan Community EV Toolkit and are intended to provide clarity for applicants, permitting, and enforcement.

B. Definitions

Electric Vehicle (EV). A motor vehicle powered in whole or in part by electricity supplied from an external source.

Electric Vehicle Supply Equipment (EVSE) / EV Charging Station. Equipment and related electrical infrastructure that delivers electricity to an EV for charging.

Public EV Charging Station (Principal Use). A site where EV Charging is the primary commercial use and is available to the public.

Accessory EV Charging Station. An EV charging installation that is subordinate and incidental to an approved principal use.

Private or Limited-Access EV Charging Station. An EV charging installation limited to residents, employees, owners, fleet vehicles, or other authorized users; not open to the public for commercial use.

C. **Use Classification and Permitted Districts**

1. *Public EV Charging Stations (Principal Use)*. Permitted as a principal commercial use in commercial, mixed-use, office, and industrial zoning districts, subject to Site Plan Review. Public EV charging stations are not permitted as a principal use in residential districts.
2. *Accessory EV Charging Stations*. Permitted by right where the principal use is permitted, subject to Administrative Review.
3. *Private or Limited-Access EV Charging Stations*. Permitted within multi-family, institutional, commercial, mixed-use, office and industrial developments for use by authorized users, subject to applicable building and electrical permits.

D. **Location and Site Design Standards**

1. *General.* EV charging stations may be located wherever off-street parking is permitted.
2. *Equipment.* All EV charging stations and associated equipment shall not obstruct pedestrian sidewalks, accessible routes, crosswalks, or fire lanes, and shall not be placed within any required intersection visibility or sight-distance triangle as set forth in Section 314 of this Ordinance.
    a. EV charging stations (the charging posts or pedestals intended for user interaction) may be permitted along or adjacent to the public right-of-way where otherwise allowed by this Ordinance.
    b. All associated equipment, including but not limited to transformers, power cabinets, switchgear, utility service equipment, conduit risers, meter pedestals, and any ancillary infrastructure, shall be located to be minimally visible from public streets and sidewalks.
3. *Utilities*. New charging equipment and associated infrastructure should maintain a minimum ten (10) foot separation from underground utilities, including storm and sanitary sewers, water mains, and fire suppression service lines, unless an alternative is approved by the City Engineer.
4. *Screening*. Equipment such as transformers, power cabinets, and switchgear shall be screened from public right-of-way by a solid wall, fence, landscaping, and/or architectural features that are compatible in appearance with the principal building.
5. *Parking Counts*. EV charging spaces shall count toward the minimum off-street parking requirements.
6. *Markings and Signage*. EV spaces shall be clearly striped and signed to indicate "EV Charging Only."
7. *Protection*. Protective bollards or equivalent barriers shall be installed to safeguard charging equipment and associated infrastructure from vehicle impact.
8. *Lighting, Noise, and Hours*. Lighting and operations shall be compatible with adjacent land uses.

E. Accessibility

All EV charging stations shall comply with the Americans with Disabilities Act (ADA), the Michigan Building Code, and applicable accessibility guidelines. A minimum of five percent (5%) of all EV charging stations provided for public or employee use, but not less than one (1), shall be accessible. Accessible EV charging spaces shall include a van-accessible access aisle and an unobstructed accessible route to the charging equipment. Accessible EV charging spaces are in addition to, and shall not be counted toward, the minimum number of barrier-free parking spaces otherwise required by code.

F. Additional Safety and Sitting Consideration

1. *Interior Installations*. EV charging equipment located within enclosed parking garages or interior service/fleet areas may be permitted without Site Plan or Administrative Review, provided no exterior site elements are affected; building and electrical approvals remain required.
2. *Hazardous Locations*. Where EV charging is proposed at facilities that dispense flammable fuels, liquids, or gases, placement and installation shall comply with the National Electrical Code.
3. *Weather Exposure*. Outdoor installations are preferred for safety; indoor or covered installations shall provide any additional fire protection or ventilation required by code.

G. Approvals and Permitting

1. *New Developments.* The location and design of EV charging stations shall be reviewed as part of the formal Site Plan Review process.
2. Where an EV charging station is designed with a canopy and multiple bays in a manner similar to layout and intensity to an automobile gasoline station, the site shall comply with the applicable design development standards of Section 557.B related to canopy setbacks and height, driveway limitations, lighting requirements, outdoor storage, and off-street parking as required by Section 403 of the Zoning Ordinance.
3. *Existing Facilities (Retrofits)*. Installation of EV charging stations at existing facilities shall be subject to Administrative Review to confirm that the proposal does not alter site circulation, parking counts, required landscaping, or other zoning-regulated features.
4. *Interior Installations.* EV charging stations installed wholly within the interior of a commercial facility (e.g., enclosed parking garage or interior fleet/service area) shall not require Site Plan Review or Administrative Review, provided no exterior site elements are affected; building and electrical approvals are still required.
5. *Permits*. Building and Electrical Permits are required for all EV charging installations.

H. Submittal Requirements

Applicants shall provide the following materials with zoning submittals and building/electrical permit applications, as applicable:

1. A scaled site plan showing parking, equipment, conduit routing, and bollards;
2. Identification of underground utilities within the work area;
3. Screening details for transformers, switchgear, and power blocks;
4. The location of the nearest fire hydrant and any Fire Department Connection (FDC);
5. Manufacturer data sheets, electrical specifications, and installation instructions for the selected chargers, including emergency shut-off location and type;
6. For interior installations, a floor plan showing charger locations; and
7. An electrical riser diagram, engineered load calculations, and panel schedule prepared, sealed, and signed by a licensed electrical engineer verifying sufficient capacity for the proposed equipment.

I. Relationship to the Electric Vehicle Charging Station Guidelines

The City of Oak Park maintains an advisory document titled "Electric Vehicle Charging Station Guidelines" that provides non-regulatory best practices for location, design, installation, and future planning of EV charging infrastructure. These Guidelines are illustrative and do not supersede the requirements of this Zoning Ordinance. In the event of a conflict, the Zoning Ordinance shall govern.

ARTICLE 4. DIVISION 4. SIGNS.

Sec. 466. Sign Definitions.

Amend "Canopy Sign" definition as indicated below. *All other provisions of this section, not listed below, remain unchanged.*

Canopy sign. ~~A structure other than an awning affixed to a building and carried by a frame which is supported by the ground.~~ A sign attached to a canopy, whether the canopy is attached to a building or is a freestanding structure. For the purposes of this ordinance: "Building-mounted canopy sign" means a sign on a canopy attached to a building, and "Freestanding canopy sign" means a sign on a canopy that is not attached to a building, including those associated with gas stations or EV charging stations.

Sec. 472. Specific sign standards.

Amend the Sign Dimensional Standards and Regulations Table to add footnote (7), as indicated below. *All other provisions of the table and section, not listed below, remain unchanged.*

	Wall, canopy, or awning		Freestanding sign			Temporary signs(c)	
District	Number	Maximum size per sign	Number	Maximum size per sign	Maximum height	Maximum size per sign	Maximum height
B-1, B-2, LI, O, PTRED, PCD, PUD, MX-1, MX-2, IF	1 per business (1) (6)	15% of front façade, a maximum of 120 square feet (3) (7)	1 sign(3)	30 square feet for businesses fronting roadway of 35 m.p.h. or less (2), (4), (5)	6 feet(5)	30 square feet	Freestanding sign maximum height is 6 feet

(7) Wall signs shall be located on the front façade of a building. The Zoning Official may permit a wall sign to be located on a façade other than the front façade, where the architectural design of the building or the visibility of the building from public street results in another façade having greater prominence or exposure than the front façade.

Sec. 473. Additional sign standards.

Amend provision 473.b., as indicated below. *All other provisions of this section, not listed below, remain unchanged.*

b. Awning and canopy signs. Awnings and building mounted canopy signs may be used as an alternative to wall signs listed in the sign dimensional standards and regulations table, if they meet the following standards:

1. Any sign area on awnings and canopy signs shall be included in calculations of maximum wall sign square footage.
2. Awnings and canopy signs in the B-1 neighborhood business district shall be set back at least two feet from any street curb line, shall not extend more than six feet over the public right-of-way, and shall leave a minimum clearance of eight feet above the ground.
3. Awning and canopy signs, other than those in the B-1 district, shall have a minimum ground clearance of ten feet, shall be set back at least six feet from any public right-of-way, nor project over an alley or private access lane. A sign shall not extend for more than two feet from the building to which it is attached.
4. No awning or canopy sign shall extend above the roof or parapet of the structure to which it is attached.
5. Wood posts or supporting arms shall not be used in conjunction with any awning or canopy sign, unless it is decorative in nature and part of the character of the sign.

6. Canopy signs shall not be internally illuminated and must be blackened out on the underside.

Amend provision 473 to add subsection f, as indicated below and renumber subsequent subsections. *All other provisions of this section, not listed below, remain unchanged.*

f. Freestanding canopy sign. These regulations apply to canopy signs associated with uses such as gasoline stations, fuel service stations, and electric vehicle (EV) charging stations:

1. Canopy signs shall be mounted flush on the vertical fascia of the canopy.
2. Signs shall be limited to business identification (name and/or logo).
3. Signs shall not project above, beyond, or outside the limits of the canopy structure.
4. The total sign area on any single canopy face shall not exceed 20% of the canopy fascia area for the face.
5. A maximum of one (1) canopy sign is permitted.
6. On corner lots, a maximum of two (2) signs is permitted, with one (1) sign on each street-facing canopy face.

Sec. 476. Dangerous, unsafe, abandoned, and illegally erected signs.

Amend provision 476.c, as indicated below. *All other provisions of this section, not listed below, remain unchanged.*

c. *Obsolete or abandoned signs.* Permanent signs applicable to a business suspended by a change in ownership, occupancy, or management shall not be deemed abandoned unless the structure remains vacant for at least 30 consecutive days. An obsolete or abandoned sign shall be removed by the owner, occupant, or lessee of the premises within ~~ten days after written notice from the city building official~~ 30 days of the close of said business or activity.

CITY OF OAK PARK

DEPARTMENT OF ECONOMIC DEVELOPMENT AND PLANNING

MEMORANDUM

TO:	Planning Commission Members	DATE:	April 1, 2026
FROM:	Kimberly Marrone, Municipal Services Director Salam Habhab, Economic Development & Planning Specialist	FILE:	APLNCOM/CIP2026-2027

SUBJECT: Capital Improvement Plan (CIP), Annual Budget 2026-2027

As part of the annual budget process, the City Manager prepares a Capital Improvement Plan Budget that is presented to the Planning Commission for review and consultation.

Attached is the Capital Improvement Plan Budget as part of the 2026-2027 Annual Budget.

City of Oak Park
Capital Improvement Program
2026- 2032 Project Summary

	DPS CIP#	PROJECT DESCRIPTION	FUNDING SOURCE	TOTAL	BUDGET FY 2026-27	PROJECTED FY 2027-28	PROJECTED FY 2028-29	FORECAST FY 2029-30	FORECAST FY 2030-31	FORECAST FY 2031-32
				CITY COST	CITY COST	CITY COST	CITY COST	CITY COST	CITY COST	CITY COST
	Roads									
1	RD-1	Meyers Realignment and Reconstruction (Eight mile to Capital)	MAJOR STREET FUND - 202	$ 2,300,000			$ 2,300,000			
2	RD-2	Marlow/Stratford (Pearson to Stratford Villa Apts.) & Stafford Ct. (Stafford St. west to Cul-de-sac) Reconstruction	LOCAL STREET FUND - 203	$ 1,800,000	$ 1,385,000	$ 415,000				
3	RD-3	Northend (Coolidge to Meyers) Major Rehabilitation	MAJOR STREET FUND - 202	$ 1,500,000					$ 1,500,000	
4	RD-5	9 Mile and Coolidge Intersection (Est $1.84 M Fed TAP Grant Reimbursement (80%))	MAJOR STREET FUND - 202	$ 2,300,000		$ 2,300,000				
5	RD-6	9 Mile and Coolidge Intersection	CORRIDOR IMPROVEMENT AUTHORITY FUND - 251	$ 600,000			$ 400,000	$ 200,000		
6	RD-7	11 Mile Road Redesign	MAJOR STREET FUND - 202	$ 1,000,000				$ 1,000,000		
7	RD-8	11 Mile Road Redesign	CORRIDOR IMPROVEMENT AUTHORITY FUND - 251	$ 200,000				$ 200,000		
8	RD-9	Eight Mile Resurfacing - MDOT	MAJOR STREET FUND - 202	$ 200,000				$ 200,000		
9	RD-10	Oakland County Tri-Party	MAJOR STREET FUND - 202	$ 50,000	$ 50,000					
10	RD-11	Mastic Rehabilitation Project (various areas)	MAJOR STREET FUND - 202	$ 150,000	$ 50,000	$ 50,000	$ 50,000			
11	RD-12	Rosewood (Oak Park Blvd to 10 mile) Reconstruction	MAJOR STREET FUND - 202	$ 2,200,000				$ 2,200,000		
12	RD-13	Roanoke (Oak Park Blvd to 10 mile) Reconstruction	MAJOR STREET FUND - 202	$ 2,200,000					$ 2,200,000	
13	RD-14	Kenberton (Roanoke to Rosewood) Reconstruction	LOCAL STREET FUND - 203	$ 1,300,000					$ 1,300,000	
14	RD-15	Northfield (Condon to Seneca) Reconstruction	LOCAL STREET FUND - 203	$ 1,700,000				$ 1,700,000		
15	RD-16	Coolidge Parking Area Improvements (Islands)	CORRIDOR IMPROVEMENT AUTHORITY FUND - 251	$ 522,000		$ 236,000	$ 286,000			
16	RD-17	Annual Joint and Crack Sealing Program	LOCAL STREET FUND - 203	$ 900,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000
17	RD-18	Annual Concrete Repair/Replacement Program	WATER AND SEWER FUND - 592	$ 1,950,000	$ 375,000	$ 375,000	$ 375,000	$ 275,000	$ 275,000	$ 275,000
			LOCAL STREET FUND - 203	$ 1,950,000	$ 375,000	$ 375,000	$ 375,000	$ 275,000	$ 275,000	$ 275,000
			SUBTOTAL	$ 22,822,000	$ 2,385,000	$ 3,901,000	$ 3,936,000	$ 6,200,000	$ 5,700,000	$ 700,000
	Sidewalks & Pathways									
18	SP-1	Triennial Sidewalk Replacement Program	SIDEWALK PROGRAM FUND - 451	$ 1,500,000		$ 750,000			$ 750,000	
			MAJOR STREET FUND - 202	$ 70,000		$ 35,000			$ 35,000	
			LOCAL STREET FUND - 203	$ 70,000		$ 35,000			$ 35,000	
			SUBTOTAL	$ 1,640,000	$ -	$ 820,000	$ -	$ -	$ 820,000	$ -
	Sanitary Sewer									
19	SS-1	Annual Sewer Lining/Repairs	WATER AND SEWER FUND - 592	$ 4,500,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000
			SUBTOTAL	$ 4,500,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000	$ 750,000
	Water Distribution									
20	WD-1	Marlow (9 Mile to Oak Park Blvd) Water Main Replacement	WATER AND SEWER FUND - 592	$ 1,350,000			$ 1,350,000			
21	WD-2	Cloverlawn (Northend to 9 Mile) Water Main Replacement	WATER AND SEWER FUND - 592	$ 1,500,000				$ 1,500,000		
22	WD-3	Dartmouth (Coolidge to Scotia) Water Main Replacement	WATER AND SEWER FUND - 592	$ 1,200,000			$ 1,200,000			
23	WD-4	Oneida (Seneca to Dartmouth) Water Main Replacement	WATER AND SEWER FUND - 592	$ 1,200,000		$ 1,200,000				
24	WD-5	Pearson (Marlow to Coolidge) Water Main Replacement	WATER AND SEWER FUND - 592	$ 2,600,000	$ 2,600,000					
25	WD-6	Lincoln (Greenfield to Kipling) Water Main Replacement	WATER AND SEWER FUND - 592	$ 3,300,000					$ 3,300,000	
26	WD-7	Marlow (9 Mile to Stratford) Water Main Replacement	WATER AND SEWER FUND - 592	$ 1,300,000			$ 1,300,000			
27	WD-8	Morton (Albany to Sunset) & Sunset (Albany to Jermone) Water Main Replacement	WATER AND SEWER FUND - 592	$ 1,000,000		$ 1,000,000				
28	WD-9	Ridgedale (Allen to Ten Mile) Water Main Replacement	WATER AND SEWER FUND - 592	$ 1,500,000				$ 1,500,000		
29	WD-10	Rue Versailles (East Road and Monmartre Ct to Barritz Cir) Water Main Replacement	WATER AND SEWER FUND - 592	$ 1,200,000	$ 1,200,000					
30	WD-11	Pump Station Rehabilitation	WATER AND SEWER FUND - 592	$ 275,000		$ 200,000		$ 75,000		
31	WD-12	Briar (Lincoln to Balfour) Water Main Replacement	WATER AND SEWER FUND - 592	$ 700,000						$ 700,000
32	WD-13	East Rue Versailles Water Main Replacement	WATER AND SEWER FUND - 592	$ 1,000,000						$ 1,000,000
33	WD-14	Replace Water Meters and annual reading software	WATER AND SEWER FUND - 592	$ 2,900,000	$ 2,900,000					
			SUBTOTAL	$ 21,025,000	$ 6,700,000	$ 2,400,000	$ 3,850,000	$ 3,075,000	$ 3,300,000	$ 1,700,000

City of Oak Park
Capital Improvement Program
2026- 2032 Project Summary

	DPS CIP#	PROJECT DESCRIPTION	FUNDING SOURCE	TOTAL	BUDGET FY 2026-27	PROJECTED FY 2027-28	PROJECTED FY 2028-29	FORECAST FY 2029-30	FORECAST FY 2030-31	FORECAST FY 2031-32
				CITY COST	CITY COST	CITY COST	CITY COST	CITY COST	CITY COST	CITY COST
	Buildings & Property									
34	BP-1	New Recreation Center	COMMUNITY CENTER CONSTRUCTION FUND - 406	$ 34,320,000	$ 17,000,000	$ 17,320,000				
35	BP-2	Trail system - Dewey, Best, Key, Rothstein	PARKS & RECREATION IMPROVEMENT FUND - 407	$ 900,000	$ 900,000					
36	BP-3	Phase 2 Tyler Park	PARKS & RECREATION IMPROVEMENT FUND - 407	$ 400,000						$ 400,000
37	BP-4	Park Upgrades	PARKS & RECREATION IMPROVEMENT FUND - 407	$ 2,000,000		$ 1,500,000	$ 500,000			
38	BP-5	Joe Forbes Field Enhancement (Fence/Dugout/Storage/Lights)	PARKS & RECREATION IMPROVEMENT FUND - 407	$ 125,000						$ 125,000
39	BP-6	Rothstein Park	PARKS & RECREATION IMPROVEMENT FUND - 407	$ 2,600,000					$ 2,600,000	
40	BP-7	Dewey Park	PARKS & RECREATION IMPROVEMENT FUND - 407	$ 2,300,000					$ 2,300,000	
41	BP-8	Best Park	PARKS & RECREATION IMPROVEMENT FUND - 407	$ 2,800,000				$ 1,400,000	$ 1,400,000	
42	BP-9	Welcome Signs (11 & Coolidge, 10 & Coolidge, 9 & Forest, 8 & Coolidge)	CORRIDOR IMPROVEMENT AUTHORITY FUND - 251	$ 155,000	$ 155,000					
43	BP-10	Pump House Renovation	WATER AND SEWER FUND - 592	$ 100,000	$ 100,000					
			SUBTOTAL	$ 45,700,000	$ 18,155,000	$ 18,820,000	$ 500,000	$ 1,400,000	$ 6,300,000	$ 525,000

City of Oak Park
Capital Improvement Program
2026- 2032 Project Summary

	DPS CIP#	PROJECT DESCRIPTION	FUNDING SOURCE	TOTAL	BUDGET	PROJECTED		FORECAST		
					FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	FY 2031-32
				CITY COST	CITY COST	CITY COST	CITY COST	CITY COST	CITY COST	CITY COST
	Machinery & Equipment (Including Vehicles)									
44	ME-1	Public Safety Ballistic Vests	GENERAL FUND- 101	$ 50,920	$ 6,840		$ 8,360	$ 16,720	$ 9,120	$ 9,880
45	ME-2	Public Safety 5 Motorola Portable Prep Radios	GENERAL FUND- 101	$ 39,000	$ 39,000					
46	ME-3	Public Safety Fire Extrication Air Bags (1 set)	GENERAL FUND- 101	$ 12,000	$ 12,000					
47	ME-4	Public Safety Pick up Truck	MOTOR POOL FUND - 654	$ 65,000		$ -		$ 65,000		
48	ME-5	Fire Truck (Engine) (financing over 5 years)	MOTOR POOL FUND - 654	$ 1,037,035	$ 207,407	$ 207,407	$ 207,407	$ 207,407	$ 207,407	
49	ME-6	Public Safety Marked Patrol Vehicles	MOTOR POOL FUND - 654	$ 465,000	$ 75,000	$ 76,000	$ 77,000	$ 78,000	$ 79,000	$ 80,000
50		Public Safety Unmarked Patrol Vehicles	MOTOR POOL FUND - 654	$ 222,000			$ 54,000	$ 55,000	$ 56,000	$ 57,000
51	ME-7	DPW Crew Cab Pick up Truck	SOLID WASTE FUND - 226	$ 55,000					$ 55,000	
			WATER AND SEWER FUND - 592	$ 55,000		$ 55,000				
52	ME-8	Utility Vehicle for Snow Removal and Maintenance	MAJOR STREET FUND - 202	$ 15,000	$ 15,000					
			LOCAL STREET FUND - 203	$ 15,000	$ 15,000					
			SIDEWALK PROGRAM FUND - 451	$ 15,000	$ 15,000					
53	ME-9	Engineering Vehicle Replacement	MAJOR STREET FUND - 202	$ 29,000	$ 14,000			$ 15,000		
			LOCAL STREET FUND - 203	$ 29,000	$ 14,000			$ 15,000		
			WATER AND SEWER FUND - 592	$ 29,000	$ 14,000			$ 15,000		
54	ME-10	Lawn Equipment	MOTOR POOL FUND - 654	$ 55,000		$ 25,000				$ 30,000
55	ME-11	Large Dump Truck Replacement	MAJOR STREET FUND - 202	$ 150,000						$ 150,000
			LOCAL STREET FUND - 203	$ 150,000						$ 150,000
56	ME-12	Municipal Services Vehicle Replacement	MOTOR POOL FUND - 654	$ 40,000				$ 40,000		
57	ME-13	BS&A Cloud	GENERAL FUND- 101	$ 370,000				$ 170,000	$ 100,000	$ 100,000
58	ME-14	Election Equipment (State Mandated)	GENERAL FUND- 101	$ 150,000	$ 150,000					
59	ME-15	Wayfinder	CORRIDOR IMPROVEMENT AUTHORITY FUND - 251	$ 75,000	$ -	$ 75,000				
60	ME-16	Wayfinder	MAJOR STREET FUND - 202	$ 75,000		$ 75,000				
61	ME-17	Council Camera and Television Replacement	GENERAL FUND- 101	$ 31,000	$ 31,000					
62	ME-18	Library Improvements	LIBRARY AUTHORITY - 111	$ 110,000	$ 55,000	$ 55,000				
63	ME-19	Foreman Pick up Truck	MAJOR STREET FUND - 202	$ 75,000	$ 35,000					$ 40,000
			LOCAL STREET FUND - 203	$ 75,000	$ 35,000					$ 40,000
			WATER AND SEWER FUND - 592	$ 75,000			$ 75,000			
64	ME-20	Mini Excavator	WATER AND SEWER FUND - 592	$ 160,000			$ 160,000			
65	ME-21	Lawn Tractor (John Deere Replacement)	MOTOR POOL FUND - 654	$ 40,000	$ 40,000					
66	ME-22	Hi- Ranger Tree Truck	MAJOR STREET FUND - 202	$ 125,000			$ 125,000			
			LOCAL STREET FUND - 203	$ 125,000			$ 125,000			
67	ME-23	Water Maintenance Van	WATER AND SEWER FUND - 592	$ 300,000	$ 150,000	$ 150,000				
68	ME-24	3 Yard Dump Truck Replacement	MAJOR STREET FUND - 202	$ 65,000	$ 65,000					
			LOCAL STREET FUND - 203	$ 65,000	$ 65,000					
			SOLID WASTE FUND - 226	$ 130,000			$ 130,000			
			WATER AND SEWER FUND - 592	$ 130,000					$ 130,000	
69	ME-25	High Flow Skid Steer with Attachments	MAJOR STREET FUND - 202	$ 40,000		$ 40,000				
			LOCAL STREET FUND - 203	$ 40,000		$ 40,000				
			SOLID WASTE FUND - 226	$ 40,000		$ 40,000				
			WATER AND SEWER FUND - 592	$ 40,000		$ 40,000				
70	ME-26	Garage Lifts and Equipment (formerly wheel balance machine $16,000 in FY 28)	MOTOR POOL FUND - 654	$ 32,000		$ 32,000				

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Capital Improvement Program
2026- 2032 Project Summary

	DPS CIP#	PROJECT DESCRIPTION	FUNDING SOURCE	TOTAL CITY COST	BUDGET FY 2026-27 CITY COST	PROJECTED FY 2027-28 CITY COST	PROJECTED FY 2028-29 CITY COST	FORECAST FY 2029-30 CITY COST	FORECAST FY 2030-31 CITY COST	FORECAST FY 2031-32 CITY COST
71	ME-27	Stump Grinder	MAJOR STREET FUND - 202	$ 15,000		$ 15,000				
			LOCAL STREET FUND - 203	$ 15,000		$ 15,000				
			WATER AND SEWER FUND - 592	$ 15,000		$ 15,000				
72	ME-28	Parks and Recreation Golf Cart	PARKS & RECREATION FUND - 208	$ 14,000				$ 14,000		
73	ME-29	Rubber Tire Backhoe	MAJOR STREET FUND - 202	$ 40,000				$ 40,000		
			LOCAL STREET FUND - 203	$ 40,000				$ 40,000		
			SOLID WASTE FUND - 226	$ 40,000				$ 40,000		
			WATER AND SEWER FUND - 592	$ 40,000				$ 40,000		
74	ME-30	Salt Dome Upgrades	MAJOR STREET FUND - 202	$ 15,000			$ 15,000			
			LOCAL STREET FUND - 203	$ 15,000			$ 15,000			
			WATER AND SEWER FUND - 592	$ 15,000			$ 15,000			
75	ME-31	Public Works Roof Repairs	MAJOR STREET FUND - 202	$ 40,000		$ 40,000				
			LOCAL STREET FUND - 203	$ 40,000		$ 40,000				
			SOLID WASTE FUND - 226	$ 40,000		$ 40,000				
			WATER AND SEWER FUND - 592	$ 40,000		$ 40,000				
76	ME-32	Street Sweeper	SOLID WASTE FUND - 226	$ 250,000					$ 250,000	
77	ME-33	Vactor Truck	WATER AND SEWER FUND - 592	$ 600,000						$ 600,000
78	ME-34	Building Maintenance Vehicle	MOTOR POOL FUND - 654	$ 50,000			$ 50,000			
79	ME-35	Building Maintenance Software	GENERAL FUND- 101	$ 80,000		$ 20,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
80	ME-36	Garage/Motor Pool Repair Truck	MOTOR POOL FUND - 654	$ 65,000				$ 65,000		
74	ME-37	Water Stake/ Crane Truck	WATER AND SEWER FUND - 592	$ 150,000			$ 150,000			
			SUBTOTAL	$ 6,514,955	$ 1,053,247	$ 1,135,407	$ 1,221,767	$ 931,127	$ 901,527	$ 1,271,880
			TOTAL	$ 102,201,955	$ 29,043,247	$ 27,826,407	$ 10,257,767	$ 12,356,127	$ 17,771,527	$ 4,946,880

	TOTAL CITY COST	BUDGET FY 2026-27 CITY COST	PROJECTED FY 2027-28 CITY COST	PROJECTED FY 2028-29 CITY COST	FORECAST FY 2029-30 CITY COST	FORECAST FY 2030-31 CITY COST	FORECAST FY 2031-32 CITY COST
GENERAL FUND- 101	$ 732,920	$ 238,840	$ 20,000	$ 23,360	$ 201,720	$ 124,120	$ 124,880
LIBRARY AUTHORITY - 111	$ 110,000	$ 55,000	$ 55,000	$ -	$ -	$ -	$ -
MAJOR STREET FUND - 202	$ 12,654,000	$ 229,000	$ 2,555,000	$ 2,490,000	$ 3,455,000	$ 3,735,000	$ 190,000
LOCAL STREET FUND - 203	$ 8,329,000	$ 2,039,000	$ 1,070,000	$ 665,000	$ 2,180,000	$ 1,760,000	$ 615,000
PARKS & RECREATION FUND - 208	$ 14,000	$ -	$ -	$ -	$ 14,000	$ -	$ -
SOLID WASTE FUND - 226	$ 555,000	$ -	$ 80,000	$ 130,000	$ 40,000	$ 305,000	$ -
CORRIDOR IMPROVEMENT AUTHORITY FUND - 251	$ 1,552,000	$ 155,000	$ 311,000	$ 686,000	$ 400,000	$ -	$ -
NARCOTIC FORFEITURE FUND - 253	$ -	$ -	$ -	$ -	$ -	$ -	$ -
COMMUNITY CENTER CONSTRUCTION FUND - 406	$ 34,320,000	$ 17,000,000	$ 17,320,000	$ -	$ -	$ -	$ -
PARKS & RECREATION IMPROVEMENT FUND - 407	$ 11,125,000	$ 900,000	$ 1,500,000	$ 500,000	$ 1,400,000	$ 6,300,000	$ 525,000
SIDEWALK PROGRAM FUND - 451	$ 1,515,000	$ 15,000	$ 750,000	$ -	$ -	$ 750,000	$ -
MUNICIPAL BUILDING CONSTRUCTION - 470	$ -	$ -	$ -	$ -	$ -	$ -	$ -
WATER AND SEWER FUND - 592	$ 29,224,000	$ 8,089,000	$ 3,825,000	$ 5,375,000	$ 4,155,000	$ 4,455,000	$ 3,325,000
MOTOR POOL FUND - 654	$ 2,071,035	$ 322,407	$ 340,407	$ 388,407	$ 510,407	$ 342,407	$ 167,000
TOTAL	$ 102,201,955	$ 29,043,247	$ 27,826,407	$ 10,257,767	$ 12,356,127	$ 17,771,527	$ 4,946,880

CITY OF OAK PARK

MEMORANDUM

TO:	Planning Commission Members	DATE:	April 24, 2026
FROM:	Kimberly Marrone, Director of Municipal Services Salam Habhab, Economic Development and Planning Specialist	FILE:	APLNCOM/SPR 2026-05 iONNA – 21500 Greenfield Rd.

SUBJECT: Site Plan Review – iONNA_MI0008_Oak Park, 21500 Greenfield Rd.

This is a Site Plan Review (SPR) request submitted by Llyod McCarthy, on behalf of iONNA-MI-0008-Oak Park, for the construction of an Electric Vehicle Charging Station. The site is located south of James St., north of Miller St., east of Greenfield Rd., and west of Stratford Ave., in the Miller's Graden Homes Sub, Section 31 T1N, R11E. Property ID 52-25-31-302-003.

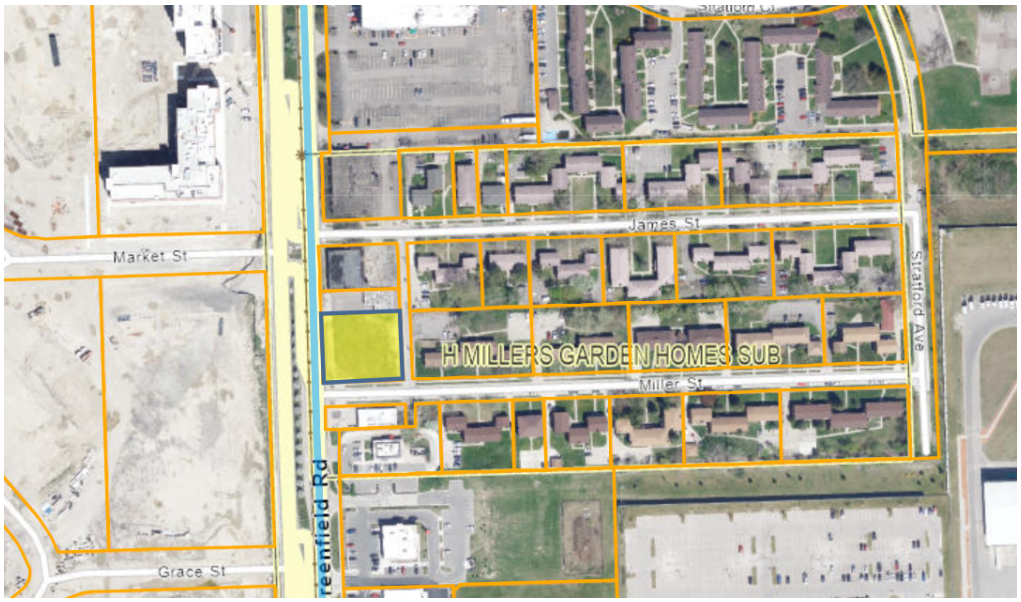

Figure 1. Location Map

SITE AND PROJECT CHARACTERISTICS

The 0.53-acre site (22,890 square feet) is a vacant corner parcel located east of Greenfield Rd. and north of Miller St. The property is served by a rear alley and includes an existing driveway access along the west side of Miller St.

The site was previously developed with the Renaissance Home Healthcare Services building, which was demolished in 2018. Since that time, the parcel has remained vacant and undeveloped.

Applicant's Request

The applicant proposes to develop an Electric Vehicle Charging Station (EVCS) with fourteen (14) charging stalls, including two (2) stalls designed to accommodate trailers, and seven (7) charging dispensers. Improvements include supporting electrical infrastructure (including a utility transformer and switchgear), a canopy over the charging area, and an accessory utility building with customer restroom facilities and a small seating area. Vehicular access and on-site circulation will be provided via the existing driveway on Miller St. and the rear alley.

The fourteen (14) charging stalls will support both Combined Charging System (CCS) and North American Charging Standard (NACS) connectors. Eight (8) stalls will provide dedicated CCS connectors, including one (1) trailer-accessible stall, and four (4) stalls will provide dedicated NACS connectors, including one (1) trailer-accessible stall. The remaining two (2) stalls are designed as accessible stalls and will be equipped with CCS/NACS connectors to serve a range of vehicle types, connector standards, and accessibility needs.

ZONING DISTRICT AND LAND USE

The property is zoned B-2, General Business District. Currently, electric vehicle (EV) charging stations are not explicitly addressed within the City's Zoning Ordinance. However, staff is presenting proposed text amendments for Planning Commission consideration and recommendation to the City Council at tonight's meeting. If recommended and approved, the ordinance amendments are scheduled for City Council consideration on May 18, 2026 for first reading and June 1, 2026 for second reading, with an anticipated effective date of June 11, 2026.

This site plan review is evaluated based on the proposed text amendments to the Zoning Ordinance, as outlined in Section 302, in addition to all applicable site development standards required for properties within the B-2 District. Under the proposed amendments, the use of an EV charging station is recommended for approval through a site plan review process.

While the proposed EVCS is similar in overall design layout to a traditional gas station, the operational impacts differ significantly. EV charging stations typically generate lower traffic turnover and longer, more predictable vehicle dwell times. As a result, the traffic

impacts and vehicle queuing associated with EV charging stations are not expected to affect surrounding traffic circulation to the same degree as a conventional gasoline fueling station.

The immediate adjacent properties to the north and south are zoned B-2, to the east is RM-1, Multi-Family Residential (Medium Density) District, and to the west is Greenfield Rd. right-of-way then the City of Southfield.

PROPOSED SECTION 302. ELECTRIC VEHICLE CHARGING STATIONS
The proposed Public EV Charging Station is a permitted principal commercial use within the B-2, General Business District, subject to Site Plan Review, in accordance with the proposed amendments of Section 302.

Proposed Section 302. Electric Vehicle (EV) Charging Station

Location and Site Design Standards

1. *General.* EV charging stations may be located wherever off-street parking is permitted.
2. *Equipment.* All EV charging stations and associated equipment shall not obstruct pedestrian sidewalks, accessible routes, crosswalks, or fire lanes, and shall not be placed within any required intersection visibility or sight-distance triangle as set forth in Section 314 of this Ordinance.
    a. EV charging stations (the charging posts or pedestals intended for user interaction) may be permitted along or adjacent to the public right-of-way where otherwise allowed by this Ordinance.
    b. All associated equipment, including but not limited to transformers, power cabinets, switchgear, utility service equipment, conduit risers, meter pedestals, and any ancillary infrastructure, shall be located to be minimally visible from public streets and sidewalks.
3. *Utilities*. New charging equipment and associated infrastructure should maintain a minimum ten (10) foot separation from underground utilities, including storm and sanitary sewers, water mains, and fire suppression service lines, unless an alternative is approved by the City Engineer.
4. *Screening*. Equipment such as transformers, power cabinets, and switchgear shall be screened from the public road right-of-way by a solid wall, fence, landscaping, and/or architectural features that are compatible in appearance with the principal building.
5. *Parking Counts*. EV charging spaces shall count toward the minimum off-street parking requirements.
6. *Marking and Signage*. EV spaces shall be clearly striped and signed to indicate “EV Charging Only.”
7. *Protection*. Protective bollards or equivalent barriers shall be installed to safeguard charging equipment and associated infrastructure from vehicle impact.

8. *Lighting, Noise, and Hours*. Lighting and operations shall be compatible with adjacent land uses.

Additional Safety and Siting Consideration

- *Weather Exposure*. Outdoor installations are preferred for safety; indoor or covered installations shall provide any additional fire protection or ventilation required by code.

Approvals And Permitting

- Where an EV charging station is designed with a canopy and multiple bays in a manner similar to layout and intensity to an automobile gasoline station, the site shall comply with the applicable design development standards of Section 557.B related to canopy setbacks and height, driveway limitations, lighting requirements, outdoor storage, and off-street parking as required by Section 403 of the Zoning Ordinance.

  Applicable standards from Section 557.b.

  1. Overhead canopies shall be setback at least 20 feet from the right-of-way and constructed of materials consistent with the principal building. The proposed clearance of any canopy shall be noted on the site plan. Any signs, logo, or identifying paint scheme shall be in accordance with article IV, division 4, signs. The canopy shall be no higher than the principal building. Lighting in the canopy shall be recessed, fully shielded, and directed downward to prevent off-site glare.
  2. Only one driveway shall be permitted from each street unless the planning commission determines additional driveways will be necessary to ensure safe and efficient access to the site.
  3. The intensity of lighting within a site shall meet the requirements of article IV, division 5, lighting standards.
  4. There shall be no outdoor storage or display of vehicle components and parts, supplies, or equipment except within an area defined on the site plan approved by the planning commission, and which extends no more than ten feet beyond the building.

The site plan depicts one (1) existing driveway access from Miller St., consistent with this standard. In addition, the site is served by two (2) access points from the rear alley, which are not considered street frontages. The combination of the existing Miller St. driveway and rear alley access provides adequate vehicular circulation and access for the site.

The Economic Development and Planning staff finds that the proposed EV Charging Station generally complies with the proposed text amendments of Section 302 of the Zoning Ordinance, with the following conditions:

- Any additional fire protection, ventilation, or other life safety measures required by the applicable building and fire codes for canopy-covered charging installations shall be provided and reviewed by the Building and Fire Departments as part of the building permit process.
- All equipment associated with the EV charging station, including transformers and service switchboards, shall comply with the performance standards of Section 320. Noise levels generated by such equipment shall not exceed seventy (70) dB(A) at any property line.

GENERAL BUSINESS DISTRICT
All general business principal uses, conditional uses, and special land uses are subject to the following site development requirements:

Schedule Regulations: Bulk, Area, Density, and Setbacks.

TABLE 1. SEC. 225 SCHEDULE OF REGULATIONS		
Location	Required	Proposed
Front (West)	10’	35’
Rear (East)	25’	25’
Side (South); Least 1	15’	35’-3”
Side; Total 2	30’	49”
Height	2 stories, 30’	Canopy 19’

The site plan meets the schedule of regulations as shown in Table.1 above.

Building Design Standards
The site plan must meet the general architectural standards by building types as regulated in Article 3, Division 2: Architectural Building Standards. Commercial buildings shall comply with Sec. 356. Commercial and Mixed-use Architectural Standards.

The proposed EV charging station does not include a conventional principal commercial building. The development consists of a canopy structure covering the charging area and an accessory utility building that contains customer restroom facilities and seating space. As such, the general architectural standards for commercial and mixed-use principal buildings are not fully applicable. The proposed canopy is constructed of metal structure, and the accessory building is finished with Hardie, Artisan Siding. The Zoning Ordinance allows Hardie Panels for residential buildings and commercial fiber cement architectural wall panels for commercial buildings. The applicant shall work with the Economic Development and Planning staff to revise the proposed building materials and color palette to ensure compliance with the Zoning Ordinance.

Site Development Requirements

Off-Street Parking and Loading Standards.

TABLE 2. SEC 403 PARKING SPACE NUMERICAL REQUIREMENTS			
Use	Ordinance	Required	Provided
Automobile gasoline stations	1.0 spaces per each pump and service bay (bay can be included as a space); plus 1.0 space per employee; plus 1.0 space for each 500 sq. ft. of GFA devoted to sales of automotive goods, convenience store (mini-mart), restaurant or auto wash.	Bays: 14 spaces Employees: None Additional uses: None	Bays: 14 spaces
	Total	14 spaces	14 spaces

The Site Plan meets the required bay parking as shown in Table 2. above.

The Zoning Ordinance requires one (1) parking space for each EV charging bay; the bay can be included as a parking space. The site plan depicts fourteen (14) EV charging bays/parking spaces consistent with the Zoning Ordinance. The proposed EV charging station will not have on-site employees. The applicant has provided a maintenance policy indicating that janitorial services will be contracted to perform weekly site maintenance and trash collection, ensuring continued site upkeep and compliance with operational standards.

Accessibility. The proposed text amendments of Section 302 require all EV charging stations to comply with the Americans with Disabilities Act (ADA), the Michigan Building Code, and applicable accessibility guidelines. A minimum of five percent (5%) of all EV charging stations provided for public or employee use, but not less than one (1), shall be accessible. Although the proposed facility does not include off-street parking spaces beyond the EV charging bays, the charging bays themselves function as parking spaces for the use. The site plan depicts (2) accessible EV stalls consistent with the Zoning Ordinance. The accessible spaces shall comply with the applicable state building codes and the ADA standards for accessible design and shall be reviewed as part of the building permit application.

Landscape Standards.

TABLE 3. SEC. 445 DESIGN STANDARDS		
Landscaped Area	Required	Provided
Greenbelts, along street frontage		
10 ft wide landscaped area	10 ft wide	10 ft provided along Greenfield Rd. and Miller St.
1 canopy tree or 2 ornamental trees / 30 ft street frontage	Greenfield: 140/30 = 5 trees	114 Spartan Juniper
6 upright shrubs / 30 ft street frontage	Greenfield: 140/30 = 4.6 5X6 = 30 shrubs	
Parking lot landscaping: Commercial		
Landscaped area of 15 sq. ft. / 1 parking space	Bay parking =14 14X15= 210 sf	
1 deciduous tree / 100 sf.	210/100 = 2 trees	
Interior Landscaping		
Landscaped area 10% of lot area	22,890 X10% = 2,289 sf	
Trees. 1 deciduous tree or evergreen / 400 sf	2,289/400 = 6 trees	
Shrubs. 2 shrubs / 400 sf.	2,289/400 = 6 6X2 = 12 shrubs	
Total	**Landscaped area = 2,289 sf** **Trees = 13** **Shrubs = 42** **Total = 55**	**Landscaped area = 4,000 sf** **Trees = 114**

The landscape plan proposes a total of (114) Spartan Juniper trees, each six (6) feet in height, distributed throughout the site. While the total quantity of plant material is generally adequate, the Zoning Ordinance requires that no single plant species comprise more than (33%) of the overall landscape plan. In addition, the greenbelt, parking lot, and interior landscaping standards require a mix of canopy and evergreen trees, as well as upright and spreading shrubs.

The extensive use of Spartan Junipers, particularly along Greenfield Rd. and Miller St. does not meet the required plant diversity standards for a road right of-way. However, the proposed buffer screening along the north property line and along the rear alley (east side) is acceptable and provides adequate screening between the subject property and the neighboring residential area.

The applicant shall submit a revised landscape plan that incorporates a greater variety of tree and shrub species and demonstrates compliance with the greenbelt, interior, and parking lot landscaping requirements of the Zoning Ordinance. The revised plan shall be subject to review and approval by the Economic Development and Planning staff.

Sec. 447 requires all landscaped areas to be provided with a functional underground irrigation system, unless the proposed landscaped materials used may survive without irrigation. The landscape plan does not indicate the irrigation system proposed on site.

Furthermore, all landscaped areas and plant materials are required to be kept free from refuse and debris. Plant materials, including lawn, shall be maintained in a healthy growing condition, neat and orderly in appearance in accordance with the approved site plan. If any plant material dies or becomes diseased, it shall be replaced within 30 days written notice from the city or within an extended time period as specified in said notice."

Section 446.a. requires screening where commercial properties adjoin a multi-family residential district or a public road right-of-way. Acceptable screening methods include landscape berms, landscape buffers, or screen walls, along with a minimum 10-foot greenbelt along public road frontages.

The site plan provides a 10-foot greenbelt along Greenfield Rd., an approximately 11-foot greenbelt along Miller St., and a landscaped buffer along the rear alley adjacent to the multi-family residential district. The rear buffer includes a row of Spartan Juniper trees intended to provide visual screening, with two access points to accommodate vehicle access to the site that meets the required turning radii for emergency vehicles.

Section 446.g. authorizes the Planning Commission to approve alternative screening designs when site conditions, layout constraints, or surrounding land uses reduce the need for strict compliance, provided the intent of the ordinance to protect adjacent residential areas from potential impacts is maintained.

Due to the configuration of the site, full compliance with complete screening along the rear alley is not feasible. Economic Development and Planning staff finds that the proposed rear landscaping buffer provides adequate screening between the subject property and the adjacent residential district and that the limited rear access points provide appropriate vehicular circulation without compromising neighborhood compatibility. The Spartan Junipers along the rear alley and the portion of screening for the mechanical equipment shall be a minimum of 6 feet in height at the time of planting to ensure immediate screening. These plants must provide year-round screenings. If at the time of planting, they do not fully screen, additional plant materials will be required to achieve 100% screening.

Access Management and Driveway Standards. The site plan depicts one (1) existing driveway access from Miller St. In addition, the site is served by two (2) access points from the rear alley. The combination of the existing Miller St. driveway and rear alley access provides adequate vehicular circulation and access for the site.

Any modifications to the access on Miller St. and the rear alley shall require obtaining permits/approval from the City of Oak Park Engineering Department. Modifications to access along Greenfield Rd. shall require permit/approval from the Oakland County Road Commission.

Dumpster Enclosure. The site plan depicts two dumpsters and a dumpster enclosure on the northeast side of the property. The location and construction details of the dumpster enclosure shall be submitted as part of the building permit application in compliance with Article 1 Division 1 Section 333 of the Zoning Ordinance.

Lighting. Any proposed exterior light fixtures should be shielded and downward cast to eliminate the possibility of nuisance to the adjoining properties. The intensity of light within a site shall not exceed one (1) footcandle at any property line, except where it abuts a service drive or other public right-of-way in compliance with the provisions of Article 4, Division 5 Lighting Standards.

Mechanical Equipment. All mechanical equipment, including transformers, shall be screened by a solid wall, fence, landscaping, and/or architectural features that are compatible in appearance with the principal building in compliance with the provisions of the proposed text amendments of Section 302. The site plan depicts a proposed Trex fence on the west side and a portion of the north side of the property, with the remaining portion of the north side screened by a proposed landscape buffer. The site plan shall provide the height, materials, and construction details of the proposed fence for review as part of the building permit process.

Signs. No signage is approved as part of the Site Plan Review process; a separate permit must be requested for the inclusion of any signs at this site.

STAFF RECOMMENDATION
Upon the findings of this report and the analysis herewith, it is the recommendation of the Economic Development and Planning staff to approve the Site Plan for the proposed iONNA-MI-0008-Oak Park at 21500 Greenfield Rd., subject to the following conditions:

Conditions of Site Plan approval:

1. The Site Plan Approval shall not become effective until adoption of the proposed text amendments to the Zoning Ordinance permitting EV Charging Stations as a principal use within the B-2, General Business District. Any subsequent changes to the adopted text amendments that affect the approved site plan shall require review of the site plan for continued compliance. Minor revisions may be subject to administrative review and approval by staff. Major revisions shall require review and approval by the Planning Commission.
2. Any additional fire protection, ventilation, or other life safety measures required by the applicable building and fire codes for canopy-covered charging installations shall be provided and reviewed by the Building and Fire Departments as part of the building permit process.
3. All equipment associated with the EV charging station, including transformers and service switchboards, shall comply with the performance standards of Section

320. Noise levels generated by such equipment shall not exceed seventy (70) dB(A) at any property line.

4. The applicant shall work with the Economic Development and Planning staff to revise the proposed building materials and color palette to ensure compliance with the Zoning Ordinance.
5. The accessible spaces shall comply with the applicable state building codes and the ADA standards for accessible design and shall be reviewed as part of the building permit application.
6. The applicant shall submit a revised landscape plan that incorporates a greater variety of tree and shrub species and demonstrates compliance with the greenbelt, interior, and parking lot landscaping requirements of the Zoning Ordinance. The revised plan shall be subject to review and approval by the Economic Development and Planning staff, and include the following:
    a. All landscaped areas to be provided with a functional underground irrigation system, unless the proposed landscaped materials used may survive without irrigation. In such cases, the applicant shall submit a landscape maintenance plan for review and approval.
    b. All landscaped areas and plant materials shall be kept free from refuse and debris. Plant materials, including lawns, shall be maintained in a healthy growing condition, neat and orderly in appearance in accordance with the approved site plan. If any plant material dies or becomes diseased, it shall be replaced within 30 days written notice from the city or within an extended time period as specified in said notice, consistent with Section 447 of the Zoning Ordinance.
7. The Spartan Junipers along the rear alley and the portion that screens the mechanical equipment shall be a minimum of 6 feet in height at the time of planting to ensure immediate screening. These plants must provide year-round screenings. If at the time of planting, they do not fully screen, additional plant materials will be required to achieve 100% screening.
8. The site plan shall provide the height, materials, and construction details of the proposed fence for screening the mechanical equipment for review as part of the building permit process.
9. Any modifications to the access on Miller St. and the rear alley shall require obtaining permits/approval from the City of Oak Park Engineering Department. Modifications to access along Greenfield Rd. shall require permit/approval from the Road Commission for Oakland County.
10. The location and construction details of the dumpster enclosure shall be submitted as part of the building permit application in compliance with Article 1 Division 1 Section 333 of the Zoning Ordinance.
11. Any existing or proposed exterior light fixtures should be shielded and downward cast to eliminate the possibility of nuisance to the adjoining properties. The intensity of light within a site shall not exceed one (1) footcandle at any property line, except where it abuts a service drive or other public right-of-way in compliance with the provision of Article 4, Division 5 Lighting Standards.

12. No signage is approved as part of the Site Plan Review process; a separate permit must be requested for the inclusion of any signs at this site.
13. The site and buildings shall comply with the applicable requirements of the City of Oak Park Engineering, Building and Fire Departments.

Dewberry

Dewberry Engineers Inc.
2610 Wycliff Road, Suite 410
Raleigh, NC 27607-3073

919.881.9939
919.881.9923 fax
www.dewberry.com

April 16, 2026

City of Oak Park
Atten: Salam Habhab, Planner
14300 Oak Park Blvd.
Oak Park, MI 48237

RE: iONNA- MI- 0008_OAK PARK_EVCS_ 21500 GREENFIELD ROAD, SITE PLAN APPLICATION
PROJECT NARRATIVE SUPPLEMENT—IONNA'S SITE MAINTENANCE POLICY

Dear Salam:

Reference is made to the above-mentioned project and the city's question on how iONNA will manage the site's regular upkeep. iONNA's sites, nationally, are kept clean and maintained by contracted janitorial service providers.

iONNA explained that the proposed EVCS site at 21500 Greenfield Road will be maintained as stated below:

> IONNA will contract with a janitorial firm for weekly maintenance and to collect the trash from the bins to dispose of them into the onsite trash enclosure. The unmanned restroom amenity building will be accessible via QR code 24/7 to the public.

A copy of iONNA's site maintenance policy statement is attached below.

Sincerely

Lloyd McCarthy

Lloyd McCarthy,
Project Manager
Dewberry Engineers for Applicants

Attachment follow this page

This project proposes to establish a new IONNA Rechargery located at 21500 Greenfield Rd, Oak Park, MI. This installation will feature seven (7) Level 3 DC fast-charging stations with a canopy, providing essential charging infrastructure for the growing electric vehicle community in Michigan.

IONNA, a joint venture established by leading automotive manufacturers including BMW, General Motors, Honda, Hyundai, Kia, Mercedes-Benz, Stellantis, and Toyota, is creating North America's premier charging network. This location will serve as a crucial link in IONNA's expanding charging infrastructure, supporting both local EV drivers and travelers along the Interstate 5 corridor.

The proposed installation will feature high-powered charging capabilities compatible with both North American Charging Standard (NACS) and Combined Charging System (CCS) connectors, ensuring accessibility for all electric vehicle makes and models. Along with a restroom amenity and canopy cover that will make the site attractive for EV customers.

IONNA will contract with a janitorial firm for weekly maintenance and to collect the trash from the bins to dispose of them into the onsite trash enclosure. The unmanned restroom amenity will be accessible via QR code 24/7 to the public.

This Rechargery represents an investment in Oak Park's future by providing essential EV charging infrastructure to the area. The location's proximity to major thoroughfares makes it an ideal spot for drivers and local businesses, bringing an untapped market to the City.

The project will adhere to all required safety standards and will be designed to minimize impact on existing infrastructure while maximizing accessibility for EV drivers.

CITY OF OAK PARK
MUNICIPAL SERVICES
ECONOMIC DEVELOPMENT & PLANNING DIVISION
14300 Oak Park Blvd,
Oak Park, Michigan 48237

APPLICATION FOR SITE PLAN REVIEW

FEES

☑ Site Plan Review	$750.00
☐ Special Land Use and Public Hearing (including Site Plan Review)	$1,000.00
☐ Administrative Review	$300.00
☐ Text or Zoning Amendments (rezoning*)	$600.00
☐ Planning Commission Special Meeting (in addition to other fees)	$600.00
☐ Deviation from Approved Site Plan (major modifications)	$300.00

Date Received	Fee Paid	Site Plan No.
03/12/2026	$750.00	PPC26-009

Site Plan Review
Site Plan Review is the process of reviewing drawings that illustrate the layout of land and structures for conformance with ordinance requirements and both on-site and off-site impacts. These requirements may include ingress/egress, traffic flow, landscaping, storm drainage, soil erosion, grading of land, parking, and signage.

Site Plan Reviews are conducted and approved by the Planning Commission, with the exception of the Administrative Review. We encourage you to request a conceptual site plan review meeting. This service is free of charge and helps to expedite the approval process. Please contact the Economic Development and Planning Department to schedule a meeting at (248) 691-7455.

Notice to Applicant
Completed Applications must be submitted to the Economic Development and Planning Department (30) days prior to the Planning Commission meeting at which the application will be considered.

Complete sets must include the following:
- ☑ Application
- ☑ Review Fee
- ☑ Plans (15 sets) (folded)
- ☑ Electronic Copy of all Plans

The Planning Commission meets the second Monday of the month at 7:00 PM in the City Council Chamber at the City Hall, 14000 Oak Park Blvd. Oak Park, MI 48237

PROPERTY INFORMATION

Name of Proposed Development	iONNA _MI-0008- Oak Park (21500 Greenfield Road)
Property Address	21500 Greenfield Road, Oak Park, MI 48237
Parcel Number | Sidwell Number	52 **25- 31- 302 -003**
Legal Description	A parcel of land described as part of Lots 47, 48 and 49...Recorded in Liber 29 of Plats, page 24 in County of Oakland, MI records.
Existing Land Use	Vacant

Proposed Land Use/ Text or Zoning Amendments (Detailed Description).

Proposed Electric Vehicle Charging Station to include the following installations:
(12) EV Charging Stalls, (7) Charging Dispensers, (1) Utility Transformer, (1) Switchgear.
(1) Utility Building containing customer restrooms and sitting space, and 1) Canopy.

Estimated Monetary Investment	$ 520,000.00	Projected Number of Employees	

PROPERTY OWNER INFORMATION

Owner Name	JS PROPERTY LLC						
Owner Address	16941 W 8 MILE RD, DETROIT MI 48235						
City	DETROIT	State	MI	Zip	48235	Phone	Amer Shaba
Signature of Property Owner		Print Name		Amer Shaba			
Email Address	[redacted]						

IONNA, LLC ("iONNA") is the EV Charging Station Developer/Operator
Address: 4022 Stirrup Creek Drive, Suite 315, Durham, NC 27703 /Email: andres@ionna.com / C: 919.922.0406

APPLICANT INFORMATION

Applicant Name and Role	Lloyd McCarthy, Dewberry Engineers for Applicants						
Applicant Address	2610 Wycliff Road, suite 410, Raleigh, NC 27607						
City	Raleigh	State	NC	Zip	27607	Phone	[redacted]
Signature of Applicant		Print Name		Lloyd McCarthy			
Email Address	[redacted]						

N: T&P/PLANNING/APPLICATIONS & PERMITS/ FINAL APPLICATIONS/ SPR APPLICATION 2025


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MI-0008 - OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SITE INFORMATION

PROPOSED SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

PROPERTY OWNER:
JS PROPERTY LLC

PARCEL ID:
PARCEL ID: 522531302003

POWER COMPANY:
DTE ENERGY
CONTACT: BRITTANY GRACEY
PHONE: 313-235-2337
EMAIL: BRITTANY.GRACEY@DTEENERGY.COM
WORK ORDER: 77211759

COUNTY:
OAKLAND COUNTY

LATITUDE*:
42° 27' 3.41" N

LONGITUDE*:
83° 12' 0.86" W
*BASED ON GOOGLE EARTH

DEWBERRY DESIGN CONTACT:
TUAN TRAN
DEWBERRY ENGINEERS INC.
(410) 645-1845
ttran@Dewberry.com

CONTRACTOR NOTE

CONTRACTOR SHALL COMPLETE INSTALL PER THE SIGNED AND SEALED SET OF DRAWINGS. ANY NECESSARY DEVIATIONS FROM THE DRAWINGS MUST BE SUBMITTED THROUGH AN RFI REQUEST PROCESS WITH ENGINEERING FOR AN APPROVAL PRIOR TO CONTRACTOR PROCEEDING WITH A DEVIATION OF THE SIGNED AND SEALED SET OF DRAWINGS.

APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

MICHIGAN UNIFORM BUILDING & ENERGY CODES, CONSISTENT WITH THE FOLLOWING CODES:

2021 MICHIGAN BUILDING CODE (IBC 2021 W/ AMENDMENTS)
2015 MICHIGAN ENERGY CODE (IECC 2015 W/ AMENDMENTS)
2023 MICHIGAN ELECTRICAL CODE (NFPA 70, 2023 W/ AMENDMENTS)

IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.

PROJECT DESCRIPTION

- INSTALL (1) UTILITY TRANSFORMER
- INSTALL (1) UTILITY PRIMARY DISCONNECT SWITCH
- INSTALL (1) 3000A, 277/480V SERVICE SWITCHBOARD
- INSTALL (7) ALPITRONIC HYC400 DUAL PORT DISPENSERS AND (14) PARKING STALLS OF CHARGING
- INSTALL (6) LIGHT POLES

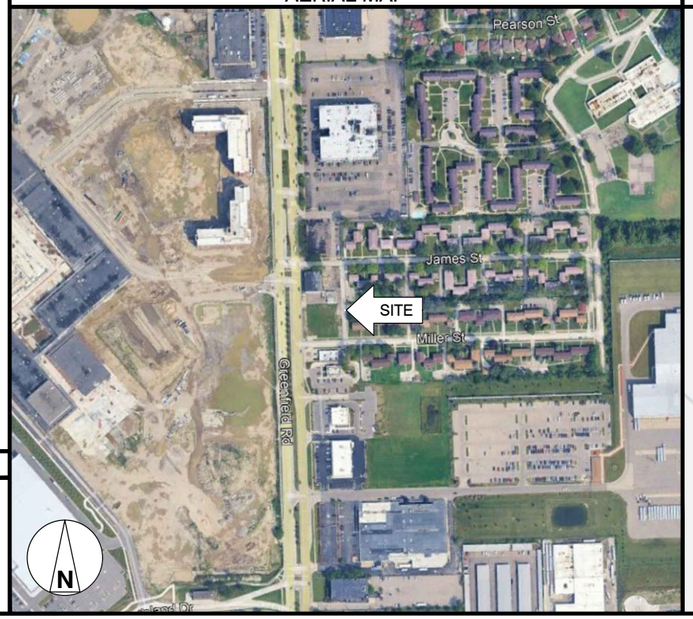
DESIGNED BY OTHER:
- INSTALL (1) PULL-THROUGH CANOPY (DESIGNED BY ARNING)
- INSTALL (1) AMENITY BUILDING (DESIGNED BY REDLINE)
- INSTALL (1) TRASH ENCLOSURE (DESIGNED BY REDLINE)

ZONING INFORMATION

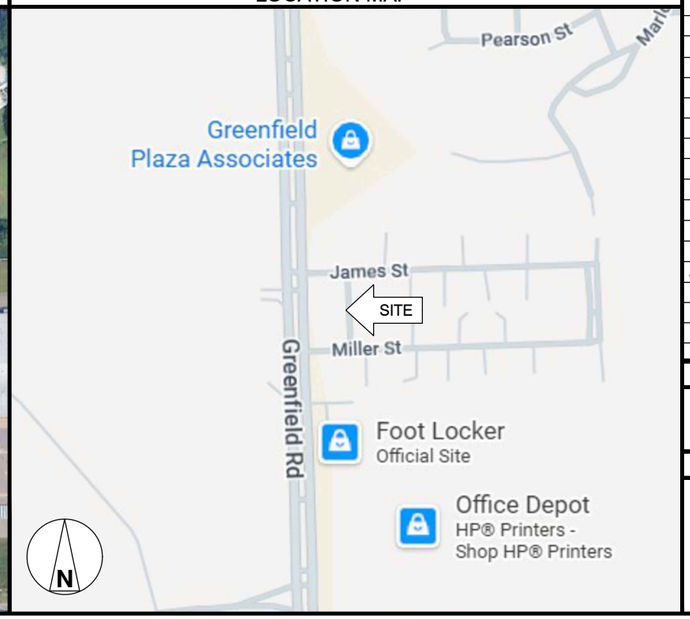
PERMITTING JURISDICTION: CITY OF OAK PARK

APN: 522531302003

AERIAL MAP



LOCATION MAP



DRAWING INDEX

SHT. NO.	SHEET TITLE
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GN-1	GENERAL NOTES I
GN-2	GENERAL NOTES II
C-1	OVERALL SITE PLAN
C-2	EXISTING CONDITIONS PLAN
C-3	EQUIPMENT & PARKING PLAN
C-3A	DIMENSIONED PARKING PLAN
C-3B	GRADING PLAN
C-3C	LANDSCAPE PLAN
C-3D	TURNING RADIUS PLAN
C-4	CONSTRUCTION DETAILS I
C-5	CONSTRUCTION DETAILS II
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E-1	ELECTRICAL ONE-LINE DIAGRAM
E-2	ELECTRICAL DETAILS I
E-3	ELECTRICAL DETAILS II
E-4	UTILITY DETAILS
SURVEY	ALTA/NSPS LAND TITLE SURVEY (FOR REFERENCE ONLY)
CANOPY	CANOPY DRAWINGS (DESIGNED BY ARNING)
AMENITY	AMENITY BUILDING (DESIGNED BY REDLINE)

BEFORE SCALING

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE IONNA REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL BEFORE YOU DIG

MISS DIG 811

MISS DIG SYSTEM, INC.
811 OR 1-800-482-7171

3 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

iONNA™
2900 S MAIN STREET
SANTA ANA, CA 92707

Dewberry®
Dewberry - MI Designers PC
2900 WEST ROAD
SUITE 500
EAST LANSING, MI 48823

DRAWN BY: GFS/RS

CHECKED BY: TT

APPROVED BY: HWJ

IONNA PROJECT #: MI-0008

JOB #: 50191375

SUBMITTALS

REV.	DATE	DESCRIPTION
2	04/20/26	REVISED PER COMMENTS
1	03/31/26	ISSUED PER PERMITS
0	12/29/25	ISSUED PER PERMITS

SITE MODEL:
PLUS BASE

SITE NAME:
MI-0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   GENERAL CONTRACTOR(s) OR SUB–CONTRACTOR(s) – CIVIL CONTRACTOR AND/OR ELECTRICIAN CONTRACTOR
   PROJECT OWNER/CONSTRUCTION MANAGER – IONNA
   PROJECT HOST – LEGAL PROPERTY OWNER
   ENGINEER – DEWBERRY ENGINEERS INC.

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING THE GENERAL CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT OWNER PRIOR TO THE COMMENCEMENT OF WORK.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. THE GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE THE INSTALLATION AS INDICATED ON THE DRAWINGS FOR A FULLY FUNCTIONAL CHARGING STATION AND COMPLETE PROJECT.

6. THE SUB–CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON DRAWINGS, THE GENERAL CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE PROJECT ENGINEER. ONLY WRITTEN APPROVALS SHALL BE DEEMED TO CONFIRM ANY SUCH CHANGES AS BEING APPROVED.

8. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT UNIQUE JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK.

9. THE GENERAL CONTRACTOR SHALL REVIEW ROUTING OF CONDUIT, POWER AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING PLAN DRAWING. THE GENERAL CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONSTRUCTION MANAGER AND PROJECT HOST.

10. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE PROJECT HOST. THE GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

11. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF GENERAL CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE CONSTRUCTION MANAGER IMMEDIATELY.

12. APPLICABLE BUILDING CODES:
    THE GENERAL CONTRACTORS WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    THE GENERAL CONTRACTOR WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
    MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION

13. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

14. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.

15. THE GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER GENERAL CONTRACTOR(S) AND/OR SUB–CONTRACTOR(S).

16. CONSTRUCTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE.

17. THE GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND GENERAL CONTRACTOR(S) AND/OR SUB–CONTRACTOR(S) TO THE SITE AND/OR BUILDING.

18. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

19. THE GENERAL CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

20. THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE PROJECT HOST 48 HOURS PRIOR TO COMMENCEMENT OF WORK.

21. THE GENERAL CONTRACTOR AND SUB–CONTRACTORS SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.

22. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2–A OR 2–A:10–B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.

23. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE PROJECT OWNER AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

24. GENERAL CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS–BUILT REDLINES AND ALL SPECIFIED CLOSE–OUT DOCUMENTATION TO THE PROJECT OWNER UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.

25. THE GENERAL CONTRACTOR SHALL LEAVE THE WORK AREA AND SURROUNDING PREMISES IN A CLEAN CONDITION.

SITE WORK NOTES:

PART 1 – GENERAL

1.1 REFERENCES:
- A. DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION–CURRENT EDITION).
- B. AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS)
- C. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS).
- D. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION).

1.2 INSPECTION AND TESTING:
- A. FIELD TESTING OF EARTHWORK COMPACTION AND CONCRETE CYLINDERS SHALL BE PERFORMED BY AN INDEPENDENT TESTING LAB. THIS WORK IS TO BE COORDINATED BY THE GENERAL CONTRACTOR.
- B. ALL WORK SHALL BE INSPECTED AND VERIFIED FOR CONFORMANCE AND RELEASED BY THE ENGINEER WHO SHALL CARRY OUT THE GENERAL INSPECTION OF THE WORK WITH SPECIFIC CONCERN TO PROPER PERFORMANCE OF THE WORK AS SPECIFIED AND/OR CALLED FOR ON THE DRAWINGS. IT IS THE GENERAL CONTRACTOR(S) RESPONSIBILITY TO REQUEST TIMELY INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

1.3 SITE MAINTENANCE AND PROTECTION:
- A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE CONTRACT.
- B. AVOID DAMAGE AND TAKE PROTECTIVE MEASURES TO THE SITE AND TO EXISTING FACILITIES, IMPROVEMENTS, STRUCTURES, PAVEMENTS, CURBS, AND LANDSCAPING DESIGNATED TO REMAIN. ANY DAMAGED PART SHALL BE REPAIRED AT SUB–CONTRACTOR(S) EXPENSE TO THE SATISFACTION OF THE PROJECT HOST.
- C. KEEP SITE FREE OF ALL PONDING OR STANDING WATER.
- D. PROVIDE EROSION CONTROL MEASURES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH STATE DOT, LOCAL PERMITTING AGENCY AND EPA REQUIREMENTS.
- E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.
- F. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUB–CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. THE GENERAL CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
- G. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE PROJECT OWNER AND/OR LOCAL UTILITIES.
- H. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE PROJECT HOST OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE PROJECT HOST AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.
- I. PROVIDE A MINIMUM 48–HOUR NOTICE TO THE PROJECT HOST AND RECEIVE WRITTEN NOTICE TO PROCEED BEFORE INTERRUPTING ANY UTILITY SERVICE.
- J. SOD PLANTED IN THE FALL MUST ESTABLISH ITS ROOTS BEFORE THE FIRST WINTER FROST. DETERMINE WHEN THE FIRST FROST USUALLY OCCURS, AND PLANT THE SOD NO LATER THAN ONE MONTH BEFORE THE FIRST FROST. IF THE CONSTRUCTION IS FINISHED LATER THAN ONE MONTH BEFORE THE FIRST FROST, USE STRAW UNTIL SOD CAN BE INSTALLED.
- K. THE GENERAL CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS, RUBBISH, DEBRIS, STUMPS, STICKS, AND STONES.
- L. THE GENERAL CONTRACTOR SHALL REMOVE ALL TRASH DEBRIS FROM THE SITE ON A DAILY BASIS.
- M. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS TO PROTECT TREES, VEGETATION, AND ROOT SYSTEMS DURING CONSTRUCTION.
- N. CONTRACTOR TO COORDINATE POST CONSTRUCTION LANDSCAPING FINISHES WITH OWNER AND IONNA.

PART 2 – PRODUCTS

2.1 GRANULAR BACKFILL: SHALL MEET THE FOLLOWING GRADATION:

SIEVE SIZE	TOTAL PERCENT PASSING
1–1/2 INCH	100
1 INCH	75 TO 100
3/4 INCH	80 TO 100
3/8 INCH	35 TO 75
NO. 4	30 TO 60
NO. 30	7 TO 30
NO. 200	3 TO 15

2.2 GRANULAR BEDDING AND TRENCH BACKFILL: WELL–GRADED SAND MEETING THE GRADATION REQUIREMENTS OF ASTM D2487 (SE OR SW–SM).

2.3 ALL STRUCTURAL BACKFILL AND SUBBASE UNDER SLABS SHALL BE SELECT STRUCTURAL FILL MEETING THE GRADATION AND SOUNDNESS REQUIREMENTS IN ACCORDANCE WITH THE FOLLOWING:

SIEVE SIZE	TOTAL PERCENT PASSING
4 INCH	100
NO. 40	0 TO 70
NO. 200	0 TO 40

2.4 MATERIALS SHALL BE SUBSTANTIALLY FREE OF SHALE OR OTHER SOFT, POOR DURABILITY PARTICLES. IF TESTING IS ELECTED BY PROJECT OWNER, MATERIAL WITH A MAGNESIUM SULFATE SOUNDNESS LOSS EXCEEDING 30% WILL BE REJECTED.

2.5 COARSE AGGREGATE FOR SUBBASE COURSE SHALL CONFORM TO ASTM D2940.

2.6 UNSUITABLE MATERIAL: HIGH AND MODERATELY PLASTIC SILTS AND CLAYS (LL>45). MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES IN ANY DIMENSION, AND DEBRIS AS DETERMINED BY THE ENGINEER. TYPICALLY THESE WILL BE SOILS CLASSIFIED BY ASTM AS PT, MH, CH, OH, ML, AND OL.

PART 3 – EXECUTION

3.1 GENERAL:
- A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF A RAIN EVENT, NO SEDIMENT WILL LEAVE THE WORK SITE.
- B. BEFORE ALL SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.
- C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA TO BE CLEARED.
- D. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, AND OTHER DEBRIS, BRUSH, AND REFUSE EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE, RAKE, DISK OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE TO A DEPTH OF 12 INCHES ALL ROOTS AND OTHER DEBRIS THEREBY EXPOSED.
- E. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR UNDESIRABLE MATERIALS.
- F. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION WORK COMPLETELY WITH GRANULAR FILL.
- G. REMOVE FROM THE SITE AND DISPOSE IN AN AUTHORIZED LANDFILL ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS. BURNING WILL NOT BE PERMITTED.
- H. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE ENGINEER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.
- I. SEPARATE AND STOCK PILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF–SITE IN A LEGAL MANNER.
- J. DURING EXCAVATION, THE SUB–CONTRACTOR SHALL PROVIDE SHORING, SHEETING, AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF EXCAVATION.
- K. WHEN DIRECTIONAL BORING IS REQUIRED, SUB–CONTRACTOR SHALL INSTALL A LOOSE TONING WIRE WITHIN INSTALLED CONDUIT TO ALLOW FOR IDENTIFICATION OF UNDERGROUND CONDUITS.

3.2 BACKFILL:
- A. AS SOON AS PRACTICAL, AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST–IN–PLACE CONCRETE, BACKFILL THE EXCAVATION WITH SPECIFIED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.
- B. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.
- C. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW, OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- D. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 12–INCHES LOOSE THICKNESS AND COMPACTED. WHERE HAND OPERATED COMPACTORS ARE USED, FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12–INCHES IN LOOSE DEPTH AND COMPACTED.
- E. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS ESTABLISHED BY THE STANDARD PROCTOR TEST, ASTM D 698.
- F. WHENEVER THE DENSITY TESTING INDICATES THAT THE SUB–CONTRACTOR(S) HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE CONSTRUCTION MANAGER. THE SUB–CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE MINIMUM COMPACTION REQUIREMENTS.
- G. THE SUB–CONTRACTOR SHALL OBTAIN GRAB SAMPLES OF SUFFICIENT QUANTITY TO PROVIDE TO LAB FOR PURPOSE OF DETERMINING MAX DRY DENSITY. ALL LOOSE AND/OR ORGANIC MATERIAL SHALL BE REMOVED PRIOR TO PREPARATION OF THE AREA FOR PLACEMENT OF STRUCTURAL BACKFILL. OVERALL PLAN AREA OF WORK SHALL EXTEND 3'–0" MINIMUM BEYOND THE FINAL DIMENSIONS.
- H. SCARIFY THE EXISTING SOILS TO A DEPTH OF 6" AND RE–COMPACT USING A VIBRATING PLATE OR TAMPER, ANY SOFT AREAS SHALL BE OVEREXCAVATED 12" AND BACKFILLED WITH MATERIALS AND COMPACTION REQUIREMENTS SHOWN ON THE DRAWINGS.
- I. PLACEMENT AND COMPACTION OF STRUCTURAL BACKFILL AND SUBBASE SHALL BE IN 12" LIFTS. EXCAVATE FOR THE FOOTING EDGE AS SHOWN ON THE DRAWINGS.

3.3 TRENCHING EXCAVATION:
- J. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE GENERAL CONTRACTOR. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.
- K. EXTEND THE TRENCH WIDTH A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.
- L. WHEN SOFT YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, EXCAVATE THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION, THEN BACKFILL WITH 12" OF GRANULAR MATERIAL.

3.4 TRENCHING BACKFILL:
- A. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.
- B. NOTIFY THE ENGINEER 24 HOURS IN ADVANCE OF BACKFILLING.
- C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.
- D. PLACE GRANULAR BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6–INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS AND HAUNCHES.
- E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.
- F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 12–INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.
- G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS ESTABLISHED BY THE STANDARD PROCTOR TEST, ASTM D 698.
- H. PER LOCAL REGULATORY AUTHORITY AND AS APPLICABLE, ALL TRENCHES IN PUBLIC RIGHT–OF–WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE–APPROVED BY THE LOCAL JURISDICTION.

3.5 FINISH GRADING:
- A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL MATCH SURROUNDING TOPOGRAPHY AND STRUCTURES.
- B. UTILIZE GRANULAR FILL RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.
- C. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL OR BETTER CONDITION.
- D. AREAS OF THE PROJECT HOST'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT OR PARKING/DRIVING AREAS SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.

3.6 ASPHALT PAVING ROAD:
- A. AASHTO
- B. STATE SPECIFIC ASPHALT SPECIFICATIONS FOR HIGHWAYS
- C. THE SUB–CONTRACTOR IS RESPONSIBLE FOR RE–STRIPING AND APPLYING SEALCOATING, UNLESS OTHERWISE SPECIFIED.

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DRAWN BY: GFS/RS

CHECKED BY: TT

APPROVED BY: HWJ

IONNA PROJECT #: MI–0008

JOB #: 50191375

SUBMITTALS

REV.	DATE	DESCRIPTION
2	04/20/26	REVISED PER COMMENTS
1	03/31/26	ISSUED PER PERMITS
0	12/29/25	ISSUED PER PERMITS

SITE MODEL:
PLUS BASE

SITE NAME:
MI–0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
GENERAL NOTES I

SHEET NUMBER
GN–1

ELECTRICAL NOTES:

1. THE GENERAL CONTRACTOR SHALL SUPPLY AND INSTALL ANY/ALL ELECTRICAL WORK INDICATED. ANY/ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS. ANY/ALL APPLICABLE SPECIFICATIONS. IF ANY PROBLEMS ARE ENCOUNTERED BY COMPLYING WITH THESE REQUIREMENTS, SUB–CONTRACTOR SHALL NOTIFY THE PROJECT HOST AS SOON AS POSSIBLE, AFTER THE DISCOVERY OF THE PROBLEMS, AND SHALL NOT PROCEED WITH THAT PORTION OF WORK, UNTIL THE PROJECT HOST HAS DIRECTED THE CORRECTIVE ACTIONS TO BE TAKEN.

2. THE GENERAL CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATION INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. ALL EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC., THAT ARE PART OF THE FINAL SYSTEM, SHALL BE VERIFIED BY THE SUB–CONTRACTOR, PRIOR TO THE SUBMITTAL OF HIS BID. FAILURE TO COMPLY WITH THIS PARAGRAPH WILL IN NO WAY RELIEVE THE SUBCONTRACTOR OF PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM.

3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL CODES AND LOCAL ORDINANCES OF THE LOCAL POWER COMPANIES HAVING JURISDICTION AND SHALL INCLUDE BUT NOT BE LIMITED TO:

A. UL – UNDERWRITERS LABORATORIES
B. NEC – NATIONAL ELECTRICAL CODE
C. NEMA – NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
D. OSHA – OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
E. SBC – STANDARD BUILDING CODE
F. NFPA – NATIONAL FIRE PROTECTION ASSOCIATION

4. DO NOT SCALE ELECTRICAL DRAWINGS, REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, AND CONFIRM WITH ENGINEER ANY SIZES AND LOCATIONS WHEN NEEDED.

5. EXISTING SERVICES: THE GENERAL CONTRACTOR SHALL NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE PROJECT HOST.

6. THE GENERAL CONTRACTOR SHALL PAY FOR ANY/ALL PERMITS, FEES, INSPECTIONS AND TESTING. THE GENERAL CONTRACTOR IS TO OBTAIN PERMITS AND APPROVED SUBMITTALS PRIOR TO THE WORK BEGINNING OR ORDERING EQUIPMENT.

7. THE TERM "PROVIDE" USED IN CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, INDICATES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL, UNLESS OTHERWISE SPECIFIED BY CONSTRUCTION MANAGER OR BY PROJECT DEVELOPER.

8. THE GENERAL CONTRACTOR SHALL CONFIRM WITH LOCAL UTILITY COMPANY ANY/ALL REQUIREMENTS SUCH AS THE: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, SIZE OF TRANSFORMERS, SCHEDULED DOWNTIME FOR THE PROJECT HOST'S CONFIRMATION, ETC. ANY/ALL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER, PRIOR TO BEGINNING ANY WORK.

9. CONDUCTORS: THE CONTRACTOR SHALL USE 98% CONDUCTIVITY COPPER OR ALUMINUM WITH TYPE (THWN–2) INSULATION, 600 VOLT, COLOR CODED UNLESS SPECIFIED DIFFERENTLY ON DRAWINGS.

10. ALL (THWN–2) WIRING INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

11. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET/DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.

12. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF THE CONSTRUCTION. CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER. SUB–CONTRACTOR IS TO PROVIDE ALL ELECTRICAL EQUIPMENT UNLESS OTHERWISE DIRECTED.

13. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL SUB–CONTRACTOR IN A FIRST CLASS, WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND SUBJECT TO REGULATORY INSPECTION AND APPROVAL BY THE CONSTRUCTION MANGER.

14. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.

15. THE GENERAL CONTRACTOR SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.

16. THE CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ANY ADDITIONAL CHARGE AND SHALL INCLUDE THE REPLACEMENT OR THE REPAIR OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.

17. ADEQUATE AND REQUIRED LIABILITY INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PROPERTY DAMAGE FOR THE DURATION OF WORK.

18. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SHALL APPEAR ON THE LIST OF U.L. APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IEEE.

19. GENERAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURES CATALOG INFORMATION OF ANY/ALL LIGHTING FIXTURES, SWITCHES AND ALL OTHER ELECTRICAL ITEMS FOR APPROVAL BY THE CONSTRUCTION MANAGER PRIOR TO INSTALLATION.

20. ANY CUTTING OR PATCHING DEEMED NECESSARY FOR ELECTRICAL WORK IS THE CONTRACTOR(S) RESPONSIBILITY AND SHALL BE INCLUDED IN THE COST FOR WORK AND PERFORMED TO THE SATISFACTION OF THE CONSTRUCTION MANAGER UPON FINAL ACCEPTANCE.

21. THE SUBCONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES.

22. DISCONNECT SWITCHES SHALL BE H.P. RATED HEAVY–DUTY, QUICK–MAKE AND QUICK–BREAK ENCLOSURES, AS REQUIRED BY EXPOSURE TYPE.

23. ALL CONNECTIONS SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANTI–OXIDE COMPOUND SUCH AS "NOALOX" BY IDEAL INDUSTRIAL INC. COAT ALL WIRE SURFACES BEFORE CONNECTING. EXPOSED ALUMINUM & COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TREATED – NO SUBSTITUTIONS.

24. ALL EXTERIOR AND INTERIOR ABOVE GROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL UNLESS SPECIFIED OTHERWISE. RACEWAYS: ALL CONDUITS SHALL BE SCHEDULE 40 EMT MEETING OR EXCEEDING NEMA TC2 – 1990 UNLESS SPECIFIED OTHERWISE. THE SUB–CONTRACTOR SHALL PLUG AND CAP EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL STRINGS – 200 LBS TEST POLYETHYLENE CORD. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 3 FT. RADIUS. EMT CONDUITS WHEN SPECIFIED, SHALL MEET UL–6 FOR GALVANIZED STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIGID CONDUIT. COAT ALL THREADS WITH 'BRITE ZINC' OR 'GOLD GALV'.

25. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.

26. CONNECTORS FOR POWER CONDUCTORS: SUB–CONTRACTOR SHALL USE PRESSURE TYPE INSULATED TWIST–ON CONNECTORS FOR NO. 10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AWG AND LARGER.

27. THE SUB–CONTRACTOR SHALL PLACE TWO LENGTHS OF WARNING TAPE AT A DEPTH OF 12" BELOW GROUND AND DIRECTLY ABOVE ELECTRICAL SERVICE CONDUITS. CAUTIONS TAPE TO READ "CAUTION BURIED ELECTRIC".

28. WHEN DIRECTIONAL BORING IS REQUIRED, SUB–CONTRACTOR SHALL INSTALL A LOOSE TONING WIRE WITHIN INSTALLED CONDUIT TO ALLOW FOR IDENTIFICATION OF UNDERGROUND CONDUITS.

29. ALL BOLTS SHALL BE STAINLESS STEEL.

30. ALL MATERIALS AND EQUIPMENT SUPPLIED AND INSTALLED BY THE SUBCONTRACTOR SHOULD BE NEW AND UNUSED.

REINFORCED CONCRETE NOTES:

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING APPLICABLE CODES: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"; ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".

2. DO NOT USE RETEMPERED CONCRETE, OR ADD WATER TO READY–MIX CONCRETE AT THE JOB SITE. MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE.

3. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR–ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS (UNLESS OTHERWISE NOTED). ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

4. MAXIMUM AGGREGATE SIZE SHALL BE 3/4".

5. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:	ASTM C 150, TYPE I
REINFORCEMENT:	ASTM A 615, GRADE 60
NORMAL WEIGHT AGGREGATE:	ASTM C 33
WATER:	DRINKABLE
ADMIXTURES:	NON–CHLORIDE CONTAINING

6. REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH "MNL–66(20): ACI DETAILING MANUAL" AND "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI–318–08.

7. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B"; ALL HOOKS SHALL BE STANDARD, UNO.

8. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

CONCRETE CAST AGAINST EARTH:	3 IN.	
CONCRETE EXPOSED TO EARTH OR WEATHER:	#6 AND LARGER	2 IN.
	#5 AND SMALLER & WWF	1–1/2 IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:	SLAB AND WALL	3/4 IN.
	BEAMS AND COLUMNS	1–1/2 IN.

9. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

10. INSTALLATION OF CONCRETE ANCHOR, SHALL BE PER MANUFACTURERS WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE.

11. CURING COMPOUNDS SHALL CONFORM TO ASTM C–309.

12. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI–301.

13. DO NOT WELD OR TACKWELD REINFORCING STEEL.

14. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.

15. LOCATE ADDITIONAL EXPANSION JOINTS REQUIRED TO FACILITATE CONSTRUCTION AS ACCEPTABLE TO ENGINEER. PLACE REINFORCEMENT CONTINUOUSLY THROUGH JOINT.

16. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.

17. PLACE CONCRETE IN A UNIFORM MANNER TO PREVENT THE FORMATION OF COLD JOINTS AND OTHER PLANES OF WEAKNESS. VIBRATE THE CONCRETE TO FULLY EMBED REINFORCING. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE THROUGH CHUTES OR FORMWORK.

18. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.

19. DO NOT ALLOW CONCRETE SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 14 DAYS AFTER PLACEMENT.

20. MAINTAIN TEMPERATURE OF CAST IN PLACE CONCRETE BETWEEN 50 DEGREES AND 90 DEGREES FAHRENHEIT. FOR COLD–WEATHER AND HOT–WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS MINIMUM.

21. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, REINFORCEMENT SPLICES SHALL MEET CLASS B, TENSION LAP REQUIREMENTS IN ACCORDANCE WITH ALL PROVISIONS OF ACI 318 LATEST EDITION, UNLESS NOTED OTHERWISE.

22. PROVIDE ACCESSORIES NECESSARY TO PROPERLY SUPPORT REINFORCING.

TRAFFIC MANAGEMENT NOTES:

1. ALL TEMPORARY CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.

2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.

3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.

4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.

5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).

6. CONTRACTORS SHALL NOTIFY THE OWNER AND ALL TENANTS OF THIS PROPERTY AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.

7. THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.

8. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.

9. MINIMUM LANE WIDTH IS TO BE 11 FEET (3.3m) UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.

10. EXISTING PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES THROUGH A COMBINATION OF PEDESTRIAN DETOURS OR PROTECTED SAFE ROUTES. ALL PEDESTRIAN ROUTES SHALL MEET APPLICABLE ACCESSIBILITY REQUIREMENTS.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION AT THIS LOCATION. THE CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC SIGNS, DRUMS, CONES, OR OTHER TRAFFIC CONTROL DEVICES TO DIRECT VEHICLES AND PEDESTRIANS AROUND THE WORK ZONE.

HORIZONTAL DIRECT DRILLING NOTES:

1. THE WORK SPECIFIED IN THIS SECTION CONSISTS OF FURNISHING AND INSTALLING UNDERGROUND UTILITIES USING THE DIRECTIONAL BORING (HORIZONTAL DIRECTIONAL DRILLING, HDD) METHOD OF INSTALLATION, ALSO COMMONLY REFERRED TO AS GUIDED HORIZONTAL BORING. THIS WORK SHALL INCLUDE ALL SERVICES, EQUIPMENT, MATERIALS, AND LABOR FOR THE COMPLETE AND PROPER INSTALLATION, TESTING, RESTORATION OF UNDERGROUND UTILITIES AND ENVIRONMENTAL PROTECTION AND RESTORATION.

2. WORK PLAN: PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST SUBMIT TO THE ENGINEER A GENERAL WORK PLAN OUTLINING THE PROCEDURE AND SCHEDULE TO BE USED TO EXECUTE THE PROJECT. PLAN SHOULD DOCUMENT THE THOUGHTFUL PLANNING REQUIRED TO SUCCESSFULLY COMPLETE THE PROJECT.

3. ENVIRONMENTAL PROTECTION: CONTRACTOR SHALL PLACE SILT FENCE BETWEEN ALL BORING OPERATIONS AND ANY DRAINAGE, WETLAND, WATERWAY OR OTHER AREA DESIGNATED FOR SUCH PROTECTION BY CONTRACT DOCUMENTS, STATE, FEDERAL AND LOCAL REGULATIONS. ADDITIONAL ENVIRONMENTAL PROTECTION NECESSARY TO CONTAIN ANY HYDRAULIC OR BORING FLUID SPILLS SHALL BE PUT IN PLACE, INCLUDING BERMS, LINERS, TURBIDITY CURTAINS AND OTHER MEASURES. CONTRACTOR SHALL ADHERE TO ALL APPLICABLE ENVIRONMENTAL REGULATIONS. FUEL OR OIL MAY NOT BE STORED IN BULK CONTAINERS WITHIN 200' OF ANY WATER–BODY OR WET–LAND.

4. UTILITY LOCATES: CONTRACTOR SHALL NOTIFY ALL COMPANIES WITH UNDERGROUND UTILITIES IN THE WORK AREA VIA THE STATE OR LOCAL "ONE–CALL" TO OBTAIN UTILITY LOCATES. ONCE THE UTILITIES HAVE BEEN LOCATED CONTRACTOR SHALL PHYSICALLY IDENTIFY THE EXACT LOCATION OF THE UTILITIES BY VACUUM OR HAND EXCAVATION, WHEN POSSIBLE, IN ORDER TO DETERMINE THE ACTUAL LOCATION AND PATH OF ANY UNDERGROUND UTILITIES WHICH MIGHT BE WITHIN 20 FEET OF THE BORE PATH. CONTRACTOR SHALL NOT COMMENCE BORING OPERATIONS UNTIL THE LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE WORK AREA HAVE BEEN VERIFIED.

5. SAFETY: CONTRACTOR SHALL ADHERE TO ALL APPLICABLE STATE, FEDERAL AND LOCAL SAFETY REGULATIONS AND ALL OPERATIONS SHALL BE CONDUCTED IN A SAFE MANNER. SAFETY MEETINGS SHALL BE CONDUCTED AT LEAST WEEKLY WITH A WRITTEN RECORD OF ATTENDANCE AND TOPIC SUBMITTED TO ENGINEER.

6. SITE RESTORATION: FOLLOWING BORING OPERATIONS, CONTRACTOR WILL DE–MOBILIZE EQUIPMENT AND RESTORE THE WORK–SITE TO ORIGINAL CONDITION. ALL EXCAVATIONS WILL BE BACKFILLED AND COMPACTED TO 95% OF ORIGINAL DENSITY. LANDSCAPING WILL BE RESTORED TO ORIGINAL.

7. RECORD KEEPING: CONTRACTOR SHALL MAINTAIN A DAILY PROJECT LOG OF BORING OPERATIONS AND A GUIDANCE SYSTEM LOG WITH A COPY GIVEN TO ENGINEER AT COMPLETION OF PROJECT. AS–BUILT DRAWINGS SHALL BE CERTIFIED AS TO ACCURACY BY CONTRACTOR.

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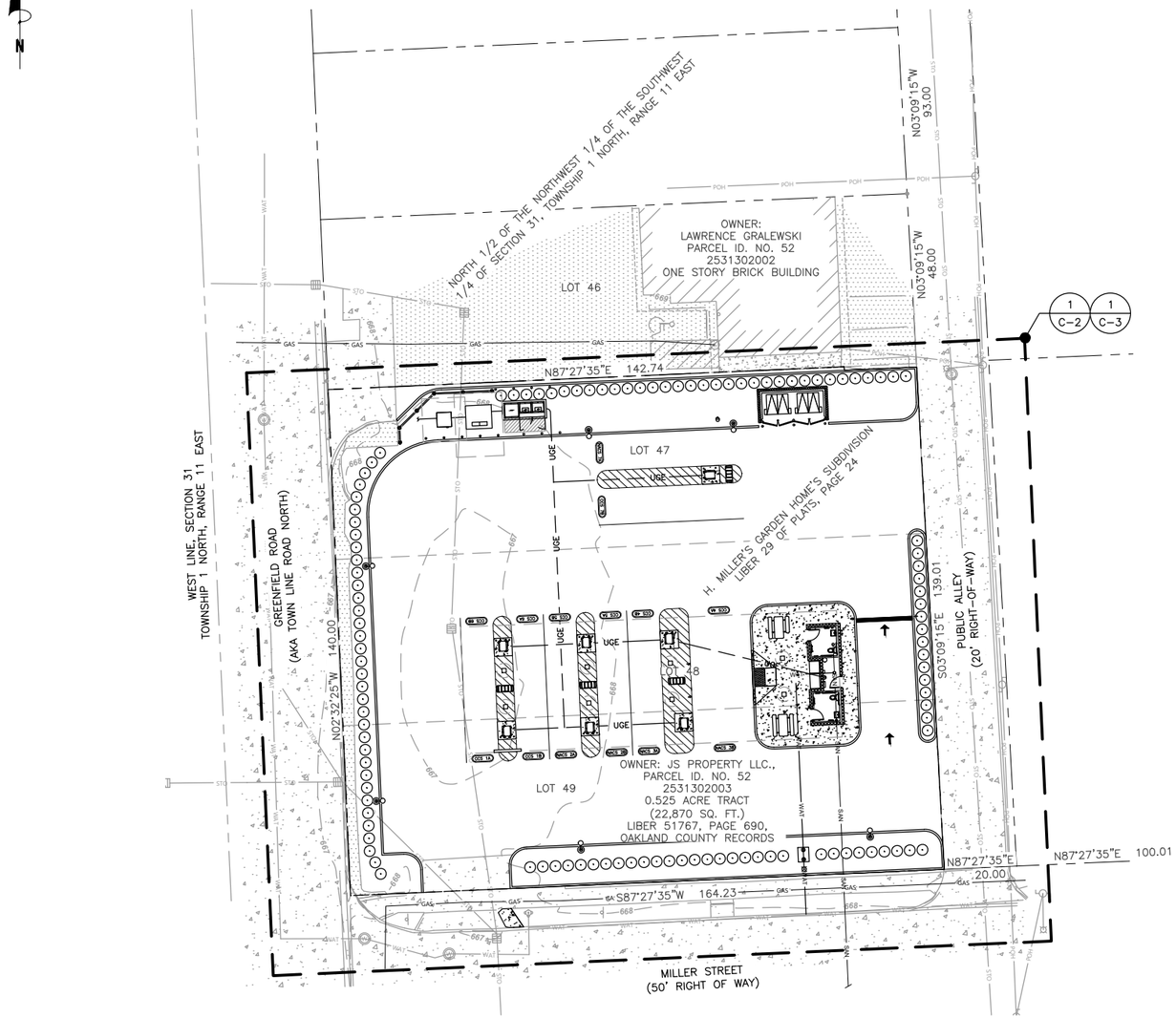
PLUS BASE

SITE NAME:
MI–0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
GENERAL NOTES II

SHEET NUMBER
GN–2



OVERALL SITE PLAN 1

SCALE: 1"=40' FOR 11"x17"
1"=20' FOR 22"x34"

0' 20' 40'

LEGEND

- HANDICAPPED STALL
- WATER MANHOLE
- HYDRANT
- NATURAL GAS METER
- POWER POLE WITH LIGHT
- POWER POLE
- CATCH BASIN
- STORM MANHOLE
- SIGN (SEE LABEL)
- FOUND MONUMENT (SEE LABEL)
- SITE BENCHMARK
- GAS — GAS LINE
- WAT — WATERMAIN
- POH — POWER OVERHEAD
- STO — STORM SEWER
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- ADJACENT LINE
- BOUNDARY SECTION LINE
- BOUNDARY UNDERLINE LINE
- WALL BOTTOM LINE
- CURB & GUTTER
- CONCRETE SURFACE
- ASPHALT SURFACE
- BUILDING
- PAINT HATCHING
- PARCEL ID. NO. — PARCEL IDENTIFICATION NUMBER

TABLE A OPTIONAL ITEM NOTES

2. The address of the subject property is 21500 Greenfield Road, Oak Park, Michigan 48237.
3. The foregoing property is located within Zone X (Unshaded) - (Area of Minimal Flood Hazard) according to FEMA FIRM Panels Number: 26125C0679F, Effective Date September 29, 2006.
4. Subject tract area is 0.525 acres, or 22,870 square feet.
5. Elevations and contours shown hereon are based on NAVD88, derived from on the ground survey displaying 1'-5' contour intervals. Site benchmarks are shown hereon.

6(b). Subject tract is in the City of Oak Park, Michigan Zoning Districts Map, (Proposed Zoning - Draft July 2020), and is Zoned - B-2 (General Business), no zoning report provided by the client.

8. The surveyor has made a good faith effort to show all substantial, above ground, visible, and permanent features observed during the course of the survey as shown hereon.
9. No marked parking spaces were found within the subject property.

NOTES:

1. CONTRACTOR SHALL HAND DIG AROUND ANY EXISTING UNDERGROUND UTILITIES LOCATED WITHIN THE AREA OF PROPOSED WORK. PROTECT EXISTING UTILITIES IN PLACE WHERE POSSIBLE AND ONLY RELOCATE AS REQUIRED/APPROVED.
2. CONTRACTOR SHALL REVIEW ALL UTILITY DESIGNS, SPECIFICATION AND STANDARDS PRIOR TO CONSTRUCTION AND COORDINATE WITH THE UTILITY ON ALL MAKE READY REQUIREMENTS.
3. CONTRACTOR TO CONFIRM ALL EXISTING & PROPOSED FIELD CONDITIONS/DIMENSIONS AND NOTIFY IONNA AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
4. EXISTING STORM DRAIN INLETS TO BE COVERED WITH SILT BAG.
5. CONTRACTOR TO CONFIRM FINAL HARDSCAPE AND LANDSCAPE FINISHES FOR DISTURBED AREAS WITH IONNA AND THE PROPERTY OWNER.

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SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
C-1

EXISTING CONDITIONS PLAN 1

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

0' 10' 20'

NOTES:

1. CONTRACTOR SHALL HAND DIG AROUND ANY EXISTING UNDERGROUND UTILITIES LOCATED WITHIN THE AREA OF PROPOSED WORK. PROTECT EXISTING UTILITIES IN PLACE WHERE POSSIBLE AND ONLY RELOCATE AS REQUIRED/APPROVED.
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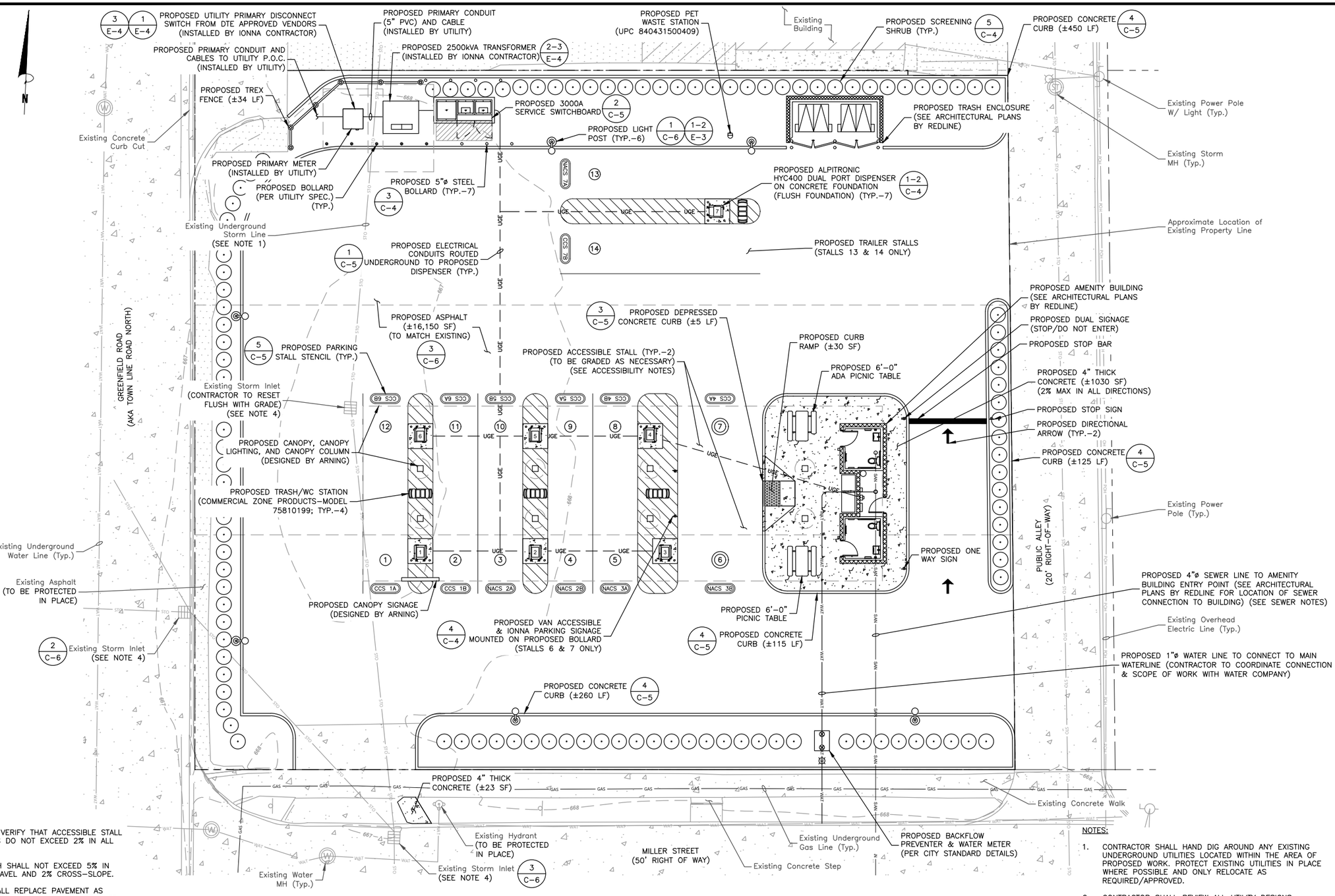
SHEET TITLE
EXISTING CONDITIONS PLAN

SHEET NUMBER
C-2



ACCESSIBILITY NOTES:

1. CONTRACTOR TO VERIFY THAT ACCESSIBLE STALL SURFACE SLOPES DO NOT EXCEED 2% IN ALL DIRECTIONS.
2. ACCESSIBLE PATH SHALL NOT EXCEED 5% IN DIRECTION OF TRAVEL AND 2% CROSS–SLOPE.
3. CONTRACTOR SHALL REPLACE PAVEMENT AS REQUIRED TO MEET ACCESSIBLE REQUIREMENTS. FEATHER PROPOSED PAVEMENT INTO EXISTING CONDITIONS TO PROVIDE POSITIVE DRAINAGE.

CHARGING STALL LEGEND	
DESCRIPTION	SYMBOL
CHARGING DISPENSER NUMBERS	[#]
CHARGING STALL COUNT	(#)
ACCESSIBLE EV STALL	((#))

PROPOSED EVCS STALL SCHEDULE	
DESCRIPTION	QUANTITY
TOTAL # OF STANDARD EVCS EQUIPPED WITH DEDICATED CCS (INCLUDING 1 TRAILER STALL)	8
TOTAL # OF STANDARD EVCS EQUIPPED WITH DEDICATED NACS (INCLUDING 1 TRAILER STALL)	4
TOTAL # OF ACCESSIBLE EVCS EQUIPPED WITH CCS/NACS (INCLUDING 2 VAN ACCESSIBLE)	2
NET STALL COUNT	14

EQUIPMENT & PARKING PLAN 1

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

0' 10' 20'

NOTES:

1. CONTRACTOR SHALL HAND DIG AROUND ANY EXISTING UNDERGROUND UTILITIES LOCATED WITHIN THE AREA OF PROPOSED WORK. PROTECT EXISTING UTILITIES IN PLACE WHERE POSSIBLE AND ONLY RELOCATE AS REQUIRED/APPROVED.
2. CONTRACTOR SHALL REVIEW ALL UTILITY DESIGNS, SPECIFICATION AND STANDARDS PRIOR TO CONSTRUCTION AND COORDINATE WITH THE UTILITY ON ALL MAKE READY REQUIREMENTS.
3. CONTRACTOR TO CONFIRM ALL EXISTING & PROPOSED FIELD CONDITIONS/DIMENSIONS AND NOTIFY IONNA AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
4. EXISTING STORM DRAIN INLETS TO BE COVERED WITH SILT BAG.
5. CONTRACTOR TO CONFIRM FINAL HARDSCAPE AND LANDSCAPE FINISHES FOR DISTURBED AREAS WITH IONNA AND THE PROPERTY OWNER.

IONNA
2900 S MAIN STREET
SANTA ANA, CA 92707

Dewberry®
Dewberry - MI Designers PC
2900 WEST ROAD
SUITE 500
EAST LANSING, MI 48823

DRAWN BY: GFS/RS
CHECKED BY: TT
APPROVED BY: HWJ
IONNA PROJECT #: MI–0008
JOB #: 50191375

SUBMITTALS

REV.	DATE	DESCRIPTION
2	04/20/26	REVISED PER COMMENTS
1	03/31/26	ISSUED PER PERMITS
0	12/29/25	ISSUED PER PERMITS

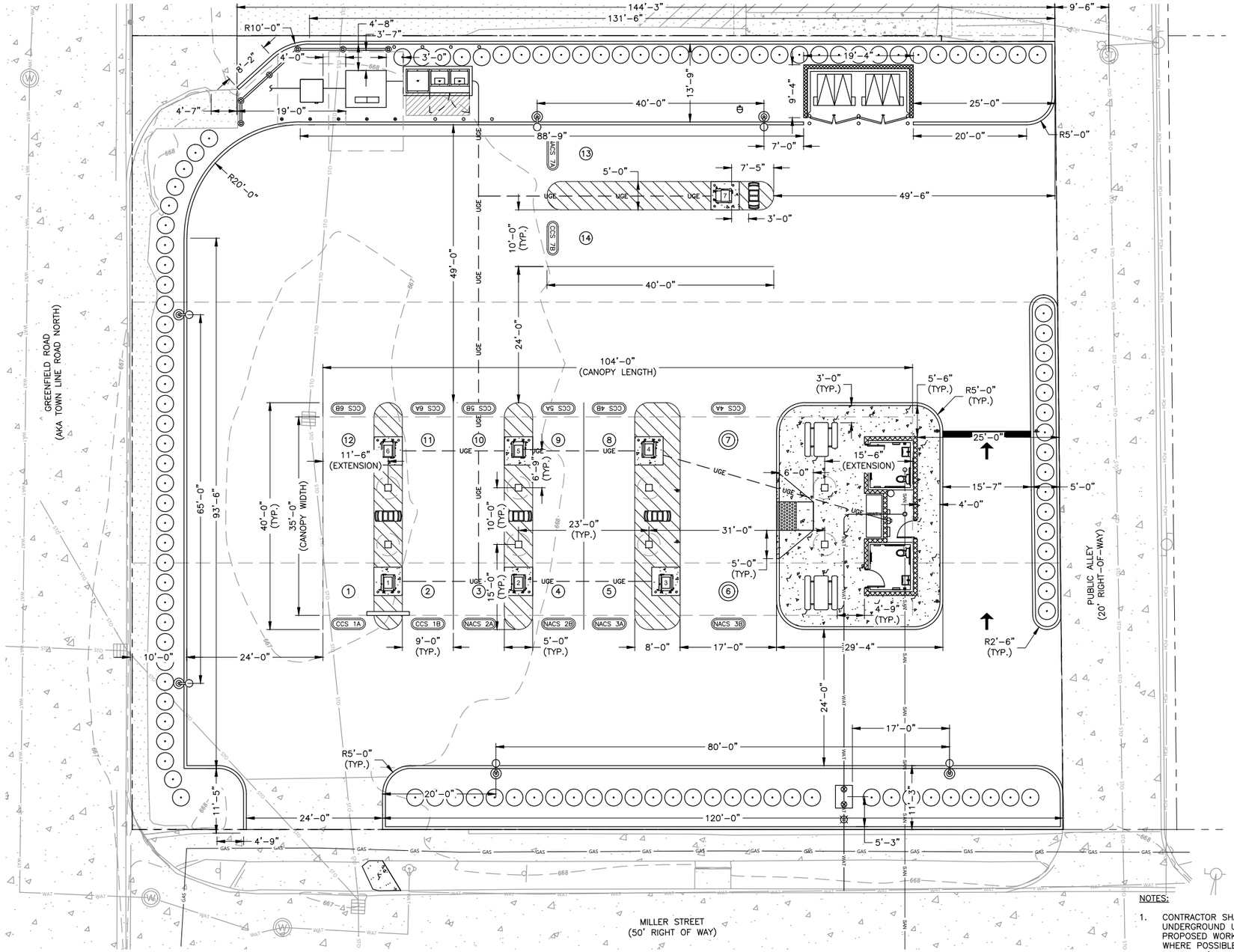
SITE MODEL:
PLUS BASE

SITE NAME:
MI–0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
EQUIPMENT & PARKING PLAN

SHEET NUMBER
C–3



DIMENSIONED PARKING PLAN 1

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

0' 10' 20'

NOTES:

1. CONTRACTOR SHALL HAND DIG AROUND ANY EXISTING UNDERGROUND UTILITIES LOCATED WITHIN THE AREA OF PROPOSED WORK. PROTECT EXISTING UTILITIES IN PLACE WHERE POSSIBLE AND ONLY RELOCATE AS REQUIRED/APPROVED.
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4. EXISTING STORM DRAIN INLETS TO BE COVERED WITH SILT BAG.
5. CONTRACTOR TO CONFIRM FINAL HARDSCAPE AND LANDSCAPE FINISHES FOR DISTURBED AREAS WITH IONNA AND THE PROPERTY OWNER.

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EAST LANSING, MI 48823

DRAWN BY:	GFS/RS
CHECKED BY:	TT
APPROVED BY:	HWJ
IONNA PROJECT #:	MI-0008
JOB #:	50191375

SUBMITTALS

REV.	DATE	DESCRIPTION
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1	03/31/26	ISSUED PER PERMITS
0	12/29/25	ISSUED PER PERMITS

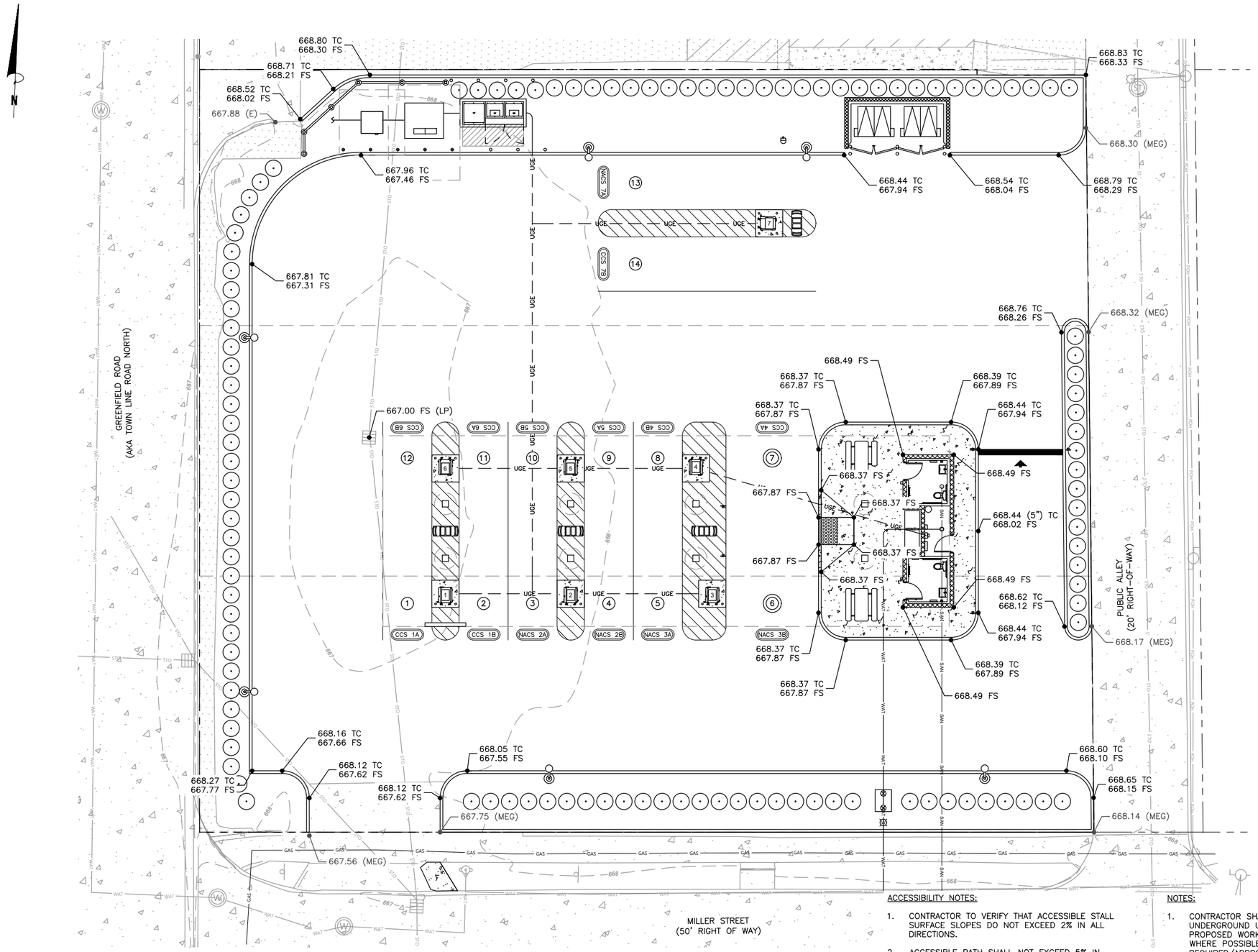
SITE MODEL:
PLUS BASE

SITE NAME:
MI-0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
DIMENSIONED PARKING PLAN

SHEET NUMBER
C-3A



GRADING PLAN

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

1

0' 10' 20'

LEGEND	
XXX.XX (E)	EXISTING GRADE
XXX.XX (MEG)	MATCH EXISTING GRADE
XXX.XX FS	FINISH SURFACE
XXX.XX TC	TOP OF CURB
LP	LOW POINT

ACCESSIBILITY NOTES:

1. CONTRACTOR TO VERIFY THAT ACCESSIBLE STALL SURFACE SLOPES DO NOT EXCEED 2% IN ALL DIRECTIONS.
2. ACCESSIBLE PATH SHALL NOT EXCEED 5% IN DIRECTION OF TRAVEL AND 2% CROSS-SLOPE.
3. CONTRACTOR SHALL REPLACE PAVEMENT AS REQUIRED TO MEET ACCESSIBLE REQUIREMENTS. FEATHER PROPOSED PAVEMENT INTO EXISTING CONDITIONS TO PROVIDE POSITIVE DRAINAGE.

NOTES:

1. CONTRACTOR SHALL HAND DIG AROUND ANY EXISTING UNDERGROUND UTILITIES LOCATED WITHIN THE AREA OF PROPOSED WORK. PROTECT EXISTING UTILITIES IN PLACE WHERE POSSIBLE AND ONLY RELOCATE AS REQUIRED/APPROVED.
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IONNA PROJECT #:	MI-0008
JOB #:	50191375

SUBMITTALS

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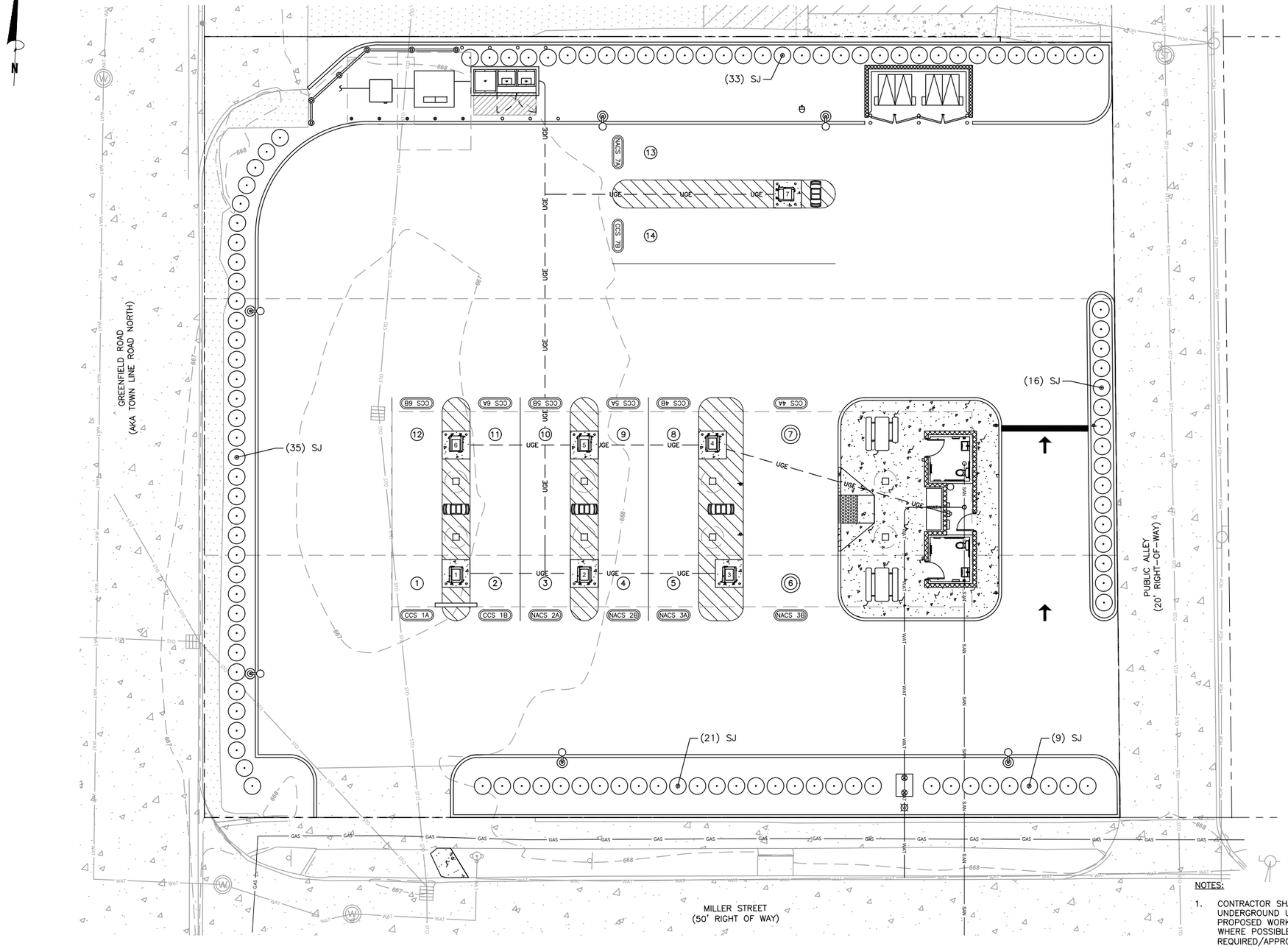
SITE MODEL:
PLUS BASE

SITE NAME:
MI-0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
GRADING PLAN

SHEET NUMBER
C-3B



LANDSCAPE PLAN

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

1

0' 10' 20'

PLANT SCHEDULE							
ABBREV.	BOTANICAL NAME/ COMMON NAME	QUANTITY	SIZE	CONDITION	FORM	SPACING	NOTES
SJ	SPARTAN JUNIPER	114	6' HEIGHT MIN.	CONTAINER / B&B	FULL, EVENLY DISTRIBUTED BRANCHES, VIGOROUS, NO BARE SPOTS	AS SHOWN, NO GREATER THAN 2.5' O.C.	ALTERNATIVE SPECIES MAY BE CONSIDERED, BUT CONTRACTOR MUST PROVIDE PROOF THAT MATURE WIDTH OF SPECIES IS NOT GREATER THAN 4'

NOTES:

1. CONTRACTOR SHALL HAND DIG AROUND ANY EXISTING UNDERGROUND UTILITIES LOCATED WITHIN THE AREA OF PROPOSED WORK. PROTECT EXISTING UTILITIES IN PLACE WHERE POSSIBLE AND ONLY RELOCATE AS REQUIRED/APPROVED.
2. CONTRACTOR SHALL REVIEW ALL UTILITY DESIGNS, SPECIFICATION AND STANDARDS PRIOR TO CONSTRUCTION AND COORDINATE WITH THE UTILITY ON ALL MAKE READY REQUIREMENTS.
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JOB #: 50191375

SUBMITTALS

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PLUS BASE

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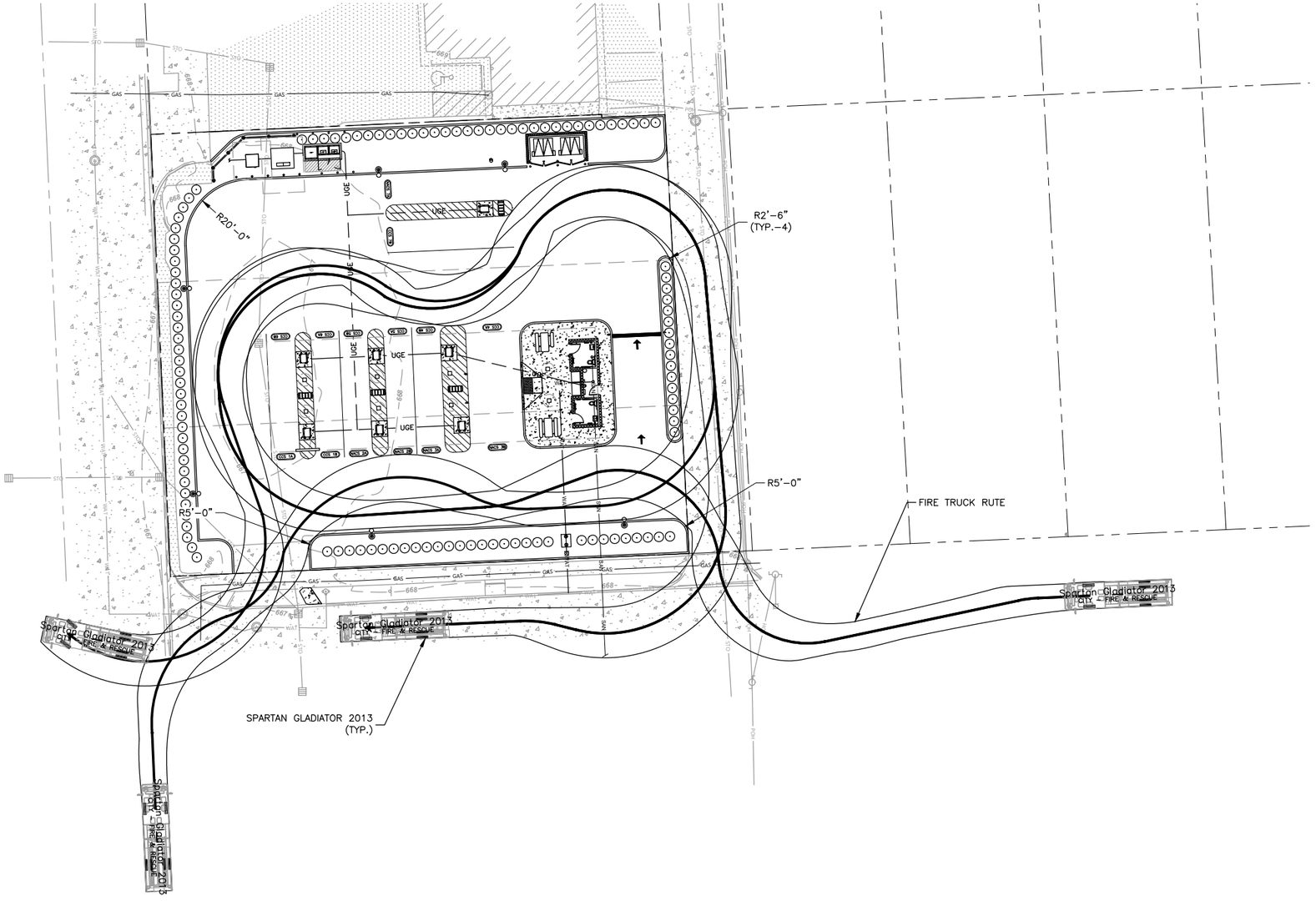
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
LANDSCAPE PLAN

SHEET NUMBER
C-3C



TURNING RADIUS PLAN

1

SCALE: 1"=40' FOR 11"x17"
1"=20' FOR 22"x34"

0' 20' 40'

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SUITE 500
EAST LANSING, MI 48823

DRAWN BY:	GFS/RS
CHECKED BY:	TT
APPROVED BY:	HWJ
IONNA PROJECT #:	MI-0008
JOB #:	50191375

SUBMITTALS

REV.	DATE	DESCRIPTION
2	04/20/26	REVISED PER COMMENTS
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0	12/29/25	ISSUED PER PERMITS

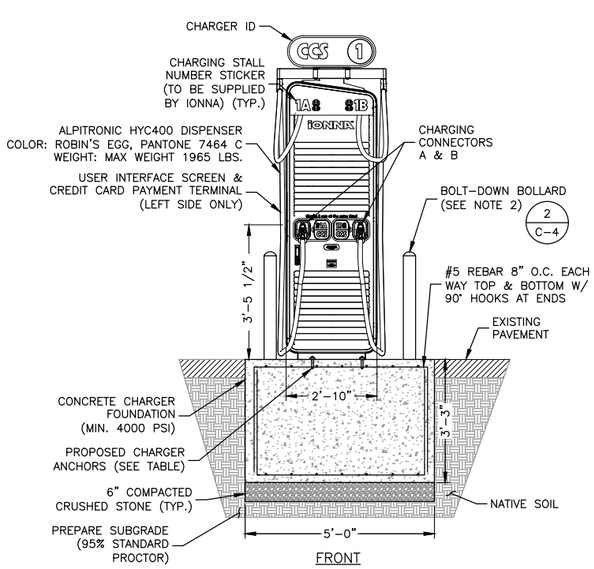
SITE MODEL:
PLUS BASE

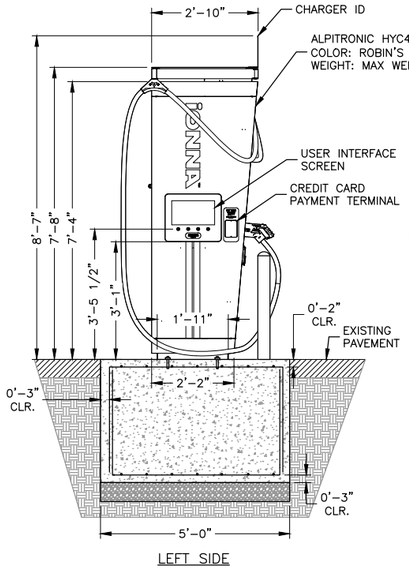
SITE NAME:
MI-0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
TURNING RADIUS PLAN

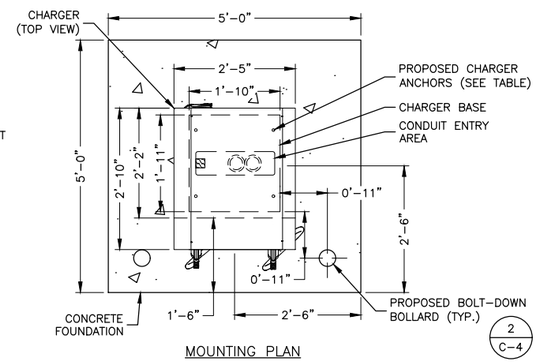
SHEET NUMBER
C-3D





NOTE:

1. ACCESSIBLE DISPENSER FOUNDATION TO BE INSTALLED FLUSH WITH EXISTING PAVEMENT.



ANCHORS	ALT. ANCHORAGE
(4) 5/8"ø HILTI KWIK BOLT TZ2 W/ 2-3/4" EFFECTIVE EMBEDMENT (3-1/4" NOMINAL EMBEDMENT)	(4) 1/2"ø HILTI HIT-HY 200 V3 + HAS THREADED ROD W/ 4-1/2" EMBEDMENT

NOTES:

1. CONTRACTOR TO REFERENCE LATEST VERSION OF ALPITRONIC HYPERCHARGER 'OPERATION INSTRUCTION AND INSTALLATION GUIDE-HARDWARE' PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO ENSURE ALL REQUIRED CHARGER CLEARANCES ARE MET AND NO DOOR SWINGS ARE RESTRICTED.

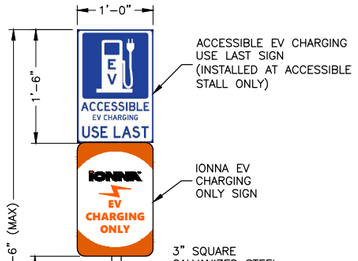
   MIN. CLEARANCE:
   SIDE: 3'-0"
   SIDE: 3'-0"
   FRONT: 3'-0"
3. FOUNDATION SIZE IS RATED FOR WINDSPEEDS UP TO 140 MPH.
4. ALL ANCHOR BOLTS TO BE 316 SS GRADE.
5. ALL THREADED RODS TO BE 316 SS GRADE.

CHARGER SPECIFICATIONS:

WEIGHT: ±1235 LBS UP TO ±1965 LBS
ENCLOSURE RATING: NEMA 3R
CORROSION PROTECTION CLASS (ISO12944-2): C3
OPERATING TEMP: -30°C-55°C
HUMIDITY: 5%-95% RELATIVE HUMIDITY
EFFICIENCY: >97.5% UNDER FULL LOAD
NOMINAL VOLTAGE: 480V
NOMINAL INPUT CURRENT: 480A
FREQUENCY: 60 HZ
POWER FACTOR: >0.99

ALPITRONIC HYC400 DETAIL (PARKING LOT) 1

SCALE: N.T.S.

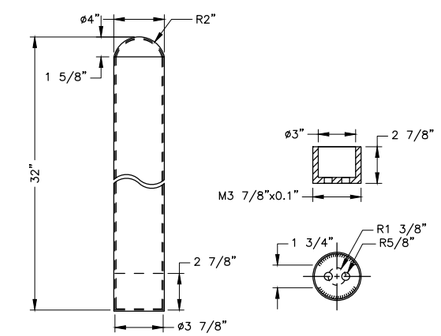


NOTES:

1. TOP OF ACCESSIBLE SIGN TO BE ALIGNED TO 6'-6" ABOVE GRADE UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO ENSURE SIGN PLACEMENT DOES NOT RESTRICT CHARGER CLEARANCES OR DOOR SWINGS.

ACCESSIBLE SIGN POST BOLLARD DETAIL 4

SCALE: N.T.S.

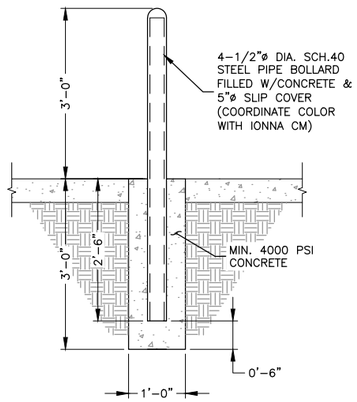


NOTES:

1. CONTRACTOR TO UTILIZED THE GALVANIZED HARDWARE VERSION.
2. THIS DETAIL ONLY TO BE USED WHERE BOLLARDS ARE SPECIFIED NEAR THE EV CHARGING STATIONS.
3. CONTRACTOR TO INSTALL 4.5"x36" ORANGE BOLLARD SLEEVE WITH WHITE TAPE.

ENCORE 32X4" BOLT DOWN BOLLARD 2

SCALE: N.T.S.

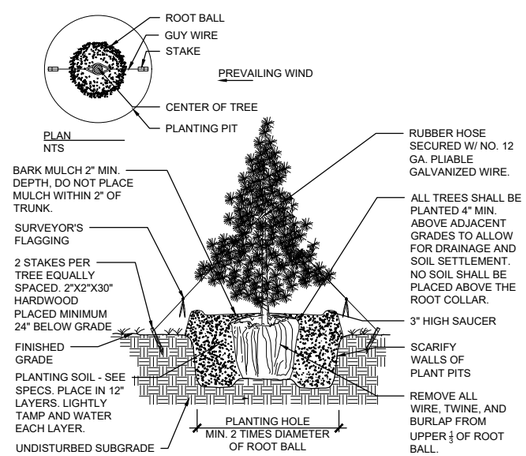


NOTES:

1. CONTRACTOR TO ENSURE BOLLARD PLACEMENT DOES NOT RESTRICT CHARGER/EQUIPMENT CLEARANCES OR DOOR SWINGS.
2. CONTRACTOR TO CONFIRM BOLLARD COVER SPEC WITH IONNA PRIOR TO INSTALLATION.

BOLLARD DETAIL 3

SCALE: N.T.S.



NOTE:
ALL TREES SHALL BE PLANTED 6" MIN. ABOVE ADJACENT GRADES TO ALLOW FOR DRAINAGE AND SOIL SETTLEMENT. NO SOIL SHALL BE PLACED ABOVE THE ROOT COLLAR.

EVERGREEN TREE PLANTING DETAIL 5

SCALE: N.T.S.

IONNA
2900 S MAIN STREET
SANTA ANA, CA 92707

Dewberry
Dewberry - MI Designers PC
2900 WEST ROAD
SUITE 500
EAST LANSING, MI 48823

DRAWN BY:	GFS/RS
CHECKED BY:	TT
APPROVED BY:	HWJ
IONNA PROJECT #:	MI-0008
JOB #:	50191375

SUBMITTALS

REV.	DATE	DESCRIPTION
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0	12/29/25	ISSUED PER PERMITS

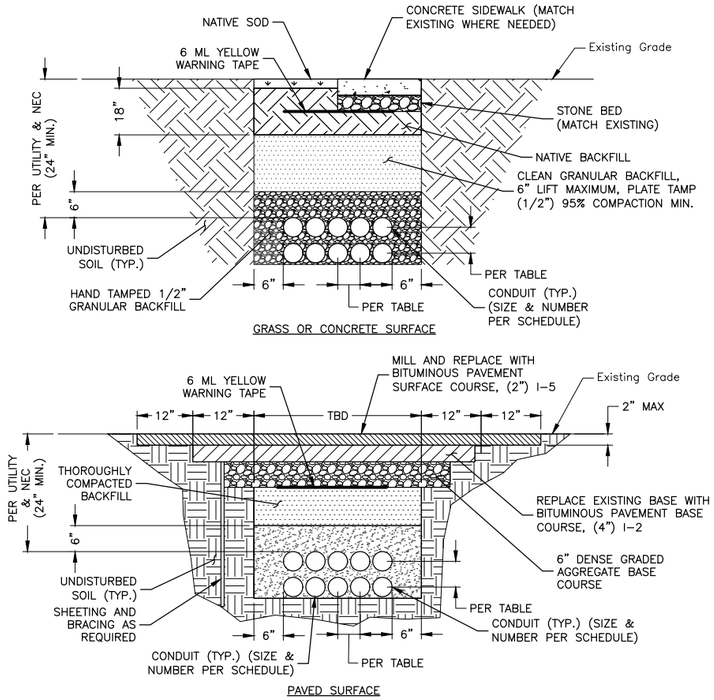
SITE MODEL:
PLUS BASE

SITE NAME:
MI-0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
CONSTRUCTION DETAILS I

SHEET NUMBER
C-4



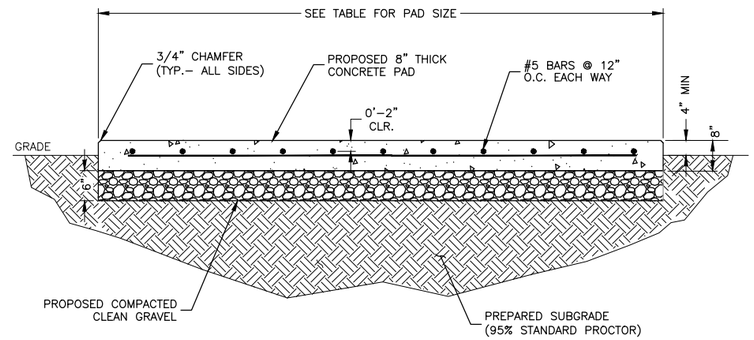
MINIMUM CENTER TO CENTER CONDUIT SPACING	
AC (PRIMARY)	7.5" O.C.
AC (SECONDARY/FEEDERS)	7.5" O.C.
DC (POSTS)	7.5" O.C.

NOTES:

1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
2. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.
4. ANY PAVEMENT DAMAGE DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO PRE CONSTRUCTION CONDITIONS OR BETTER.
5. MAINTAIN 12" SEPARATION MIN. BETWEEN AC OR DC CONDUCTORS AND COMMUNICATION CABLES.
6. CONFIRM ALL DEPTHS W/UTILITY & NEC PRIOR TO CONSTRUCTION.

TYP. BURIED CONDUIT TRENCH DETAILS 1

SCALE: N.T.S.



CONCRETE PAD DIMENSIONS					
PAD TYPE	CONCRETE	L	W	t (THICKNESS)	AREA
SWITCHBOARD*	4000 PSI	12'–2"	5'–3"	8"	64 SF

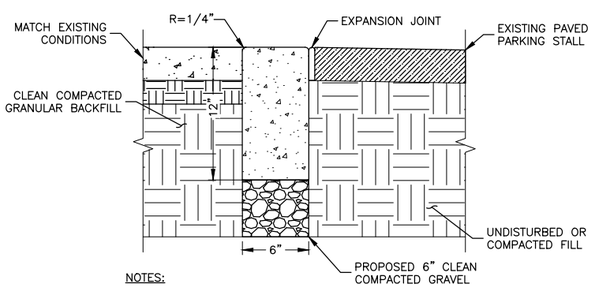
NOTES:

1. SEE CONCRETE NOTES ON SHEET GN–2.
2. CONTRACTOR TO VERIFY FINAL PAD SIZE & CONDUIT ENTRY WITH SWITCHBOARD SHOP DRAWINGS PRIOR TO CONSTRUCTION.

* SWITCHGEAR ANCHORS SHALL BE: (18) 1/2"ø HILTI TZ2 SS 316 W/ 3–1/4" EFFECTIVE EMBEDMENT (3–3/4" NOMINAL EMBEDMENT)

CAST IN PLACE CONCRETE PAD 2

SCALE: N.T.S.

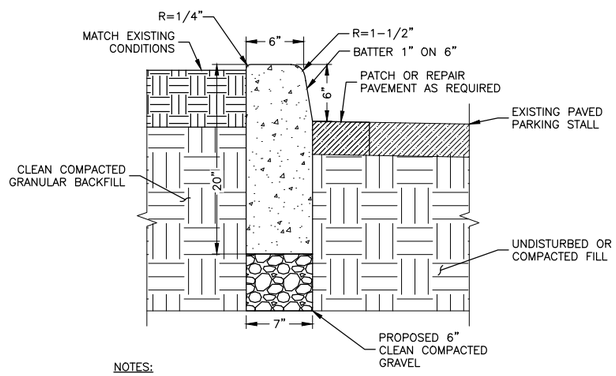


NOTES:

1. INSTALL FORMS AS NECESSARY.
2. COMPACT EXISTING SUBGRADE MATERIAL TO ACHIEVE 95% COMPACTION.
3. CONCRETE TO BE 4000 PSI AIR ENTRAINED CONCRETE.
4. INSTALL CONTROL JOINTS EVERY 10 LINEAR FEET.

DEPRESSED CONCRETE CURB DETAIL 3

SCALE: N.T.S.



NOTES:

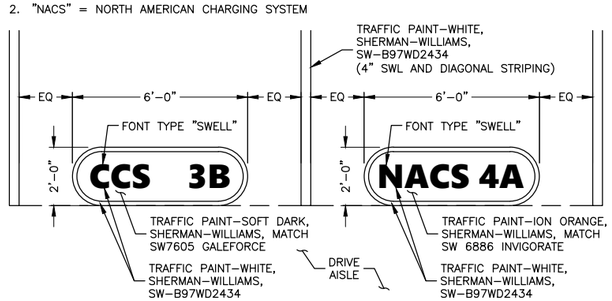
1. SAW CUT AREA TO BE REPAIRED/REPLACED. DISPOSE OF DEBRIS PROPERLY OFF SITE.
2. INSTALL FORMS AS NECESSARY.
3. COMPACT EXISTING SUBGRADE MATERIAL TO ACHIEVE 95% COMPACTION.
4. CONCRETE TO BE 4000 PSI AIR ENTRAINED CONCRETE.
5. INSTALL CONTROL JOINTS EVERY 10 LINEAR FEET.

CONCRETE CURB DETAIL 4

SCALE: N.T.S.

NOTES:

1. "CCS" = COMBINED CHARGING SYSTEM
2. "NACS" = NORTH AMERICAN CHARGING SYSTEM



PARKING STALL STENCIL LAYOUT 5

SCALE: N.T.S.

IONNA
2900 S MAIN STREET
SANTA ANA, CA 92707

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2900 WEST ROAD
SUITE 500
EAST LANSING, MI 48823

DRAWN BY:	GFS/RS
CHECKED BY:	TT
APPROVED BY:	HWJ
IONNA PROJECT #:	MI–0008
JOB #:	50191375

SUBMITTALS

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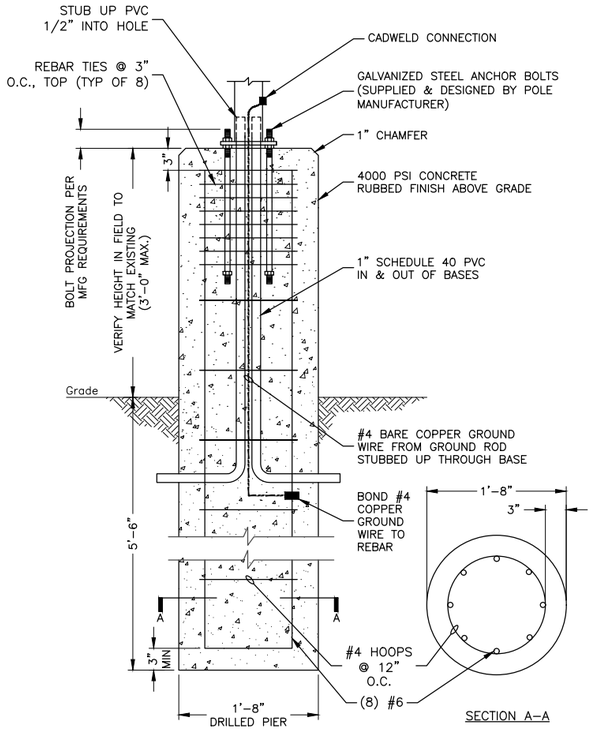
SITE MODEL:
PLUS BASE

SITE NAME:
MI–0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

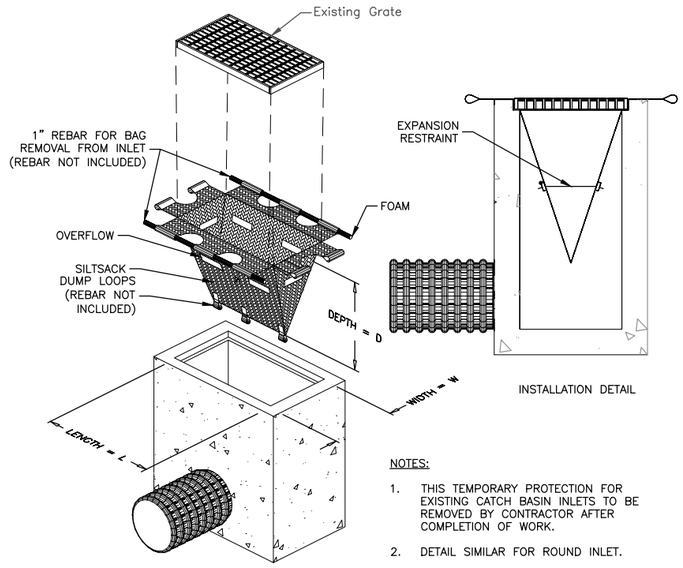
SHEET TITLE
CONSTRUCTION DETAILS II

SHEET NUMBER
C–5



LIGHT POLE BASE DETAIL 1

SCALE: N.T.S.

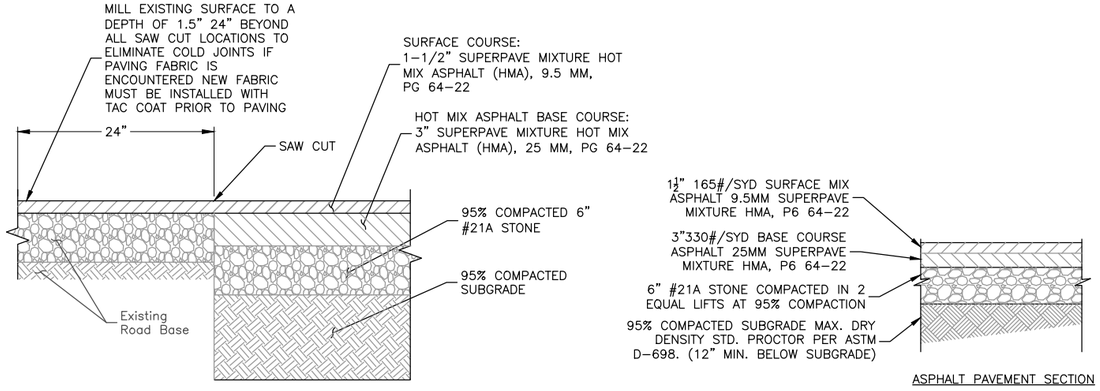


NOTES:

1. THIS TEMPORARY PROTECTION FOR EXISTING CATCH BASIN INLETS TO BE REMOVED BY CONTRACTOR AFTER COMPLETION OF WORK.
2. DETAIL SIMILAR FOR ROUND INLET.

CATCH BASIN INLET PROTECTION DETAIL 2

SCALE: N.T.S.



ASPHALT PAVEMENT DETAIL 3

SCALE: N.T.S.

IONNA
2900 S MAIN STREET
SANTA ANA, CA 92707

Dewberry
Dewberry - MI Designers PC
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DRAWN BY:	GFS/RS
CHECKED BY:	TT
APPROVED BY:	HWJ
IONNA PROJECT #:	MI-0008
JOB #:	50191375

SUBMITTALS

REV.	DATE	DESCRIPTION
2	04/20/26	REVISED PER COMMENTS
1	03/31/26	ISSUED PER PERMITS
0	12/29/25	ISSUED PER PERMITS

SITE MODEL:
PLUS BASE

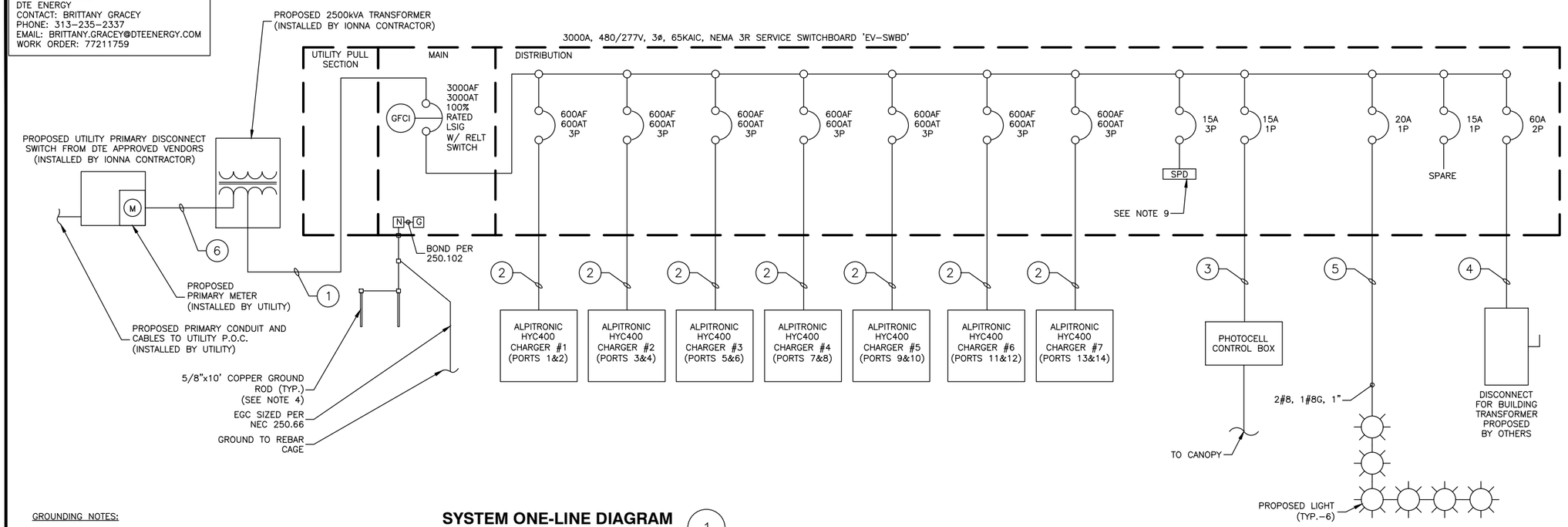
SITE NAME:
MI-0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
CONSTRUCTION DETAILS III

SHEET NUMBER
C-6

UTILITY COMPANY:
DTE ENERGY
CONTACT: BRITTANY GRACEY
PHONE: 313-235-2337
EMAIL: BRITTANY.GRACEY@DTEENERGY.COM
WORK ORDER: 77211759



SYSTEM ONE-LINE DIAGRAM

SCALE: N.T.S.

GROUNDING NOTES:

1. ALL GROUNDING SHALL COMPLY WITH NEC ARTICLE 250 AND ARTICLE 625. VERIFY ALL SPECIFIC GROUNDING AND BONDING REQUIREMENTS WITH EVSE MANUFACTURER'S INSTALLATION MANUAL.
2. EQUIPMENT GROUNDING CONDUCTOR, SIZED PER NEC 250.122. RUN WITH BRANCH CIRCUIT CONDUCTORS FROM DISTRIBUTION SERVICE TO EACH EVSE.
3. BOND METALLIC STRUCTURAL ELEMENTS (E.G., SUPPORT POSTS, BOLLARDS, CANOPIES) TO THE EQUIPMENT GROUNDING SYSTEM PER NEC 250.104(C). ROUTE BONDING JUMPER VIA SHORTEST PRACTICAL PATH IN RACEWAY OR DIRECTLY ATTACHED TO STRUCTURE.

NOTES:

1. ALPITRONIC HYC400 CHARGING DISPENSER(S).
2. PROPOSED CTs/PTs SHALL BE LOCATED AS APPROVED BY THE UTILITY COMPANY.
3. ALL ELECTRICAL WORK ON SITE TO BE CONDUCTED TO NEC CODE AND LOCAL UTILITY REGULATIONS. CONTRACTOR TO REFERENCE UTILITY DESIGN AND STANDARDS PRIOR TO CONSTRUCTION.
4. GROUND RODS TO BE SEPARATED BY MINIMUM 6'-0" OR PROVIDE A CERTIFIED TEST SHOWING RESISTANCE TO GROUND IS 25 OHMS OR LESS.
5. SERVICE ENTRANCE MAIN DISCONNECT SWITCH W/ GROUND FAULT PROTECTION & ARC ENERGY REDUCTION SWITCH PER NEC. 230.95 & 240.87.
6. PROVIDE LOCKABLE OPEN CIRCUIT BREAKER IN ACCORDANCE WITH NEC 110.25 AND IN COMPLIANCE WITH NEC 625.43.
7. SERVICE EQUIPMENT SHALL BE FIELD MARKED IN COMPLIANCE WITH NEC 110.24(A) AND 230.70(B)
8. CONDUCTORS SHOWN IN ELECTRICAL FEEDER SCHEDULE ARE BASED ON 75° COLUMN OF NEC TABLE 310.15(B)(16).
9. PROVIDE A UL 1449 LISTED TYPE 2 SURGE PROTECTIVE DEVICE (SPD), WITH AN AMPERE INTERRUPTING CAPACITY (AIC) / SHORT CIRCUIT CURRENT RATING (SCCR) EQUAL TO OR EXCEEDING THE AIC RATING OF THE SERVICE EQUIPMENT. THE SPD SHALL PROVIDE PROTECTION FOR ALL APPLICABLE MODES; INCLUDING LINE-TO-NEUTRAL (L-N), LINE-TO-GROUND (L-G), NEUTRAL-TO-GROUND (N-G), AND LINE-TO-LINE (L-L). INCLUDE STATUS INDICATORS AND REMOTE ALARM CONTACTS, AND BE INSTALLED PER NEC AND MANUFACTURER'S INSTRUCTIONS.
10. THE COMMS BOX SHALL TERMINATE THE INCOMING POWER WITH A 20A, 120V, 1ø FUSE/BREAKER THAT FEEDS A GFCI OUTLET WITHIN THE ENCLOSURE. THIS PROVIDES THE SECONDARY PROTECTION FOR THE 3kVA TRANSFORMER PER NEC 450.3(B) AND THE PROPER BRANCH CIRCUIT PROTECTION PER NEC 210.20.
11. CONTRACTOR SHALL CONDUCT AN ONSITE PRE-CONSTRUCTION MEETING WITH THE UTILITY TO REVIEW & COORDINATE ALL NECESSARY MAKE READY INSTALLATION REQUIREMENTS.
12. NOT ALL UTILITY REQUIREMENTS & SPECIFICATIONS ARE NOTED IN THESE PLANS. CONTRACTOR SHALL INDEPENDENTLY VERIFY ALL NECESSARY UTILITY REQUIREMENTS PRIOR TO CONSTRUCTION. NOTIFY IONNA & DEWBERRY IMMEDIATELY FOR ANY DISCREPANCIES WITH THESE CONSTRUCTION DOCUMENTS.

ELECTRICAL FEEDER SCHEDULE

NO.	FROM	TO	CONFIGURATION
1	PROPOSED CUSTOMER TRANSFORMER	PROPOSED 3000A SWITCHBOARD: INCOMING	PROPOSED CONDUCTORS BY UTILITY. PROPOSED CABLE TRENCH BY CONTRACTOR. *SEE NOTE BELOW
2	PROPOSED 3000A SWITCHBOARD (600A BREAKER) (TYP.-7)	PROPOSED ALPITRONIC HYC400 CHARGER (TYP.-7)	[2 SETS PER CHARGER:] (3) 500KCMIL AL (THWN-2) (1) #2/0 AWG AL GND (THWN-2) IN 3.5"C PVC CONDUIT
3	PROPOSED 3000A SWITCHBOARD (15A BREAKER)	CANOPY LIGHTING THRU PHOTOCELL CONTROL BOX	[1 SET:] (2) #10 AWG CU (THWN-2) (1) #10 AWG CU EGC (THWN-2) IN 1" PVC CONDUIT
4	PROPOSED 3000A SWITCHBOARD (60A BREAKER)	DISCONNECT FOR BUILDING TRANSFORMER	(3) #4 AWG CU (THWN-2) (1) #10 AWG CU GND (THWN-2) (1) 1-1/4" SCH 40 PVC
5	PROPOSED 3000A SWITCHBOARD (15A BREAKER)	PROPOSED SITE LIGHT	[1 SET:] (2) #8 CU (THWN-2) (1) #8 CU GND (THWN-2) IN 1" PVC CONDUIT
6	PROPOSED PRIMARY DISCONNECT SWITCH	PROPOSED CUSTOMER TRANSFORMER	CABLES TBD BY UTILITY IN 5" PVC CONDUIT INSTALLED BY IONNA CONTRACTOR

NOTE: CONTRACTOR SHALL REVIEW & VERIFY THE UTILITY DESIGN/SPECIFICATIONS PRIOR TO CONSTRUCTION. NOTIFY IONNA & DEWBERRY IMMEDIATELY FOR DISCREPANCIES WITH THE CONSTRUCTION DOCUMENTS.

UTILITY FAULT CURRENT

VOLTAGE: 480/277V

TRANSFORMER SIZE: T.B.D. KVA

*FAULT CURRENT: T.B.D. AMPS

PENDING

* FAULT CURRENT INFORMATION PROVIDED BY UTILITY ON XX/XX/XX.

NOTE:

1. CONTRACTOR SHALL REQUEST FINAL ELECTRICAL COORDINATION STUDY & ARC FLASH ANALYSIS FROM DEWBERRY PRIOR TO START OF CONSTRUCTION.

PANEL SCHEDULE

PANEL NAME: EV-SWBD
MANUFACTURER: ZPOWER
VOLTAGE: 480/277VAC, 3ø, 4W
MAIN DISCONNECT MEANS: MCB (100% RATED)

MAIN RATING: 3000A, 100% RATED
BUS RATING: 3000A
FAULT CURRENT RATING: 65KAIC
ENCLOSURE RATING: NEMA 3R

CKT NO.	DESCRIPTION	BREAKER	POLE	LOAD (kvA) Aø	LOAD (kvA) Bø	LOAD (kvA) Cø	TOTAL CIRCUIT PROPOSED LOAD (kvA)
1	HYC400 #1 (PORTS 1&2)	600AF 600AT	3	133.02	133.02	133.02	399.06
2	HYC400 #2 (PORTS 3&4)	600AF 600AT	3	133.02	133.02	133.02	399.06
3	HYC400 #3 (PORTS 5&6)	600AF 600AT	3	133.02	133.02	133.02	399.06
4	HYC400 #4 (PORTS 7&8)	600AF 600AT	3	133.02	133.02	133.02	399.06
5	HYC400 #5 (PORTS 9&10)	600AF 600AT	3	133.02	133.02	133.02	399.06
6	HYC400 #6 (PORTS 11&12)	600AF 600AT	3	133.02	133.02	133.02	399.06
7	HYC400 #7 (PORTS 13&14)	600AF 600AT	3	133.02	133.02	133.02	399.06
8	SPD	15A	3	0.10	0.10	0.10	0.30
9	CANOPY LIGHTING	15A	1	1.00	0.00	0.00	1.00
10	SITE LIGHT	20A	1	–	1.2	–	1.2
11	SPARE	15A	1	–	–	–	–
12	25 KVA BUILDING TRANSFORMER	60A	2	0.00	26.0	26.0	52.00
			PROPOSED kvA PER PHASE:	666.20	692.40	691.20	
						PROPOSED SWITCHBOARD TOTAL CONNECTED LOAD:	2,847.9 KVA
						PROPOSED SWITCHBOARD TOTAL CONNECTED CURRENT:	3,425.5 A
						PEAK DEMAND IS LIMITED BY LOAD MANAGEMENT CONTROL MAXIMUM SITE DEMAND:	3000 A

IONNA
2900 S MAIN STREET
SANTA ANA, CA 92707

Dewberry
Dewberry - MI Designers PC
2900 WEST ROAD
SUITE 500
EAST LANSING, MI 48823

DRAWN BY: GFS/RS
CHECKED BY: TT
APPROVED BY: HWJ
IONNA PROJECT #: MI-0008
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PLUS BASE

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OAK PARK, MI 48237

SHEET TITLE
ELECTRICAL
ONE-LINE DIAGRAM

SHEET NUMBER
E-1

hyc400

Product data sheet 1/3

NOTE: IMAGE BELOW IS FOR REFERENCE ONLY. ACTUAL CHARGERS INSTALLED ONSITE WILL BE OF A DIFFERENT COLOR SCHEME. SEE DETAIL ON CIVIL SHEETS FOR MORE INFORMATION.

100 kW to 400 kW
DC-charging system
for EVs

Up to **97.5 %**
efficiency under full load

Up to **2x 600 A**
simultaneous output

50 kW
dynamic load management granularity

150 - 1000 V
output range

Bidirectional
future capability

All-in-one design for an ultra-compact footprint

Up to 4 simultaneous charge outputs

Power-Stack scalable architecture

Product data sheet HYC400UL / V1-1

5815 Westpark Drive, Charlotte, NC 28217
info@alpitronic.us

www.hypercharger.us

alpitronic hypercharger

hyc400

Product data sheet 2/3

Charging Interfaces

Connection options	CCS1, J3400 (NACS), CHAdeMO
Cable lengths	11.5 ft (3.5 m), 16.4 ft (5 m), 25 ft (7.5 m)
RFID system	ISO/IEC 14443A/B, ISO/IEC 15693, NFC
Network connections	Dual SIM, 4G LTE Modems 10/100 Base-T Ethernet
Energy management	Configurable static power limit, Dynamic Power limit via OCPP/Modbus
Network communications protocol	Open Charge Point Protocol (OCPP) 1.6 and 2.0.1 Modbus, API
Vehicle communications protocol	DIN 70121, ISO 15118, Autocharge, Plug and Charge, CHAdeMO 1.2

Electrical

AC nominal voltage (RMS)	480 V ±10%
AC nominal input current (RMS)	480 A
Input connection	3-Phase: L1, L2, L3, GND (no neutral)
Frequency	60 Hz
Power factor	> 0.99 at full load
THDi (Total harmonic distortion)	< 5% at full load
Conversion efficiency	up to 97.5% at full load
SCCR	65 kA
Surge protection	Type 1, In 20 kA, Imax 50 kA
Standby power consumption	43 W
DC output	100 kW (one Power-Stack), max. 300 A 200 kW (two Power-Stacks), max. 600 A 300 kW (three Power-Stacks), max. 900 A (600 A max. per cable) 400 kW (four Power-Stacks), max. 1200 A (600 A max. per cable)
Output voltage	150 - 1000 VDC

(1) Standard environmental conditions 60°F [20°C], 10 ft [3 m] distance
(2) See Manual for environmental derate
(3) Depending on the configuration

www.hypercharger.us

alpitronic hypercharger

hyc400

Product data sheet 3/3

General

Operating temperature	-30°C up to +55°C (-22°F to 131°F)[2]
Storage/transport temperature	-40°C to 70°C (-40°F to 158°F)
Altitude	<4,000 m (< 13,000 ft)[2]
Humidity (in operation, storage)	Up to 95% non-condensing
Enclosure type	NEMA 3R (IP54) Indoor/Outdoor
Impact resistance (IEC 62262)	IK10
Noise emission	< 52 dBA[1]
Dimensions (H x W x D)	88 x 29 x 26 in (2185 x 732 x 663 mm)
Weight	1235 lbs up to 1965 lbs (560 kg up to 890 kg)[3]
Accessibility	Meets ADA requirements for height and reach
User interface	15.6" display, 4 buttons, RGB connector status
Multilingual system	GUI in 27 languages
Remote management	Access control, configuration, diagnostics, software updates

Configuration Options

Branding	Options for custom colors (powder coating), custom vinyl
CMS (Cable Management System)	Metal swing arm keeps 16.4 ft (5 m) off the ground
Payment system	Credit card reader optional (Payter/Nayax), EMV Chip, Tap to Pay

Compliance and Safety

NRTL	UL 2202, UL 2231-1, UL 2231-2 CSA C22.2 No. 346.22, No. 281.1-12, No. 281.2-12 File No. E515867
Metering	CTEP No. 5966-24
EMC	FCC 47CFR Part 15B (Class A)
Electrical safety	NEC (NFPA 70) Article 625
NEVI	Buy America, 100% US Steel

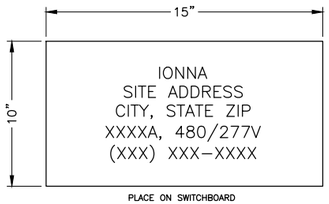
More Information:
www.hypercharger.us

alpitronic hypercharger

REFERENCE DATASHEETS (1)
SCALE: N.T.S.

NOTES:

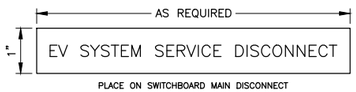
1. PLACE LABEL IN A VISIBLE LOCATION: SWITCHBOARD (METER COMPARTMENT).
2. RED BACKGROUND, WHITE LETTERING.
3. VERIFY FINAL PLACARD INFORMATION WITH IONNA.



METER LABEL (2)
SCALE: N.T.S.

NOTES:

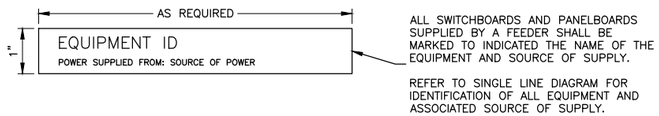
1. PLACE LABEL IN A VISIBLE LOCATION: SWITCHGEAR.
2. RED BACKGROUND, WHITE LETTERING.
3. TEXT: MIN. 3/8" AND 1/8" HEIGHT, ALL CAPITAL LETTERS ARIAL OR SIMILAR FONT, NON-BOLD.
4. MATERIAL NOTE: ENGRAVED ON OUTDOOR-RATED PLASTIC LAMINATE WITH ADHESIVE BACKING SUITABLE FOR THE ENVIRONMENT.
5. APPLICABLE NEC SECTIONS: NEC 110.22.



MAIN CIRCUIT BREAKER LABEL (3)
SCALE: N.T.S.

NOTES:

1. PLACE LABEL ON FRONT OF EQUIPMENT IN VISIBLE LOCATION: EV CHARGER CABINETS, SWITCHBOARDS, PANELS, AND METERING ENCLOSURES.
2. BLACK BACKGROUND, WHITE LETTERING.
3. TEXT: MIN. 1/2" HEIGHT, ALL CAPITAL LETTERS ARIAL OR SIMILAR FONT, NON-BOLD.
4. MATERIAL NOTE: ENGRAVED ON OUTDOOR-RATED PLASTIC LAMINATE WITH ADHESIVE BACKING SUITABLE FOR THE ENVIRONMENT.
5. APPLICABLE NEC SECTIONS: NEC 408.4 (B).



EQUIPMENT IDENTIFICATION LABEL (4)
SCALE: N.T.S.

IONNA
2900 S MAIN STREET
SANTA ANA, CA 92707

Dewberry®
Dewberry - MI Designers PC
2900 WEST ROAD
SUITE 500
EAST LANSING, MI 48823

DRAWN BY: GFS/RS
CHECKED BY: TT
APPROVED BY: HWJ
IONNA PROJECT #: MI-0008
JOB #: 50191375

SUBMITTALS

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SITE MODEL:
PLUS BASE

SITE NAME:
MI-0008 OAK PARK, MI

SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
ELECTRICAL DETAILS I

SHEET NUMBER
E-2

NLS LIGHTING

VSR-1

SITE LIGHTING

LED WATTAGE CHART			
	32L	48L	64L
700 milliamps	71w	104w	136w
1050 milliamps	106w	156w	205w

FORM AND FUNCTION
- Sleek, low profile housing
- Engineered for optimum thermal management
- Low depreciation rate
- Optical system designed for:
  - Parking Lots
  - Commercial Applications

CONSTRUCTION
- Die Formed heavy duty Aluminum
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP-65 seal for electronics compartment
- Two-piece silicone Micro Optic system ensures IP-67 level seal around each PCB

BUY AMERICAN
To ensure the latest BAA/TAA/BABA Standards are being met, please select BAA, TAA, or BABA in the options section. Please contact the factory before placing an order for any NLS products requesting BAA (Buy American Act), TAA (Trade American Act), or BABA (Build America, Buy America).

REV. 10.18.24

Project Name: Type:

VSR-1 ORDERING GUIDE

Cat#	Light Dist.	# of LEDs	Miliamps	Kelvin	Volts
Value Series Round 1 **(VSR-1)**	Type 2 **(T2)**	32 **(32L)**	700 **(7)**	Amber 586-600nM **(AMBER)** 5, 7, 9, 10	120-277 **(UNV)**
	Type 3 **(T3)**	48 **(48L)**	1050 **(1)**	2700K, 70 CRI **(27K7)** 5	347-480 **(HV)**
	Type 4 **(T4)**	64 **(64L)**		2700K, 80 CRI **(27K8)** 1, 5	
	Type 5 **(T5)**			3000K, 70 CRI **(30K7)** 5	
				3000K, 80 CRI **(30K8)** 1, 5	
				3500K, 80 CRI **(35K8)**	
				4000K, 70 CRI **(40K7)**	
				4000K, 80 CRI **(40K8)** 1	
				5000K, 70 CRI **(50K7)**	
				5000K, 80 CRI **(50K8)** 1	

Mounting	Color	Controls Options	Options
Direct Pole 6" Arm Single D180 **(DPS6)** 2	Bronze Textured **(BRZ)**	Nema 7-Pin Receptacle **(PE7)**	Bird Spikes **(BS)**
Direct Pole 10" Arm D90, T90, T120, Quad **(DPS10)** 2	White Textured **(WHT)**	Photocell + Receptacle **(PCR)**	Marine Grade Finish **(MGF)**
Wall Mount **(WM)** 3	Smooth White Gloss **(SWT)**	Receptacle + Shorting Cap **(PER)**	Quick Mount Bracket **(QMB)**
	Silver Metallic **(SVR)**	FSP-211 with Motion Sensor/Photocell 8' + Below Heights **(FSP211-8)** 4, 11	Retrofit Mount Bracket **(RQMB)**
	Black Textured **(BLK)**	9'-20' Heights **(FSP211-20)** 4, 11	Round Pole Adaptor 3"-4" Pole **(RPA4)**
	Smooth Black Gloss **(SBK)**	21'-40' Heights **(FSP211-40)** 4, 11	Round Pole Adaptor 5"-6" Pole **(RPA5)**
	Graphite Textured **(GPH)**	FSP-221 with Motion Sensor/Photocell 9'-20' Heights **(FSP221-20)** 12	Rotated Optic Left **(ROL)**
	Grey Textured **(GRY)**	21'-40' Heights **(FSP221-40)** 12	Rotated Optic Right **(ROR)**
	Green Textured **(GRN)**	Custom Controls Integration **(CCI)** 6	Automotive House Side Shield **(AHS)**
	Hunter Green Textured **(HGN)**	Button Type Photocell **(PC)** 4	House Side Shield **(HSS)**
	Custom **(CS)**		Buy American Act **(BAA)** 8
			Trade Agreement Act **(TAA)** 8
			Build America Buy American **(BABA)** 8

RAL2008 (10 day lead impact)

NOTES:
1. Consult Factory for Lead Time. Consult Factory for 90 CRI Requests.
2. For Round Pole Specify RPA4 or RPA5
3. Includes 6" Bolt On Arm
4. Universal Voltage 120-277
5. 3000K or lower, with fixed mounting options only, must be selected to meet International Dark-Sky Association certification.
6. Please contact Factory for Custom Control Integration requests (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, Dali II, Avi-On, or other control systems)
7. Turtle Safe
8. Consult factory for all BAA/TAA/BABA requests
9. Consult Factory for Lead Time
10. Not Available above 700mA
11. FSP-211, 120V/277V, 230-240VAC (single phase), 50/60Hz
12. FSP-221, 100–347VAC (single phase) or 208/230/480VAC (phase-to-phase)

NLS LIGHTING 701 Kingshill Place, Carson, CA 90746 **Call Us Today** (310) 341-2037 **nlslighting.com**

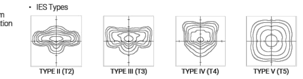
PRODUCT SPECIFICATIONS

ELECTRICAL
- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver
- Driver power factor at maximum load is ≥ .95, THD maximum load is 15%
- LED Drivers Ambient Temp. Min is -40°C and Ambient Temp. Max ranges from 50°C to 55°C and, in some cases, even higher. Consult the factory for revalidation by providing the fixture catalog string before quoting and specifying it.
- All internal wiring UL certified for 600 VAC and 105°C
- All drivers, controls, and sensors housed in enclosed IP-65 compartment
- CRI 70, 80 or 90
- Color temperatures: Amber, 2700K, 3000K, 3500K, 4000K, 5000K
- Surge Protection: 20KA supplies as standard.

OPTIONS
- BIRD SPIKES (BS)—Offers effective and humane deterrent for larger bird species and provides cost-effective long-term solution to nuisance bird infestations and protect your property.
- MARINE GRADE FINISH (MGF)—A multi-step process creating protective finishing coat against harsh environments.
  - Chemically washed in a 5 stage cleaning system.
  - Pre-baked
  - Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer.
  - 1-2 feet inside pole coverage top and bottom.
  - Oven Baked.
  - Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.
- SHIELDS (HSS, AHS)—House Side Shield (HSS) is designed for full property line cut-off. Automotive House Side Shield (AHS) is a single-sided shield allowing partial cut-off on either side or front of luminaire.
- ROUND POLE ADAPTER (RPA)– When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3"-4" round poles, and RPA5 when installing on 5"-6" round poles.

CONTROLS
- FSP-211 (FSP-X)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
  - All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
  - FSP-20 mounting heights 9-20 feet.
  - FSP-40 mounting heights 21-40 feet.
  - Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field.
  - FSIR-100 commissioning remote is required to change sensor settings. Please contact factory for ordering.
- NEMA 7-PIN RECEPTACLE (PE7)—An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.
- Controls Agnostic: Please contact factory for your preferred controls option. (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, DALI II, Avi-On, or other control systems)

OPTICS
Silicone optics high photothermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life. UV and thermal stability with scratch resistance increases exterior application durability.
- IES Types



FINISH
- 5 mils electrostatic powder coat.
- NLS' standard high-quality finishes prevent corrosion protects against extreme environmental conditions

WARRANTY
Five-year limited warranty for drivers and LEDs.

LISTINGS
- Certified to UL 1598
- CSA C22.2 No. 250.0
- IP65/ IP67 Rated
- Dark Sky Approved
- IK10 Rated

BUY AMERICAN OPTION
While all of the NLS Lighting products listed in this document qualify for the Buy America(n) Act of 1933, we reserve the right to change our listings without notice.

The information provided above is for general informational purposes only. We encourage you to consult legal professionals for advice particular to your projects concerning BAA, TAA, BABA or Buy America.

Additional NLS Products that meet BAA, TAA standards can be found at the following link:

https://nlslighting.com/buy-american/

The information and specifications on this document are subject to change without any notification. All values are design, nominal, typical or prorated values when measured under internal and external laboratory conditions.

NLS LIGHTING 701 Kingshill Place, Carson, CA 90746 **Call Us Today** (310) 341-2037 **nlslighting.com**

PRODUCT SPECIFICATIONS

LUMENS																					
PART NUMBER	T2	LM/W	BUG	T3 HSS	LM/W	BUG	T3	LM/W	BUG	T4 AHS	LM/W	T4 HSS	LM/W	BUG	T4	LM/W	BUG	T5	LM/W	BUG	Watts
VSR-1-32L-7-30K7	7427	105	B2-U0-G2	4118	58	B0-U0-G1	7881	111	B2-U0-G2	5112	72	4047	57	B0-U0-G1	7896	111	B2-U0-G2	8236	116	B3-U0-G2	71
VSR-1-32L-7-40K7	7991	113	B2-U0-G2	4402	62	B0-U0-G1	8480	119	B2-U0-G2	5396	76	4331	61	B0-U0-G2	8496	120	B2-U0-G2	8875	125	B3-U0-G2	71
VSR-1-32L-7-50K7	8169	115	B2-U0-G2	4686	66	B0-U0-G1	8669	122	B2-U0-G2	5680	80	4615	65	B0-U0-G2	8685	122	B2-U0-G2	9088	128	B3-U0-G2	71
VSR-1-32L-1-30K7	11088	105	B2-U0-G2	6148	58	B0-U0-G2	10812	102	B2-U0-G2	7632	72	6042	57	B0-U0-G2	10715	101	B2-U0-G2	11130	105	B4-U0-G2	106
VSR-1-32L-1-40K7	11930	113	B2-U0-G2	6572	62	B0-U0-G2	11634	110	B2-U0-G2	8056	76	6466	61	B0-U0-G2	11529	109	B2-U0-G2	11978	113	B4-U0-G2	106
VSR-1-32L-1-50K7	12196	115	B2-U0-G2	6996	66	B0-U0-G2	11893	112	B2-U0-G2	8480	80	6890	65	B0-U0-G2	11787	111	B2-U0-G2	12296	116	B4-U0-G2	106
VSR-1-48L-7-30K7	11844	114	B2-U0-G2	6032	58	B0-U0-G2	11544	111	B2-U0-G2	7488	72	5928	57	B0-U0-G2	11648	112	B2-U0-G2	12068	116	B4-U0-G2	104
VSR-1-48L-7-40K7	12744	123	B2-U0-G2	6448	62	B0-U0-G2	12421	119	B2-U0-G2	7904	76	6344	61	B0-U0-G2	12444	120	B2-U0-G2	12985	125	B4-U0-G2	104
VSR-1-48L-7-50K7	13028	125	B2-U0-G2	6864	66	B0-U0-G2	12698	122	B2-U0-G2	8320	80	6760	65	B0-U0-G2	12792	123	B2-U0-G2	13275	128	B4-U0-G2	104
VSR-1-48L-1-30K7	16318	105	B3-U0-G3	9048	58	B0-U0-G2	15912	102	B3-U0-G3	11232	72	8892	57	B1-U0-G2	15769	101	B3-U0-G3	16455	105	B4-U0-G2	156
VSR-1-48L-1-40K7	17558	113	B3-U0-G3	9672	62	B0-U0-G2	17121	110	B3-U0-G3	11856	76	9516	61	B1-U0-G2	16968	109	B3-U0-G3	17705	113	B4-U0-G2	156
VSR-1-48L-1-50K7	17950	115	B3-U0-G3	10296	66	B1-U0-G2	17503	112	B3-U0-G3	12480	80	10140	65	B1-U0-G2	17346	111	B3-U0-G3	18100	116	B4-U0-G2	156
VSR-1-64L-7-30K7	15488	114	B3-U0-G3	7888	58	B0-U0-G2	15096	111	B2-U0-G2	9792	72	7752	57	B0-U0-G2	15124	111	B3-U0-G3	15781	116	B4-U0-G2	136
VSR-1-64L-7-40K7	16665	123	B3-U0-G3	8432	62	B0-U0-G2	16243	119	B2-U0-G2	10336	76	8296	61	B0-U0-G2	16273	120	B3-U0-G3	16981	125	B4-U0-G2	136
VSR-1-64L-7-50K7	17037	125	B3-U0-G3	8976	66	B0-U0-G2	16606	122	B2-U0-G2	10880	80	8840	65	B1-U0-G2	16728	123	B3-U0-G3	17359	128	B4-U0-G2	136
VSR-1-64L-1-30K7	21443	105	B3-U0-G3	11890	58	B1-U0-G2	20910	102	B3-U0-G3	14760	72	11685	57	B1-U0-G2	20722	101	B3-U0-G3	21623	105	B5-U0-G3	205
VSR-1-64L-1-40K7	23073	113	B3-U0-G3	12710	62	B1-U0-G2	22499	110	B3-U0-G3	15580	76	12505	61	B1-U0-G2	22297	109	B3-U0-G3	23267	113	B5-U0-G3	205
VSR-1-64L-1-50K7	23588	115	B3-U0-G3	13530	66	B1-U0-G2	23001	112	B3-U0-G3	16400	80	13325	65	B1-U0-G3	22795	111	B3-U0-G4	23785	116	B5-U0-G3	205

Lumen Maintenance Data							
Ambient Temperature	Drive Current	L90 Hours*	L70 Hours**	30,000 Hours*	50,000 Hours*	60,000 Hours*	100,000 Hours**
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%
	1050mA	38,000	96,000	93.0%	85.4%	81.8%	68.8%

*Reported extrapolations per IESNA TM-21 **Projected extrapolations per IESNA TM-21

LED KELVIN RANGE

Color	Dominant or Peak Wavelength Range (nm)	
	Minimum	Maximum
Amber	585	600

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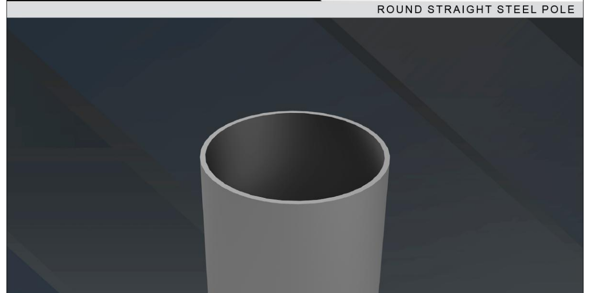
LIGHT FIXTURE DETAILS (1)

SCALE: N.T.S.

NLS LIGHTING

RSSP

ROUND STRAIGHT STEEL POLE



HEIGHT
10' - 30'

POLE SHAFT
The pole shaft material is a weldable grade hot rolled commercial quality steel tubing with a minimum yield of 46,000 psi. Conforms to ASTM A500 Grade B Standards. Poles have ground lug welded inside hand-hole opposite side of the hand-hole. Pole shaft is welded to base plate on top and bottom of base plate.

BASE PLATE
The Base Plate is manufactured from structural hot rolled steel that meets or exceeds a minimum yield strength of 36,000 psi, conforms the ASTM–A36 standards. Base Plate vary in size from 1" thick for poles 21 feet and over, 3/4" thick for poles 10 to 20 feet.

ANCHOR BOLTS
All anchor bolts are hot dipped galvanized steel and come with two galvanized nuts and washers per bolt. Minimum yield strength 50,000 psi. Anchor bolts are not included for Custom Bolt Circle.

BASE COVER
All base covers are fabricated two-piece 6063 aluminum and powder coated to match the pole. Square base cover comes standard, Round base cover optional.

HAND-HOLE
A reinforced hand-hole is 12" on center from the base plate and is constructed of 3"x 5" rectangular steel tubing which is welded to pole shaft for added strength. The hand-hole covers are provided with internal bridge support and powder coated to match pole finish.

POLE CAP
All poles come with a removable polymer pole cap installed. All pole caps are black finish. Aluminum Pole Cap option is painted to match pole.

FINISH
All poles are treated with shot blast media for a near white finish, power blasted with 100 psi prior to powder coat application. Electrostatically applied AAMA 2604 polyester powder coat with a 3 to 5 mil thickness for maximum adherence.

MARINE GRADE FINISH
All poles are washed through a 5-stage cleaning system with a deionized rinse, a 3 to 5 mils zinc rich durable polyester primer powder coat, followed by a 3 to 5 mils super durable AAMA 2604 polyester powder coat finish.

Recommended for applications near the coastline or in demanding environments.

GALVANIZED FINISH
All poles are Hot Dipped Galvanized in a multi stage process. Galvanizing Specification, Zinc (Hot Dipped Galvanized) per ASTM A 123/A 123M – 02

Zinc coatings on threaded materials shall conform to specification A 153 /A 153M. The coating shall be continuous and reasonably smooth and uniform in thickness and in weight.

Galvanizing Adherence - The Zinc coating shall withstand handling consistent with the nature and thickness of the coating and normal use of the article without peeling or flaking.

Provides the most protection against the elements in coastal and harsh environments.

GALVANIZED UNDER POWDER
Galvanized Under Powder (GUP) adheres to above galvanized specification, and the second stage is a light sand blast on the outside of the pole, third stage is a 3-5 mils AAMA 2604 polyester powder coat finish for maximum adherence.

VIBRATION DAMPENER
The Vibration Dampener is factory installed and consists of a rugged galvanized chain coated with heavy duty polyester tubing that is factory secured at the bottom 2-3rds of the pole and can optionally be secured in the field by a contractor at the base during installation.

BUY AMERICAN
To ensure the latest BAA/TAA/BABA Standards are being met, please select BAA, TAA, or BABA in the options section. Please contact the factory before placing an order for any NLS products requesting BAA (Buy American Act), TAA (Trade American Act), or BABA (Build America, Buy America).

4" 5" 6"

REV. 12.17.24

Project Name: Type:

RSSP ORDERING GUIDE

Cat#	Height	Pole Dimension	Gauge	Base Pattern
Round Straight Steel Pole **(RSSP)**	10' **(10)**	4" Round **(4R)**	.120 Wall Thickness **(11G)**	(10'-20') 9"- 10 3/8" Bolt Circle **(9BC)**
	12' **(12)**	5" Round **(5R)**	.180 Wall Thickness **(7G)**	(22'-30') 11 1/2"- 14" Bolt Circle **(12BC)**
	14' **(14)**	6" Round **(6R)**		Custom Bolt Circle **(CBC)** * Consult Factory
	16' **(16)**			
	18' **(18)**			
	20' **(20)**			
	22' **(22)**			
	24' **(24)**			
	25' **(25)**			
	26' **(26)**			
	28' **(28)**			
	30' **(30)**			

Mounting	Color	Bolts	Options
Single **(SGL)**	Bronze Textured **(BRZ)**	3/4" x 30" **(3430)**	GFI Kit **(GFI20A)** 3, 4, 5 *20 Amp Weather Proof Receptacle*
Double **(D-90)** **(D-180)**	White Textured **(WHT)**	1" x 36" **(136)**	GFI Provision Only **(PROV)** 4, 5
Triple **(T-90)** **(T-120)**	Smooth White Gloss **(SWT)**	Less Anchor Bolts **(LAB)**	Galvanized **(GLV)**
Quad **(QD)**	Silver Metallic **(SVR)**		Round Base Cover **(RBC)** **Consult Factory for Pricing*
No Drill **(ND)** **Tenon Option*	Black Textured **(BLK)**		Galvanized Under Powder **(GUP)**
Tenon	Smooth Black Gloss **(SBK)**		1/2" Coupling **(COUP)** 4 **Specify Location*
2-3/8" Round **(T2R)**	Graphite Textured **(GPH)**		Vibration Dampener **(VD)**
3" Round **(T3R)**	Grey Textured **(GRY)**		Extra Hand Hole **(XHH)** 4 ** Specify Location*
3-1/2" Round **(T312R)**	Green Textured **(GRN)**		Marine Grade Finish **(MGF)**
4" Round **(T4R)**	Hunter Green Textured **(HGN)**		UL Certified with label **(UL)** 1
4-1/2" Round **(T412R)**	Custom **(CS)**		Aluminum Pole Cap **(APC)** 2
			Buy American Act **(BAA)** 2
			Trade Agreement Act **(TAA)** 2
			Build America Buy American **(BABA)** 2

RAL2008 (10 day lead impact)

NOTES:
1. Aluminum Pole Cap must be selected for UL Certified Pole Option
2. Consult Factory
3. Standard weatherproof cover comes standard with option. For lockable cover requests, please contact factory
4. Specify the Height (in feet) from ground level and degree orientation from wire access slot.
5. 120V Only

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PRODUCT SPECIFICATIONS

Max. allowable EPA - RSSP poles (per AASHTO LRFDLTS-1)																											
Catalog Number	Shaft Length, ft	Wall thick-ness, in.	Shaft dia., in.	Base Plate, in.	Bolt Circle, in.	Bolts	80 mph	Max. wt. (lb)	90 mph	Max. wt. (lb)	100 mph	Max. wt. (lb)	110 mph	Max. wt. (lb)	115 mph	Max. wt., lb	120 mph	Max. wt., lb	130 mph	Max. wt., lb	140 mph	Max. wt., lb	150 mph	Max. wt., lb	160 mph	Max. wt., lb	170 mph	Max. wt., lb	180 mph	Max. wt., lb
RSSP-10-4R-11G-9BC-3430	10	0.120	4	9" sq.	9	3/4"x30"	20.0	500	20.0	500	20.0	500	20.0	500	18.3	458	16.6	416	13.9	347	11.7	292	10.0	250	8.7	217	7.6	190	6.8	169
RSSP-12-4R-11G-9BC-3430	12	0.120	4	9" sq.	9	3/4"x30"	20.0	500	20.0	500	20.0	500	16.1	402	14.5	363	13.1	329	10.8	270	9.0	225	7.6	190	6.6	165	5.7	143	5.0	126
RSSP-14-4R-11G-9BC-3430	14	0.120	4	9" sq.	9	3/4"x30"	20.0	500	20.0	500	16.4	409	13.0	326	11.7	292	10.5	262	8.5	213	7.0	174	5.8	145	4.9	124	4.3	108	3.7	93
RSSP-16-4R-11G-9BC-3430	16	0.120	4	9" sq.	9	3/4"x30"	20.0	500	16.3	408	12.6	316	9.9	247	8.8	220	7.8	196	6.2	156	4.9	124	4.0	100	3.4	85	2.9	73	2.5	63
RSSP-18-4R-11G-9BC-3430	18	0.120	4	9" sq.	9	3/4"x30"	18.3	458	13.7	344	10.4	261	8.0	201	7.1	177	6.2	154	4.8	119	3.6	91	2.8	70	2.3	60	2.0	60	1.6	60
RSSP-20-4R-11G-9BC-3430	20	0.120	4	9" sq.	9	3/4"x30"	15.7	393	11.6	289	8.6	216	6.5	162	5.5	139	4.8	120	3.5	88	2.5	62	1.8	60	1.4	60	1.1	60	0.9	60
RSSP-20-4R-7G-9BC-3430	20	0.188	4	9" sq.	9	3/4"x30"	20.0	500	19.6	489	15.1	378	11.8	294	10.5	262	9.3	232	7.3	183	5.7	144	4.6	116	3.9	98	3.3	84	2.9	72
RSSP-20-5R-11G-9BC-3430	20	0.120	5	9" sq.	9	3/4"x30"	20.0	500	19.7	491	14.9	374	11.5	288	10.1	253	9.0	226	7.4	186	6.2	156	5.2	131	4.5	112	3.8	96	3.3	83
RSSP-20-5R-7G-9BC-3430	20	0.188	5	9" sq.	9	3/4"x30"	20.0	500	20.0	500	20.0	500	16.2	406	14.4	361	13.0	325	10.8	271	9.1	228	7.8	195	6.7	167	5.8	146	5.1	127
RSSP-22-4R-11G-12BC-136	22	0.120	4	12" sq.	12	1"x36"	12.3	308	8.9	222	6.4	161	4.6	115	3.9	97	3.2	80	2.1	60	1.3	60	0.7	60	0.5	60	0.3	60	0.1	60
RSSP-22-4R-7G-12BC-136	22	0.188	4	12" sq.	12	1"x36"	20.0	500	15.6	389	11.8	295	9.0	226	8.0	199	7.0	174	5.3	133	4.0	100	3.1	77	2.6	64	2.2	60	1.8	60
RSSP-22-5R-11G-12BC-136	22	0.120	5	12" sq.	12	1"x36"	20.0	500	15.4	385	11.5	287	8.6	215	7.5	187	6.6	164	5.4	134	4.4	110	3.7	92	3.1	77	2.6	65	2.2	60
RSSP-22-5R-7G-12BC-136	22	0.188	5	12" sq.	12	1"x36"	20.0	500	20.0	500	20.0	500	15.8	396	14.1	351	12.7	316	10.5	263	8.9	221	7.5	188	6.5	162	5.6	140	4.9	122
RSSP-25-4R-11G-12BC-136	25	0.120	4	12" sq.	12	1"x36"	9.7	242	6.7	167	4.5	112	2.9	72	2.3	60	1.7	60	0.7	60	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
RSSP-25-4R-7G-12BC-136	25	0.188	4	12" sq.	12	1"x36"	17.1	428	12.5	313	9.3	231	6.8	170	5.8	145	5.0	124	3.5	88	2.4	60	1.6	60	1.2	60	0.9	60	0.7	60
RSSP-25-5R-11G-12BC-136	25	0.120	5	12" sq.	12	1"x36"	16.9	423	12.1	302	8.7	217	6.2	154	5.1	128	4.4	110	3.5	87	2.7	68	2.2	60	1.7	60	1.4	60	1.1	60
RSSP-25-5R-7G-12BC-136	25	0.188	5	12" sq.	12	1"x36"	20.0	500	20.0	500	16.4	409	12.5	312	10.9	272	9.7	243	8.0	200	6.7	167	5.6	140	4.8	119	4.0	101	3.5	87
RSSP-26-4R-11G-12BC-136	26	0.120	4	12" sq.	12	1"x36"	8.9	222	6.0	150	3.9	98	2.4	60	1.7	60	1.2	60	0.3	60	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
RSSP-26-4R-7G-12BC-136	26	0.188	4	12" sq.	12	1"x36"	16.1	401	11.6	290	8.5	212	6.2	154	5.2	130	4.4	109	3.0	74	1.9	60	1.2	60	0.8	60	0.6	60	0.3	60
RSSP-26-5R-11G-12BC-136	26	0.120	5	12" sq.	12	1"x36"	13.3	333	11.1	278	7.9	196	5.4	135	4.4	111	3.7	93	2.9	72	2.3	60	1.8	60	1.4	60	1.1	60	0.8	60
RSSP-26-5R-7G-12BC-136	26	0.188	5	12" sq.	12	1"x36"	12.1	302	16.1	403	13.9	347	11.5	287	10.0	249	8.9	222	7.3	182	6.0	150	5.0	125	4.2	106	3.6	89	3.1	77
RSSP-28-4R-7G-12BC-136	28	0.188	4	12" sq.	12	1"x36"	14.1	353	10.0	250	7.1	177	4.9	122	4.0	100	3.3	82	2.0	60	1.0	60	0.3	60	0.1	60	0.0	-	0.0	-
RSSP-28-5R-11G-12BC-136	28	0.120	5	12" sq.	12	1"x36"	13.6	341	9.4	234	6.3	158	4.0	101	3.1	78	2.5	63	1.8	60	1.3	60	0.9	60	0.6	60	0.4	60	0.2	60
RSSP-28-5R-7G-12BC-136	28	0.188	5	12" sq.	12	1"x36"	20.0	500	17.8	445	13.1	329	9.7	242	8.3	207	7.2	181	5.9	147	4.8	120	3.9	98	3.2	81	2.7	68	2.3	60
RSSP-28-6R-7G-12BC-136	28	0.188	6	12" sq.	12	1"x36"	20.0	500	20.0	500	20.0	500	17.0	425	15.4	385	14.0	349	11.6	290	9.7	243	8.2	206	7.1	177	6.1	152	5.3	132
RSSP-30-5R-11G-12BC-136	30	0.120	5	12" sq.	12	1"x36"	11.7	293	7.8	194	4.9	122	2.8	69	1.9	60	1.4	60	0.8	60	0.4	60	0.1	60	0.0	-	0.0	-	0.0	-
RSSP-30-6R-11G-12BC-136	30	0.120	6	12" sq.	12	1"x36"	18.6	466	12.9	321	9.0	225	7.0	175	6.2	154	5.5	136	4.3	108	3.5	87	2.8	69	2.2	60	1.8	60	1.4	60
RSSP-30-5R-7G-12BC-136	30	0.188	5	12" sq.	12	1"x36"	20.0	500	15.6	391	11.3	282	8.1	201	6.8	169	5.8	146	4.6	115	3.7	92	3.0	74	2.4	60	1.9	60	1.5	60
RSSP-30-6R-7G-12BC-136	30	0.188	6	12" sq.	12	1"x36"	20.0	500	20.0	500	18.6	465	14.9	371	13.4	334	12.1	303	10.0	250	8.3	208	7.0	176	6.0	149	5.1	127	4.4	110

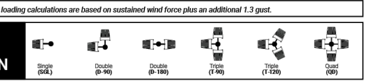
*Pole Assemblies With EPA>9.0 Require Specific Review

CAUTION: Installation of poles without luminaire(s) will compromise pole strength. Any accessories attached to the pole, or other modifications done in the field, will compromise the pole strength and may result in pole failure. Wind load evaluations and provisions for appendages such as banner arms, signage, cameras, etc., must be evaluated and approved by the factory prior to placing an order. Additional evaluation and approval should be performed by the customer's local structural engineer on the project.

**Anchor Bolts are NOT included with Custom Bolt Circle.*
**Do NOT pour concrete referencing this drawing. Consult Factory.*

**All wind loading calculations are based on sustained wind force plus an additional 1.3 gust.*

MOUNTING CONFIGURATION



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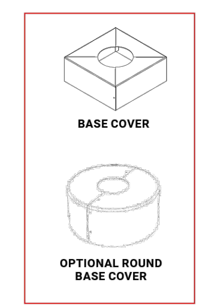
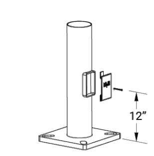
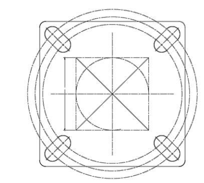
PRODUCT SPECIFICATIONS

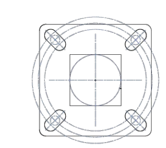




BASE DETAIL



12" BASE DETAIL



9" BASE DETAIL

NLS LIGHTING 701 Kingshill Place, Carson, CA 90746 **Call Us Today** (310) 341-2037 **nlslighting.com**

LIGHT POLE DETAILS (2)

SCALE: N.T.S.

iONNA™
2900 S MAIN STREET
SANTA ANA, CA 92707

Dewberry®
Dewberry - MI Designers PC
2900 WEST ROAD
SUITE 500
EAST LANSING, MI 48823

DRAWN BY:	GFS/RS
CHECKED BY:	TT
APPROVED BY:	HWJ
IONNA PROJECT #:	MI–0008
JOB #:	50191375

SUBMITTALS		
REV.	DATE	DESCRIPTION
2	04/20/26	REVISED PER COMMENTS
1	03/31/26	ISSUED PER PERMITS
0	12/29/25	ISSUED PER PERMITS

SITE MODEL:
PLUS BASE

SITE NAME:
MI–0008 OAK PARK, MI

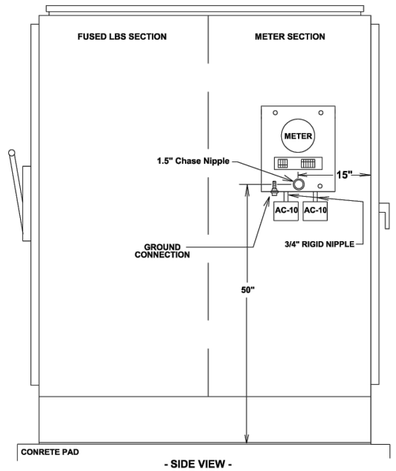
SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
ELECTRICAL DETAILS II

SHEET NUMBER
E–3

JUNE 2016	PRIMARY SERVICE	11-4-6

OUTDOOR INSTALLATION LAYOUT
FOR
COMBINATION FUSED LOADBREAK DISCONNECT SWITCH/METER UNIT
UTILIZING A ZS3-20 METER BOX (4-Wire)
OR
UTILIZING A ZS3-20-5S METER BOX (3-Wire)



- SIDE VIEW -

NOTES:

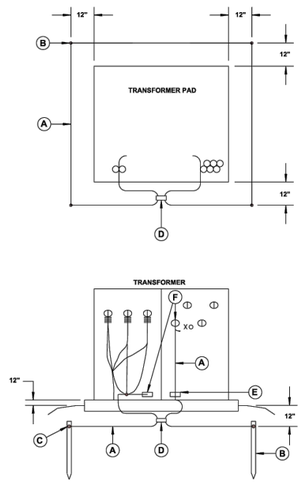
1. THE ZS3-20 (or ZS3-20-5S) METER BOX WILL BE MOUNTED ON THE OUTDOOR SWITCHGEAR WITH FOUR 1-INCH .25 x 20 RUSTPROOF BOLTS, FLAT WASHERS AND LOCK WASHERS (STAINLESS STEEL, SILICON BRASS, ETC.). A 1 1/2 - INCH BOLT, FLAT WASHERS & LOCK WASHERS (SILICON BRASS) WILL BE USED IN THE LOWER LEFT HAND CORNER TO PROVIDE A GROUND CONNECTION POINT IN THE BOX. A ONE-HOLE COMPRESSION LUG IS TO BE INSTALLED ON THE END OF THE 600 VOLT #2 COPPER GROUND CONDUCTOR, THEN ENTER THE METER BOX THROUGH THE 1.5" CHASE NIPPLE.
2. A FOUR(4) FOOT CLEAR AREA MUST BE PROVIDED IN FRONT OF THE METER.
3. IF AN AC-10 IS TO BE INSTALLED FOR CUSTOMER ACCESS OR DECo COMMUNICATIONS, THE CONNECTING CONDUIT (3/4" RIGID) MUST ENTER THE ZS3-20 FROM BOTTOM PLATE. BOTH BOXES SUPPLIED AND INSTALLED BY CUSTOMER'S CONTRACTOR.
4. THIS LAYOUT CAN BE USED FOR OUTDOOR FREE STANDING SWITCHGEAR. SEE PRIMARY SERVICE REPRESENTAIVE FOR METER BOX LOCATION/INSTALLATION REQUIREMENTS.

PRIMARY SERVICES	SIM-ESIG	DTE

UTILITY PRIMARY DISCONNECT SWITCH DETAILS 1
SCALE: N.T.S.

11-3-6	PRIMARY SERVICE	JUNE 2016

GROUNDING SPECIFICATION
CUSTOMER OWNED TRANSFORMER INSTALLATION



BILL OF MATERIAL:

- (A) 4/0 7 OR 19 STRAND COPPER CONDUCTOR
- (B) 5/8"x8' COPPER-CLAD GROUND ROD. GALVANIZED RODS UNACCEPTABLE (QTY 3, 5/8"x4' COPPER-CLAD GROUND RODS COUPLED WITH "DENMARK-58" CONNECTORS ACCEPTABLE AS SINGLE GROUND ROD)
- (C) ANDERSON CATALOG NO. GC-103-02 CONNECTOR (CADWELD ACCEPTED AS ALTERNATIVE)
- (D) ANDERSON CATALOG NO. K-3 CONNECTOR (4/0 BRONZE SPLIT BOLT ACCEPTABLE)
- (E) ANDERSON CATALOG NO. GTCS-41 TRANSFORMER TANK CONNECTOR
- (F) 4/0 2-HOLE COPPER COMPRESSION LUG (ANDERSON VHCL-4/0-12BN, OR BURNDY EQUIVALENT) SET SCREW LUGS UNACCEPTABLE

NOTES:

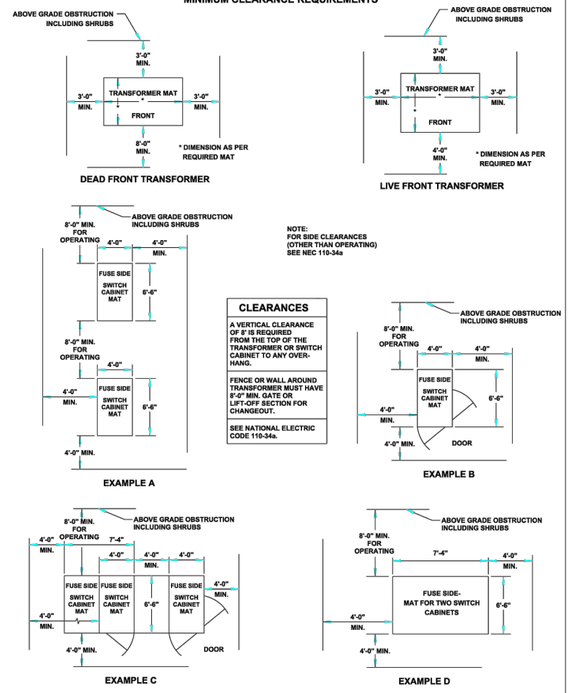
1. GROUNDING CONDUCTOR TO BE ENTIRELY CONTINUOUS.
2. CONDUCTOR TO FEED THROUGH ITEM (E).
3. TRANSFORMER GROUND STRAP TO REMAIN.
4. GROUND MAT TO MEGGER 5 OHMS OR LESS.
5. PRIMARY SERVICE REPRESENTATIVE TO INSPECT FINISHED MAT PRIOR TO BURIAL.

PRIMARY SERVICES	SIM-ESIG	DTE

UTILITY TRANSFORMER PAD DETAILS 2
SCALE: N.T.S.

JUNE 2016	PRIMARY SERVICE	11-3-7

CUSTOMER OWNED
PADMOUNT TRANSFORMER OR SWITCH CABINET
MINIMUM CLEARANCE REQUIREMENTS



PRIMARY SERVICES	SIM-ESIG	DTE

UTILITY EQUIPMENT PAD DETAILS 3
SCALE: N.T.S.

iONNA
2900 S MAIN STREET
SANTA ANA, CA 92707

Dewberry®
Dewberry - MI Designers PC
2900 WEST ROAD
SUITE 500
EAST LANSING, MI 48823

FOR REFERENCE ONLY

DRAWN BY:	GFS/RS
CHECKED BY:	TT
APPROVED BY:	HWJ
IONNA PROJECT #:	MI-0008
JOB #:	50191375

SUBMITTALS

REV.	DATE	DESCRIPTION
2	04/20/26	REVISED PER COMMENTS
1	03/31/26	ISSUED PER PERMITS
0	12/29/25	ISSUED PER PERMITS

SITE MODEL:
PLUS BASE

SITE NAME:
MI-0008 OAK PARK, MI

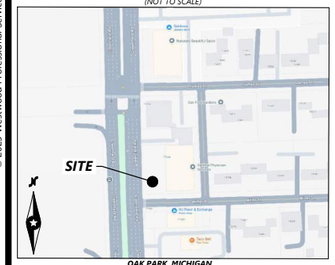
SITE ADDRESS:
21500 GREENFIELD ROAD
OAK PARK, MI 48237

SHEET TITLE
UTILITY DETAILS

SHEET NUMBER
E-4

VICINITY MAP

(NOT TO SCALE)



OAK PARK, MICHIGAN,
OAKLAND COUNTY

TABLE A OPTIONAL ITEM NOTES

2. The address of the subject property is 21500 Greenfield Road, Oak Park, Michigan 48237.

3. The foregoing property is located within Zone X (Unshaded) - (Area of Minimal Flood Hazard) according to FEMA FIRM Panels Number: 26125C0679F, Effective Date September 29, 2006.

4. Subject tract area is 0.525 acres, or 22,870 square feet.

5. Elevations and contours shown hereon are based on NAVD88, derived from on the ground survey displaying 1'-5' contour intervals. Site benchmarks are shown hereon.

6(b). Subject tract is in the City of Oak Park, Michigan Zoning Districts Map, (Proposed Zoning - Draft July 2020), and is Zoned - B-2 (General Business), no zoning report provided by the client.

8. The surveyor has made a good faith effort to show all substantial, above ground, visible, and permanent features observed during the course of the survey as shown hereon.

9. No marked parking spaces were found within the subject property.

11(a). Evidence of underground utilities existing on or serving the surveyed property as determined by found evidence, and on the ground markings, no plans provided at the time of survey.

11(b). A private utility marking request was made by the client. The underground utility lines shown hereon have been located from field survey information provided by BLVD, on 10/21/2025. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in service or abandoned, nor do we guarantee the accuracy or completeness of the markings and maps provided.

13. Names of adjoining owners are shown according to the Oakland County Appraisal District, shown hereon.

17. The surveyor is not aware of any proposed changes in street right of way lines. and there was no observable evidence of recent street or sidewalk construction or repairs at the time of survey.

18. Any plottable offsite easements provided in the Title Insurance Commitment are shown hereon.

20(a). No evidence of soil borings were found on the subject property at the time of the survey.

20(b). No wetland delineation markers were observed in the process at the time of the survey. The surveyor is not aware of any recent wetland delineations taking place on the subject property.

SURVEYOR'S GENERAL NOTES

1. This survey was prepared using Fidelity National Title Insurance Company, Commitment Number: 5000019537, having an effective date of October 16, 2025 at 12:00 am.

2. Elevations are based on North American Vertical Datum of 1988 (NAVD 88).

3. The horizontal datum is the Michigan State Plane Coordinate System, South Zone NAD83(2011), International Foot. The average project combined grid factor is 1.0001025877 verified against OPUS-S solution.

4. Plat Reference: Recorded in Liber 29, of Plats, Page 24, Clerk/Register of Records Oakland County, Michigan.

5. Warranty Deed: Recorded in Liber 51767, Page 690, Clerk/Register of Deeds Oakland County, Michigan.

LEGAL DESCRIPTION

PER TITLE COMMITMENT NO. 5000019537

An interest in land, said interest being over a portion of the following described parent parcel:

Property situated in the County of Oakland, and State of Michigan, described as follows:

Lots 47, 48 and 49, Except the North 1 Foot of the East 20 Feet of Lot 47, H. Miller's Garden Home's Subdivision, According to the Recorded Plat Thereof, as Recorded in Liber 29 of Plats, Page 24, Oakland County Records.

AND BEING the same property conveyed to Namaste 1 LLC, a Michigan limited liability company from Coplin LLC, a Michigan limited liability company by Warranty Deed dated February 13, 2014 and recorded February 26, 2014 in Liber 46819, Page 56; AND FURTHER CONVEYED to Namaste 1 LLC, a Michigan limited liability company from WLMH, LLC, a Michigan limited liability company by Quit Claim Deed dated January 25, 2018 and recorded April 17, 2018 in Liber 51731, Page 455; AND FURTHER CONVEYED to JS Property LLC, a Michigan limited liability company from Namaste 1 LLC, a Michigan limited liability company by Covenant Deed dated March 22, 2018 and recorded April 30, 2018 in Liber 51767, Page 690.

Tax Parcel No. 25-31-302-003

CERTIFICATION

TO: (I) FIDELITY NATIONAL TITLE INSURANCE COMPANY (II) IONNA LLC, A DELAWARE LIMITED LIABILITY COMPANY;

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 6(b), 8, 9,11(a)(b), 13, 17, 18, 20(a), AND 20(b) OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON OCTOBER 26, 2025.

STATE OF MICHIGAN · CHRISTOPHER R. FOLEY · PROFESSIONAL SURVEYOR · 4001071349 · LICENSED PROFESSIONAL SURVEYOR

CHRISTOPHER R. FOLEY, PS *DATE: 11/07/2025*
MICHIGAN STATE LICENSE NO. 4001071349
Chris.Foley@westwoodps.com

SCHEDULE B, PART II - EXCEPTIONS

PER TITLE COMMITMENT NO. 5000019537

The following notes correspond to the numbering system of Schedule B, Part II - General Exceptions, and Special Exceptions of the above mentioned title commitment. Items 1-2, and 5-6 of the General Exceptions, and 7 of the Special Exceptions are not a survey related and are not addressed hereon.
SURVEYORS COMMENTS IN BOLD ITALICS

GENERAL EXCEPTIONS:

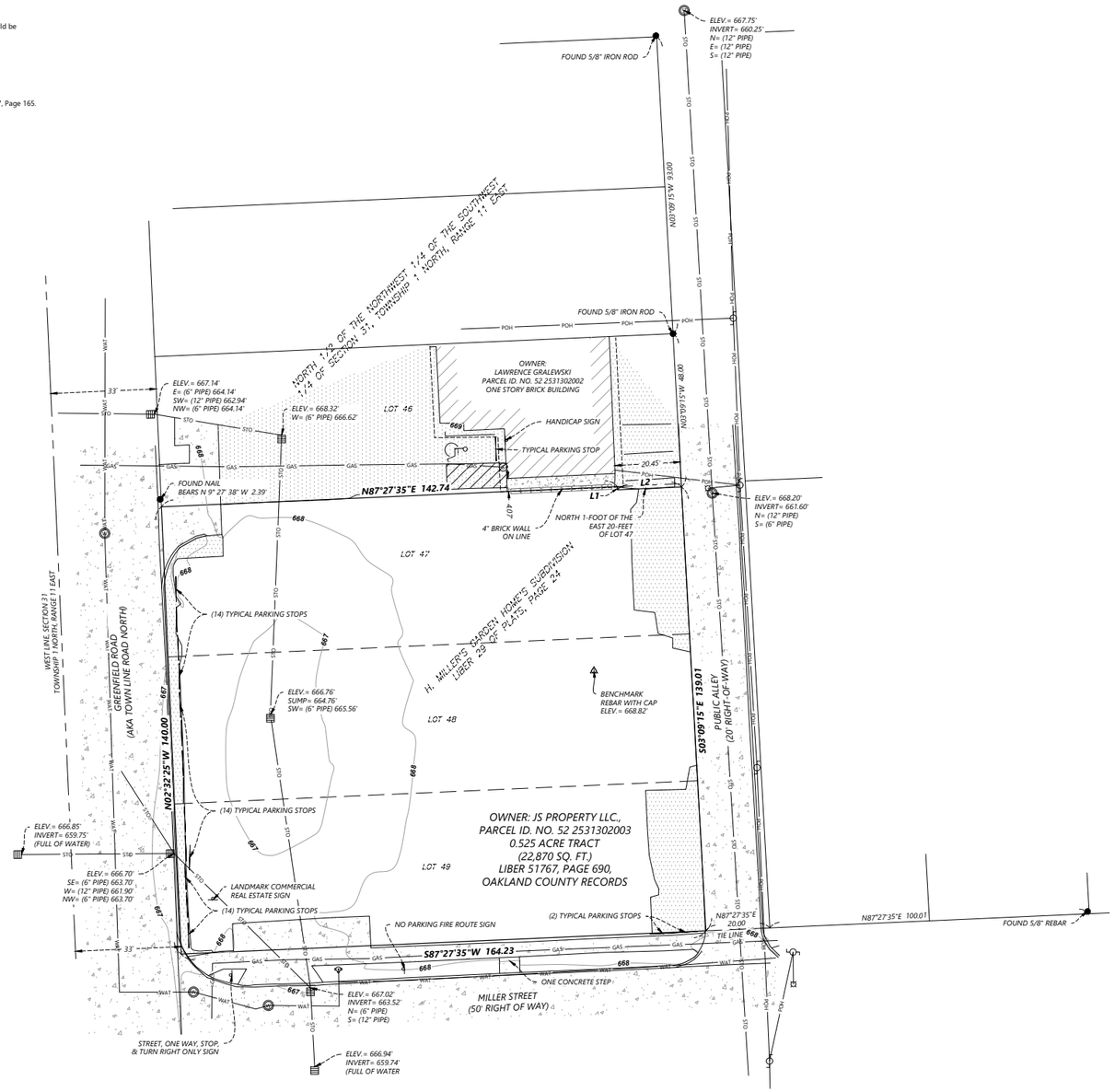
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the Land. ***SUCH ITEMS, IF ANY, AS SHOWN***

4. Easements, or claims of easements, not shown by the Public Records. ***SUCH ITEMS, IF ANY, AS SHOWN***

SPECIAL EXCEPTIONS:

8. Matters as shown and noted on Plat recorded in Plat Liber 29, Page 24. ***UNDERLYING PLAT***

9. Certificate of Forfeiture of Real Property dated April 5, 2012 and recorded on April 12, 2012 in Liber 44057, Page 165. ***BLANKET IN NATURE***



Line Table		
Line #	Length	Direction
L1	1.00'	S02°32'25"E
L2	20.00'	N87°27'35"E

Call 48 Hours before digging:
811 or call811.com
Common Ground Alliance

1" = 20'
0' 20' 40' 60'

LEGEND

- HANDICAPPED STALL
- WATER MANHOLE
- HYDRANT
- NATURAL GAS METER
- POWER POLE WITH LIGHT
- POWER POLE
- CATCH BASIN
- STORM MANHOLE
- SIGN (SEE LABEL)
- FOUND MONUMENT (SEE LABEL)
- SITE BENCHMARK
- GAS — GAS LINE
- WAT — WATERMAIN
- POH — POWER OVERHEAD
- STO — STORM SEWER
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- ADJACENT LINE
- BOUNDARY SECTION LINE
- BOUNDARY UNDERLINE LINE
- WALL BOTTOM LINE
- CURB & GUTTER
- CONCRETE SURFACE
- ASPHALT SURFACE
- BUILDING
- PAINT HATCHING
- PARCEL ID. NO. PARCEL IDENTIFICATION NUMBER

N:\0053440.00\IONNA SITES\MI\21500 GREENFIELD RD, OAK PARK, MI 48237\06 CAD\DWG\SURVEY C3D\0072207.36V-SURV.DWG

PROJECT:	72207.36
CHECKED:	CRF/ECO
DRAWN:	MWL
HORIZONTAL SCALE:	1" = 20'

INITIAL ISSUE:
REVISIONS:

PREPARED FOR:

Ionna LLC
Durham, NC

OAK PARK
21500 GREENFIELD ROAD
OAK PARK, MI 48237

Westwood
Phone (210) 265-8300 · 211 North Loop 1604 East, Suite 205
Toll Free (888) 937-5150 · San Antonio, TX 78232
westwoodps.com
Westwood Professional Services, Inc.

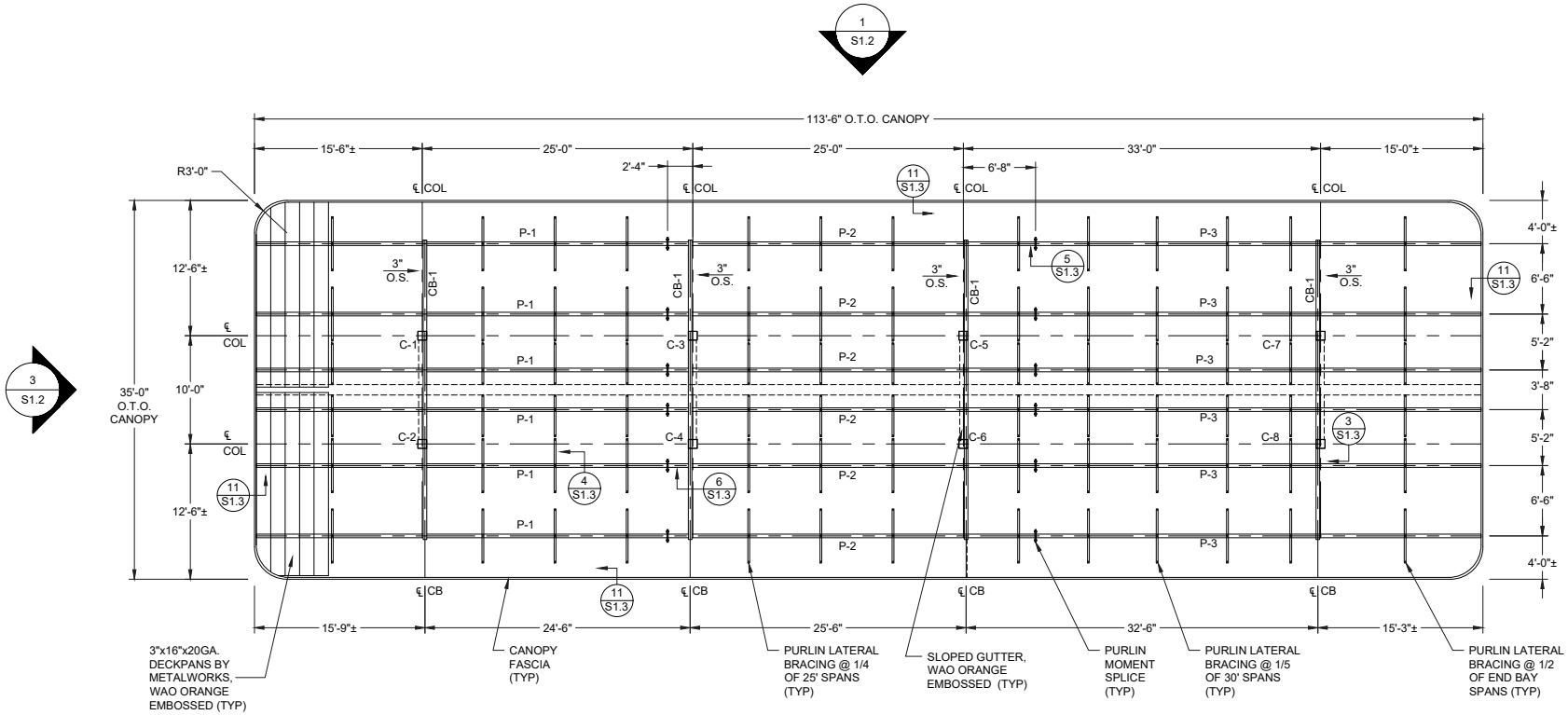
ALTA/NSPS Land Title Survey

A 0.525 ACRE TRACT SITUATED IN THE NORTH HALF OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 31, TOWNSHIP 1 NORTH, RANGE 11 EAST
CITY OF OAK PARK , OAKLAND COUNTY, MICHIGAN
PROJECT NUMBER: 0072207.36

SHEET NUMBER: 1 OF 1

DATE: 11/07/2025

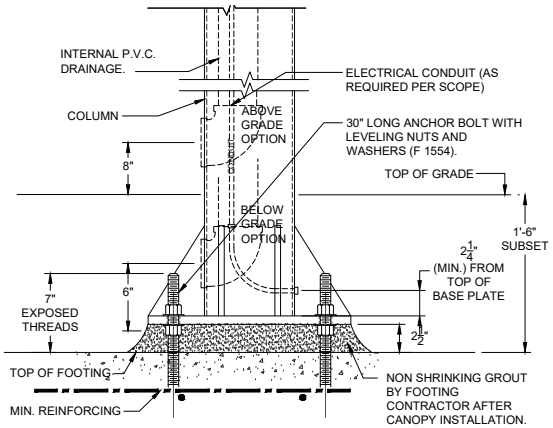
FRAMING PLAN



1 CANOPY FRAMING PLAN

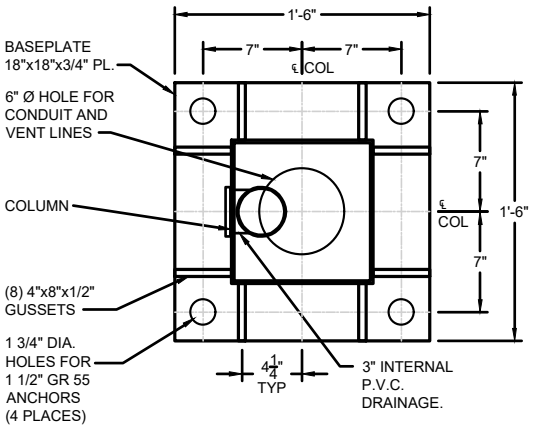
2 S1.2

TYPICAL DETAILS:

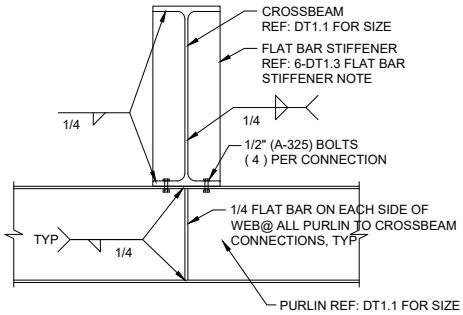


1 ANCHOR BOLT DETAIL
N.T.S.

NOTE: REFER TO GENERAL STRUCTURAL NOTES FOR SNUG TIGHT NUT TIGHTENING METHOD



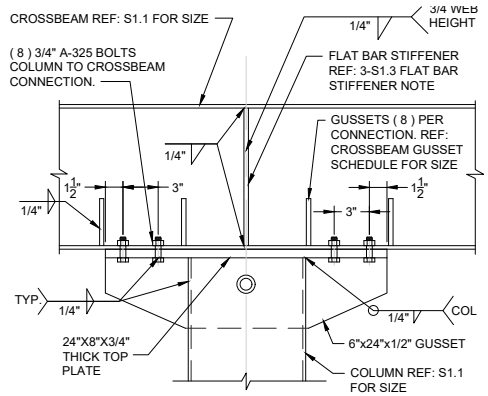
2 BASE PLATE DETAIL
N.T.S.



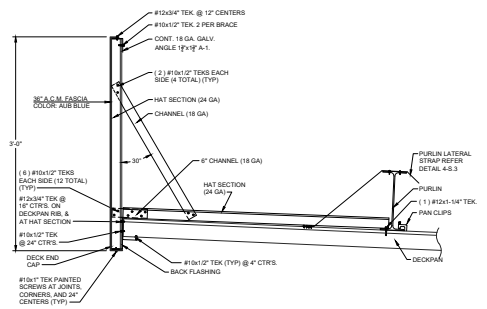
FLAT BAR STIFFENER NOTE (PURLIN TO PURLIN):
1/4" FLAT BAR ON EACH SIDE OF WEB @ PURLIN TO PURLIN CONNECTION FOR SIZES UP TO W16X31#. ALL SIZES LARGER THAN W16X31# USE 3/8" FLAT BAR.

6 CROSSBEAM TO PURLIN CONNECTION
N.T.S.

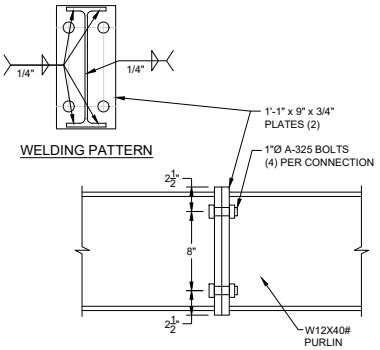
NOTE: REFER TO GENERAL STRUCTURAL NOTES FOR SNUG TIGHT NUT TIGHTENING METHOD



3 COLUMN TO CROSSBEAM CONNECTION
N.T.S.



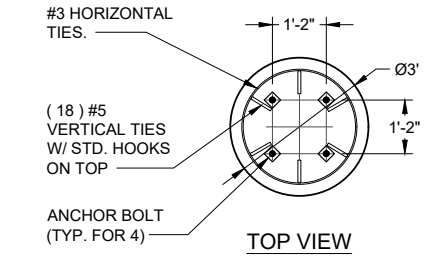
11 FASCIA SECTION
SCALE: 1-1/2" = 1'-0"



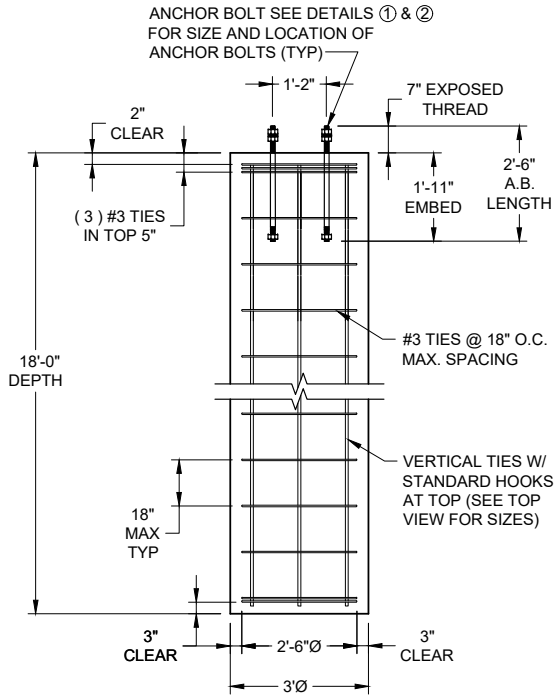
5 PURLIN MOMENT SPLICE
SCALE: 1 1/2" = 1'-0"

NOTE: REFER TO GENERAL STRUCTURAL NOTES FOR TURN-OF-THE-NUT TIGHTENING METHOD

TYPICAL DETAILS:



TOP VIEW

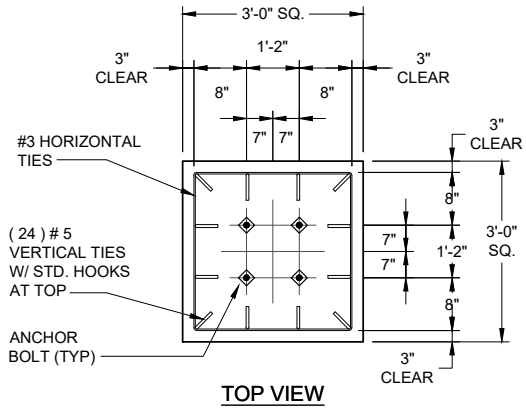


SIDE VIEW

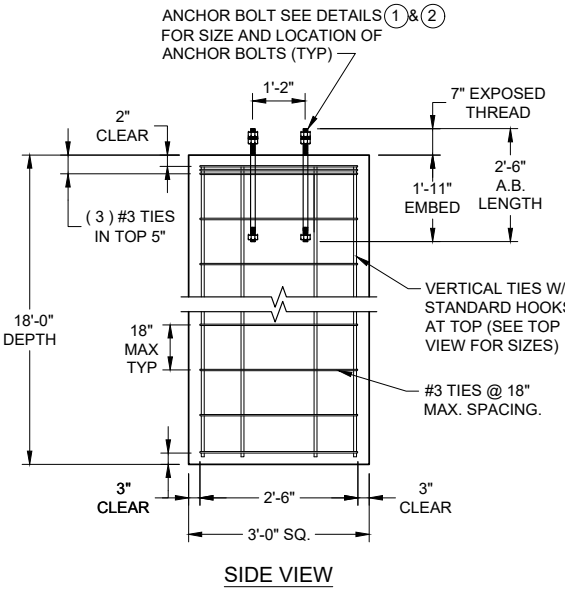
OPTION #1 CAISSON FOOTING

10

N.T.S



TOP VIEW

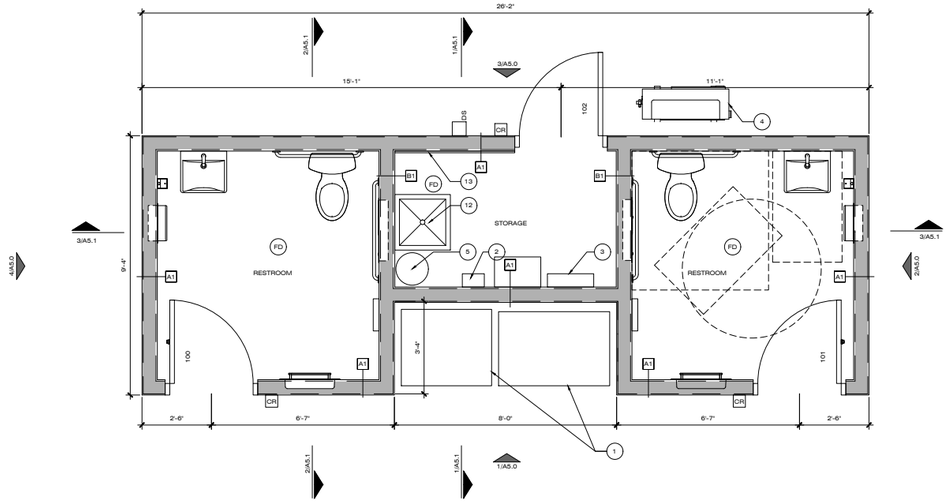


SIDE VIEW

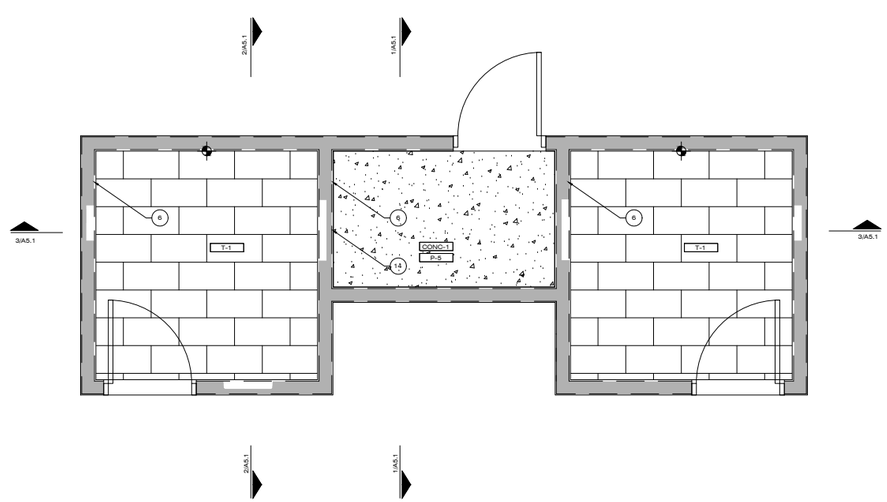
OPTION #2 CUBE FOOTING

9

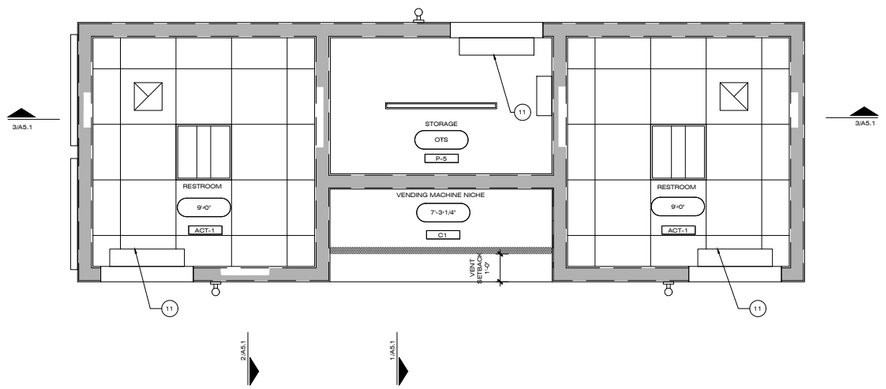
N.T.S



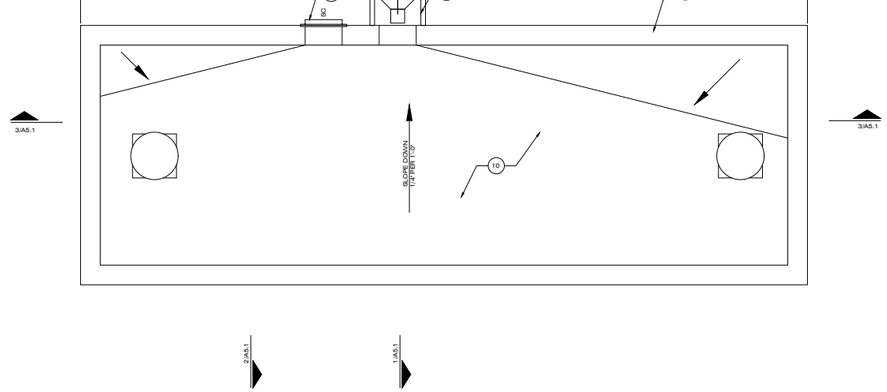
1 FIRST FLOOR - CONSTRUCTION PLAN
SCALE: 1/2" = 1'-0"



2 FIRST FLOOR - FINISH PLAN
SCALE: 1/2" = 1'-0"



3 FIRST FLOOR - REFLECTED CEILING PLAN
SCALE: 1/2" = 1'-0"



4 ROOF PLAN
SCALE: 1/2" = 1'-0"

CONSTRUCTION KEY NOTES

1	VENDING MACHINES, TO BE PROVIDED BY OWNER. VENDING MACHINE USER INTERFACE IS TO BE MOUNTED WITHIN REQUIRED REACH RANGES OF ANSI A117.1 SECTION 308.	8	OVERFLOW SCUPPER, SEE DETAIL 1/A8.0.
2	ELECTRICAL DISCONNECT, SEE ELECTRICAL SHEETS	9	PREFINISHED ALUMINUM PARAPET COPING. REFER TO EXTERIOR ELEVATIONS A5.0 FOR MORE INFORMATION. SLOPE TOWARD ROOF.
3	ELECTRICAL PANELS, SEE ELECTRICAL SHEETS	10	MECHANICALLY FASTENED CLASS 'A' 60 MIL. SINGLE-PLY TPO ROOFING WITH WHITE FACE. JOHNS MANVILLE OR EQUIVALENT. PROVIDE A MINIMUM 3-YEAR AGED SOLAR REFLECTIVE INDEX OF 64.
4	OUTDOOR UNIT, SEE MECHANICAL PLANS	11	SPLIT ZONE SYSTEM, SEE MECH.
5	WATER HEATER, SEE PLUMBING DRAWINGS	12	SQUARE FLOOR MOUNTED MOP SINK, SEE PLUMBING DRAWINGS FOR MORE DETAILS.
6	WATER RESISTANT GYP BOARD ON FRAMED WALLS	13	PLYWOOD TELEPHONE BACKER BOARD, SEE ELECTRICAL DRAWINGS
7	DOWNSPOUT WITH COLLECTOR, SEE DETAIL 2/A8.0.	14	4' WIDE FRP PANEL CENTERED ON MOP SINK. P-199 'BRIGHT WHITE' PEBBLED FINISH BY MARLITE.

CODE INFO

2021 MICHIGAN BUILDING CODE
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

A. PROJECT INFORMATION

NAME OF PROJECT: IONNA RECHARGERY - INTEGRATED VENDING ENCLOSURE
ADDRESS: 21500 GREENFIELD ROAD, OAK PARK, MI. ZIP CODE: 48237
OWNER/AUTHORIZED AGENT: FERAS AFANI PHONE: 785.452.1379 EMAIL: FERAS.AFANI@IONNA.COM

B. CODE DATA

■ NEW BUILDING

RISK CATEGORY (TABLE 1604.5): PROPOSED) (SELECT ONE): ☐ I ☐ II ☐ III ■ IV

C. BASIC BUILDING DATA

CONSTRUCTION TYPE (SELECT ONE): ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV(HT) ☐ V-A ■ V-B

SPRINKLERS: (SELECT ONE) ☐ N/A ☐ YES ■ NO ☐ PARTIAL (SELECT ONE) ■ N/A ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

STANDPIPES (SELECT ONE): ☐ N/A ■ NO ☐ CLASS I - WET ☐ CLASS I - DRY ☐ CLASS II - WET ☐ CLASS II - DRY ☐ CLASS III - WET ☐ CLASS III - DRY

FLOOD HAZARD AREA (SELECT ONE): ☐ YES ■ NO

SPECIAL INSPECTIONS REQUIRED: ☐ YES (CONTACT THE LOCAL INSPECTION JURISDICTION FOR ADDITIONAL PROCEDURES AND REQUIREMENTS). ■ NO

GROSS BUILDING AREA TABLE

FLOOR	NEW OCCUPIABLE (S.F.)	EXTERIOR COVERED AREA (S.F.)	SUB-TOTAL
1ST FLOOR	217.55 SF	26.68 SF	244.23 SF
TOTALS	217.55 SF	26.68 SF	244.23 SF

D. ALLOWABLE AREA

PRIMARY OCCUPANCY CLASSIFICATION(S):
OCCUPANCY = B (BUSINESS)

ALLOWABLE AREA PER 506.2:
OCCUPANCY B, TYPE V-B CONSTRUCTION UNSPRINKLERED = 9,000 SF

BRIAN BAILEY
ARCHITECT

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STATE OF MICHIGAN
BRIAN BAILEY
License No.
1301072832
LICENSED ARCHITECT

12/16/2025

IONNA RECHARGERY

INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
OAK PARK, MI. 48237

#	△	DESCRIPTION	DATE
1		ISSUED FOR PERMIT	12.19.25
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OWNER PROJECT CODE MI-0008
ARCH PROJECT # RDU 25-174

CONSTRUCTION PLANS

SCALE: AS NOTED

SHEET # **A1.0**

WIRING DEVICE SYMBOL LEGEND

SYMBOL	DESCRIPTION
A-1	HOMERUN TO LIGHTING/SERVICE PANEL. HOMERUN INDICATES PANEL NAME AND CIRCUIT NUMBER OR FEEDER TAG. CONDUCTORS SHALL BE #12 AWG IN 3/4 ' CONDUIT (1" UNDERGROUND) UNLESS NOTED OTHERWISE. HOMERUNS MAY BE COMBINED INTO A COMMON RACEWAY FOR 20A SINGLE PHASE CIRCUITS ONLY IF HANDLE TIES ARE PROVIDED ON CIRCUIT BREAKERS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS. MAXIMUM OF (6) CURRENT CARRYING CONDUCTORS SHALL BE PROVIDED IN RACEWAY, UNLESS NOTED OTHERWISE. PROVIDE #10 AWG FOR 120V BRANCH CIRCUITS LONGER THAN 100 FEET. PROVIDE #8 AWG FOR 120V BRANCH CIRCUITS LONGER THAN 150 FEET. INCREASE CONDUIT SIZE AS REQUIRED. VERIFY EXACT CIRCUIT LENGTH AND SIZE OF CONDUCTORS TO PROVIDE ACCEPTABLE VOLTAGE DROP PER NEC. COMPLY WITH NEC FOR CONDUCTOR DERATING AND CONDUIT FILL.
	CONDUIT STUB
	CONDUIT TURNED DOWN
	CONDUIT TURNED UP
	CONDUIT INSTALLED BELOW GRADE OR BELOW FINISHED FLOOR
E101	ELECTRICAL CONNECTION TO EQUIPMENT ITEM 'E101' (LETTER DESIGNATION AS APPLICABLE) - SEE CORRESPONDING EQUIPMENT CONNECTION SCHEDULE
	DUPLEX RECEPTACLE AT 18" AFF, UNO. NEMA 5-20R.
	SAME AS ABOVE BUT GENERATOR/ALTERNATE POWER SOURCE.
	QUADRUPLEX RECEPTACLE AT 18" AFF, UNO. NEMA 5-20R.
	SAME AS ABOVE BUT GENERATOR/ALTERNATE POWER SOURCE.
	DUPLEX RECEPTACLE - CEILING MOUNTED. NEMA 5-20R.
	DUPLEX RECEPTACLE - FLOOR MOUNTED. NEMA 5-20R.
	SINGLE RECEPTACLE AT 18" AFF, UNO. NEMA 5-20R.
	FOR RECEPTACLES ABOVE, SUBSCRIPT DEFINITION AS FOLLOWS: AC - MOUNTED 8" ABOVE COUNTER CR - CORD REEL GFI - GROUND FAULT CIRCUIT INTERRUPTER DEVICE IG - ISOLATED GROUND TR - TAMPER RESISTANT USB - DEVICE WITH TYPE 'A' & TYPE 'C' USB PORTS WP - UL LISTED WEATHER-RESISTANT (WR) DEVICE WITH WEATHERPROOF WHILE-IN-USE COVER (xx") - MOUNTING HEIGHT OF RECEPTACLE AFF
	SPECIAL PURPOSE RECEPTACLE - HEIGHT AND TYPE AS NOTED ON DRAWINGS
	SURFACE RACEWAY
J	JUNCTION BOX - MOUNTING HEIGHT AND SIZE AS REQUIRED BY CODE OR AS NOTED ON DRAWINGS
	VERTICAL SERVICE POLE
	COMBINATION IN FLOOR POWER / DATA / A/V DEVICE.
	PUSHBUTTON
	MOTOR. SEE DRAWINGS FOR DESCRIPTION
30A/3P/20/1	SAFETY DISCONNECT SWITCH. "30" INDICATES AMP RATING, "3P" INDICATES NUMBER OF POLES, "20" INDICATES FUSE SIZE, "1" INDICATES NEMA ENCLOSURE RATING (1, 3R, 4X, ETC). HEAVY DUTY SAFETY SWITCH UNLESS NOTED OTHERWISE. "NF" INDICATES NON-FUSED.
	COMBINATION MOTOR STARTER
	MOTOR STARTER M = MANUAL MOTOR STARTER
B	DOOR BELL

DISTRIBUTION SYMBOL LEGEND

SYMBOL	DESCRIPTION
	ELECTRICAL PANEL, SURFACE MOUNTED.
	ELECTRICAL PANEL, FLUSH MOUNTED.
T1	TRANSFORMER
ATS	AUTOMATIC TRANSFER SWITCH

FIRE ALARM SYMBOL LEGEND

UNLESS NOTED OTHERWISE ON DRAWINGS, FOR EACH DEVICE BELOW, PROVIDE 2-GANG JUNCTION BOX WITH 1-GANG MUDRING AND 3/4" CONDUIT WITH PULL CORD TO ABOVE NEAREST ACCESSIBLE CEILING IN CORRIDOR. PROVIDE NYLON BUSHING ON CONDUIT END.

SYMBOL	DESCRIPTION
FAAP	FIRE ALARM ANNUNCIATOR PANEL - WALL MOUNTED AT 60" AFF TO CENTER, UNO
FACP	FIRE ALARM CONTROL UNIT; "D" SUBSCRIPT INDICATES DEDICATED UNIT
FATC	FIRE ALARM TERMINAL CABINET - WALL MOUNTED AT 72" AFF TO TOP, UNO
ARCM	AREA OF REFUGE EMERGENCY COMMUNICATION SYSTEM MASTER UNIT
ARCR	AREA OF REFUGE EMERGENCY COMMUNICATION SYSTEM REMOTE UNIT
NAC_n	NOTIFICATION CIRCUIT POWER BOOSTER, EXTENDER PANEL. "n" = UNIT NUMBER
PRE	PRE-ACTION SYSTEM / CONTROL UNIT
SD	SMOKE DAMPER CONNECTION
ES	ELEVATOR SHUTDOWN CONNECTION
ER	ELEVATOR RECALL CONNECTION
FH	ELEVATOR FIREMAN'S HAT LIGHT CONNECTION
VM	ELEVATOR SHUNT TRIP VOLTAGE MONITOR CONNECTION
AIM	ADDRESSABLE INPUT MONITOR MODULE
AOM	ADDRESSABLE OUTPUT RELAY MODULE
IM	ISOLATION MODULE
CO	CO DETECTOR
H	HEAT DETECTOR. - SPOT TYPE
H LIN	HEAT DETECTOR. - LINEAR TYPE
WF	WATER FLOW DETECTOR / SWITCH
RL	NON-ADDRESSABLE OUTPUT RELAY
SS	SURGE SUPPRESSOR
VS	VALVE SUPERVISORY SWITCH
F	FIRE ALARM PULL STATION AT 44" AFF. UNO
S	FIRE ALARM SMOKE DETECTOR / SENSOR
S R	RELAY BASE
S AS	SMOKE DETECTOR - AIR SAMPLING TYPE
SS	SMOKE ALARM. SINGLE STATION
S	DUCT SMOKE DETECTOR
F SS	FIRE ALARM SYSTEM BELL - SINGLE STROKE
F G	GONG
cd	COMBINATION HORN / VISIBLE; cd = CANDELA RATING
cd 1W	COMBINATION SPEAKER / VISIBLE; W = WATTAGE, cd = CANDELA RATING
F H	HORN ONLY
RI	CEILING MOUNT INDICATOR
RTS	REMOTE ALARM INDICATING AND TEST SWITCH
S W	SPEAKER ONLY, WALL MOUNT; W = WATTAGE
cd	VISIBLE ONLY (STROBE), CEILING MOUNT; cd = CANDELA RATING
cd	VISIBLE ONLY (STROBE), WALL MOUNT; cd = CANDELA RATING
DH	DOOR HOLDER
	SUBSCRIPT DEFINITIONS: C - CEILING MOUNTED WF - WEATHERPROOF WG - WIRE GUARD
KB	KNOX BOX

LIGHTING & CONTROL SYMBOL LEGEND

SYMBOL	DESCRIPTION
S_x	20A SWITCH AT 44" CL AFF, UNO
D_x	WALL DIMMER FOR SWITCH OR DIMMER ABOVE, SUBSCRIPT DEFINITION AS FOLLOWS: a,b - SWITCHING SCHEME m - MOTOR RATED WITH LOCKOUT BRACKET P - PILOT LIGHT 3 - 3-WAY SWITCH 4 - 4-WAY SWITCH o - OCCUPANCY SENSOR v - VACANCY SENSOR
OS	OCCUPANCY SENSOR - CEILING MOUNTED
PC	PHOTOCELL
DS	DAYLIGHT SENSOR
	INTERIOR LIGHT FIXTURES AS SPECIFIED ON THE LIGHTING FIXTURE SCHEDULE. REFER ALSO TO LIGHTING CIRCUITING GUIDE.
	EXTERIOR LIGHT FIXTURES AS SPECIFIED ON THE LIGHTING FIXTURE SCHEDULE. REFER ALSO TO LIGHTING CIRCUITING GUIDE.
	EMERGENCY LIGHTING UNIT, WITH BATTERY. REFER TO LIGHTING FIXTURE SCHEDULE
	EXIT SIGN. WHERE USED, ARROW INDICATES CHEVRON DIRECTION.
	CEILING FAN

LIGHTING CIRCUITING GUIDE

SYMBOL	DESCRIPTION
B / X-1 (a)	LIGHTING TYPE AND CIRCUIT DESIGNATION X: PANEL 1: CIRCUIT NUMBER B: LIGHT FIXTURE TYPE, REFER TO LIGHT FIXTURE SCHEDULE SWITCHING SCHEME OR ZONE

POWER CIRCUITING GUIDE

SYMBOL	DESCRIPTION
XXX X-1	POWER CIRCUITING DESIGNATION X: PANEL 1: CIRCUIT NUMBER DEVICE, JUNCTION BOX, FLOOR BOX, ETC EQUIPMENT ABBREVIATION, REFER TO LEGEND AND ABBREVIATION SCHEDULE FOR ADDITIONAL INFORMATION

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINSHED GRADE
ACH	ABOVE COUNTER HEIGHT
AL	ALUMINUM
BKR	BREAKER
CKT	CIRCUIT
CL	CENTERLINE
CU	COPPER
DWG	DRAWING
EC	EMPTY CONDUIT
EF	EXHAUST FAN
EWC	ELECTRIC WATER COOLER
FLA	FULL LOAD AMPS
FU	FUSE
FWE	FURNISHED WITH EQUIPMENT
GC	GENERAL CONTRACTOR
GFI/GFCI	GROUND FAULT INTERRUPTER DEVICE
IG	ISOLATED GROUND
LRA	LOCKED ROTOR AMPS
LTG, L	LIGHTING
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MLO	MAIN LUG ONLY
MOCP	MAXIMUM OVERCURRENT CIRCUIT PROTECTION
MSB	MAIN SWITCHBOARD
NL	NIGHT LIGHT
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PH	PHASE
PNL	PANEL
RCPT	RECEPTACLE
REQD	REQUIRED
RTU	ROOFTOP UNIT
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
UGND	UNDERGROUND
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
W/	WITH
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER

COMcheck Software Version COMcheckWeb
Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: IONNA - OAK PARK, MI
Project Type: New Construction

Construction Site: 21500 GREENFIELD ROAD, OAK PARK, Michigan 48237
Owner/Agent: Devita, Inc., 33 Villa Road, Greenville, South Carolina 29615, 864-232-6642
Designer/Contractor:

Additional Efficiency Package(s)
Credits: 10.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-ELECTRICAL/MECHANICAL (Common Space Types:Electrical/Mechanical)	43	0.43	18
2-RESTROOMS (Common Space Types:Restrooms)	113	0.63	71
		Total Allowed Watts =	90

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-ELECTRICAL/MECHANICAL (Common Space Types:Electrical/Mechanical)				
LED: B: 4' LINEAR STRIP: Other:	1	1	26	26
2-RESTROOMS (Common Space Types:Restrooms)				
LED: A: 2X2 LAY-IN: Other:	1	2	30	60
			Total Proposed Watts =	86

Interior Lighting PASSES: Design 4% better than code

Interior Lighting Compliance Statement

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

RYAN A. GRAY [illegible] 12/18/25
Name - Title Signature Date

Project Title: IONNA - OAK PARK, MI Report date: 12/18/25
Data filename: Page 1 of 6

COMcheck Software Version COMcheckWeb
Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: IONNA - OAK PARK, MI
Project Type: New Construction
Exterior Lighting Zone 2 (Residential mixed use area (LZ2))

Construction Site: 21500 GREENFIELD ROAD, OAK PARK, Michigan 48237
Owner/Agent: Devita, Inc., 33 Villa Road, Greenville, South Carolina 29615, 864-232-6642
Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
VENDING EXTERIOR (Free standing/attached sales canopy)	475 ft2	0.4	Yes	190
			Total Tradable Watts (a) =	190
			Total Allowed Watts =	190
			Total Allowed Supplemental Watts (b) =	400

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

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
VENDING EXTERIOR (Free standing/attached sales canopy, 475 ft2): Tradable Wattage				
LED: C: EXTERIOR SCONCE: Other:	1	3	18	54
LED: D: WALL WASH: Other:	1	2	80	160
			Total Tradable Proposed Watts =	214

Exterior Lighting PASSES: Design 64% better than code

Exterior Lighting Compliance Statement

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

RYAN A. GRAY [illegible] 12/18/25
Name - Title Signature Date

Project Title: IONNA - OAK PARK, MI Report date: 12/18/25
Data filename: Page 2 of 6

BRIAN BAILEY ARCHITECT

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DeVita & Associates, Inc. Project : 25282-05
Drawn By:DMN Checked By: RAG

STATE OF MICHIGAN
RYAN ALAN GRAY
ENGINEER
No. 6201064660
LICENSED ENGINEER
[illegible] 12/18/2025

IONNA RECHARGERY

INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
OAK PARK, MI. 48237

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OWNER PROJECT CODE MI-0008
ARCH PROJECT # RDU 25-174

ELECTRICAL COVERSHEET

SHEET # **E0.0**

ELECTRICAL SPECIFICATIONS:

CONTRACTOR IS RESPONSIBLE TO REVIEW AND UNDERSTAND ALL DRAWINGS AND ALL WORK OF ALL TRADES TO ENSURE A COMPLETE AND THOROUGH PROJECT. CONTRACTOR SHALL COOPERATE AND COORDINATE ALL PHASES OF WORK WITH OTHER DISCIPLINES AND GENERAL CONTRACTOR.

CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS, VERIFY LOCATIONS, CONDUIT ROUTINGS, COORDINATE WITH EXISTING EQUIPMENT, ETC. BEFORE SUBMITTING A BID. ANY DISCREPANCIES SHALL BE REPORTED TO THE GENERAL CONTRACTOR BEFORE THE BID DATE.

FIELD DETERMINE THE EXACT EXISTING CONDITIONS AND EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT, INCLUDING ALL EQUIPMENT RATINGS AND FEEDER SIZES. EXISTING CONDITIONS INDICATED ON THESE DRAWINGS ARE TAKEN FROM EXISTING BUILDING DOCUMENTS AND/OR FIELD OBSERVATION. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE ELECTRICAL CONTRACTOR IS RESPONSIBLE THAT MAY NOT BE SPECIFICALLY ADDRESSED IN THESE DRAWINGS.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES PRIOR TO INSTALLATION OF EQUIPMENT AND RACEWAYS.

CONTRACTOR SHALL OBTAIN ALL PERMITS AND COORDINATE ALL INSPECTIONS REQUIRED BY LOCAL AUTHORIZED AGENCIES HAVING JURISDICTION. PERMIT/INSPECTION FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH RECOGNIZED STANDARDS OF WORKMANSHIP. ALL WORK SHALL BE INSTALLED IN A NEAT AND ORDERLY MANNER.

ALL ELECTRICAL CONSTRUCTION SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE, APPLICABLE NEMA, ANSI, AND IEEE PUBLICATIONS, U.L. STANDARDS, AND OSHA REQUIREMENTS. WORK SHALL COMPLY WITH LOCAL, COUNTY, STATE, AND NATIONAL CODES HAVING JURISDICTION.

PROVIDE MATERIALS AND LABOR FOR A COMPLETE ELECTRICAL INSTALLATION. ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE NEW AND BEAR THE UNDERWRITERS LABORATORIES, INC. (UL) LABEL WHERE AVAILABLE.

MULTIPLE ITEMS SUCH AS WIRING DEVICES, RACEWAYS, ETC. SHALL BE FROM THE SAME MANUFACTURER. ALL EQUIPMENT PROVIDED SHALL BE THE STANDARD EQUIPMENT OF THE MANUFACTURER.

PANELBOARDS SHALL HAVE HARD DRAWN COPPER BUS AND BOLT-ON MOLDED CASE THERMAL-MAGNETIC CIRCUIT BREAKERS. AIC RATINGS SHALL BE RATED AS INDICATED ON PANEL SCHEDULES. ACCEPTABLE MANUFACTURERS: GENERAL ELECTRIC, SQUARE D, SIEMENS, EATON.

ALL BREAKERS SHALL BE TYPE HACR BREAKERS.

SAFETY DISCONNECT SWITCHES SHALL BE SINGLE-THROW, HEAVY-DUTY TYPE, WITH SOLID NEUTRAL. VOLTAGE RATING SHALL BE 240VAC OR 600VAC AS REQUIRED BY THE UTILIZATION VOLTAGE OF THE EQUIPMENT SERVED. PROVIDE FUSIBLE OR NON-FUSIBLE AS INDICATED. PROVIDE FUSES WHERE INDICATED; FUSES SHALL BE DUAL-ELEMENT, TIME-DELAY, REJECTION TYPE. SWITCHES SHALL HAVE HORSEPOWER RATINGS EQUAL TO OR GREATER THAN THE CONNECTED MOTOR LOADS. ACCEPTABLE MANUFACTURERS: GENERAL ELECTRIC, SQUARE D, SIEMENS, EATON.

WIRING SHALL BE INSTALLED IN CONDUIT. CONDUIT SHALL BE EMT FOR BRANCH CIRCUIT WIRING. FITTINGS SHALL BE HEX-NUT, COMPRESSION TYPE, ZINC PLATED, AND U.L. LISTED AS RAINTIGHT. NO CRIMP, SPRING, OR SET-SCREW TYPE FITTINGS WILL BE ACCEPTED. EXPOSED CONDUITS SHALL BE RIGID GALVANIZED STEEL. CONNECTORS AND COUPLINGS SHALL BE STEEL, THREADED TYPE. PAINT EXPOSED CONDUIT, COUPLINGS AND CONNECTORS WITH ZINC PRIMER AND ONE FINISH COAT OF AIR DRIED ENAMEL. FURNISH AND INSTALL SLEEVES (GALVANIZED STEEL) FOR ALL CONDUIT PENETRATIONS IN SLAB OR WALLS. MINIMUM CONDUIT SIZE SHALL BE 1/2".

CONDUCTORS SHALL BE COPPER, 600 VOLTS, THHN-THWN, 75'C INSULATION. MINIMUM SIZE BRANCH CIRCUIT CONDUCTORS SHALL BE NUMBER 12 AWG. CONDUCTORS SHALL BE COLOR CODED AND CONTINUOUS FROM OUTLET TO OUTLET. NUMBER 12 AWG SHALL BE SOLID, AND NUMBER 10 AWG AND LARGER SHALL BE STRANDED.

TYPE MC CABLE MAY BE USED IN CONCEALED LOCATIONS ABOVE CEILING WHERE ALLOWED BY LOCAL CODES AND SHALL BE REFLECTED AS A COST SAVINGS TO THE OWNER. MC CABLE SHALL NOT BE USED TO ENTER PANELBOARDS.

COLOR CODE WIRING AS FOLLOWS:

120Y / 240V SYSTEM:	480Y / 277V SYSTEM:
PHASE A: BLACK	PHASE A: BROWN
PHASE B: RED	PHASE B: ORANGE
NEUTRAL: WHITE	PHASE C: YELLOW
GROUND: GREEN	NEUTRAL: WHITE WITH COLORED STRIPE
	GROUND: GREEN

ALL CONDUIT AND WIRING SHALL BE CONCEALED IN WALLS OR ABOVE CEILINGS UNLESS NOTED OTHERWISE OR APPROVED BY THE ARCHITECT/ENGINEER. ALL DEVICE OUTLET BOXES SHALL BE RECESSED UNLESS NOTED OTHERWISE OR APPROVED BY THE ARCHITECT/ENGINEER. WHERE APPROVED OR NOTED, SURFACE METAL RACEWAY AND DEVICE BOXES SHALL BE USED IN LIEU OF CONDUIT AND CONCEALED BOXES AT NO EXTRA COST TO THE OWNER.

INSTALL EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW THE SURFACE CONTOURS AS MUCH AS PRACTICAL. RUN PARALLEL OR BANKED RACEWAYS TOGETHER, ON COMMON SUPPORTS WHERE PRACTICAL. MAKE BENDS IN PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL. USE FACTORY ELBOWS ONLY WHERE ELBOWS CAN BE INSTALLED PARALLEL; OTHERWISE, PROVIDE FIELD BENDS FOR PARALLEL RACEWAYS.

FLEXIBLE CONDUIT WITH COLD ROLLED STEEL CORE SHALL BE USED FOR SHORT FINAL CONNECTION (6'-0" OR LESS) TO EQUIPMENT. PROVIDE MAXIMUM 6'-0" UNJACKETED FLEXIBLE CONDUIT CONNECTIONS TO LIGHTING FIXTURES IN LIFT-OUT TYPE CEILINGS FROM AN OUTLET BOX LOCATED ABOVE THE CEILING.

EACH ELECTRICAL DEVICE AND JUNCTION POINT SHALL BE PROVIDED WITH A STEEL OUTLET BOX. BOXES SHALL BE OF SUFFICIENT SIZE FOR NUMBER OF CONDUCTORS AND SPLICES.

WHERE CONCEALED CONDUIT IS INDICATED, PROVIDE A FLUSH-MOUNTED GALVANIZED PRESSED SHEET STEEL OUTLET BOX, 1 1/2" X 4" X 4" MINIMUM SIZE, COMPLETE WITH RAISED DEVICE COVER.

JUNCTION, PULL, AND OUTLET BOXES SHALL BE INSTALLED SUCH THAT THE WIRING CONTAINED IN BOX MAY BE RENDERED ACCESSIBLE.

FLOOR BOXES SHALL BE CAST METAL, RECTANGULAR, FULLY-ADJUSTABLE, WITH COVER, AND WITH COMPARTMENTS FOR POWER AND DATA AS REQUIRED. ACCEPTABLE MANUFACTURERS: WIREMOLD, HUBBELL, STEEL CITY.

WIRING DEVICES SHALL BE HEAVY DUTY TYPE AND AS SPECIFIED IN THE ELECTRICAL SYMBOL LEGEND. COLOR/FINISH SHALL BE AS SELECTED BY OWNER. ACCEPTABLE MANUFACTURERS: HUBBELL, LEVITON, PASS & SEYMOUR, COOPER.

DEVICE PLATES SHALL BE INSTALLED ON ALL ELECTRICAL WIRING DEVICES. DEVICE PLATES MATERIAL AND FINISH SHALL BE AS SELECTED BY OWNER.

CONDUIT PENETRATIONS OF ROOF, WALLS, FLOORS, AND CEILINGS SHALL BE SEALED TO PRESERVE THE INTEGRITY OF WATERPROOFING, FIRE RATING, AND SOUNDPROOFING FOR WHICH THE ROOF, WALL, FLOOR, OR CEILING IS DESIGNED. MATERIALS AND METHODS USED SHALL CONFORM TO THAT SPECIFIED UNDER ARCHITECTURAL SECTIONS AND SHALL COMPLY WITH STATE AND LOCAL BUILDING AND FIRE CODES. COORDINATE WITH GENERAL CONTRACTOR TO ENSURE THAT SEALING/FIRESTOPPING IS DONE.

LIGHTING FIXTURES SHALL BE AS SCHEDULED. FLUORESCENT LAMPS SHALL HAVE COLOR TEMPERATURE OF 4100K. FLUORESCENT BALLASTS SHALL HAVE A TOTAL HARMONIC DISTORTION OF LESS THAN 20%. EMERGENCY BATTERY PACK BALLASTS SHALL BE INTERNAL TYPE WITH A SEALED BATTERY AND FULLY-AUTOMATIC CHARGER.

VERIFY ALL DOOR SWINGS BEFORE ROUGH-IN OF LIGHT SWITCHES.

ALL METAL RACEWAYS, INCLUDING CONDUIT, WIRE TROUGHS, WIREMOLD, ETC., SHALL BE GROUNDED. ALL CONNECTIONS IN METAL RACEWAYS SHALL BE COMPLETED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUS PATH TO GROUND THROUGHOUT THE ENTIRE LENGTH OF THE RACEWAY.

THE METALLIC CONDUIT SYSTEM SHALL BE USED AS PERMITTED BY THE ELECTRICAL CODE FOR EQUIPMENT AND ENCLOSURE GROUNDING SYSTEM. PROVIDE, AS DEFINED BY THE ELECTRICAL CODE, GROUNDING LUGS, STRAPS AND GREEN INSULATED COPPER GROUNDING CONDUCTORS EACH UTILIZED AND SIZED ACCORDING TO THE ELECTRICAL CODE.

IN ADDITION, A GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR, INSTALLED AS A REDUNDANT GROUND PATH, IN CONDUIT WITH THE PHASE CONDUCTORS, SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS.

PROVIDE GROUNDING FOR ALL EQUIPMENT IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.

ALL WORK SHALL HAVE PROPER LABELING. ALL CIRCUITS SHALL BE LABELED AT PANELS AND ON RECEPTACLE & DEVICE OUTLET PLATES. ALL PANELS AND DISCONNECTS SHALL BE PERMANENTLY MARKED WITH NAME OR EQUIPMENT SERVED. ALL PANELS SHALL BE PROVIDED WITH TYPEWRITTEN PANEL SCHEDULES.

ALL EQUIPMENT, FIXTURES, DEVICES, AND MATERIALS SHALL BE FREE OF CORROSION, DIRT, PAINT, SPLATTER OR DAMAGE OF ANY SORT AT FINAL ACCEPTANCE OF THE WORK. ELECTRICAL CONTRACTOR SHALL CLEAN, REPAIR OR REPLACE SAME AS INSTRUCTED BY OWNER BEFORE FINAL PAYMENT.

BRIAN
BAILEY
ARCHITECT

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OWNER PROJECT CODE **MI-0008**
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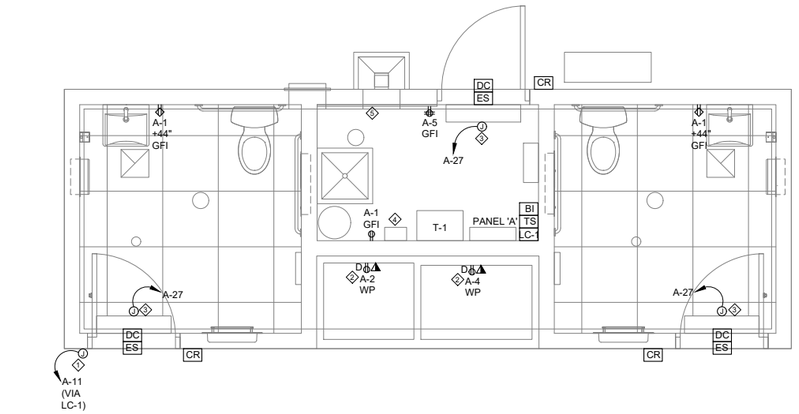
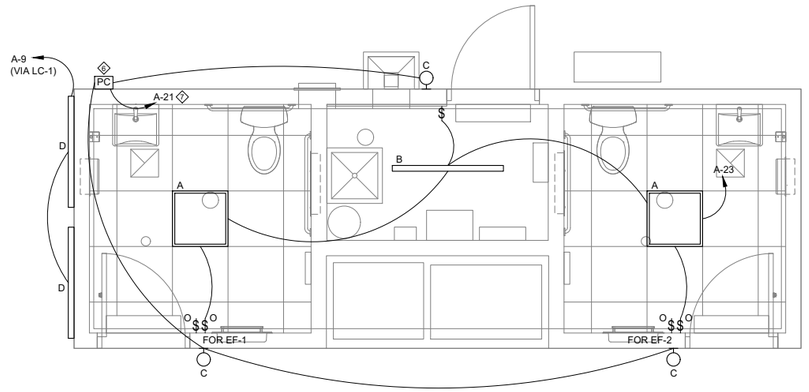
ELECTRICAL SPECIFICATIONS

SHEET # **E0.1**



1 E1.0 ELECTRICAL POWER PLAN
SCALE: 1/2" = 1'-0"



2 E1.0 ELECTRICAL LIGHTING PLAN
SCALE: 1/2" = 1'-0"

LIGHTING FIXTURE SCHEDULE

FIXTURE MARK	FIXTURE DESCRIPTION	LAMP QUANTITY, WATTAGE, & TYPE	VOLTAGE	FIXTURE WATTS	MOUNTING METHOD & HEIGHT	FIXTURE MANUFACTURER & MODEL	REMARKS
A	2X2 RECESSED TROFFER W/ 90 MIN. BATTERY PACK	LED	120V	30	RECESSED	LITHONIA: ENVX-2X2-HGR-330DLM-80CRI-40K-MIN1-ZT-MVOLT	BATTERY PACK MODEL "ELELP-CP15-HE-SD-A
B	4' LINEAR STRIP LIGHT W/ 90 MIN. BATTERY PACK	LED	120V	26.3	SURFACE	LITHONIA: CSS-L48-AL03-MVOLT-40K-80CRI	BATTERY PACK MODEL "ELELP-CP10-HE-SD-A
C	EXTERIOR SCONCE	LED	120V	18	WALL	WAC LIGHTING: WS-W1902-12-30-765-BK	POWERED THROUGH BATTERY INVERTER AND LIGHTING CONTACTOR
D	4' WALLWASH LINEAR	LED	120V	80	WALL	ARCLUCE: P-KN0284US-16S	POWERED THRU LIGHTING CONTACTOR. PROVIDE WITH REVOLVING AND EXTENSIBLE

LIGHT FIXTURE SCHEDULE NOTES:
A. FINISHES SHALL BE CONFIRMED BY ARCHITECT OR OWNER PRIOR TO ORDERING.
B. LED DRIVERS SHALL CONFORM TO IEEE P1789 STANDARDS. ALTERNATIVELY, MANUFACTURERS MUST DEMONSTRATE CONFORMANCE WITH PRODUCT LITERATURE AND TESTING WHICH DEMONSTRATES THIS PERFORMANCE. SYSTEMS THAT DO NOT MEET IEEE P1789 WILL NOT BE CONSIDERED.
C. LED DRIVERS SHALL BE MULTI-VOLT. IF MULTI-VOLT DRIVERS ARE NOT AVAILABLE, THEN REQUIRED VOLTAGE SHALL BE VERIFIED WITH ENGINEER PRIOR TO ORDERING.
D. CONTRACTOR SHALL ENSURE THAT LIGHTING CONTROL DEVICES ARE COMPATIBLE WITH FIXTURES AND LAMPS.
E. CONTRACTOR SHALL PROVIDE ALL REQUIRED HARDWARE FOR PENDANT MOUNTED FIXTURES. VERIFY TYPE REQUIRED WITH ARCHITECT.
F. CONTRACTOR SHALL PROVIDE MOUNTING KITS AND/OR ACCESSORIES REQUIRED FOR INSTALLING FIXTURES IN VARIOUS CEILING TYPES. VERIFY CEILING TYPES WITH ARCHITECTURAL DRAWINGS.

GENERAL NOTES - POWER:

A. ALL RECEPTACLES AND TELEPHONE/DATA OUTLETS SHALL BE FLUSH-MOUNTED. ALL CONDUIT AND RACEWAY SHALL BE CONCEALED, UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.

B. CONTRACTOR TO VERIFY ALL TELE/DATA LOCATIONS WITH OWNER, PRIOR TO ROUGH-IN.

C. ALL SINGLE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 50 AMPHERES OR LESS AND ALL THREE-PHASE RECEPTACLES RATED 150 VOLTS TO GROUND OR LESS, 100 AMPHERES OR LESS LOCATED IN KITCHEN, SERVERY AREAS, AND AREAS WITH A SINK AND PERMANENT PROVISIONS FOR EITHER FOOD PREPARATION OR COOKING SHALL BE GFCI PROTECTED. WHERE RECEPTACLES ARE NOT ACCESSIBLE, PROVIDE PROTECTION THROUGH GFCI TYPE CIRCUIT BREAKER IN PANEL.

D. THESE DRAWINGS MAY NOT SHOW EVERY BOX, CONDUIT, DEVICE NEEDED FOR A COMPLETE FUNCTION POWER SYSTEM. CONTRACTOR SHALL PROVIDE ALL REQUIRED COMPONENTS NEEDED AS REQUIRED FOR MEANS & METHODS AND AS PER MANUFACTURER'S RECOMMENDATIONS.

E. COORDINATE CORE-DRILLING AND SAW-CUTTING OF SLABS WITH LANDLORD, ARCHITECT, AND STRUCTURAL ENGINEER PRIOR TO STARTING WORK.

F. EC TO VERIFY AVAILABLE SERVICE VOLTAGE RATINGS TO SPACE WITH APPROPRIATE UTILITY COMPANY. E.C. TO COORDINATE WITH E.O.R.IN CASE OF ANY DISCREPANCIES.

GENERAL NOTES - LIGHTING:

A. LIGHTING INSTALLATIONS SHALL MEET THE REQUIREMENTS OF NEC ARTICLES 410 AND 700.

B. COORDINATE ALL CONSTRUCTION WITH OTHER TRADES. COORDINATE AND ADJUST LIGHTING FIXTURES IN OPEN CEILING ROOMS AND ABOVE CEILINGS WITH ACTUAL INSTALLATION OF PIPING, DUCTWORK, SPECIAL EQUIPMENT, STRUCTURAL COMPONENTS, ETC. COORDINATE PRIOR TO ROUGH-IN. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS IN CEILINGS. DO NOT DIMENSION OFF THESE PLANS.

C. DO NOT LOCATE SWITCHES BEHIND DOOR SWINGS, TV SCREENS, OR ANY WALLS WITH BRANDING OR SPECIAL WALL COVERINGS. CONTRACTOR SHALL COORDINATE IN THE FIELD AND WITH ARCHITECTURAL DRAWINGS.

D. ALL EMERGENCY BATTERY PACK FIXTURES SHALL BE UNSWITCHED "HOT" LEG SERVING THE AREA, CONNECTED AHEAD OF SWITCH SERVING THE AREA/ROOM. ALL FIXTURES WITH INTEGRAL BATTERY PACKS SHALL OPERATE THE SAME AS NORMAL LIGHTING IN AREA. EMERGENCY UNITS SHALL SENSE A LOSS OF POWER AND AUTOMATICALLY TURN ON TO MEET IBC 1008.2 FOR AVERAGE LIGHTING LEVELS ALONG PATH OF EGRESS. ALL CIRCUITS SERVING EMERGENCY FIXTURES SHALL BE IDENTIFIED AT THE PANEL PER NEC.

E. CONTRACTOR SHALL COORDINATE NUMBER AND LOCATION OF OCCUPANCY/VACANCY SENSORS PER MANUFACTURERS' RECOMMENDATIONS TO ASSURE COVERAGE IN ALL OCCUPIABLE AREAS OF ROOMS COVERED. CONTRACTOR SHALL COORDINATE FINAL LOCATIONS WITH ACTUAL INSTALLATION OF OTHER CEILING DEVICES (INCLUDING DIFFUSERS). LOCATE TO ENSURE ADEQUATE FUNCTIONALITY AND OPERATION.

KEY NOTES: ◇

1. PROVIDE POWER FOR BUILDING ADDRESS SIGNAGE. CIRCUIT SHALL RUN THROUGH EXTERIOR LIGHTING CONTACTOR. COORDINATE EXACT LOCATION AND POWER REQUIREMENTS/CONNECTIONS WITH TENANT AND ARCHITECT PRIOR TO ROUGH-IN. PROVIDE A LOCAL DISCONNECTING MEANS IF HARD-WIRED, OR PROVIDE A LOCKABLE TYPE CIRCUIT BREAKER WITH GFCI PROTECTION.
2. PROVIDE GFCI-TYPE CIRCUIT BREAKER TO SERVE LOAD. SEE PANEL SCHEDULE FOR DETAILS.
3. PROVIDE POWER TO DOOR HARDWARE POWER SUPPLY, VERIFY EXACT LOCATION AND REQUIREMENTS WITH DOOR HARDWARE VENDOR.
4. PROVIDE NEW DISCONNECT TO SERVE TRAANSFORMER T-1 AND NEW PANEL 'A'. TIE INTO NEW PAD MOUNTED SWITCHGEAR. SEE ELECTRICAL SITE DRAWINGS AND E3.0 FOR ADDITIONAL INFORMATION.
5. PROVIDE 4' WIDE X 8' HIGH X 3/4" THICK FIRE RETARDANT PLYWOOD BACKBOARD. MOUNT BOTTOM AT 24" AFF.
6. EXTERIOR LIGHTING TO BE CONTROLLED VIA EXTERIOR PHOTOCELL. PROVIDE SINGLE-GANG WEATHER-PROOF JUNCTION BOX TO SERVE EQUIPMENT. EC TO MOUNT PHOTOCELL FACING NORTH.
7. ROUTE CIRCUIT THROUGH LIGHTING CONTACTOR AND BATTERY INVERTER.

NORTH

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STATE OF MICHIGAN
RYAN ALAN GRAY
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12/19/2025

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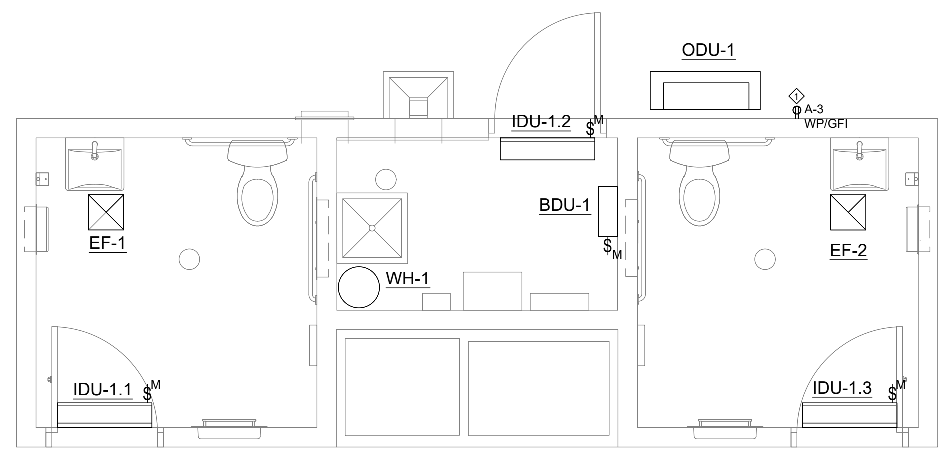
ELECTRICAL PLANS - POWER & LIGHTING

SHEET # **E1.0**



MECHANICAL POWER PLAN

1 / E1.1 SCALE: 1/2" = 1'-0"

GENERAL NOTES - MECHANICAL:

A. COORDINATE ALL REQUIRED CONDUIT AND BOXES WITH MECHANICAL AND PLUMBING CONTRACTORS, INCLUDING LOW-VOLTAGE PATHWAYS AND CONTROLS CONDUIT. CONCEAL ALL INFRASTRUCTURE TO FURTHEST EXTENT POSSIBLE.

B. ALL POWER AND CONTROL CONDUIT ROUTED TO EXTERIOR ON-GRADE MECHANICAL EQUIPMENT SHALL BE ROUTED UNDERGROUND UNLESS OTHERWISE NOTED. COORDINATE STUB-UP LOCATIONS PRIOR TO ROUGH-IN.

C. A GFI, SERVICE RECEPTACLE MUST BE PROVIDED FOR ALL SERVICEABLE EQUIPMENT PER NEC. TOTAL DISTANCE FROM EQUIPMENT TO OUTLET SHALL NOT EXCEED 25'. LOCATE OUTLET AT EQUIPMENT'S ELEVATION IN OPEN CEILINGS OR 6" BELOW CEILING PLANE.

KEY NOTES:

1. E.C. TO PROVIDE LOCKING-TYPE COVER FOR EXTERIOR RECEPTACLE.

MECHANICAL EQUIPMENT SCHEDULE

ITEM TAG	VOLTS	PH	LOAD KW	LOAD HP	LOAD FLA	CONDUCTORS & CONDUIT	DISCONNECT	CIRCUIT	REMARKS
EF-1	120	1	-	-	0.5	2#12,1#12G; 3/4"C	TOGGLE SWITCH	A-2	CONTROLLED VIA MOTION SENSOR SWITCH; SEE E1.0
EF-2	120	1	-	-	0.5	2#12,1#12G; 3/4"C	TOGGLE SWITCH	A-2	CONTROLLED VIA MOTION SENSOR SWITCH; SEE E1.0
BDU-1	240	1	-	-	1.0	2#12,1#12G; 3/4"C	HEAVY DUTY TOGGLE SWITCH	PP-1/3/5	POWERED BY ODU-1
IDU-1.1	240	1	-	-	0.5	2#12,1#12G; 3/4"C	HEAVY DUTY TOGGLE SWITCH	PP-19/21/23	POWERED BY ODU-1
IDU-1.2	240	1	-	-	0.5	2#12,1#12G; 3/4"C	HEAVY DUTY TOGGLE SWITCH	PP-25/27/29	POWERED BY ODU-1
IDU-1.3	240	1	-	-	0.5	2#12,1#12G; 3/4"C	HEAVY DUTY TOGGLE SWITCH	PP-20/22/24	
ODU-1	240	1	-	-	14.7	2#10,1#10G; 3/4"C	30/2/EMR/3R	PP-32/34/36	
WH-1	240	1	-	-	6.3	2#12,1#12G; 3/4"C	30/2/NF/1	PP-37/39/41	

MECHANICAL EQUIPMENT SCHEDULE GENERAL NOTES:

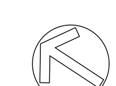
A. HORSEPOWER RATINGS AND POWER RATINGS INDICATED ON DRAWINGS MAY DIFFER FROM THE ACTUAL EQUIPMENT FURNISHED. IF FURNISHED EQUIPMENT DIFFERS FROM BASIS OF DESIGN RATINGS ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD RELATED TO THESE CHANGES WILL BE AVAILABLE FOR A FEE.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SIZING OF ALL MOTOR OVERLOAD DEVICES IN STARTERS, BASED ON ACTUAL NAMEPLATE RATINGS ON THE MOTORS BEING INSTALLED.

C. CONTRACTOR SHALL NOTE UL LABELS ON PACKAGE-TYP MECHANICAL EQUIPMENT. IF UL LABEL ON MECHANICAL EQUIPMENT CALLS FOR THE OVERCURRENT PROTECTIVE DEVICE TO BE FUSES, THE CONTRACTOR SHALL PROVIDE A FUSED DISCONNECT SWITCH WITH PROPERLY SIZED FUSES ST THE SWITCH LOCATION INDICATED ON THE DRAWING.

D. CONTRACTOR SHALL VERIFY WIRE SIZES, FUSE RATINGS, AND CIRCUIT BREAKER RATINGS FOR ALL HVAC EQUIPMENT, AND SHALL BRING TO THE ATTENTION OF THE ENGINEER ANY DISCREPANCIES AFFECTING THE WORK, PRIOR TO PROCEEDING.

E. VERIFY 3 PHASE EQUIPMENT DOES NOT ALSO SERVE SINGLE PHASE LOADS INTEGRAL TO EQUIPMENT. PROVIDE A NEUTRAL WIRE AS REQUIRED.



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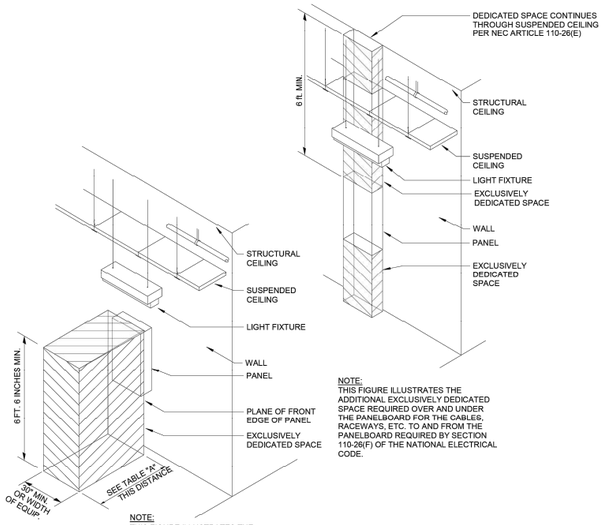
MECHANICAL POWER PLAN - NEW WORK

SHEET # **E1.1**



NOTE:
THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER THE PANELBOARD FOR THE CABLES, RACEWAYS, ETC. TO AND FROM THE PANELBOARD REQUIRED BY SECTION 110-26(F) OF THE NATIONAL ELECTRICAL CODE.

NOTE:
THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE PANELBOARD REQUIRED BY SECTION 110-26 OF THE NATIONAL ELECTRICAL CODE.

TABLE 110-26(A) WORKING SPACES

VOLTAGE TO GROUND, NOMINAL	MINIMUM CLEAR DISTANCE (FEET)		
CONDITION:	1	2	3
0-150	3	3	3
151-600	3	3 1/2	4

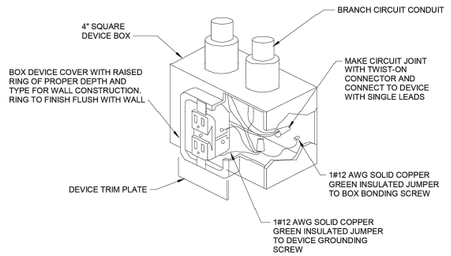
WHERE THE "CONDITIONS" ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300 VOLTS SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE. CONCRETE, BRICK OR TILE SHALL BE CONSIDERED AS GROUNDED.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

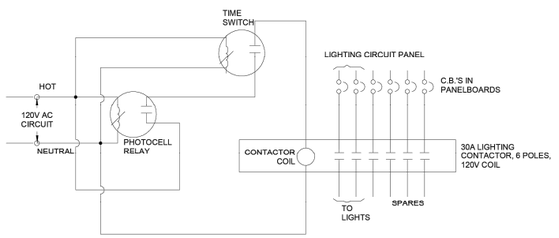
NOTE:

NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES SHALL BE PERMITTED TO BE INSTALLED IN OR PASS THROUGH THE DEDICATED SPACES SHOWN ABOVE WITHOUT THE WRITTEN PERMISSION OF THE DESIGN ENGINEER AND THE AUTHORITY HAVING JURISDICTION.

2 E2.0 ELECTRICAL WORKING CLEARANCES DETAIL
NOT TO SCALE



1 E2.0 RECEPTACLE GROUNDING DETAIL
NOT TO SCALE



3 E2.0 EXTERIOR LIGHTING CONTROL DETAIL
NOT TO SCALE

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ELECTRICAL DETAILS

SHEET # **E2.0**

GENERAL NOTES - LIGHTING:

A. REFER TO PANEL SCHEDULES FOR FAULT CURRENT INTERRUPTING CAPACITIES.

B. PROVIDE ARC FLASH HAZARD LABELING FOR ALL EQUIPMENT PER NEC 110.16.

C. ALL CIRCUITRY MODIFICATIONS MADE IN THE FIELD SHALL BE INDICATED ON THE DEVICE CIRCUIT LABELS, ASSOCIATED JUNCTION BOXES ABOVE CEILING AND IN UPDATED TYPED PANEL DIRECTORIES.

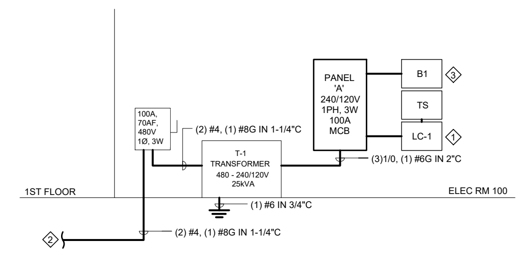
D. PROVIDE TYPED DIRECTORY AT END OF PROJECT. ALL SPARE BREAKERS SHALL BE LABELED "SPARE" IN THE DIRECTORY AND IN THE "OFF" POSITION. THERE SHALL BE NO HAND WRITTEN MARKS ON THE DIRECTORIES AT PROJECT COMPLETION. ALL PANEL SCHEDULES SHALL MEET NEC 408.4.

E. FIRST DOWNSTREAM OVERCURRENT DEVICES SHOWN ON DRY-TYPE TRANSFORMER SECONDARY FEEDERS SHALL BE LOCATED WITHIN 10FT. AS MEASURED BY CONDUCTOR LENGTH. THIS INCLUDES MAIN CIRCUIT BREAKERS LOCATED IN PANELBOARDS.

F. PANELBOARDS SHALL HAVE A SHORT-CIRCUIT CURRENT RATING NOT LESS THAN THE AVAILABLE FAULT CURRENT. THE AVAILABLE FAULT CURRENT AND THE DATE THE CALCULATION WAS PERFORMED SHALL BE FIELD MARKED ON THE ENCLOSURE AT THE POINT OF SUPPLY. COMPLY WITH NEC 110.21(B)(3). THE ELECTRICAL CONTRACTOR SHALL OBTAIN, FROM THE POWER COMPANY, THE ACTUAL AVAILABLE FAULT CURRENT AT THE POINT OF DELIVERY. THE CONTRACTOR SHALL CONTACT THE ENGINEER WITH THIS VALUE AND THE VERIFIED LENGTH OF CONDUCTORS. AT THAT TIME, THE EOR WILL CONFIRM FAULT CURRENT CALCULATION RESULTS.

G. BREAKERS RATED 125 AMPS OR LESS MUST BE MARKED FOR USE WITH 60 DEG C, 60/75 DEG C, OR 75 DEG C ONLY WIRE. ALL WIRE SIZES SHOWN ON PLANS ARE ASSUMING RATINGS OF 60/75 DEG C; UNLESS NOTED OTHERWISE. IF 75 DEG C RATED LUGS ARE PROVIDED, CONTRACTOR MUST ADJUST THE WIRE SIZES ACCORDINGLY.

H. PER ARTICLE 300 (RACEWAYS EXPOSED TO DIFFERENT TEMPERATURES), FILL ALL RACEWAYS OR SLEEVES THAT PENETRATE THE EXTERIOR OF THE BUILDING WITH AN APPROVED MATERIAL TO PREVENT THE CIRCULATION OF WARM AIR TO A COLDER SECTION OF THE RACEWAY OR SLEEVE.



KEY NOTES:

1. LIGHTING CONTACTOR LC-1 (EXTERIOR), 6-POLE, EOEH CONTACTOR, 120V COIL, NEMA 1 ENCLOSURE. PROVIDE 20A, 120V TIMER SWITCH, DPST, 7 DAYS. MOUNT ADJACENT TO PANEL 'A'. REFER TO PANEL SCHEDULES FOR CIRCUITS TO BE RUN THROUGH LIGHTING CONTACTOR. CONTROL POWER CIRCUIT A-25.
2. CONNECT TO 60A/2P CB IN MAIN SWITCHBOARD (SEE E2.0 IN ELECTRICAL SITE DRAWINGS). MAIN SWITCHBOARD BY OTHERS.
3. REFER TO PLANS AND PANEL SCHEDULE FOR CIRCUIT TO BE ROUTED THROUGH BATTERY INVERTER.

PANEL A

VOLTAGE:	120/240 1 PH 3W	MIN SCCR:	10K	REMARKS:
FEEDER AMP:	100	MAINS: 100 MCB	MOUNTING: SURFACE	
LUGS:	-	FEED: BOTTOM	ENCLOSURE: NEMA 1	

BKR	NOTE	LOAD DESCRIPTION	VA	CKT	PHASE	CKT	VA	LOAD DESCRIPTION	NOTE	BKR
20/1		REC - INTERIOR	540	1	A	2	500	VENDING MACHINE	**1	20/1
20/1		REC - MECH CONV.	180	3	B	4	500	VENDING MACHINE	**1	20/1
20/1		REC - PANEL DED.	360	5	A	6	0	SPARE		20/1
15/1		EF-1 & EF-2	120	7	B	8	0	SPARE		20/1
20/1	**2	LTS - REAR EXTERIOR SIGNAGE	160	9	A	10	0	SPARE		20/1
20/1		ADDRESS SIGNAGE	250	11	B	12	0	SPARE		20/1
25/2		ODU-1	1765	13	A	14	0	SPARE		20/1
↓		↓	1765	15	B	16	0	SPARE		20/1
15/2		WH-1	750	17	A	18	0	SPACE		-
↓		↓	750	19	B	20	0	SPACE		-
20/1	**2, **3	LTS - BLDG EXTERIOR	54	21	A	22	0	SPACE		-
20/1		LTS - BUILDING INTERIOR	86	23	B	24	0	SPACE		-
30/1		LC-1	200	25	A	26	0	SPACE		-
20/1		DOOR HARDWARE CONTROLLER	1500	27	B	28	0	SPACE		-
20/1		SPARE	0	29	A	30	0	SPACE		-
		Connected Load Per Phase	PH A:	4329	PH B:	5151				

	Lighting	HVAC	Motors	Recept.	Refrig	Kitchen	Misc	Total VA	Amps
Connected VA	300	120	3530	2080	0	0	3450	9480	**39.5**
Demand Factor	1.25	1.00	1.00	NEC	1.00	1.00	1.00		
Demand VA	375	120	3530	2080	0	0	3450	9555	**39.8**

PANEL SCHEDULE NOTES

E EXISTING CIRCUIT TO REMAIN

G GFI CIRCUIT BREAKER

IG ISOLATED GROUND CIRCUIT

LC ROUTE CIRCUIT HOMERUN VIA LIGHTING CONTACTOR

LF PROVIDE PADLOCK ATTACHMENT FOR MAINTENANCE LOCK-OUT OF CIRCUIT BREAKER

LO PROVIDE LOCK-ON DEVICE FOR CIRCUIT BREAKER

P PRE-WIRED INTERNAL CIRCUIT BY SWITCHGEAR MANUFACTURER

ST SHUNT-TRIP CIRCUIT BREAKER

SUB SUB-FEED CIRCUIT BREAKER

V FIELD VERIFY CIRCUIT INDICATED WITH ACTUAL EQUIPMENT PRIOR TO ROUGH-IN AND MAKE ALL PROVISIONS.

**1 PROVIDE GFCI TYPE CIRCUIT BREAKER TO SERVE LOAD.

**2 ROUTE LIGHTING CIRCUIT THROUGH LIGHTING CONTACTOR LC-1.

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POWER RISER DIAGRAM

SHEET # **E3.0**

HVAC SYMBOLS AND CONVENTIONS

SYMBOL	DESCRIPTION
	TURNING VANES
	MANUAL VOLUME DAMPER
FD	FIRE DAMPER
FSD	FIRE/SMOKE DAMPER
SD	SMOKE DETECTOR
M	MOTOR OPERATED DAMPER
T	DUCTWORK TEMPERATURE SENSOR
H	DUCTWORK HUMIDITY SENSOR
SP	DUCTWORK STATIC PRESSURE SENSOR
	SUPPLY DUCT (UP/DOWN)
	RETURN DUCT (UP/DOWN)
	EXHAUST DUCT (UP/DOWN)
	FLEX DUCT
H	HUMIDISTAT/HUMIDITY SENSOR
T	THERMOSTAT
S	SPACE TEMPERATURE SENSOR
C	CARBON DIOXIDE SENSOR
UCD	UNDERCUT DOOR
	AIRFLOW DIRECTION
	AIRFLOW DIRECTION
DP	PIPING DIFFERENTIAL PRESSURE SENSOR
	POINT OF CONNECTION NEW TO EXISTING
	MANUAL BALANCING VALVE
	BACKFLOW PREVENTER
	CHECK VALVE
	CONTROL VALVE (2-WAY)
	CONTROL VALVE (3-WAY)
	PRESSURE REDUCING VALVE
	REMOVE TO POINT AND CAP
	REMOVE TO POINT FOR RECONNECTION
	SHUT OFF VALVE (REFER TO PLANS AND SPEFICIATIONS FOR TYPE)
	STEAM TRAP
	Y-STRAINER WITH BLOW DOWN AND VALVE
	UNION
	PIPE BRANCH TAKE-OFF FROM BOTTOM
	PIPE BRANCH TAKE-OFF FROM TOP
	PIPE DROP
	PIPE RISE
	FLANGED CONNECTION
CD	AC CONDENSATE DRAIN PIPING

AIR SYSTEM SPECIFIC ABBREVIATIONS

AC	AIR CONDITIONING	HV	HEATING AND VENTILATING UNIT
ACC	AIR COOLED CONDENSER	IH	INTAKE HOOD
ACCU	AIR COOLED CONDENSATING UNIT	LAT	LEAVING AIR TEMPERATURE
ACD	AUTOMATIC CONTROL DAMPER	LUVR	LOUVER
ACU	AIR CONDITIONING UNIT	LUVD	LOUVERED DOOR
AHU	AIR HANDLING UNIT	OA	OUTSIDE AIR
ALD	ACOUSTICALLY LINED DUCT	OAI	OUTSIDE AIR INTAKE
ATD	AIR TERMINAL DEVICE	OBD	OPPOSED BLADE DAMPER
BDD	BACKDRAFT DAMPER	OED	OPENED END DUCT
CC	COOLING COIL	(R)	RELOCATED
CD	CEILING DIFFUSER	RA	RETURN AIR
CFM	CUBIC FEET PER MINUTE	RD	REFRIGERANT DISCHARGE
CG	CEILING GRILLE	RF	RETURN FAN
DIFF	DIFFUSER	RG	RETURN GRILLE
DX	DIRECT EXPANSION	RL	REFRIGERANT LIQUID
(E)	EXISTING	RLF	RELIEF
EDH	ELECTRIC DUCT HEATER	RR	RETURN REGISTER
EF	EXHAUST FAN	RS	REFRIGERANT SUCTION
EG	EXHAUST GRILLE	RTU	ROOFTOP UNIT
ER	EXHAUST REGISTER	SA	SUPPLY AIR
ERHC	ELECTRIC REHEAT COIL	SD	SMOKE DETECTOR
ESP	EXTERNAL STATIC PRESSURE	SD	SMOKE DAMPER
EUH	ELECTRIC UNIT HEATER	SF	SUPPLY FAN
F	FAN	SG	SUPPLY GRILLE
FA	FREE AREA	SGD	SLIDE GATE DAMPER
FC	FORWARD CURVE	SM	SHEET METAL
FCU	FAN COIL UNIT	SP	STATIC PRESSURE
FD	FIRE DAMPER (W/ACCESS DOOR)	SR	SUPPLY REGISTER
FLTR	FILTER	TE	TOILET EXHAUST
FO	FLAT OVAL	TF	TRANSFER FAN
FPI	FINS PER INCH	TG	TRANSFER GRILLE
FSD	FIRE SMOKE DAMPER	TR	TRANSFER
GDH	GAS DUCT HEATER	TSP	TOTAL STATIC PRESSURE
GE	GENERAL EXHAUST	UCD	UNDERCUT DOOR
GF	GAS FURNACE	VAV	VARIABLE AIR VOLUME
GH	GRAVITY HOOD	VD	VOLUME DAMPER
GUH	GAS UNIT HEATER	VFD	VARIABLE FREQUENCY DRIVE
HC	HEATING COIL	WMS	WIRE MESH SCREEN

EQUIPMENT TAGGING LEGEND

EQUIPMENT DESIGNATION	TAGGING DESCRIPTION
AIR DEVICES - S,R,E,T	X-X / XXX — EQUIPMENT DESIGNATION; TYPE; CFM
EQUIPMENT DESIGNATION - AHU, AC, GF, RTU, VAV, EDH, EUH, GUH, PTAC	XXX-X — EQUIPMENT DESIGNATION; PLAN DESIGNATION
VFD	VFD-XX-XXXX — SERVICING EQUIPMENT MARK; SPECIFIC COMPONENT DESIGNATION

MECHANICAL SPECIFICATIONS

SCOPE OF WORK

1. THE WORK INCLUDED UNDER THIS SECTION CONSISTS OF FURNISHING ALL MATERIALS, EQUIPMENT AND LABOR, AND THE PERFORMING OF ALL DRAWINGS TO BE PERFORMED BY OTHERS, FOR THE INSTALLATION OF ALL HEATING AND COOLING EQUIPMENT, PIPING AND ALL DUCTWORK, GRILLES, REGISTERS, ETC., INCLUDING ALL CONNECTIONS TO EACH SYSTEM AS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS. IT SHALL FURTHER INCLUDE FURNISHING AND INSTALLING ALL MISCELLANEOUS ITEMS REQUIRED FOR THE OPERATION OF THE SYSTEM, WHETHER SPECIFICALLY CALLED OUT OR NOT.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL UTILITIES PRIOR TO BID. THE CONTRACTOR SHALL VISIT THE SITE AND INSPECT THE WORK THEY MUST PERFORM, IN ADDITION TO WHAT IS SHOWN HEREIN, AND INCLUDE IN THEIR BID AN AMOUNT TO DO SUCH WORK.

COORDINATION

1. ALL CONTRACTS SHALL BE RESPONSIBLE FOR COORDINATING WORK WITH OTHER TRADES AFFECTED BY EACH OTHERS WORK.
2. ANY DISCREPANCIES ON THIS PROJECT SHALL BE IN WRITTEN FORM AS AN RFI WITH PROPOSED SOLUTION TO THE ARCHITECT PRIOR TO ANY WORK. IF CONTRACTOR PROCEEDS PRIOR TO WRITTEN AUTHORIZATION, THE CONTRACTOR WILL TAKE FULL RESPONSIBILITY FOR THE CHANGES.
3. ALL SUBMITTALS, RFIS, AND SHOP DRAWINGS FOR APPROVAL BY ENGINEER SHALL BE SUBMITTED IN A TIMELY MANNER. ENGINEER SHALL HAVE 10 BUSINESS DAYS TO RESPOND TO ANY AND ALL SUBMISSIONS UNLESS AN EXPEDITED RESPONSE IS APPROVED BY ENGINEER.

CODES AND PERMITS

1. ALL MATERIALS, EQUIPMENT AND INSTALLATION MUST COMPLY WITH ALL APPLICABLE LAWS, CODES, RULES AND REGULATIONS, REQUIRED BY CITY, COUNTY AND STATE, AS WELL AS FEDERAL REQUIREMENTS.
2. PERMITS: OBTAIN AND PAY FOR ALL REQUIRED PERMITS, LICENSES AND FEES.
3. INSPECTIONS: FURNISH ARCHITECT WITH CERTIFICATE OF INSPECTION AND APPROVAL BY LOCAL AUTHORITIES PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE ARCHITECT. ALL WORK MUST BE INSPECTED.

PRODUCTS

1. ALL PRODUCTS SHALL BE NEW AND UNUSED OF ESTABLISHED AND REPUTABLE MANUFACTURERS. ITEMS OF EQUIPMENT USED FOR THE SAME PURPOSE SHALL BE OF THE SAME MANUFACTURER.
2. SYSTEMS SHALL BE COMPLETE AND OPERABLE. ANY ACCESSORIES REQUIRED FOR THE OPERATION OF THE SYSTEM SHALL BE INCLUDED AS REQUIRED FOR THE OPERATION OF THE SYSTEM SHALL BE INCLUDED AS THOUGH SPECIFICALLY INDICATED TO BE PROVIDED. SUCH ACCESSORIES WOULD INCLUDE FILTERS, CONDENSATE DRAINS, RELIEF VALVES, SERVICE VALVES, THERMOSTATS, VIBRATION INSULATORS, ETC. MOTOR STARTERS FOR PREWIRED EQUIPMENT (AND OTHER PROTECTION AND CONTROL DEVICES) ARE ALSO INCLUDED IN THIS SPECIFICATION. SPECIFIC REFERENCE TO A MANUFACTURER'S PRODUCT IS ONLY TO ESTABLISH TYPE, QUALITY, AND PERFORMANCE REQUIRED. THESE QUALIFICATIONS ARE IN ADDITION TO THE REQUIREMENTS SHOWN ON THE DRAWINGS AND HEREIN THESE SPECIFICATIONS. LISTING OF ALTERNATE EQUIPMENT MANUFACTURERS SHALL NOT BE CONSTRUED AS AN UNCONDITIONAL APPROVAL OF THE PRODUCTS OF THOSE MANUFACTURERS.

SUPPORTS

ALL PIPE AND EQUIPMENT HANGERS AND SUPPORTS INCLUDING CLAMPS, HANGER-ROD ATTACHMENTS, SADDLES AND SHIELDS, SPRING HANGERS, PIPE ALIGNMENT GUIDES AND ANCHORS SHALL COMPLY WITH MSS SP-58. PROVIDE SUPPORTS AT SPACINGS AS REQUIRED BY CURRENT MECHANICAL CODE SECTION 305.4.

VIBRATION CONTROL

1. ALL MOTORIZED EQUIPMENT INSTALLED UNDER DIVISION 22 OR 23 AND WEIGHING MORE THAN 25 LBS SHALL RECEIVE VIBRATION CONTROL SUPPORTS UNLESS INTEGRAL TO FURNISHED EQUIPMENT MOUNTING.
   - A. WHERE EQUIPMENT RESTS ON A HOUSEKEEPING PAD OR CURB AND LOADING DOES NOT EXCEED 60 PSI, PROVIDE DOUBLE-RIBBED NEOPRENE PADS BETWEEN ALL EQUIPMENT SUPPORTS AND HOUSEKEEPING PAD. SECURE UNIT FROM HORIZONTAL TRAVEL AS REQUIRED. KINETICS NOISE CONTROL NPD OR EQUAL.
   - B. WHERE EQUIPMENT RESTS ON A HOUSEKEEPING PAD OR CURB AND LOADING EXCEEDS 60 PSI, PROVIDE PRE-MOLDED FIBERGLASS ISOLATION PAD BETWEEN ALL EQUIPMENT SUPPORTS AND HOUSEKEEPING PAD. SECURE UNIT FROM HORIZONTAL TRAVEL AS REQUIRED. KINETICS NOISE CONTROL KIP OR EQUAL.
   - C. WHERE EQUIPMENT IS SUSPENDED BY THREADED RODS, PROVIDE SPRING ISOLATION HANGERS. USE MANUFACTURER'S LISTED CORNER WEIGHTS FOR SIZING IF APPLICABLE. COORDINATE LOCATIONS WITH STRUCTURAL ENGINEER. KINETICS NOISE CONTROL SH OR EQUAL.
   - D. WHERE EQUIPMENT IS FREESTANDING, PROVIDE HOUSED SPRING ISOLATORS. USE MANUFACTURER'S LISTED CORNER WEIGHTS FOR SIZING IF APPLICABLE. COORDINATE LOCATIONS WITH STRUCTURAL ENGINEER. KINETICS NOISE CONTROL SM OR EQUAL.
2. PROVIDE FLEXIBLE CONNECTIONS FOR ALL DUCT AND PIPING CONNECTIONS TO ISOLATED EQUIPMENT.

SUBSTITUTIONS

1. SUBSTITUTIONS OF MATERIALS OR PRODUCTS SHOWN HEREIN SHALL BE AT THE OWNER'S, ARCHITECTS, OR ENGINEER'S WRITTEN APPROVAL ONLY WITH COPIES OF APPROVAL SENT TO THE PROJECT FILE. ANY DEVIATION FROM THESE DRAWINGS WILL NOT BE ALLOWED.
2. ANY FIELD CHANGES BY THE CONTRACTOR FOR WHICH THE LOCAL AUTHORITY REQUIRES A SEALED LETTER AND/OR DRAWING BY THE ENGINEER SHALL RESULT IN A COST TO THE CONTRACTOR. THE FEE FOR THESE CHANGES SHALL BE PAYABLE UPON DELIVERY OF THE LETTER/DRAWING AND UNLESS THE CHANGE WAS INSTITUTED BY THE OWNER, THE CONTRACTOR SHALL NOT CHARGE THE OWNER THIS
3. FEE FOR THE ABOVE NOTED LETTER/DRAWING SHALL BE $250. - PER ITEM
4. ANY DEVIATIONS FROM THESE PLANS (FOR ANY REASON INCLUDING ACTUAL FIELD CONDITIONS) WITH OUT PRIOR WRITTEN APPROVAL SHALL BE THE COMPLETE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

EQUIPMENT, DUCTWORK, AND PIPING IDENTIFICATION

1. MANUFACTURERS: ADVANCED GRAPHIC ENGRAVING, BRIMAR INDUSTRIES, CRAFTMARK PIPE MARKERS, KOLBI PIPE MARKER CO, OR SETON IDENTIFICATION PRODUCTS.
2. NAMEPLATES FOR ALL MECHANICAL EQUIPMENT
   - A. LETTER COLOR: WHITE, LETTER HEIGHT: 1/4 INCH, BACKGROUND COLOR: BLACK, PLASTIC: COMPLY WITH ASTM D709, PROVIDE ALL INFORMATION AS LISTED IN EQUIPMENT SCHEDULES. PERMANENTLY ATTACHED. ACCEPTABLE ALTERNATIVE OF EMBOSSED STEEL WITH 1/4" LETTING.
3. TAGS FOR ALL HVAC AND PLUMBING VALVES
   - A. METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCH DIAMETER WITH SMOOTH EDGES.
     - i. BRASS, 19-GAUGE THICK VALVE TAGS WITH 3/16" DIAMETER TOP HOLE FOR FASTENER OR CHAIN, BLANK OR PRE-STAMPED LETTERING, AND NATURAL BRASS FINISH. TOP LINE (SYSTEM) LETTERING SHALL BE 1/4" AND BOTTOM LINE (VALVE NUMBER) SHALL BE 1/2". PROVIDE BRASS OR STAINLESS STEEL BEADED CHAIN WITH LOCKING LINKS TO ATTACH TAG TO VALVE.
   - B. VALVE TAG CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME.
4. STENCILS FOR ALL CANVAS JACKETED PIPING AND DUCTWORK
   - A. STENCILS: WITH CLEAN CUT SYMBOLS AND LETTERS OF FOLLOWING SIZE: DUCTWORK AND EQUIPMENT: 2-1/2 INCH HIGH LETTERS.
   - B. STENCIL PAINT: AS SPECIFIED IN SECTION 099123, SEMI-GLOSS ENAMEL, COLORS COMPLYING WITH ASME A13.1.
5. PIPE MARKERS FOR ALL PIPING UNLESS NOTED OTHERWISE.
   - A. COLOR: COMPLY WITH ASME A13.1.
   - B. PLASTIC PIPE MARKERS: FACTORY FABRICATED, FLEXIBLE, SEMI- RIGID PLASTIC, PREFORMED TO FIT AROUND PIPE OR PIPE COVERING; MINIMUM INFORMATION INDICATING FLOW DIRECTION ARROW AND IDENTIFICATION OF FLUID BEING CONVEYED.
   - C. UNDERGROUND PLASTIC PIPE MARKERS: BRIGHT COLORED CONTINUOUSLY PRINTED PLASTIC RIBBON TAPE, MINIMUM 6 INCHES WIDE BY 4 MIL THICK, MANUFACTURED FOR DIRECT BURIAL SERVICE. PROVIDE IN ALL LOCATIONS WHERE UNDERGROUND PLASTIC PIPING IS UTILIZED

NON-HYDRONIC PIPING:

1. REFRIGERANT PIPING:
   - A. COPPER PIPE AND TUBE MATERIAL: DRAWN TEMPER COPPER TUBING, ASTM B 88, TYPE L AND ANNEALED TEMPER COPPER TUBING, ASTM B 88, TYPE K.
   - B. CONTRACTOR TO ENSURE THAT ALL FIELD ASSEMBLED REFRIGERANT PIPING IS SIZED AND CHARGED PER MANUFACTURERS INSTRUCTIONS. PRIOR TO START-UP COORDINATE ADDITIONAL REFRIGERANT CHARGE WITH MANUFACTURER.
   - C. FITTINGS: SUITABLE FOR PIPING TYPE AND SERVICE CLASS.
   - D. JOINTS: SOLDER, WELDED, FLANGED OR GROOVED MECHANICAL JOINTS SUITABLE FOR SERVICE.
   - E. VALVES:
     - i. GENERAL DUTY VALVES: SERVICE VALVES, STRAINERS, FILTER DRYERS, MOISTURE AND LIQUID INDICATORS SUITABLE FOR USE.
     - ii. SPECIAL DUTY VALVES: ALL ADDITIONAL PIPING ACCESSORIES AND SPECIALTIES AS INDICATED BY MANUFACTURER PROVIDED PIPING DIAGRAM.
2. CONDENSATE PIPING:
   - A. COPPER PIPE AND TUBE MATERIAL: DRAWN TEMPER COPPER TUBING, ASTM B 88, TYPE L.
   - B. FITTINGS: SUITABLE FOR PIPING TYPE AND SERVICE CLASS. PROVIDE DIELECTRIC UNION WHEREVER DISSIMILAR METALS CONNECT.
   - C. JOINTS: SOLDER, WELDED, FLANGED OR GROOVED MECHANICAL JOINTS SUITABLE FOR SERVICE.

PIPE INSULATION

1. THE MAXIMUM FIRE HAZARD CLASSIFICATION OF THE INSULATION SYSTEM SHALL NOT HAVE MORE THAN A FLAME SPREAD OF 25, AND A FUEL CONTRIBUTED RATING OF 50, AND A SMOKE DEVELOPED RATING OF 50, WHEN TESTED IN ACCORDANCE WITH U.L. REQUIREMENTS. PIPE COVERING SHALL BEAR THE U.L. LABEL.
2. ALL FLEXIBLE ELASTOMERIC CELLULAR RUBBER INSULATION SHALL COMPLY WITH ASTM C534/C534M GRADE 1; USE MOLDED TUBULAR MATERIAL WHEREVER POSSIBLE, WITH VAPOR BARRIER ADHESIVE.
3. INSULATE ALL FITTINGS VALVE BODIES ETC. WITH SINGLE OR MULTIPLE LAYERS OF INSULATION WITH PREFABRICATED FITTINGS WITH P.V.C. JACKETS.
4. JACKETING:
   - A. CANVAS JACKET: UL LISTED 6 OZ/SQ YD PLAIN WEAVE COTTON FABRIC TREATED WITH DILUTE FIRE-RETARDANT LAGGING ADHESIVE.
   - B. ALUMINUM JACKET: ASTM B209 (ASTM B209M) FORMED ALUMINUM SHEET, 0.016" THICK, EMBOSSED FINISH, 2 INCH LAP JOINTS, DIE SHAPED FITTINGS, AND METAL JACKETING BANDS
   - C. PVC PLASTIC: ONE PIECE MOLDED TYPE FITTING COVERS AND SHEET MATERIAL, OFF-WHITE COLOR, 10MIL THICK BRUSH OR WELDED ADHESIVE CONNECTIONS.
5. SYSTEM INSULATION SCHEDULE:
   - A. REFRIGERANT LINES SHALL BE INSULATED WITH 1.0-INCH-THICK CLOSED CELL ELASTOMERIC FOAM INSULATION WITH UV PROTECTION.
   - B. CONDENSATE LINES SHALL BE INSULATED WITH 1.0-INCH-THICK CLOSED CELL INSULATION WITH UV PROTECTION AND ASJ JACKETING. ARMSTRONG ARMAFLEX II, OR PRE-APPROVED EQUAL BY OWENS CORNING OR SCHULLER.
6. SUBMIT SHOP DRAWINGS FOR ALL INSULATION MATERIALS.

DUCTWORK

1. ALL DUCTWORK AND PLENUMS SHALL BE GALVANIZED SHEET METAL. FABRICATE AND INSTALL ALL DUCTWORK IN STRICT CONFORMANCE WITH THE LATEST SMACNA MANUAL, AND I.M.C. FOR LOW VELOCITY DUCT CONSTRUCTION STANDARDS.
2. PROVIDE SPIRAL DUCTWORK WERE INDICATED ON PLANS. FINISH TO BE DETERMINED BY ARCHITECT. ELBOWS AND FITTINGS SHALL BE PRE-MANUFACTURED CONSTRUCTION WITH WELDED SEAM, STANDING SEAM, OR GORED FITTING.
3. EACH DUCT SYSTEM SHALL BE COMPLETE WITH ALL REQUIRED DUCTWORK FITTINGS, TURNING VANES, SPLITTER DAMPERS AND SUPPORTS, AND EXTRACTORS AT ALL RIGHT ANGLE TAKEOFFS AND TEES.
4. DUCTWORK SHALL BE GALVANIZED, PRIME-GRADE, LOCK-FORMING QUALITY STEEL (LFQ) HAVING A GALVANIZED COATING OF 1-3/4" OUNCES TO TOTAL FOR BOTH SIDES OF ONE SQUARE FOOT OF A SHEET.
5. CROSSBREAK ALL SIDES OF ALL DUCTS. DUCTWORK SHALL BE INSTALLED WITH NO OBJECTIONABLE NOISE, AND CONTRACTOR SHALL PROVIDE ANY ADDITIONAL STIFFENERS REQUIRED.
6. ALL LONGITUDINAL SEAMS SHALL BE PITTSBURGH LOCK SEAM, HAMMERED FLAT, WITH ALL TRANSVERSE JOINTS TAPED WITH 8 OZ. CANVASS AND SEALED WITH ARABOL, AIRTIGHT.
7. PROVIDE DOUBLE THICKNESS, FACTORY FABRICATED GALVANIZED SHEET STEEL TURNING VANES WITH AIRFOIL CONTOUR IN ALL RIGHT ANGLE ELBOWS, TEES, AND ELBOWS WITH RADIUS LESS THE 1-1/2 TIMES THE WIDTH OF THE DUCT.
8. ALL ROUND DUCT BRANCH TAKEOFFS SHALL BE PROVIDED WITH SPIN-IN WITH AIRSCOOP AND BALANCING DAMPER.
9. DUCT SIZES SHOWN ON THE DRAWINGS ARE TO THE INSIDE OF ACOUSTICAL LININGS. INCREASE SIZES OF DUCTS AS REQUIRED TO ACCOMMODATE ACOUSTICAL INSULATION.
10. DUCTWORK SHALL CONFORM TO DIMENSIONS ON THE DRAWINGS, UNLESS LOCATION OF STRUCTURAL MEMBERS PROHIBITED. INCASE OF CHANGE IN DIMENSIONS, CROSS SECTIONAL AREAS SHALL BE MAINTAINED.
11. ALL DUCTS SHALL BE SUBSTANTIALLY SUPPORTED WITH HANGERS TO THE STRUCTURE OR OTHERWISE DEPENDING ON LOCATION CONDITIONS, PLACING SUPPORTS NOT OVER 8 FEET APART ALONG THE LENGTH OF THE DUCT. HANGERS SHALL CONFORM TO ALL SMACNA REQUIREMENTS.
12. FLEXIBLE ROUND DUCTS TO OUTLETS SHALL BE THERMAFLEX TYPE MKE, A MAXIMUM LENGTH OF 6'-0" LONG (ONLY WERE INDICATED ON THE DRAWINGS).
13. ALL FACTORY-MADE DUCTS MUST BE CLASS 0 OR 1 AS APPROVED BY THE INTERNATIONAL MECHANICAL CODE.

THERMAL INSULATION

1. EXHAUST DUCTS SHALL NOT BE INSULATED.

CONTROLS

1. ALL CONTROL WIRING, DEVICES, RELAYS, AND CONTROL POWER SUPPLIES NECESSARY FOR COMPLETE INSTALLATION OF EQUIPMENT SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.
2. CONTROL WIRING SHALL BE 18/2 SHIELDED COPPER CABLE INSTALLED IN MINIMUM 1/2" EMT CONDUIT WHERE EXPOSED OR PLENUM-RATED CABLE WHERE CONCEALED.
3. AIR HANDLING UNITS:
   - A. INDOOR UNITS SHALL BE CONTROLLED BY LG PREMTBVC4 PROGRAMMABLE THERMOSTAT AND ZVRCZTRH1 REMOTE TEMPERATURE/HUMIDITY SENSOR.
   - B. UNITS SHALL SWITCH TO OCCUPIED MODE ONE HOUR PRIOR TO BUILDING OCCUPANCY AND SHALL SWITCH TO UNOCCUPIED MODE ONE HOUR AFTER BUILDING OCCUPANCY. OCCUPANCY TIME TO BE DETERMINED BY BUILDING OWNER.
   - C. THERMOSTATS SHALL ALLOW MANUAL 4-HOUR OCCUPANCY OVERRIDE THROUGH THERMOSTAT INTERFACE.
4. EXHAUST FANS:
   - A. EXHAUST FANS SHALL BE CONTROLLED AS NOTED ON EXHAUST FAN SCHEDULE.
5. ALL OTHER MECHANICAL EQUIPMENT SHALL BE WIRED AND CONTROLLED AS RECOMMENDED BY MANUFACTURER'S WRITTEN GUIDELINES UNLESS NOTED OTHERWISE.
6. NEW THERMOSTATS & CONTROL DEVICES TO BE MOUNTED AT 48" A.F.F. UNLESS NOTED OTHERWISE.

FINAL TESTS

1. BEFORE ACCEPTANCE AND FINAL PAYMENT, A COMPLETE CERTIFIED TEST AND BALANCE SHALL BE PERFORMED. THE TEST AND BALANCE SHALL BE IN ACCORDANCE WITH AABC OR NEBB AND SHALL BE PERFORMED BY AND AABC OR NEBB CERTIFIED CONTRACTOR. THE TEST AND BALANCE SHALL INCLUDE ALL COMPONENTS OF THE MECHANICAL SYSTEM INCLUDING AIR DISTRIBUTION, HYDRONIC SYSTEMS, ALL EQUIPMENT, ETC. THREE COPIES OF THE FINAL REPORT (IN THE FORMAT OF AABC OR NEBB) SHALL BE SUBMITTED TO THE ARCHITECT FOR FINAL APPROVAL BY THE RESPONSIBLE ENGINEER. THE COSTS FOR THE TESTING OUTLINED IN THIS SECTION OF THE SPECIFICATION SHALL BE THE SOLE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. ANY DECISION TO EXCLUDE THIS FROM THE BID SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT PRIOR TO BID.
2. TEST AND BALANCE CONTRACTOR SHALL INCLUDE AN ADDITIONAL VISIT FOR FINAL SYSTEM ADJUSTMENTS AFTER ENGINEER'S REVIEW OF INITIAL TEST AND BALANCE REPORT. ADDITIONAL VISIT SHALL ALSO BE INCLUDED IN THE WARRANTY PERIOD OF THE PROJECT.
3. PROVIDE A COPY OF THE FINAL TEST AND BALANCE REPORT TO INSPECTOR PRIOR TO FINAL INSPECTION.

GUARANTEE

1. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FROM DEFECT OF WORKMANSHIP, AND SHALL REPLACE OR REPAIR WITHOUT ADDITIONAL COST TO THE OWNER ALL DEFECTIVE MATERIAL AND WORKMANSHIP, FOR A PERIOD OF ONE (1) YEAR AFTER COMPLETION AND ACCEPTANCE.

MECHANICAL SHEET INDEX

SHEET NUMBER	SHEET NAME	REVISIONS LATEST REV	REVISIONS DATE
MECHANICAL			
M0.0	MECHANICAL SPECIFICATIONS & LEGEND		
M1.1	MECHANICAL PLAN		
M5.1	DETAILS		
M6.1	SCHEDULES		

COMcheck Software Version COMcheckWeb

Mechanical Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: IONNA - OAK PARK, MI
Location: Oak Park (Oakland), Michigan
Climate Zone: 5a
Project Type: New Construction

Construction Site:
21500 GREENFIELD ROAD
OAK PARK, Michigan 48237

Owner/Agent:
Devita, Inc.
33 Villa Road
Greenville, South Carolina 29615
864-232-6642

Designer/Contractor:

Additional Efficiency Package(s)

Credits: 10.0 Required 0.0 Proposed

Mechanical Systems List

Quantity System Type & Description

1 HVAC System (Single Zone):
Split System Heat Pump
Heating Mode: Capacity = 32 kBtu/h,
Proposed Efficiency = 7.50 HSPF2, Required Efficiency = 7.50 HSPF2
Cooling Mode: Capacity = 30 kBtu/h,
Proposed Efficiency = 14.30 SEER2, Required Efficiency = 14.30 SEER2
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: FANS -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 2 Supply, Constant Volume, 268 CFM, 0.1 motor nameplate hp, 0.00 fan energy index , fan exception: Fan array <= 5 total HP or <= 4.1 kW
FAN 3 Supply, Constant Volume, 268 CFM, 0.1 motor nameplate hp, 0.00 fan energy index , fan exception: Fan array <= 5 total HP or <= 4.1 kW
FAN 1 Supply, Constant Volume, 268 CFM, 0.1 motor nameplate hp, 0.00 fan energy index , fan exception: Fan array <= 5 total HP or <= 4.1 kW

1 Water Heater:
Electric Storage Water Heater, Capacity: 6 gallons
No minimum efficiency requirement applies

Mechanical Compliance Statement

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

KEITH MATTISON
Name - Title

[illegible]
Signature

12/18/25
Date

Project Title: IONNA - OAK PARK, MI
Data filename:

Report date: 12/18/25
Page 1 of 8

BRIAN BAILEY ARCHITECT

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DeVita & Associates, Inc. Project : 25282-05
Drawn By:JTP Checked By:KFM

STATE OF MICHIGAN
KEITH E. MATTISON
ENGINEER
No.
6201060742
LICENSED PROFESSIONAL ENGINEER

[illegible]
12/18/25

IONNA RECHARGERY

INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
OAK PARK, MI. 48237

#	△	DESCRIPTION	DATE
1		ISSUED FOR PERMIT	12.19.25
2			
3			
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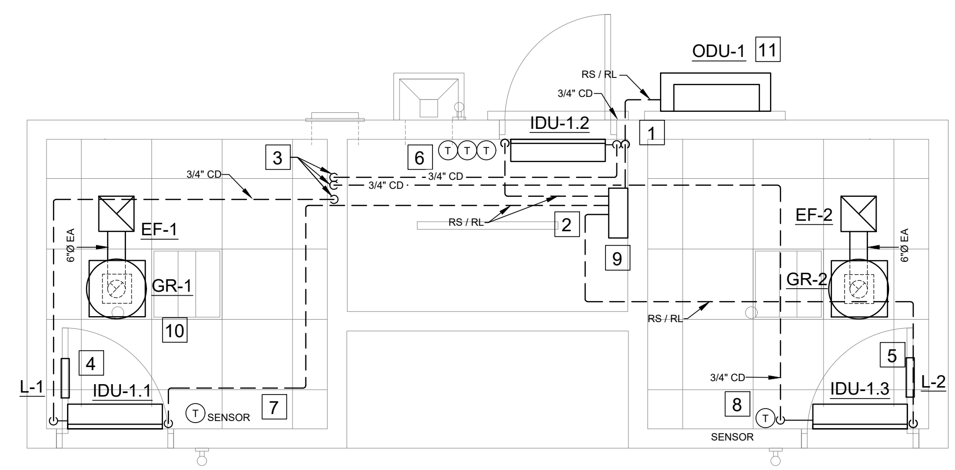
9			
10			

OWNER PROJECT CODE MI-0008
ARCH PROJECT # RDU 25-174

MECHANICAL SPECIFICATIONS & LEGEND

SHEET # **M0.0**



1 M1.1 MECHANICAL FLOOR PLAN

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

0 1' 2' 3' 4' 5' 6'

GENERAL NOTES:

A. INSTALL DUCTWORK BETWEEN JOISTS AND AS TIGHT TO THE STRUCTURE AS POSSIBLE. MODIFY DUCTWORK AS REQUIRED.

B. ANY DISCREPANCIES ON THIS PROJECT SHALL BE IN WRITTEN FORM AS AN RFI WITH PROPOSED SOLUTION TO THE ARCHITECT PRIOR TO ANY WORK. IF CONTRACTOR PROCEEDS PRIOR TO WRITTEN AUTHORIZATION, THE CONTRACTOR WILL TAKE FULL RESPONSIBILITY FOR THE CHANGES.

C. NEW THERMOSTATS TO BE MOUNTED AT 48" A.F.F.

D. CONTRACTOR TO FIELD COORDINATE DUCT ROUTING PRIOR TO INSTALLATION OR FABRICATION OF DUCTWORK. CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL WORK WITH OTHER TRADES.

E. CONTRACTOR TO PROVIDE A COPY OF THE TEST AND BALANCE REPORT TO THE INSPECTOR AND OWNER PRIOR TO FINAL APPROVAL.

KEY NOTES: #

ROUTE REFRIGERANT LINES DOWN ON WALL AND OUT TO ODU-1.

2. ROUTE REFRIGERANT LINES FROM BDU TO IDUS. SIZE PER MANUFACTURER'S RECOMMENDATION.

3. PUMP CONDENSATE FROM UNIT TO MOP SINK. PIPE DOWN IN WALL AND TERMINATE 3" ABOVE FLOOD LEVEL RIM WITH ELBOW FITTING OPENING DOWNWARD INTO BASIN.

4. INSTALL DOOR GRILLE LV-1 18" A.F.F. TO BOTTOM OF GRILLE.

5. INSTALL DOOR GRILLE LV-2 18" A.F.F. TO BOTTOM OF GRILLE.

6. THERMOSTATS FOR IDU-1.1, IDU-1.2 AND IDU-1.3. CONNECT THERMOSTAT FOR IDU-1.1 AND IDU1.3 TO BUTTON SENSORS IN WALL.

7. LG ZVRCZTRH1 REMOTE TEMPERATURE SENSOR. WIRE TO THERMOSTAT FOR IDU1.1.

8. LG ZVRCZTRH1 REMOTE TEMPERATURE SENSOR. WIRE TO THERMOSTAT FOR IDU1.3.

9. 3-PORT BRANCH DISTRIBUTION UNIT. SEE SPLIT SYSTEM SCHEDULE.

10. ROUTE 6" Ø EXHAUST UP TO GRAVITY RELIEF VENT ON ROOF.

11. NO CONCRETE PAD REQUIRED IF UNIT IS INSTALLED ON EXISTING CONCRETE FLATWORK.

NORTH

BRIAN BAILEY ARCHITECT

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DeVita & Associates, Inc. Project : 25282-05
Drawn By:JTP Checked By:KFM

STATE OF MICHIGAN KEITH E. MATTISON ENGINEER No. 6201060742 LICENSED PROFESSIONAL ENGINEER

[illegible]
12/18/25

IONNA RECHARGERY

INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
OAK PARK, MI. 48237

#	△	DESCRIPTION	DATE
1		ISSUED FOR PERMIT	12.19.25
2			
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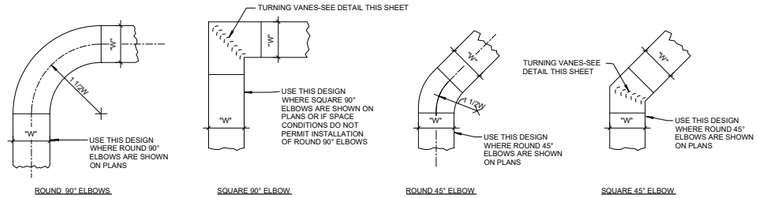
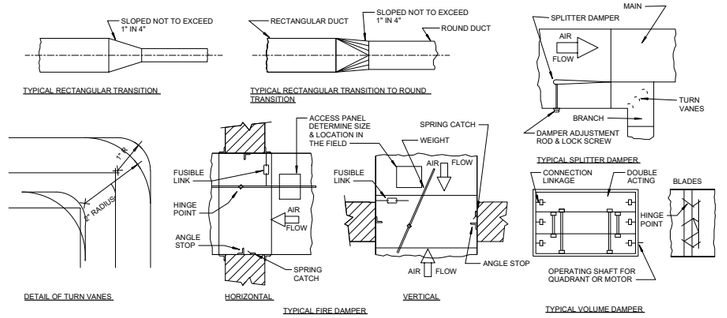
OWNER PROJECT CODE MI-0008
ARCH PROJECT # RDU 25-174

MECHANICAL PLAN

SHEET # **M1.1**



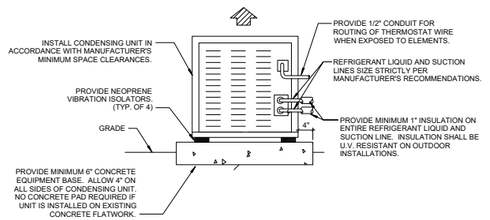


INSTALLATION NOTES.

1. ALL DUCTS SHALL BE CONSTRUCTED AND ERECTED IN A NEAT AND WORKMANLIKE MANNER.
2. DUCTS SHALL BE CONSTRUCTED OF THE WEIGHTS, GAGES AND MATERIAL SHOWN IN THE SCHEDULE ON THESE DRAWINGS
3. THE DIMENSION SHOWN FOR ALL DUCTS SHOWN IN PLAN GIVE THE WIDTH FIRST AND THEN THE HEIGHT.
4. DUCT RISERS SHOULD BE SUPPORTED BY ANGLES AT EVERY FLOOR.
5. AIR TURN SHALL BE INSTALLED IN ALL ABRUPT ELBOWS TO PREVENT TURBULENCE.
6. DUCTS SHALL BE SECURELY ATTACHED TO THE BUILDING CONSTRUCTION IN AN APPROVED MANNER.
7. DIVERGING TRANSITION PIECES SHALL BE MADE AS GRADUAL AS POSSIBLE.
8. INSTALL FIRE DAMPERS IN ACCORDANCE WITH UL 555.
9. ACCESS PANELS SHOULD BE PLACED BEFORE AND/OR AFTER EQUIPMENT INSTALLED IN THE DUCT
10. DUCT AREA SHOULD NOT BE DECREASED MORE THAN 10 PERCENT WHEN OBSTRUCTIONS CANNOT BE AVOIDED, AND THEN A STREAMLINED FITTING SHOULD BE USED.
11. FLEXIBLE FABRIC CONNECTIONS (OR EQUAL) SHOULD BE USED ON BOTH INLETS AND OUTLETS OF ALL FANS AND AIR HANDLING UNITS.
12. JOINTS AND SEAMS OF SUPPLY DUCTS SHALL BE FASTENED SECURELY AND MADE AIR TIGHT.

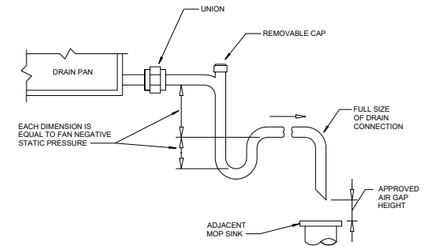
1 / M5.1 LOW VELOCITY LAYOUT DETAIL

NOT TO SCALE



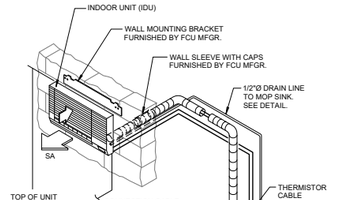
5 / M5.1 CONDENSING UNIT DETAIL

NOT TO SCALE



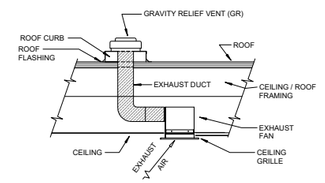
2 / M5.1 CONDENSATE DRAIN TO TERMINATION DETAIL

NOT TO SCALE



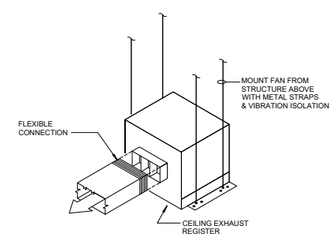
6 / M5.1 DUCTLESS AIR CONDITIONER UNIT DETAIL

NOT TO SCALE



3 / M5.1 CEILING EXHAUST FAN DETAIL

NOT TO SCALE



4 / M5.1 CEILING EXHAUST FAN DETAIL

NOT TO SCALE

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12/19/25

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INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
OAK PARK, MI. 48237

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DETAILS

SHEET # **M5.1**

SPLIT SYSTEM HEAT PUMP SCHEDULE / SPLIT SYSTEM SCHEDULE

MARK		AREA SERVED	NOMINAL TONS	MANUF.	HEAT PUMP (OUTSIDE UNIT)								AIR HANDLING UNIT (INSIDE UNIT)					ELECTRICAL					NOTES
OUTSIDE UNIT	INSIDE UNIT				MODEL NUMBER	COOLING			HEATING			EST. WEIGHT LBS	MODEL NUMBER	SUPPLY AIR	OUTSIDE AIR	ESP	WEIGHT	VOLTAGE	PHASE	MCA	FLA	MOCP	
						TOTAL BTU	AMBIENT	EER	BTU	AMBIENT	COP												
ODU-1	IDU-1.1	RESTROOM	0.75	LG	LMU303HV	30,000	95°F	12.5	32,000	47°F	4	155	KNUAB091A	268	0	0.01	20	230	1	18.4	19	25	1 - 12
	IDU-1.2	JANITOR'S CLOSET	0.75	LG									KNUAB091A	268	0	0.01	20						
	IDU-1.3	RESTROOM	0.75	LG									KNUAB091A	268	0	0.01	20						

GENERAL NOTES:
1. PROVIDE WITH MANUFACTURER'S EQUIPMENT RAIL.
2. MAINTAIN MANUFACTURER'S CLEARANCES AROUND UNIT FOR INTAKE AND MAINTENANCE.
3. PROVIDE WITH MANUFACTURER'S LOW AMBIENT KIT.
4. PROVIDE WITH A2L REFRIGERANT MONITORING AND ISOLATION SYSTEMS COMPLIANT WITH ASHRAE STANDARDS 15 & 34.
5. PROVIDE MANUFACTURER WIND BAFFLE.
6. PROVIDE FULL PORT ISOLATION VALVES ON REFRIGERANT CONNECTION AT UNIT.
7. SIZE REFRIGERATION PIPING PER MANUFACTURER'S RECOMMENDATION.
8. INDOOR UNIT IS POWERED BY OUTDOOR UNIT. DIVISION 23 SHALL PROVIDE INTERCONNECTING WIRE AND DISCONNECT SWITCHES.
9. PROVIDE MANUFACTURER'S 3-UNIT BRANCH DISTRIBUTION UNIT PMBD3630 POWERED BY OUTDOOR UNIT.
10. PROVIDE LG PREMTBVC4 THERMOSTAT FOR EACH INDOOR UNIT WITH REMOTE TEMPERATURE SENSORS WHERE NOTED. SEE FLOOR PLAN FOR MOUNTING INFORMATION.
11. DUCT MOUNTED SMOKE DETECTOR NOT NEEDED DUE TO UNIT RA SYSTEM BEING <2000 CFM.
12. PROVIDE UNIT WITH 240V/1 LITTLE GIANT CONDENSATE PUMP POWERED BY INDOOR UNIT.

FAN SCHEDULE

MARK	MANUFACTURER MODEL NO.	AREA SERVED	SERVICE	TYPE	CFM	STATIC PRESS. IN. WG.	NOMINAL RPM	DRIVE TYPE	CONTROL	ELECTRICAL		MOTOR HP (WATTS)	NOTES
										VOLTAGE	PHASE		
EF-1	GREENHECK SP-A390-VG	RESTROOM	EXHAUST	CEILING	100	0.5	1253	DIRECT	SCHEDULE	120 V	1	0.02	1-13
EF-2	GREENHECK SP-A390-VG	RESTROOM	EXHAUST	CEILING	100	0.5	1253	DIRECT	SCHEDULE	120 V	1	0.02	1-13

GENERAL NOTES:
1. BASIS OF DESIGN IS GREENHECK. EQUALS BY LOREN COOK, TWIN CITY BLOWER, OR AS LISTED IN SPECIFICATIONS.
2. PROVIDE ALL DUCT TRANSITIONS FOR FANS.
3. UNIT HOUSING SHALL BE CONSTRUCTED OF ALUMINUM.
4. ALL FANS SHALL BE U.L. LISTED.
5. PROVIDE WITH UNIT MOUNTED DISCONNECT.
6. PROVIDE OVERLOAD PROTECTION FOR ALL FANS. COORDINATE WITH ELEC.
7. PROVIDE SPEED CONTROLLERS FOR ALL DIRECT DRIVE FANS.
8. ALL MOTORS SHALL BE PREMIUM EFFICIENCY.
9. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH, UNIT MOUNTED SPEED CONTROLLER, AND BACKDRAFT DAMPER.
11. PROVIDE WITH MANUFACTURERS HANGING BRACKETS WITH VIBRATION ISOLATION PADS.
12. PROVIDE FAN WITH A VFD OR ECM MOTOR.
13. INTERLOCK FAN WITH MOTION SENSOR.

LOUVER SCHEDULE

MARK	MANUFACTURER MODEL	OPENING	DESIGN AIR FLOW	MAX VELOCITY (FPM)	PRESSURE DROP (IN. WG)	SCREEN TYPE	NOTES
L-1	GREENHECK XG-DGDF	12 x 12	100	200	0.02	BIRD	1-6
L-2	GREENHECK XG-DGDF	12 x 12	100	200	0.02	BIRD	1-6

GENERAL NOTES:
1. PROVIDE FRAMED 1/2" X 1/2" ALUMINUM BIRD SCREEN FOR ALL LOUVERS.
2. ALL LOUVERS SHALL BE RATED FOR THE PROJECT WIND ZONE.
3. LOUVERS SHALL HAVE 3-COAT 70% KYNAR 500/HYLAR 5000 FINISH WITH A DRY FILM THICKNESS OF 2.0 MIL MINIMUM. PROVIDE STANDARD AND CUSTOM COLOR CHARTS WITH SUBMITTAL. COLOR SHALL BE SELECTED BY ARCHITECT.
4. ALL LOUVERS SHALL BE AMCA 500-L CERTIFIED FOR AIR PERFORMANCE, WATER PENETRATION, AND WIND DRIVEN RAIN AND BEAR APPROPRIATE SEAL.
5. EQUIVALENTS BY RUSKIN, AIROLITE, NAILOR, RELIABLE, POTTORFF, OR AS LISTED IN THE SPECIFICATIONS.
6. PROVIDE MILL FINISH SUITABLE FOR PAINTING.

ROOF VENT SCHEDULE

MARK	MANUFACTURER MODEL	HEIGHT (IN.)	DESIGN AIR FLOW	MAX PRESSURE LOSS (IN. WG.)	DIAMETER	WEIGHT	NOTES
GR-1	GREENHECK GRSR-8	7.25 IN	100 CFM	0.05 IN-WG	20.5 IN	10 LB	1-6
GR-2	GREENHECK GRSR-8	7.25 IN	100 CFM	0.05 IN-WG	20.5 IN	10 LB	1-6

GENERAL NOTES:
1. PROVIDE BACKDRAFT DAMPER AND BIRD SCREEN.
2. PROVIDE FACTORY ROOF CURB.

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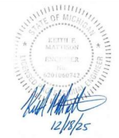

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SCHEDULES

SHEET # **M6.1**

SCOPE OF WORK

1. ALL WORK REQUIRED CONSISTS OF PERFORMING ALL LABOR AND FURNISHING ALL MATERIALS, FIXTURES AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE PLUMBING INSTALLATION AS INDICATED ON THE DRAWINGS. IT SHALL FURTHER INCLUDE FURNISHING AND INSTALLING ALL MISCELLANEOUS ITEMS REQUIRED FOR THE OPERATION OF THE SYSTEMS, WHETHER SPECIFICALLY CALLED FOR OR NOT. CONNECT ALL EQUIPMENT FURNISHED UNDER OTHER TRADES AS REQUIRED. DETERMINE IN ADVANCE THE SHUT-DOWN OF EXISTING UTILITIES.

CODES

1. ALL MATERIALS, EQUIPMENT AND INSTALLATION MUST COMPLY WITH ALL APPLICABLE LAWS, CODES, RULES, AND REGULATION, REQUIRED BY CITY, COUNTY AND STATE, AS WELL AS FEDERAL REQUIREMENTS.

PERMITS

1. THIS CONTRACTOR SHALL PAY FOR ALL PERMITS, LICENSES AND FEES REQUIRED BY STATE AND LOCAL AUTHORITIES.

INSPECTION

1. FURNISH ARCHITECT WITH CERTIFICATE OF INSPECTION AND APPROVAL BY LOCAL AUTHORITIES PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE ARCHITECT. ALL WORK MUST BE INSPECTED.

MATERIALS

1. WATER PIPING:
   A. ALL PIPING SHALL CONFORM TO THE REQUIREMENTS OF THE ANSI SAFETY CODE AND BE FREE FROM ALL DEFECTS AND BE PROPERLY IDENTIFIED.
   B. ABOVE GROUND: SHALL BE TYPE "L" HARD DRAWN COPPER TUBING CONFORMING TO ASTM B 88-72.
   C. BELOW GROUND: (INSTALLED IN CONCRETE OR UNDER CONCRETE) TYPE "K" SOFT DRAWN COPPER TUBING, CONFORMING TO ASTM B 88-72, SPIRALLY WRAP PIPING BELOW GRADE OR FLOORS WITH 3 LAYERS OF 30 MIL POLYETHYLENE TAPE WITH 1/2 OVERLAP. INSTALL NO PIPING JOINTS BELOW FLOOR.
   D. ALL COPPER TUBING SHALL UTILIZE SWEAT FITTINGS SOLDERED WITH ASTM B 32, ALLOY SN95, SN94, OR E, LEAD FREE SOLDER.
   E. ALL CONDENSATE PIPING SHALL BE COPPER PIPE.
2. SOIL, WASTE, AND VENT PIPING:
   A. CAST IRON: NO-HUB CAST IRON, CISPI 301-72T SPECIFICATION FOR ALL SOIL, WASTE AND VENT PIPING 2 INCHES AND LARGER WITH STANDARD WEIGHT FITTINGS, USE STAINLESS STEEL NO-HUB CAST IRON COUPLINGS THROUGHOUT THE PROJECT.
   B. GALVANIZED IRON: SCHEDULE 40 STANDARD WEIGHT CONFORMING TO ASTM A72-68, FOR ALL VENT PIPING 1-1/2" AND SMALLER, USE WROUGHT IRON SCREWED FITTINGS TO MATCH PIPE. MAKE ALL SCREWED JOINTS WITH TEFLON TAPE.
   C. POLYVINYL CHLORIDE: SCHEDULE 40 SOLID CORE PVC PIPE AND FITTINGS, ASTM ASTM D2665 SPECIFICATION FOR NON-PRESSURIZED SOIL, WASTE, AND VENT PIPING. DO NOT INSTALL IN RETURN AIR PLENUM.
   D. ALL SOIL AND WASTE PIPING 2-1/2" AND SMALLER SHALL SLOPE MINIMUM OF 1/4" PER FOOT, PIPING 3" AND LARGER SHALL SLOPE MINIMUM OF 1/8" PER FOOT.
   E. ALL PIPING INSTALLED BELOW GRADE SHALL MEET PLUMBING CODE REQUIREMENTS FOR TRENCHING AND BACKFILLING, PIPE SHALL BE SUPPORTED THROUGHOUT ITS ENTIRE LENGTH. SUCH PIPE SHALL NOT BE SUPPORTED ON BLOCKS TO GRADE. WHERE THE PIPING MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE MORE RESTRICTIVE THAN THOSE PRESCRIBED BY THE CODE, THE MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MORE RESTRICTIVE REQUIREMENT.
3. VALVES:
   A. SIZE OF SHUT-OFF VALVE, CONTROL VALVES, BALANCING COCKS, UNIONS ETC., SHALL BE FULL LINE SIZE.
   B. INSTALL SHUTOFF VALVE CLOSE TO WATER MAIN ON EACH BRANCH AND RISER SERVING PLUMBING FIXTURES OR EQUIPMENT.
   C. INSTALL ALL VALVES SUCH THAT THEY CAN BE OPERATED WITH RESPECT TO THE FINISHED BUILDING.
4. PIPE HANGERS:
   A. PIPE HANGERS SHALL BE MICHIGAN #400 FOR STEEL PIPING, #402 FOR GAS AND COPPER PIPING. SUPPORT PIPING 3/4" AND LESS AT 6'-0" O/C, 1-1/4" O/C AND SMALLER 8'-0" O/C, AND PIPING 1-1/2" AND LARGER 10'-0" O/C. WASTE PIPING SHALL BE SUPPORTED AT 5'-0" O/C. PROVIDE 3/8" DIA. THREADED ROD PROPERLY BRACED FOR SEISMIC RESTRAINT ZONE 2.
5. PIPE INSULATION:
   A. ALL HOT WATER PIPING AND HOT WATER RETURN PIPING (IF APPLICABLE) SHALL HAVE 1 INCH THICK FIBERGLASS INSULATION WITH ASJ JACKET, HAVING A THERMAL CONDUCTIVITY (K-FACTOR) OF 0.24 AT 75 DEGREES MEAN TEMPERATURE.
   B. ALL COLD WATER PIPING SHALL HAVE 1 INCH THICK FIBERGLASS INSULATION WITH ASJ JACKET, HAVING A THERMAL CONDUCTIVITY (K-FACTOR) OF 0.24 AT 75 DEGREES MEAN TEMPERATURE.
   C. ALL CONDENSATE PIPING SHALL HAVE 1/2 INCH THICK FIBERGLASS INSULATION WITH ASJ JACKET, HAVING A THERMAL CONDUCTIVITY (K-FACTOR) OF 0.24 AT 75 DEGREES MEAN TEMPERATURE.
   D. THE MAXIMUM FIRE HAZARD CLASSIFICATION OF THE INSULATION SYSTEM SHALL NOT HAVE MORE THAN A FLAME SPREAD OF 25, AND A FUEL CONTRIBUTED RATING OF 50, AND A SMOKE DEVELOPED RATING OF 50, WHEN TESTED IN ACCORDANCE WITH U.L. REQUIREMENTS. PIPE COVERING SHALL BEAR THE U. L. LABEL.
   E. INSULATE ALL FITTINGS VALVE BODIES ETC. WITH SINGLE OR MULTIPLE LAYERS OF INSULATION WITH PREFABRICATED FITTINGS WITH P.V.C. JACKETS.
   F. SUBMIT SHOP DRAWINGS FOR ALL INSULATION MATERIALS.
6. CLEAN OUTS: (ZURN, JOSAM, SMITH)
   A. CLEAN OUTS SHALL BE THE SAME SIZE AS THE LARGEST DOWNSTREAM PIPE IT IS SERVING. NO PLASTIC CLEAN OUTS WILL BE ACCEPTED. PLUGS SHALL BE BRONZE.
7. PIPE INSTALLATION:
   A. INSTALL PIPING TO BEST SUIT FIELD CONDITIONS, COORDINATE LAYER OF PIPING WITH DUCT WORK AND OFFSET PIPING AS REQUIRED TO CLEAR NEW DUCTWORK.
   B. INSTALL ALL PRESSURE REDUCING VALVES AND BACKFLOW PREVENTION DEVICES IN AN ACCESSIBLE LOCATION SUCH THAT REGULAR MAINTENANCE AND TESTING MAY BE PERFORMED.
8. WATER HAMMER ARRESTORS: (ZURN, WATTS, SOUIX CHIEF)
   A. PROVIDE WATER HAMMER ARRESTORS AT ALL QUICK-CLOSING VALVES, SIZE AND INSTALL PER MANUFACTURER'S GUIDELINES. HAMMER ARRESTORS SHALL BE ASSE 1010 LISTED.

PIPING IDENTIFICATION

1. MANUFACTURERS: ADVANCED GRAPHIC ENGRAVING, BRIMAR INDUSTRIES, CRAFTMARK PIPE MARKERS, KOLBI PIPE MARKER CO, OR SETON IDENTIFICATION PRODUCTS.
2. ALL IDENTIFICATION SHALL BE PLENUM RATED UNLESS NOTED OTHERWISE ON PLANS.
3. NAMEPLATES FOR ALL PLUMBING EQUIPMENT
   A. LETTER COLOR: WHITE, LETTER HEIGHT: 1/4 INCH, BACKGROUND COLOR: BLACK, PLASTIC: COMPLY WITH ASTM D709, PROVIDE ALL INFORMATION AS LISTED IN EQUIPMENT SCHEDULES. PERMANENTLY ATTACHED. ACCEPTABLE ALTERNATIVE OF EMBOSSED STEEL WITH 1/4" LETTERING.
4. TAGS FOR ALL PLUMBING AND PIPING ACCESSORIES
   A. METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCH DIAMETER WITH SMOOTH EDGES.
      1. BRASS, 19-GAUGE THICK VALVE TAGS WITH 3/16" DIAMETER TOP HOLE FOR FASTENER OR CHAIN, BLANK OR PRE-STAMPED LETTERING, AND NATURAL BRASS FINISH. TOP LINE (SYSTEM) LETTERING SHALL BE 1/4" AND BOTTOM LINE (VALVE NUMBER) SHALL BE 1/2". PROVIDE BRASS OR STAINLESS STEEL BEADED CHAIN WITH LOCKING LINKS TO ATTACH TAG TO VALVE.
5. PIPE MARKERS FOR ALL PIPING UNLESS NOTED OTHERWISE.
   A. LOCATE LABELS EVERY 25' FOR RUNS, ADJACENT TO ALL EQUIPMENT AND PIPE ACCESSORIES.
   B. PLASTIC PIPE MARKERS: FACTORY FABRICATED, SELF-ADHESIVE OR STRAP ON TYPE MARKERS MARKERS SHALL FIT AROUND PIPE OR PIPE COVERING; MINIMUM INFORMATION INDICATING FLOW DIRECTION ARROW AND IDENTIFICATION OF FLUID BEING CONVEYED.
   C. UNDERGROUND PLASTIC PIPE MARKERS: BRIGHT COLORED CONTINUOUSLY PRINTED PLASTIC RIBBON TAPE, MINIMUM 6 INCHES WIDE BY 4 MIL THICK, MANUFACTURED FOR DIRECT BURIAL SERVICE. PROVIDE IN ALL LOCATIONS WHERE UNDERGROUND PLASTIC PIPING IS UTILIZED.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL UTILITIES PRIOR TO BID. THE CONTRACTOR SHALL VISIT THE SITE AND INSPECT THE WORK THEY MUST PERFORM, IN ADDITION TO WHAT IS SHOWN HEREIN, AND INCLUDE IN THEIR BID AN AMOUNT TO DO SUCH WORK.

UNION

1. PROVIDE A UNION BETWEEN CONNECTIONS TO EACH FIXTURE, DEVICE OR PIECE OF EQUIPMENT FOR DISCONNECTING OF PIPING.

TESTING

1. FILL DOMESTIC WATER SYSTEM WITH WATER AND PRESSURIZE TO 125 PSI AND MAINTAIN FOR FOUR (4) HOURS WITH NO PRESSURE DROP.
2. FILL WASTE, SOIL, AND VENT SYSTEM WITH WATER TO HIGHEST POINT OF THE SYSTEM. HOLD PRESSURE FOR FOUR (4) HOURS WITH NO DROP IN WATER LEVEL.
3. TEST AND OBTAIN APPROVAL ON ALL UNDERGROUND PIPING BEFORE COVERING WORK. PROVIDE WRITTEN TESTING REPORT TO ARCHITECT.
4. GAS TESTING:
   A. AIR PRESSURE TEST SYSTEM TO 75 PSI AND MAINTAIN FOR A PERIOD OF EIGHT (8) HOURS WITH NO PRESSURE DROP.
   B. PURGE LINE WITH NITROGEN AT JUNCTION WITH MAIN LINE AT GAS METER TO REMOVE ALL AIR. CLEAR COMPLETE LINE BY ATTACHING A TEST PILOT FIXTURE AT CAPPED STUB-IN LINE AT THE BUILDING LOCATION, AND LET GAS FLOW UNTIL TEST PILOT IGNITES. CAUTION FAILURE TO PURGE SYSTEM MAY RESULT IN EXPLOSION WITHIN LINE WHEN AIR-TO-GAS IS AT CORRECT MIXTURE.

STERILIZATION

1. STERILIZE THE ENTIRE WATER DISTRIBUTION SYSTEM THOROUGHLY WITH A SOLUTION CONTAINING NOT LESS THAN 50 PARTS PER MILLION OF AVAILABLE CHLORINE. FOR CHLORINATING MATERIALS USE SODIUM HYPOCHLORITE SOLUTION CONFORMING TO FEDERAL SPEC. O-B-441, GRADE D, AND INTRODUCE INTO THE SYSTEM BY USE OF A COCK AT A SLOW, EVEN, CONTINUOUS RATE. ALLOW THE STERILIZING SOLUTION TO REMAIN IN THE SYSTEM FOR A PERIOD OF 8 HOURS, DURING WHICH TIME ALL VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER STERILIZATION, FLUSH THE SOLUTION FROM THE SYSTEM WITH CLEAN WATER UNTIL THE RESIDUAL CHLORINE CONTENT IS NOT GREATER THAN 0.2 PARTS PER MILLION. PLATE COUNT SHALL INDICATE COUNT LESS THAN 100 BACTERIA PER CC.

CLEANING

1. AT THE COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE, ALL PARTS OF THE WORK INSTALLED UNDER THIS SPECIFICATION SHALL BE THOROUGHLY CLEANED. ALL EQUIPMENT, FIXTURES, PIPE, VALVES AND FITTINGS SHALL BE CLEANED OF GREASE, METAL CUTTINGS AND SLUDGE WHICH MAY HAVE ACCUMULATED BY OPERATION OF THE SYSTEM FOR TESTING HEREIN BEFORE SPECIFIED OR FROM OTHER CAUSES.

GUARANTEE

1. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FROM DEFECT OF MATERIAL AND WORKMANSHIP, AND SHALL REPLACE OR REPAIR, WITHOUT ADDITIONAL COST TO THE OWNER, ALL DEFECTIVE MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER COMPLETION AND ACCEPTANCE.

COORDINATION

1. ALL CONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATING WORK WITH OTHER TRADES AFFECTED BY EACH OTHERS WORK AND FOR CUTTING AND RE-FINISHING OF EXISTING WALLS, FLOORS, SOLID AND SUSPENDED CEILINGS ETC., WHERE REQUIRED BY WORK SHOWN AND NOTED HEREIN. INSTALL ALL WORK TO CLEAR NEW AND EXISTING ARCHITECTURAL AND STRUCTURAL MEMBERS. ITEMS SUCH AS PIPE, FITTINGS, ETC., SHALL NOT BE INSTALLED IN CONFLICT WITH EQUIPMENT. COORDINATE ALL CUTTING AND PATCHING WITH THE GENERAL CONTRACTOR. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF HIS WORK. OBTAIN WRITTEN PERMISSION OF ARCHITECT BEFORE PROCEEDING WITH ANY CUTTING OR PATCHING OF STRUCTURAL SYSTEMS.
2. ALL SUBMITTALS, RFIS, AND SHOP DRAWINGS FOR APPROVAL BY ENGINEER SHALL BE SUBMITTED IN A TIMELY MANNER. ENGINEER SHALL HAVE 10 BUSINESS DAYS TO RESPOND TO ANY AND ALL SUBMISSIONS UNLESS AN EXPEDITED RESPONSE IS APPROVED BY ENGINEER.

SUBSTITUTIONS

1. SUBSTITUTIONS OF MATERIALS OR PRODUCTS SHOWN HEREIN SHALL BE AT THE OWNER'S, ARCHITECTS OR ENGINEER'S WRITTEN APPROVAL ONLY WITH COPIES OF APPROVAL SENT TO ARCHITECT FOR PROJECT FILE. DEVIATION FROM THESE DRAWINGS WILL NOT BE ALLOWED.
2. ANY FIELD CHANGES BY THE CONTRACTOR FOR WHICH THE LOCAL AUTHORITY REQUIRES A SEALED LETTER AND/OR DRAWING BY THE ENGINEER SHALL RESULT IN A COST TO THE CONTRACTOR. THE FEE FOR THESE CHANGES SHALL BE PAYABLE UPON DELIVERY OF THE LETTER/DRAWING AND UNLESS THE CHANGE WAS INSTITUTED BY THE OWNER. THE CONTRACTOR SHALL NOT CHARGE THE OWNER THIS FEE.
3. THE FEE FOR THE ABOVE NOTED LETTER/DRAWING SHALL BE $250.00 PER ITEM.
4. ANY DEVIATIONS FROM THESE PLANS (FOR ANY REASON INCLUDING ACTUAL FIELD CONDITIONS) WITH OUT PRIOR WRITTEN APPROVAL SHALL BE THE COMPLETE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

RECORD DRAWINGS

1. PROVIDE TWO (2) SETS OF "RECORD" DRAWINGS AND TWO (2) BOUND SETS OF ALL OPERATIONS MANUALS, DIAGRAMS, SERVICE CONTRACTS, GUARANTEES, ETC., ONE FOR THE OWNER AND ONE FOR BUILDING OPERATIONS DEPARTMENT. OBTAIN A COMPLETE SET OF RECORD DRAWINGS OF EXISTING CONSTRUCTION FROM THE OWNERS FOR INFORMATION ON EXISTING CONDITIONS. INCORPORATE ANY EXISTING CONDITIONS ON NEW RECORD DRAWINGS REQUIRED TO SHOW THE "INSTALLED" INSTALLATION.
   PLUMBING SPECIFICATIONS

SEWER LOAD CALCULATION

MARK	FIXTURE/EQUIPMENT	QUANTITY	WASTE	
			F. U. PER FIXT	TOTAL F.U. PER FIXT
FD-1	FLOOR DRAIN	3	2.0	6.0
L-1	LAVATORY	2	1.0	2.0
HWC	WATER CLOSET	2	4.0	8.0
MS	MOP SINK	1	3.0	3.0
TOTALS				19.0
MAX WASTE DEMAND AT 19.0 F.U. = 3" SANITARY SEWER WASTE				
FIXTURE UNITS BASED ON 2021 I.P.C.				

WATER SUPPLY LOAD CALCULATION

MARK	FIXTURE/EQUIPMENT	QUANTITY	WATER			
			CW F.U. PER FIXT	HW F.U. PER FIXT	TOT WSFU PER TYPE	TOTAL F.U. PER FIXT
L-1	LAVATORY	2	1.5	1.5	2.0	4.0
HWC	WATER CLOSET	2	5.0	-	5.0	10.0
MS	MOP SINK	1	2.0	2.0	3.0	3.0
TOTALS						17.0
MAXIMUM WATER DEMAND AT 17 F.U. = 18.4 GPM = 1 1/4" WATER MAIN SUPPLY						
FIXTURE UNITS BASED ON 2021 I.P.C. (FLUSH VALVES)						

PLUMBING SYMBOLS LEGEND

	DOMESTIC COLD WATER - CW
S	SOFTENED COLD WATER - S
FW	FILTERED WATER - FW
(E)CW	EXISTING DOMESTIC COLD WATER (E)CW
	DOMESTIC HOT WATER - HW
(E)HW	EXISTING DOMESTIC HOT WATER (E)HW
HWR	DOMESTIC HOT WATER RETURN - HWR
140°F	DOM. HOT WATER RETURN - 140°F
(E)HWR	EXISTING HOT WATER RETURN (E)HWR
V	VENT PIPING - V
(E)V	EXIST. VENT PIPING ABOVE FLOOR (E)V
SS	SANITARY SEWER PIPING - SS
(E)SS	EXISTING SANITARY SEWER PIPING (E)SS
GW	GREASE PIPING - GW
(E)GW	EXISTING GREASE LADEN PIPING (E)GW
SD	STORM DRAIN PIPING - SD
(E)SD	EXISTING STORM DRAIN PIPING (E)SD
CD	CONDENSATE DISCHARGE PIPING - CD
(E)CD	EXIST. CONDENSATE DISCHARGE (E)CD
F	FIRE PROTECTION PIPING - F
(E)F	EXISTING FIRE PROTECTION PIPING (E)F
G	NATURAL GAS PIPING - G
(E)G	EXISTING NATURAL GAS PIPING (E)G
A	COMPRESSED AIR PIPING - A
(E)A	EXISTING COMPRESSED AIR PIPING (E)A
O	OIL PIPING - O
	SODA/BEER PIPING CHASE
	RISE AND FALL IN PIPING
	SHUT OFF VALVE: BALL
	CONNECT TO EXISTING
	PLUMBING RISER NUMBER
	PLUMBING NOTE
	FIXTURE DESIGNATION
AFF	ABOVE FINISHED FLOOR
CD	CONDENSATE DRAIN PIPING
CW	DOMESTIC COLD WATER
ECO	EXTERIOR CLEAN OUT
EWC	ELECTRIC WATER COOLER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FPWH	FROSTPROOF WALL HYDRANT
G	GAS PIPING
HB	HOSE BIBB
HD	HUB DRAIN
HW	DOMESTIC HOT WATER
RD	ROOF DRAIN
RL	ROOF LEADER
SD	STORM DRAIN
SS	SANITARY SEWER
TD	TRENCH DRAIN
TP	TRAP PRIMER
VTR	VENT THRU ROOF
WCO	WALL CLEAN OUT
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTER

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INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
OAK PARK, MI. 48237

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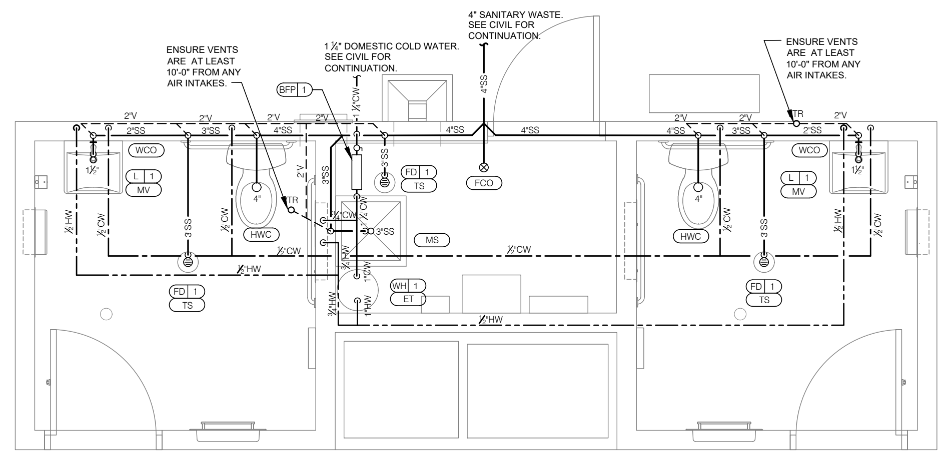
OWNER PROJECT CODE MI-0008
ARCH PROJECT # RDU 25-174

PLUMBING SPECIFICATIONS & LEGEND

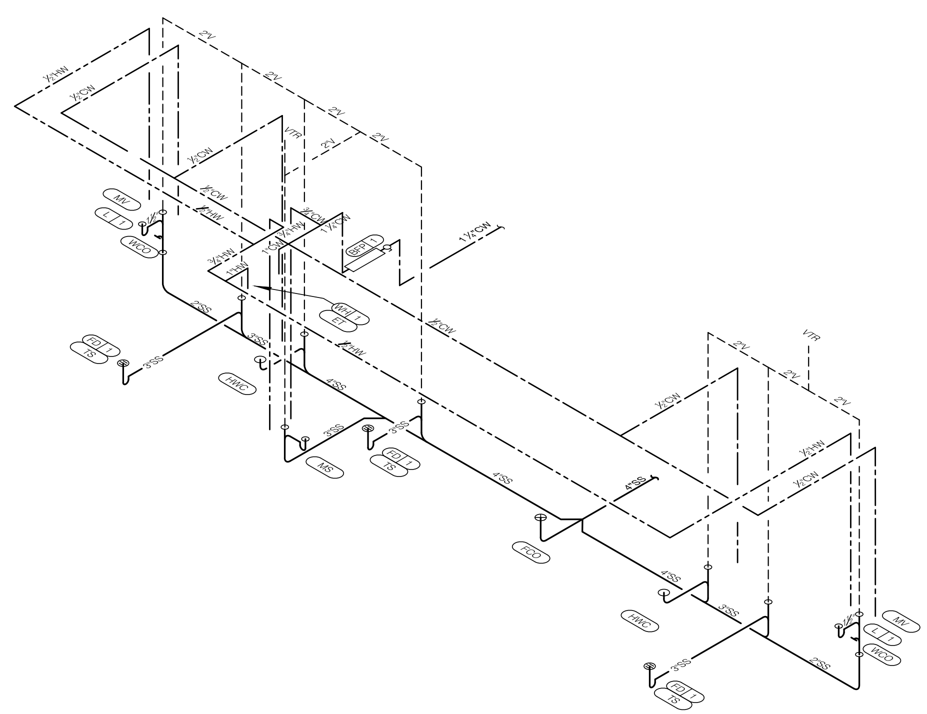
SHEET # **P0.0**



1 / P1.1 PLUMBING PLAN

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

0 1' 2' 3' 4' 5' 6'



2 / P1.1 RISER DIAGRAM

NOT TO SCALE

GENERAL NOTES:

A. PROVIDE BALL VALVES ON ALL WATER LINE BRANCHES.

B. CONTRACTOR TO CONFIRM EXISTING CONDITIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR TO PROVIDE RFI TO ENGINEER FOR ANY DISCREPANCIES.

C. NO VOC EMITTING PRODUCTS TO BE USED IN PRESSURIZED AREA.

D. EXACT LOCATION OF PLUMBING FIXTURES SHALL BE DETERMINED BY ARCHITECTURAL DRAWINGS.

E. CONTRACTOR SHALL VERIFY INVERT ELEVATION OF SANITARY MAIN PRIOR TO COMMENCEMENT OF WORK.

F. CONTRACTOR TO VERIFY AND COORDINATE LOCATION OF PLUMBING LINES WITH DUCTWORK AND ELECTRICAL SERVICES.

G. CONTRACTOR SHALL NOT CUT HOLES IN STRUCTURAL MEMBERS WITHOUT SECURING WRITTEN APPROVAL FROM ARCHITECT.

H. CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.

I. INSTALL FLOOR DRAIN STRAINERS AND CLEANOUTS FLUSH WITH FINISHED FLOOR.

NORTH

BRIAN BAILEY ARCHITECT

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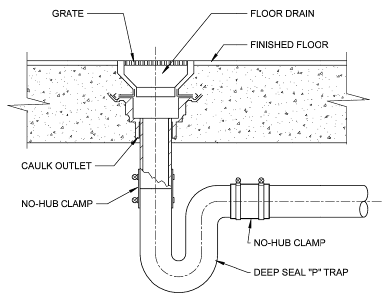
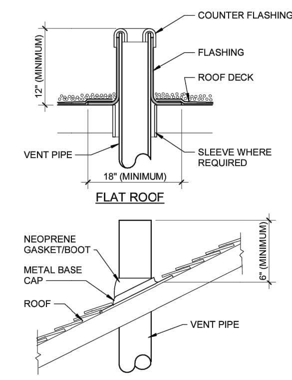
PLUMBING PLAN & RISER DIAGRAM

SHEET # **P1.1**



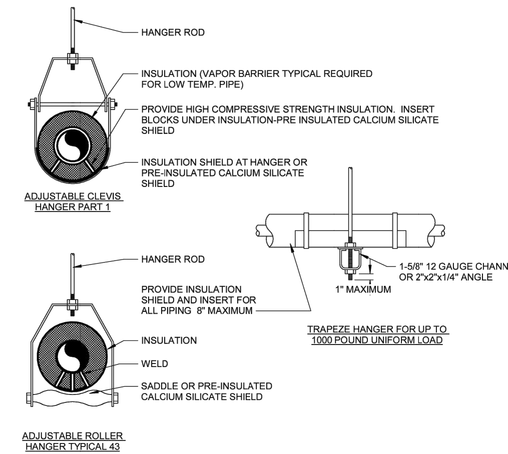
10 P5.1 FLOOR DRAIN DETAIL
NOT TO SCALE



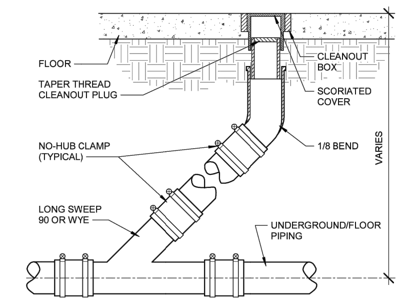
7 P5.1 VENT THROUGH ROOF DETAIL
NOT TO SCALE

MAXIMUM PIPE/TUBING SUPPORT SPACING, FEET																		
NOM. SIZE	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	22
PIPE	7 FT	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
TUBING	5 FT	6	7	8	8	9	10	12	13	14	16	-	-	-	-	-	-	-

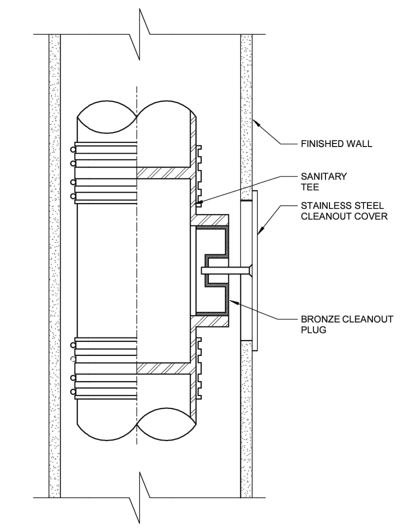
NOTE: FOR TRAPEZE HANGER - TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.


HANGER ROD
INSULATION (VAPOR BARRIER TYPICAL REQUIRED FOR LOW TEMP. PIPE)
PROVIDE HIGH COMPRESSIVE STRENGTH INSULATION. INSERT BLOCKS UNDER INSULATION-PRE INSULATED CALCIUM SILICATE SHIELD
INSULATION SHIELD AT HANGER OR PRE-INSULATED CALCIUM SILICATE SHIELD
ADJUSTABLE CLEVIS HANGER PART 1
1-5/8" 12 GAUGE CHANNEL OR 2"x2"x1/4" ANGLE
1" MAXIMUM
HANGER ROD
PROVIDE INSULATION SHIELD AND INSERT FOR ALL PIPING 8" MAXIMUM
TRAPEZE HANGER FOR UP TO 1000 POUND UNIFORM LOAD
INSULATION
WELD
SADDLE OR PRE-INSULATED CALCIUM SILICATE SHIELD
ADJUSTABLE ROLLER HANGER TYPICAL 43

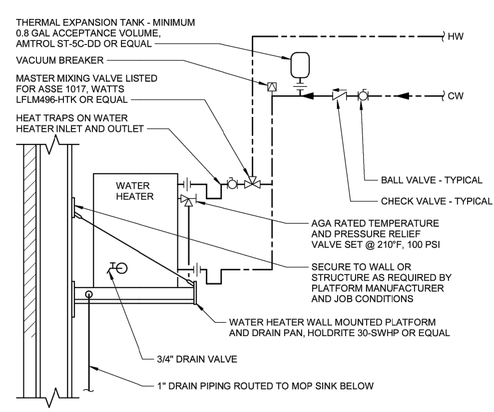
5 P5.1 PIPE HANGER DETAILS
NOT TO SCALE



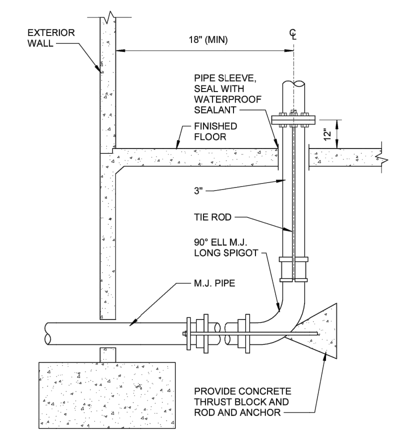
1 P5.1 FLOOR CLEANOUT DETAIL
NOT TO SCALE



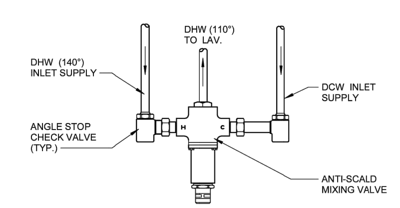
2 P5.1 WALL CLEANOUT DETAIL
NOT TO SCALE


THERMAL EXPANSION TANK - MINIMUM 0.8 GAL ACCEPTANCE VOLUME, AMTROL ST-5C-DD OR EQUAL
HW
VACUUM BREAKER
CW
MASTER MIXING VALVE LISTED FOR ASSE 1017, WATTS LFLM496-HTK OR EQUAL
HEAT TRAPS ON WATER HEATER INLET AND OUTLET
WATER HEATER
BALL VALVE - TYPICAL
CHECK VALVE - TYPICAL
AGA RATED TEMPERATURE AND PRESSURE RELIEF VALVE SET @ 210°F, 100 PSI
SECURE TO WALL OR STRUCTURE AS REQUIRED BY PLATFORM MANUFACTURER AND JOB CONDITIONS
WATER HEATER WALL MOUNTED PLATFORM AND DRAIN PAN, HOLDRITE 30-SWHP OR EQUAL
3/4" DRAIN VALVE
1" DRAIN PIPING ROUTED TO MOP SINK BELOW

8 P5.1 WATER HEATER ON SHELF DETAIL
NOT TO SCALE

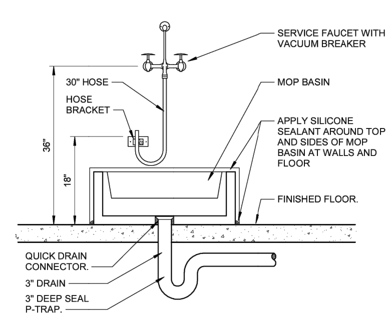


6 P5.1 PIPE ENTRANCE DETAIL
NOT TO SCALE

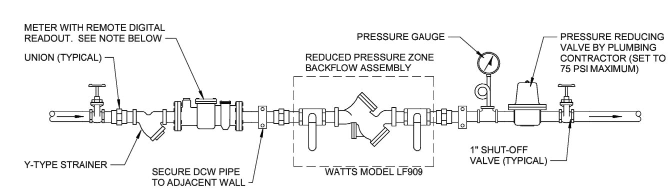


NOTE:
1. PIPE SIZES SHALL BE 1/2" WHEN SERVING (1) FAUCET.

3 P5.1 MIXING VALVE DETAIL
NOT TO SCALE



9 P5.1 MOP BASIN DETAIL
NOT TO SCALE


METER WITH REMOTE DIGITAL READOUT. SEE NOTE BELOW
UNION (TYPICAL)
PRESSURE GAUGE
REDUCED PRESSURE ZONE BACKFLOW ASSEMBLY
PRESSURE REDUCING VALVE BY PLUMBING CONTRACTOR (SET TO 75 PSI MAXIMUM)
Y-TYPE STRAINER
SECURE DCW PIPE TO ADJACENT WALL
WATTS MODEL LF909
1" SHUT-OFF VALVE (TYPICAL)

NOTE:
1. PROVIDE 1"∅ WATTS LF909M1QT-S WITH 909-AG-F AIR GAP OR EQUAL.
2. ROUTE BACKFLOW PREVENTER DRAIN LINE TO CAST IRON FLOOR DRAIN AND TERMINATE WITH 2" AIR GAP (MINIMUM).
3. PLUMBING CONTRACTOR SHALL PROVIDE A WATER METER (SENSUS W-120-DR OR EQUAL) WITH REMOTE READOUT (SENSUS 7113-AC OR EQUAL). PLUMBING CONTRACTOR SHALL COORDINATE WITH E.C. AND LANDLORD FOR REMOTE READOUT LOCATION. PLUMBING CONTRACTOR SHALL COMPLY WITH ANY CODE OR LANLORD RESTRICTIONS.

4 P5.1 BACKFLOW PREVENTER (BFP) WITH REMOTE METER DETAIL
NOT TO SCALE

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STATE OF MICHIGAN
KEITH E. MATTISON
ENGINEER
No. 6201060742
LICENSED PROFESSIONAL ENGINEER
[illegible]
12/18/25

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ARCH PROJECT # RDU 25-174

PLUMBING DETAILS

SHEET # P5.1

PLUMBING FIXTURE/EQUIPMENT SCHEDULE

ITEM	FIXTURE	SOIL OR WASTE	VENT	COLD WATER	HOT WATER	TEMPD WATER	DESCRIPTION	MANUFACTURER / MODEL NUMBER
ECO	EXTERIOR CLEANOUT	--	--	--	--	--	CAST IRON CLEANOUT WITH THREADED ADJUSTABLE HOUSING, ROUND SCORIATED HEAVY CAST IRON COVER.	JOSAM / MODEL: 56000
								WADE / MODEL: 6000Z
								ZURN / MODEL: Z-1400
FCO	FLOOR CLEANOUT	--	--	--	--	--	CAST IRON CLEANOUT WITH THREADED ADJUSTABLE HOUSING, ROUND SCORIATED HEAVY CAST IRON COVER.	JOSAM / MODEL: 56000
								WADE / MODEL: 6000Z
								ZURN / MODEL: Z-1400
WCO	WALL CLEANOUT	--	--	--	--	--	CAST IRON CLEANOUT TEE WITH INLET/OUTLET SPIGOT AND THREADED BRASS PLUG, WITH STAINLESS STEEL ACCESS COVER.	JOSAM / MODEL: 58510
								WADE / MODEL: 8560E
								ZURN / MODEL: Z-1446-BP
FD 1	FLOOR DRAIN (2")	3"	2"	--	--	--	LIGHT DUTY ADJUSTABLE PVC WITH THREADED ADAPTOR AND 5" DIAMETER NICKEL BRONZE RING AND FASTENED GRATE	ZURN / MODEL: FD-2210
								SIOUX CHIEF 842
								OATEY 72000
BFP 1	BACKFLOW PREVENTER	--	--	VERIFY	--	--	REDUCED PRESSURE ZONE BACKFLOW PREVENTER, CAST BRONZE CONSTRUCTION WITH QUARTER TURN FULL-PORT BALL VALVES AND BRONZE STRAINER. DUAL CHECK VALVES - BRONZE BODY, STAINLESS STEEL SPRINGS, SILICONE DISC, PLASTIC DISC MODULES.	WATTS / MODEL: 009M2QTS
								WILKINS / MODEL: 975XLS
								FEBCO / MODEL: 860
MV	MIXING VALVE ☑	--	--	1/2"	1/2"	--	THERMOSTATIC, 125 PSIG, 200 DEG F BRONZE BODY, STAINLESS STEEL PISTON LINER, CHECK VALVES SIZE PER PIPE CONNECTIONS. ASSE 1070 COMPLIANT.	POWERS SERIES LF495
								WATTS / LFUSG-B
								LEONARD SERIES 170
WHA	WATER HAMMER ARRESTOR	--	--	1/2"	--	--	STAINLESS STEEL CASING WITH STAINLESS STEEL BELLOWS, PRECHARGED WITH NITROGEN. SIZED PER PDI-WH201	WADE / SHOKSTOP
								JOSAM / MODEL: 75000
								ZURN / SHOKTROL
HWC	WATER CLOSET ☑	4"	2"	1"	--	--	WHITE VITREOUS CHINA FLOOR MOUNTED TYPE, ELONGATED BOWL, ADA COMPLIANT, 1.6 GPF, WITH OPEN FRONT SEAT LESS COVER, OLSONITE #95 OR EQUIVALENT. PRESSURE ASSISTED.	AM. STD. "CADET"
L 1	LAVATORY ☑	1-1/4"	1-1/2"	--	--	1/2"	UNDER-MOUNT LAVATORY, WHITE VITREOUS CHINA, KOHLER K-13461-PC BATTERY OPERATED SENSOR FAUCET, 0.5 GPM AERATOR, ONE QUART CYCLE. PROVIDE WITH MCGUIRE PW2125HDWC INSULATED OFFSET WASTE ASSEMBLY WITH GRID STRAINER, AND WATTS LFUSG-B ASSE 1070 LISTED MIXING VALVE.	KOHLER / K-2084
ET	EXPANSION TANK	--	--	3/4"	--	--	EXPANSION TANK, EXPANSION MEMBRANE 150 PSI, 160° F, 2 GALLON CAPACITY.	WATTS SERIES DET
								AMTROL SERIES ST
								WILKINS SERIES WXTP
MS	MOP SINK	3"	2"	3/4"	3/4"	--	24" SQUARE FLOOR-MOUNTED MOP SINK, WHITE MOLDED STONE, WITH CHICAGO FAUCET 897-CCP WITH VACUUM BREAKER, PAIL HOOK, AND 3/4" HOSE CONNECTION.	STERN WILLIAMS / MTB-2424
TS	TRAP SEAL	3"	--	--	--	--	WATERLESS INLINE DRAIN TRAP SEAL. HDPE HOUSING, SILICONE DIAPHRAGM, AND SOFT EPDM RUBBER SEALING GASKET. ASSE 1072 COMPLIANT.	RECTORSEAL / SURESEAL SS3009V

ELECTRIC WATER HEATER SCHEDULE

MARK	LOCATION	MANUF.	MODEL	TANK CAPACITY	INPUT (KW)	RECOVERY RATE (100°F RISE)	ELECTRICAL V/PH/HZ	NOTES
WH-1	UTILITY ROOM	A.O. SMITH	DEL-6	6 GALLON	2	8 GPH	240/1/60	A THRU G

NOTES:
A. EQUIPMENT AND ALL ASSOCIATED WATER SIDE PIPING, VALVES, AND ACCESSORIES SHALL BE PROVIDED BY PLUMBING CONTRACTOR.
B. EQUIPMENT SHALL MEET ASHRAE 90.1 STANDARDS FOR THERMAL EFFICIENCY AND STANDBY LOSS.
C. PROVIDE FACTORY INSTALLED ANODE ROD(S) TO PREVENT ELECTROLYTIC CORROSION OF TANK.
D. PROVIDE FACTORY INSTALLED TEMPERATURE AND PRESSURE SAFETY RELIEF VALVE (T&P VALVE).
E. PLUMBING CONTRACTOR SHALL PROVIDE HARD COPPER DRAIN LINE FROM T&P VALVE DOWN TO AN APPROVED RECEPTOR WITH AIR GAP. PIPING TO BE FULL SIZE OF T & P VALVE DISCHARGE CONNECTION.
F. DISCONNECT SWITCH TO BE PROVIDED BY ELECTRICAL CONTRACTOR. PLUMBING CONTRACTOR TO COORDINATE INSTALLATION WITH ELECTRICAL CONTRACTOR.
G. REFER TO WATER HEATER DETAIL FOR ADDITIONAL INSTALLATION INFORMATION.

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PLUMBING SCHEDULES

SHEET # **P6.1**

GENERAL

A. USE THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND SHOP DRAWINGS.
B. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL CONTRACT DOCUMENTS AND LATEST ADDENDA, AS WELL AS SUBMITTING TO ALL SUBCONTRACTORS AND SUPPLIERS PRIOR TO SUBMITTING SHOP DRAWINGS.
C. DO NOT SCALE DRAWINGS OR AUTO-DIMENSION ELECTRONIC FILES. NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES IN WRITING PRIOR TO FABRICATION OR CONSTRUCTION.
D. COMPARE ALL CONTRACT DRAWINGS AND REPORT ANY DISCREPANCIES BETWEEN DISCIPLINES, AND WITHIN A GIVEN DISCIPLINE, TO THE ARCHITECT AND ENGINEER PRIOR TO FABRICATION AND ERECTION.
E. IF A CONFLICT EXISTS AMONG THE STRUCTURAL DRAWINGS OR GENERAL NOTES, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, GOVERNS.
F. COORDINATE ALL ELEVATIONS AND DIMENSIONS, INCLUDING BUT NOT LIMITED TO, OPENINGS IN WALLS AND IN ROOF AND FLOOR SYSTEMS, WITH THE ARCHITECTURAL, PLUMBING, ELECTRICAL, AND MECHANICAL PLANS.
G. VERIFY ALL DIMENSIONS, ELEVATIONS, AND ANY OTHER EXISTING CONDITIONS. NOTIFY THE ARCHITECT AND ENGINEER OF DISCREPANCIES BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK. DURING THE CONSTRUCTION PROCESS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF THE EXISTING STRUCTURE AND TO PROTECT FROM DAMAGE ANY PORTIONS THAT REMAIN. THE SHORING AND BRACING SHOWN (IF ANY) IS A PARTIAL AND SCHEMATIC REPRESENTATION. DETERMINE THE ERECTION PROCEDURE TO ENSURE THE STABILITY AND SAFETY OF THE BUILDING AND ITS COMPONENTS DURING CONSTRUCTION.
H. THE COMPLETED LATERAL-FORCE RESISTING SYSTEMS (LFRS), INCLUDING THE DIAPHRAGMS, ARE REQUIRED TO RESIST LATERAL LOADS AND PROVIDE STABILITY UNDER GRAVITY LOADS. DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL BRACING DURING CONSTRUCTION TO MAINTAIN THE STABILITY AND SAFETY OF ALL STRUCTURAL ELEMENTS UNTIL THE LATERAL-LOAD RESISTING OR STABILITY-PROVIDING SYSTEM IS COMPLETELY INSTALLED AND THE STRUCTURE IS COMPLETELY TIED TOGETHER.
I. UNLESS NOTED OTHERWISE, DETAILS SHOWN ARE TYPICAL FOR ALL SIMILAR CONDITIONS.
J. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS, AS WELL AS SAFETY PRECAUTIONS AND PROGRAMS.
K. BRITT, PETERS & ASSOCIATES, INC. IS NOT RESPONSIBLE FOR ACTS OR OMISSIONS OF THE CONTRACTOR, NOR FAILURE TO PERFORM WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
L. PERIODIC SITE OBSERVATION BY BRITT, PETERS & ASSOCIATES, INC. IS FOR DETERMINING IF THE WORK IS PROCEEDING IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. STRUCTURAL OBSERVATIONS ARE NOT INTENDED AS QUALITY CONTROL (CONTRACTOR'S RESPONSIBILITY), QUALITY ASSURANCE (SPECIAL INSPECTOR'S RESPONSIBILITY), NOR TO CONFIRM THE QUALITY OR QUANTITY OF THE WORK.
M. THE BUILDING OWNER IS RESPONSIBLE FOR PERIODIC MAINTENANCE TO ENSURE STRUCTURAL INTEGRITY. MAINTENANCE INCLUDES, BUT IS NOT LIMITED TO, STEEL/CONCRETE COATINGS, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS, AND CRACKS IN CONCRETE, AND CLEANING OF EXPOSED STRUCTURAL ELEMENTS.

DESIGN CRITERIA

A. STRUCTURAL DRAWINGS ARE BASED ON THE REQUIREMENTS OF THE 2021 INTERNATIONAL BUILDING CODE , AND THE REFERENCED SECTIONS WITHIN.
B. DEAD LOADS:
  1. ROOF SYSTEMS:
    a. WOOD (25 PSF TOTAL)
      1. STRUCTURE 11 PSF
      2. MEP 4 PSF
      3. INSULATION AND ROOFING 10 PSF
C. LIVE LOADS:
  1. LIVE LOADS ARE BASED ON THE MORE RESTRICTIVE OF THE UNIFORM LOAD OR THE CONCENTRATED LOAD LISTED ACTING OVER A 6.25 SQUARE FOOT AREA. LIVE LOADS HAVE BEEN REDUCED AS PRESCRIBED IN THE AFOREMENTIONED BUILDING CODE.

LIVE LOADS

CATEGORY	UNIFORM LOAD (PSF)	CONCENTRATED LOAD (LBS)
ROOFS: ALL ROOF SURFACES SUBJECT TO WORKERS		300
ROOFS: ORDINARY ROOF	20	

D. DESIGN SNOW LOADS:
  1. GROUND SNOW LOAD: P_G 25 PSF
  2. FLAT ROOF SNOW LOAD: P_F 22.5 PSF
  3. SNOW EXPOSURE FACTOR: C_E 1.0
  4. SNOW THERMAL FACTOR: C_T 1.0
  5. SLOPE FACTOR: C_S 1.0
  6. SNOW IMPORTANCE FACTOR: I_S 1.0
  7. DRIFT SURCHARGE: P_D 9.8 PSF
  8. SNOW DRIFT WIDTH: w 4.5 FT
E. DESIGN WIND LOADS:
  1. BASIC WIND SPEED: V_{ULT} 108 MPH (3-SEC GUST)
  2. BASIC WIND SPEED: V_{ASD} 84 MPH (3-SEC GUST)
  3. RISK CATEGORY: II
  4. WIND EXPOSURE: B
  5. INTERNAL PRESSURE COEFF: GC_{PI} ±0.18
  6. COMPONENTS & CLADDING WIND PRESSURES (ULTIMATE):

Ultimate Design Wind Pressure (psf):

			Effective Wind Area (sq ft)					
Walls:			10	20	50	100	200	500
Interior	Zone 4	+	16.0	16.0	16.0	16.0	16.0	16.0
		-	-17.1	-16.4	-16.0	-16.0	-16.0	-16.0
Edge	Zone 5	+	16.0	16.0	16.0	16.0	16.0	16.0
		-	-21.0	-19.6	-17.8	-16.4	-16.0	-16.0
Roof:			10	20	50	100	200	500
Interior	Zone 1	+	16.0	16.0	16.0	16.0	16.0	16.0
		-	-27.4	-25.6	-23.2	-21.4	-19.6	-17.2
Interior	Zone 1'	+	16.0	16.0	16.0	16.0	16.0	16.0
		-	-16.0	-16.0	-16.0	-16.0	-16.0	-16.0
Edge	Zone 2	+	16.0	16.0	16.0	16.0	16.0	16.0
		-	-36.2	-33.8	-30.8	-28.4	-26.1	-23.0
Corner	Zone 3	+	16.0	16.0	16.0	16.0	16.0	16.0
		-	-49.3	-44.7	-38.5	-33.8	-29.2	-23.0
Overhang:			10	20	50	100	200	500
Edge	Zone 2	+	16.0	16.0	16.0	16.0	16.0	16.0
		-	-33.5	-30.4	-26.3	-23.2	-20.1	-16.0
Corner	Zone 3	+	16.0	16.0	16.0	16.0	16.0	16.0
		-	-46.7	-41.3	-34.1	-28.6	-23.2	-16.0
Parapet:			10	20	50	100	200	500
Edge	Zone 2	+	57.4	53.7	48.8	45.1	41.4	36.4
		-	-33.9	-32.2	-29.9	-28.2	-26.5	-24.2
Corner	Zone 3	+	73.6	67.0	58.3	51.7	45.1	36.4
		-	-38.8	-36.2	-32.8	-30.2	-27.6	-24.2

WIDTH OF ZONE, a = 6FT

F. SEISMIC LOADS:
  1. RISK CATEGORY: II
  2. SEISMIC IMPORTANCE FACTOR: I_E 1.0
  3. SHORT PERIOD SPECTRAL RESPONSE ACCELERATION: S_S 0.097 g
  4. 1-SEC PERIOD SPECTRAL RESPONSE ACCELERATION: S_1 0.045 g
  5. SITE CLASS: D (ASSUMED)
  6. SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION: S_{DS} 0.104 g
  7. 1-SEC PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION: S_{D1} 0.072 g
  8. SEISMIC DESIGN CATEGORY: B
  9. BASIC SEISMIC-FORCE RESISTING SYSTEM: LIGHT-FRAME (WOOD) WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE
  10. DESIGN BASE SHEAR: V 0.40 K
  11. SEISMIC RESPONSE COEFFICIENT: C_S 0.02
  12. RESPONSE MODIFICATION FACTOR: R 6.5
  13. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
G. RAIN LOADS:
  1. RAIN INTENSITY (100-YEAR STORM): I 2.67 IN/HR
H. VERIFY ALL MECHANICAL EQUIPMENT WEIGHTS, LOCATIONS,, AND ASSOCIATED OPENINGS WITH THE MECHANICAL CONTRACTOR, AND SUBMIT INFORMATION PRIOR TO FABRICATION OF THE SUPPORTING STRUCTURE. NOTIFY THE ENGINEER IF THE ACTUAL WEIGHT EXCEEDS THE WEIGHT INDICATED ON THE STRUCTURAL DRAWINGS.

FOUNDATIONS

A. AN ALLOWABLE BEARING CAPACITY OF 1,500 PSF HAS BEEN ASSUMED AND MUST BE CONFIRMED BY A QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF CONCRETE.
B. REVIEW THE GEOTECHNICAL REPORT AND ADHERE TO ALL RECOMMENDATIONS WITHIN, INCLUDING CUT, SUBGRADE PREPARATION, FILL, ETC.
C. ALL SOILS WORK, INCLUDING BACKFILL OF UTILITY TRENCHES AND THE VERIFICATION OF BEARING CAPACITY MUST BE UNDER THE DIRECTION OF A QUALIFIED GEOTECHNICAL ENGINEER. PROXIMITY OF UTILITY TRENCHES TO BUILDING FOUNDATION SYSTEM MUST BE AS APPROVED BY THE GEOTECHNICAL ENGINEER TO ENSURE INTEGRITY OF THE BEARING SOILS.
D. ALL FOUNDATIONS BEAR ON UNDISTURBED EARTH OR ENGINEERED FILL AT ELEVATIONS SHOWN ON PLANS AND DETAILS. COORDINATE FINAL TOP OF FOOTING ELEVATIONS WITH THE ARCHITECTURAL ELEVATIONS, MEP DRAWINGS, AND CIVIL GRADING PLANS PRIOR TO PLACEMENT. FOUNDATION STEPS INDICATED ARE APPROXIMATE, UNLESS NOTED OTHERWISE, AND MUST BE FIELD COORDINATED. THE BOTTOM OF EXTERIOR FOUNDATION ELEVATIONS MUST BE BELOW THE FROST DEPTH ELEVATION 42 INCHES MEASURED FROM EXTERIOR FINISHED GRADE.
E. BEAR FLOOR SLABS ON 4 INCH MINIMUM DRAINAGE COURSE (COMPACTED STONE) UNLESS NOTED OTHERWISE IN THE GEOTECHNICAL REPORT OR DRAWINGS. PLACE THE VAPOR RETARDER BETWEEN THE DRAINAGE COURSE AND THE SLAB. VAPOR RETARDER IS ASTM E1745, CLASS B, 15 MIL UNLESS NOTED OTHERWISE. PLACE, PROTECT, AND REPAIR PER ASTM E1643 AND MANUFACTURER'S INSTRUCTIONS.
F. DO NOT INSTALL FOUNDATION CONCRETE UNTIL ALL FOUNDATION WORK HAS BEEN COORDINATED WITH UNDERGROUND UTILITIES. NOTIFY THE ENGINEER OF ALL CONFLICTS BETWEEN FOUNDATIONS AND UTILITIES.
G. ALL FOUNDATIONS, OR PORTIONS THEREOF BELOW GRADE, MAY BE EARTH FORMED BY NEAT EXCAVATIONS. DO NOT PLACE FOUNDATIONS, SLABS, OR OTHER CONCRETE ON FROZEN SUBGRADE OR IN STANDING WATER.
H. CENTER ALL FOUNDATIONS ON WALLS AND/OR COLUMNS, UNLESS NOTED OTHERWISE.
I. DETERMINE THE EXTENT OF CONSTRUCTION DEWATERING REQUIRED FOR THE EXCAVATIONS. SUBMIT THE PROPOSED CONSTRUCTION DEWATERING PLAN TO THE GEOTECHNICAL ENGINEER FOR REVIEW PRIOR TO EXCAVATION.
J. DO NOT PLACE UNBALANCED BACKFILL UNLESS OTHERWISE BRACED OR SUPPORTED AGAINST OVERTURNING.
K. DO NOT ALLOW HEAVY EQUIPMENT WITHIN A DISTANCE TO EARTH RETAINING WALLS EQUAL TO THE HEIGHT OF RETAINED EARTH PLUS TWO FEET. USE ONLY HAND-OPERATED VIBRATORY COMPACTORS FOR COMPACTING BEHIND RETAINING WALLS.

CONCRETE

A. CONCRETE MUST CONFORM TO THE CONCRETE PROPERTIES SPECIFIED IN THE CONCRETE PROPERTIES TABLE.
B. CONCRETE MUST HAVE ALLOWABLE UNIT SHRINKAGE OF 0.045% AT 28 DAYS (SEE ASTM C157).
C. SLABS TO RECEIVE MOISTURE SENSITIVE FLOOR COVERINGS MUST HAVE MAXIMUM WATER/CEMENTITIOUS MATERIAL RATIO OF 0.45.
D. CONCRETE CONSTRUCTION MUST CONFORM TO THE CURRENT "ACI MANUAL OF CONCRETE PRACTICE".
E. ALL CONCRETE PLACEMENT SHALL ADHERE TO APPLICABLE SECTIONS OF ACI 305 AND ACI 306 FOR HOT WEATHER/COLD WEATHER CONCRETE PLACEMENT.
F. CONCRETE MATERIALS MUST CONFORM TO THE FOLLOWING SPECIFICATIONS:
  1. PORTLAND CEMENT: ASTM C150, TYPE I OR II
  2. AGGREGATE (NORMAL WEIGHT): ASTM C33
G. ALL REINFORCEMENT MUST CONFORM TO THE FOLLOWING SPECIFICATIONS:
  1. ALL REINFORCING, UNO: ASTM A615 GRADE 60
  2. DEFORMED BAR ANCHORS (DBA): ASTM A496 (75 KSI)
  3. WELDED WIRE REINFORCEMENT (WWR):
    a. SMOOTH WIRE: ASTM A1064 (65 KSI)
    b. DEFORMED WIRE: ASTM A1064 (70 KSI)
    c. POLYPROPYLENE FIBRILLATED FIBER MAY BE USED TO SUBSTITUTE WWR IN SLABS ON GRADE WHEN ADDED TO CONCRETE MIX ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDED DOSAGES.
H. REINFORCEMENT DETAILING:
  1. DETAIL AND PLACE REINFORCEMENT IN ACCORDANCE WITH ACI 315.
  2. DEVELOPMENT AND SPLICE LENGTHS ARE IN TENSION UNLESS NOTED OTHERWISE. REFER TO THE REINFORCING BAR LAP LENGTH SCHEDULE ON THE TYPICAL DETAIL SHEETS.
  3. LAP WWR ONE CROSSWIRE SPACING PLUS 2".
  4. INSTALL CORNER BARS AT ALL FOOTINGS AND WALL INTERSECTIONS TO MATCH HORIZONTAL REINFORCING SIZE AND SPACING. AT INTERSECTIONS OF CONTINUOUS SPREAD FOOTINGS, EXTEND ALL BARS TO FAR SIDE OF INTERSECTING FOOTING.
  5. INSTALL AND SECURE REINFORCEMENT TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT. PROVIDE THE FOLLOWING CONCRETE COVER FOR REINFORCING ACI 318 SECTION 7.7 AND IBC TABLE 720.1, UNLESS SPECIFICALLY NOTED OTHERWISE:
    a. CAST AGAINST EARTH: 3"
    b. EXPOSED TO EARTH/WEATHER: #5 & SMALLER 1 1/2"
  6. INSTALL DOWELS TO MATCH REINFORCEMENT SIZE AND SPACING INDICATED, UNLESS NOTED OTHERWISE.
I. CAST FOUNDATION WALLS, GRADE BEAMS, AND FOOTINGS IN ALTERNATE PANELS NOT TO EXCEED 60'-0" IN LENGTH. INSTALL SHEAR KEYS AT EACH CONSTRUCTION JOINT AND LOCATED AT 1/3 POINTS OF SPANS.
J. DO NOT USE HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS UNLESS SHOWN ON THE DRAWINGS. THE ENGINEER MUST APPROVE ALL DEVIATIONS OR ADDITIONAL JOINTS IN WRITING.
K. CAST SLABS AND BEAMS/JOISTS MONOLITHICALLY UNLESS NOTED OTHERWISE.
L. CHAMFER ALL PERMANENTLY EXPOSED CONCRETE EDGES 3/4 INCH, UNLESS NOTED OTHERWISE.
M. REFERENCE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS OF OPENINGS AND SLEEVES IN CONCRETE WALLS AND SUPPORTED FLOORS. SPREAD REINFORCEMENT AT OPENINGS AND SLEEVES UNLESS OTHERWISE INDICATED. DO NOT CUT REINFORCEMENT.
N. SLOPE CONCRETE SLABS TO FLOOR DRAINS SHOWN ON MECHANICAL, PLUMBING, CIVIL, AND ARCHITECTURAL DRAWINGS.
O. BOND NEW CONCRETE TO HARDENED CONCRETE WITH A STRUCTURAL ADHESIVE BONDING AGENT PER ASTM C1059. INSTALL PER THE MANUFACTURER'S INSTRUCTIONS.
P. NO HOLES OR OPENINGS THROUGH FOUNDATION WALLS AND/OR FOOTINGS WITHOUT ENGINEER'S APPROVAL.
Q. DO NOT EMBED ALUMINUM IN CONCRETE.

CONCRETE PROPERTIES

USAGE	STRENGTH (PSI)	TYPE	COMMENTS	DURABILITY CLASSIFICATION
ALL CONCRETE NOT OTHERWISE SPECIFIED	4000	NWT		F0, S0, W0, C1
FOOTINGS	4000	NWT		F0, S0, W0, C1
SLAB-ON-GRADE INTERIOR	4000	NWT		F0, S0, W0, C0

CONCRETE PROPERTIES TABLE NOTES:
1. MINIMUM STRENGTH AND MAXIMUM DENSITY MEASURED AT 28 DAYS.
2. NWT = NORMAL WEIGHT CONCRETE
3. DURABILITY CLASSIFICATION INDICATES CONCRETE REQUIREMENTS BY EXPOSURE CLASS, REFER TO TABLE 19.3.2.1 OF ACI 318.

ROUGH CARPENTRY

A. GENERAL
  1. LUMBER:
    a. GRADING PER DOC PS 20 AND APPLICABLE GRADING AGENCY RULES.
      1. FACTORY MARK EACH PIECE WITH GRADING AGENCY GRADE STAMP.
    b. MAXIMUM MOISTURE CONTENT: 19%
    c. PROTECT MATERIALS FROM WEATHER.
    d. SORT AND SELECT LUMBER SO NATURAL CHARACTERISTICS DO NOT INTERFERE WITH INSTALLATION OR FASTENING.
    e. PASS PLUMBING AND CONDUIT THROUGH HOLES, NOT NOTCHES, IN STUDS, SILLS, AND PLATES. CENTER HOLES IN THE MEMBER DEPTH. USE GALVANIZED NAIL STOPPERS (16 GAGE MINIMUM) ON BOTH FACES OF BORED MEMBERS IN ACCORDING WITH THE GOVERNING PLUMBING/ELECTRICAL CODE.
  2. PRESERVATIVE-TREATED (P.T.):
    a. PRESERVATIVE TREATMENT PROCESS: AWPA U1
      1. CATEGORY UC2 FOR INTERIOR CONSTRUCTION NOT IN CONTACT WITH GROUND.
      2. CATEGORY UC3b FOR EXTERIOR CONSTRUCTION NOT IN CONTACT WITH GROUND.
      3. CATEGORY UC4a FOR ITEMS IN CONTACT WITH GROUND.
      4. CHEMICALS USED MUST BE ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND NOT CONTAIN ARSENIC, CHROMIUM, NOR AMMONIA-CAL COPPER ZINC ARSENATE (ACZA). DO NOT USE INORGANIC BORON (SBX) FOR SILL PLATES.
    b. KILN-DRY AFTER TREATMENT TO A MAXIMUM MOISTURE CONTENT OF 19 PERCENT.
    c. MARK LUMBER WITH TREATMENT QUALITY MARK OF AN INSPECTION AGENCY APPROVED BY THE ALSC BOARD.
    d. UNLESS NOTED OTHERWISE, INSTALL PT LUMBER AS FOLLOWS:
      1. EXTERIOR LOCATIONS.
      2. WOOD MEMBERS IN CONTACT WITH MASONRY, MORTAR, GROUT OR CONCRETE.
      3. WOOD FRAMING MEMBERS LESS THAN 18 INCHES ABOVE GROUND IN CRAWLSPACES OR UNEXCAVATED AREAS.
B. DIMENSIONAL LUMBER:
  1. UNLESS NOTED OTHERWISE: SOUTHERN PINE NO 2 OR BETTER
  2. EXTERIOR WALLS: SOUTHERN PINE NO 2 OR BETTER
  3. INTERIOR LOAD BEARING WALLS: SOUTHERN PINE NO 2 OR BETTER,
C. ENGINEERED LUMBER AND STRUCTURAL COMPOSITE LUMBER (SCL):
  1. INSTALL ENGINEERED WOOD PRODUCTS PER MANUFACTURER'S WRITTEN INSTRUCTIONS. FOLLOW MANUFACTURER INSTRUCTIONS FOR MULTI-PLY FASTENING AS WELL AS LIMITS ON HOLE SIZES AND LOCATIONS.
  2. SIZES INDICATED ARE NET DIMENSIONS.
  3. LAMINATED-VENEER LUMBER (LVL):
    a. STRUCTURAL CAPACITIES IN ACCORDANCE WITH ASTM D5456.
    b. ALLOWABLE UNIT STRESSES FOR DRY CONDITIONS AS FOLLOWS:
      1. EXTREME FIBER STRESS IN BENDING, EDGEWISE: 2,600 PSI
      2. MODULUS OF ELASTICITY, EDGEWISE: 2,000,000 PSI
D. FASTENERS:
  1. NAILS, BRADS, AND STAPLES: ASTM F1667
  2. EXPOSED FASTENERS AND FASTENERS USED IN PRESERVATIVE-TREATED OR FIRE-TREATED LUMBER ARE GALVANIZED TO ASTM STANDARD B695 - CLASS 55, OR A153 - CLASS D.
  3. FASTENERS USED IN PROXIMITY TO SALTWATER SPRAY ARE MANUFACTURED FROM TYPE 316 STAINLESS STEEL OR HOT DIP GALVANIZED.
  4. REPAIR DAMAGED GALVANIZED COATINGS PRIOR TO CONCEALING.
  5. AS A MINIMUM, FASTEN ALL WOOD FRAMING TO COMPLY WITH THE "FASTENING SCHEDULE" OF THE REFERENCED BUILDING CODE AND THE ICC-ES EVALUATION REPORT FOR FASTENERS.
  6. USE STEEL COMMON NAILS UNLESS NOTED OTHERWISE.
  7. STAGGER FASTENERS TO PREVENT SPLITTING, INCLUDING PARALLEL TO GRAIN SPLITTING.
  8. FASTEN MULTI-PLY MEMBERS TOGETHER USING (3) ROWS OF 16d NAILS AT 12 INCHES OC, UNLESS NOTED OTHERWISE.
E. CONNECTORS:
  1. INSTALL CONNECTORS COMPLYING WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. INSTALL FASTENERS THROUGH EACH FASTENER HOLE, UNLESS NOTED OTHERWISE.
  2. CONNECTORS INDICATED ARE MANUFACTURED BY SIMPSON STRONG-TIE, INC. CONNECTORS BY OTHER MANUFACTURERS MAY BE USED IF THE LOAD CAPACITY IS EQUAL TO OR GREATER THAN THE CONNECTOR SPECIFIED. USE MANUFACTURER'S RECOMMENDED FASTENERS, UNLESS NOTED OTHERWISE.
  3. CONNECTORS HAVE A MINIMUM CORROSION PROTECTION OF G90 GALVANIZATION COMPLYING WITH ASTM A653.
  4. CONNECTORS IN CONTACT WITH PRESSURE TREATED OR FIRE TREATED LUMBER ARE MANUFACTURED FROM SIMPSON ZMAX (G185 GALVANIZED) STEEL COMPLYING WITH ASTM A653.
  5. CONNECTORS IN PROXIMITY TO SALTWATER SPRAY ARE MANUFACTURED FROM TYPE 316 STAINLESS STEEL OR HOT DIP GALVANIZED TO ASTM STANDARD A123 - CLASS C.
F. ERECTION TOLERANCES:
  1. FRAMING MEMBERS COVERED BY FINISHES SUCH AS WALLBOARD, PLASTER OR CERAMIC TILE SET IN A MORTAR SETTING BED, MUST BE WITHIN THE FOLLOWING LIMITS:
    a. LAYOUT OF WALLS AND PARTITIONS: 1/4 INCH FROM THE INTENDED POSITION
    b. PLATES AND RUNNERS: 1/4 INCH IN 8 FEET FROM A STRAIGHT LINE
    c. STUDS: 1/4 INCH IN 8 FEET OUT OF PLUMB, NOT CUMULATIVE
    d. FACE OF FRAMING MEMBERS: 1/4 INCH IN 8 FEET FROM A TRUE PLANE
  2. FRAMING MEMBERS COVERED BY CERAMIC TILE SET IN DRY-SET MORTAR, LATEX-PORTLAND CEMENT MORTAR OR ORGANIC ADHESIVE MUST BE WITHIN THE FOLLOWING LIMITS:
    a. LAYOUT OF WALLS AND PARTITIONS: 1/4 INCH FROM THE INTENDED POSITION
    b. PLATES AND RUNNERS: 1/8 INCH IN 8 FEET FROM A STRAIGHT LINE
    c. STUDS: 1/8 INCH IN 8 FEET OUT OF PLUMB, NOT CUMULATIVE
    d. FACE OF FRAMING MEMBERS: 1/8 INCH IN 8 FEET FROM A TRUE PLANE
G. WALL CONSTRUCTION:
  1. UNLESS NOTED OTHERWISE USE SINGLE BOTTOM PLATE AND DOUBLE TOP PLATES USING 2x MEMBERS WITH WIDTHS EQUAL TO THE WALL STUDS. FASTEN PLATES TO SUPPORTING CONSTRUCTION. SPLICE TOP PLATES WITHIN THE CENTER THIRD OF THE TOTAL WALL LENGTH WITH A 4 FOOT MINIMUM LAP, UNLESS NOTED OTHERWISE.
  2. EXTERIOR WALLS: 2x6 STUDS AT 16 INCHES OC MAX SPACING, UNLESS NOTED OTHERWISE
  3. INTERIOR WALLS: 2x6 STUDS AT 16 INCHES OC MAX SPACING, UNLESS NOTED OTHERWISE
  4. INSTALL HORIZONTAL BLOCKING AT WALL MIDHEIGHT. BLOCKING IS 2x MEMBERS WITH WIDTHS EQUAL TO THE STUDS.
  5. CONSTRUCT CORNERS AND INTERSECTIONS WITH THREE OR MORE STUDS.
  6. FRAME WALL OPENINGS WITH MULTIPLE JAMBS STUDS AND HEADERS AS INDICATED. INSTALL HEADER MEMBERS WITH THICKNESS EQUAL TO WIDTH OF THE WALL STUDS.

WOOD SHEATHING

A. GENERAL:
  1. WOOD SHEATHING REFERS TO WOOD STRUCTURAL PANELS, OF EITHER PLYWOOD OR ORIENTED STRAND BOARD (OSB).
  2. WOOD SHEATHING IS APA-RATED SHEATHING, COMPLYING WITH PRODUCT STANDARD DOC PS1 OR DOC PS2. WOOD SHEATHING MANUFACTURER MUST BE A MEMBER OF THE AMERICAN PLYWOOD ASSOCIATION (APA).
  3. PROTECT WOOD SHEATHING FROM WEATHER AND PROVIDE FOR AIR CIRCULATION AROUND STACKS AND UNDER COVERINGS.
  4. PANELS MUST HAVE FACTORY MARKS INDICATING COMPLIANCE WITH APPLICABLE STANDARDS.
  5. THICKNESS NOT LESS THAN INDICATED, AND AS REQUIRED TO COMPLY WITH SPECIFIED REQUIREMENTS.
  6. INSTALL SHEATHING WITH THE STRENGTH DIRECTION (TYPICALLY LONG DIMENSION) PERPENDICULAR TO FRAMING AND WITH END JOINTS STAGGERED.
  7. DO NOT USE MATERIALS WITH DEFECTS IMPAIRING THE QUALITY OF SHEATHING OR PIECES TOO SMALL TO USE WITH MINIMUM NUMBER OF JOINTS. LAYOUT PANELS TO SPAN BETWEEN AT LEAST THREE SUPPORT MEMBERS.
  8. COORDINATE SHEATHING INSTALLATION WITH FLASHING AND JOINT-SEALANT INSTALLATION SO MATERIALS ARE INSTALLED IN A SEQUENCE AND MANNER PREVENTING EXTERIOR MOISTURE FROM PASSING THROUGH THE COMPLETED ASSEMBLY.
  9. DO NOT BRIDGE BUILDING EXPANSION JOINTS.
  10. WHERE EITHER 2 INCH OR 2 1/2 INCH FASTENER SPACINGS ARE SPECIFIED TO 2 INCH OR LESS FRAMING MEMBERS, THE FRAMING MEMBER AT ADJOINING PANEL EDGES MUST BE 2 1/2 INCH WIDE OR GREATER. STAGGER FASTENERS AT PANEL EDGES IN TWO LINES.
B. PRESERVATIVE-TREATED (P.T.):
  1. PRESERVATIVE TREATMENT PROCESS: AWPA U1
    a. CATEGORY UC2 FOR INTERIOR CONSTRUCTION NOT IN CONTACT WITH GROUND.
    b. CATEGORY UC3b FOR EXTERIOR CONSTRUCTION NOT IN CONTACT WITH GROUND.
    c. CATEGORY UC4a FOR ITEMS IN CONTACT WITH GROUND.
    d. CHEMICALS USED MUST BE ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND NOT CONTAIN ARSENIC, CHROMIUM, NOR AMMONIA-CAL COPPER ZINC ARSENATE (ACZA).
  2. MARK SHEATHING WITH APPROPRIATE CLASSIFICATION MARKING OF AN INSPECTION AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
  3. UNLESS NOTED OTHERWISE, INSTALL PT SHEATHING IN CONTACT WITH MASONRY, MORTAR, GROUT OR CONCRETE, OR, WHEN USED WITH ROOFING, FLASHING, VAPOR BARRIERS, AND WATER PROOFING.
C. WALL SHEATHING (STRUCTURAL SHEATHING):
  1. SPAN RATING: NOT LESS THAN 32/16
  2. NOMINAL THICKNESS: NOT LESS THAN 15/32 INCH
  3. EXPOSURE AND DURABILITY CLASSIFICATION: EXPOSURE 1
  4. FASTENING METHOD, UNLESS NOTED OTHERWISE:
    a. FASTENERS: 8d NAILS
    b. BOUNDARY EDGE SPACING: 6 INCHES OC
    c. PANEL EDGE SPACING: 6 INCHES OC
    d. FIELD SPACING: 12 INCHES OC
  5. REFERENCE SHEARWALL DETAILS FOR SHEARWALL SHEATHING FASTENING, BLOCKING, AND OTHER DETAILS.
D. ROOF SHEATHING (STRUCTURAL SHEATHING):
  1. SPAN RATING: NOT LESS THAN 40/20
  2. NOMINAL THICKNESS: NOT LESS THAN 15/32 INCH
  3. EXPOSURE AND DURABILITY CLASSIFICATION: EXPOSURE 1
  4. FASTENING METHOD, UNLESS NOTED OTHERWISE:
    a. FASTENERS: 8d RING SHANK NAILS
    b. BOUNDARY EDGE SPACING: 6 INCHES OC
    c. PANEL EDGE SPACING: 6 INCHES OC
    d. FIELD SPACING: 12 INCHES OC
  5. UNLESS NOTED OTHERWISE, INSTALL BLOCKING AT ALL SHEATHING EDGES AND FASTEN SHEATHING EDGES TO BLOCKING ACCORDING TO PANEL EDGE SPACING.
E. FASTENERS:
  1. AS A MINIMUM, FASTENING TO COMPLY WITH THE "FASTENING SCHEDULE" OF THE REFERENCED BUILDING CODE AND THE ICC-ES EVALUATION REPORT FOR FASTENERS.
  2. USE STEEL COMMON NAILS INTO WOOD FRAMING AND SCREWS INTO COLD-FORMED STEEL FRAMING, UNLESS NOTED OTHERWISE.
  3. NAILS, BRADS, AND STAPLES: ASTM F1667.
  4. SCREWS FOR FASTENING SHEATHING TO WOOD FRAMING: ASTM C1002.
  5. SCREWS FOR FASTENING SHEATHING TO COLD-FORMED STEEL FRAMING: ASTM C954, EXCEPT WITH WAFER HEADS (MINIMUM HEAD DIA=0.333 INCHES) AND REAMER WINGS, LENGTH AS RECOMMENDED BY SCREW MANUFACTURER.
  6. FOR ROOF, PARAPET, AND WALL SHEATHING, USE FASTENERS WITH HOT-DIP ZINC COATING COMPLYING WITH ASTM A153 OR TYPE 304 STAINLESS STEEL.
  7. FOR ROOF, PARAPET, AND WALL SHEATHING WITH ORGANIC-POLYMER OR OTHER CORROSION-PROTECTION COATINGS, USE FASTENERS WITH A SALT-SPRAY RESISTANCE OF MORE THAN 800 HOURS ACCORDING TO ASTM B117.

POST-INSTALLED ANCHORS

A. ONLY USE POST-INSTALLED ANCHORS WHERE SPECIFIED ON THE DRAWINGS.
B. OBTAIN APPROVAL FROM THE ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
C. LOCATE EXISTING REBAR, REINFORCING, AND ANCHORS PRIOR TO DRILLING. DO NOT DAMAGE OR DISTURB EXISTING REBAR, REINFORCING OR ANCHORS.
D. INSTALL ANCHORS ACCORDING TO MANUFACTURER'S INSTRUCTIONS, INCLUDING, BUT NOT LIMITED TO: EXPIRATION DATE, INSTALLATION TEMPERATURE, DRILLING METHOD, HOLE SIZE, HOLE DEPTH, HOLE CLEANING, MIXING PROCEDURE, ANCHOR INSTALLATION, AND CURING.
E. FOR PROJECTS MEETING IBC 2012 OR LATER, ACI/CRSI ADHESIVE ANCHORS INSTALLER CERTIFICATION IS REQUIRED FOR ALL INSTALLERS OF ADHESIVE ANCHORS IN HORIZONTAL OR UPWARDLY INCLINED ORIENTATION. PROOF OF CERTIFICATION OR ON-SITE TRAINING FOR ALL ADHESIVE ANCHOR INSTALLERS SHALL BE PROVIDED TO THE EOR PRIOR TO INSTALLATION.
F. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR MINIMUM EDGE DISTANCES AND SPACING.
G. UNLESS NOTED OTHERWISE, EMBED ANCHORS IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT REQUIRED TO SUPPORT THE INTENDED LOAD.
H. ADHESIVE ANCHOR DESIGN BOND STRENGTH IS BASED ON CRACKED CONCRETE, ACI 355.4 TEMPERATURE CATEGORY B, AND INSTALLATIONS INTO DRY HOLES DRILLED USING A HAMMER DRILL INTO CONCRETE CURED FOR AT LEAST 21 DAYS AND NOT EXPOSED TO WATER FOR THE PRECEDING 14 DAYS. ADHESIVE ANCHORS MUST BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318.
I. INSPECT ANCHOR INSTALLATION PER APPLICABLE BUILDING CODE AND SPECIAL INSPECTION REQUIREMENTS.
J. SUBMIT SUBSTITUTION REQUESTS TO THE STRUCTURAL ENGINEER, INCLUDING CALCULATIONS PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER SHOWING THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE BUILDING CODE.
K. ACCEPTABLE PRODUCTS ARE:
  1. CONCRETE MECHANICAL ANCHORS:
    a. HILTI KB TZ2 SAFESET SYSTEM WITH ADAPTIVE TORQUE MODULE
    b. HILTI KWIK HUS-EZ
    c. SIMPSON STRONG-TIE TITEN-HD
    d. SIMPSON STRONG-TIE "STRONG-BOLT 2"
  2. CONCRETE ADHESIVE ANCHORS:
    a. HILTI RE500 V3 SAFESET SYSTEM
    b. HILTI HY200 V3 SAFESET SYSTEM
    c. SIMPSON STRONG-TIE "SET-XP"
    d. SIMPSON STRONG-TIE "AT-XP"
L. NON-ADHESIVE ANCHORS IN NEW CONCRETE SHALL NOT BE INSTALLED UNTIL CONCRETE HAS CURED A MINIMUM OF 7 DAYS AND SHALL NOT BE LOADED PRIOR TO CONCRETE CURING FOR 28 DAYS (UNLESS OTHERWISE SPECIFIED BY MANUFACTURER).
M. INSTALL ANCHORS PER THE MANUFACTURER PRINTED INSTALLATION INSTRUCTIONS (MPII), AS INCLUDED IN THE ANCHOR PACKAGING.
N. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THE ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF ANCHOR INSTALLATION.

SPECIAL INSPECTIONS AND TESTING

A. SPECIAL INSPECTIONS AND TESTING ARE PERFORMED IN ACCORDANCE WITH IBC CHAPTER 17 AND LOCAL JURISDICTION PROVISIONS, BY AN INDEPENDENT INSPECTION AND TESTING AGENCY. THE SPECIAL INSPECTOR MUST OBSERVE AND TEST THE WORK FOR CONFORMANCE TO THE CONTRACT DOCUMENTS.
B. THE SPECIAL INSPECTOR MUST FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD, AND ALL OTHER DESIGNATED INDIVIDUALS. ALL DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF NOT CORRECTED, TO THE PROPER DESIGN AUTHORITY AND THE BUILDING OFFICIAL.
C. THE SPECIAL INSPECTOR MUST SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK IS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE CONTRACT DOCUMENTS, SOILS REPORT, AND APPLICABLE WORKMANSHIP OF THE BUILDING CODE.
D. STATEMENT AND SCHEDULE OF SPECIAL INSPECTIONS IS PART OF THE CONTRACT DOCUMENTS.

SUBMITTALS

A. CONTRACTOR MUST REVIEW AND STAMP ALL SHOP DRAWINGS BEFORE SUBMITTING FOR REVIEW. SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND/OR ENGINEER FOR REVIEW. FABRICATE AND CONSTRUCT FROM THE REVIEWED SUBMITTALS. ALLOW 10 BUSINESS DAYS FOR EACH SUBMITTAL REVIEW UNLESS AN ALTERNATE REVIEW TIME IS AGREED UPON BY ALL PARTIES. IN THE EVENT MULTIPLE SUBMITTALS ARE SUBMITTED AT THE SAME TIME, THE CONTRACTOR MUST INDICATE WHICH SUBMITTALS HAVE PRIORITY.
B. MAINTAIN A RECORD SET OF APPROVED SHOP DRAWINGS IN THE FIELD.
C. SUBMIT IN WRITING ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO, THE STRUCTURE OR ANY PART OF THE STRUCTURE DETAILED, TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED SPECIFIC CHANGES ARE BEING REQUESTED.
D. PREPARE A LIST AND SCHEDULE OF ALL STRUCTURAL SUBMITTALS PRIOR TO CONSTRUCTION.
E. SUBMIT THE FOLLOWING SHOP DRAWINGS FOR THE ENGINEER'S REVIEW:
  1. CONCRETE MIX DESIGNS
  2. REINFORCING STEEL
  3. MISCELLANEOUS STEEL
  4. METAL AND FABRIC CANOPIES - CONNECTION TO BUILDING IS BY SUPPLIER (1, 3)
  5. EMBEDDED ITEMS (PLATES, ANGLES, BOLTS, ETC.) OR ITEMS ATTACHED TO THE STRUCTURAL FRAME FOR BUILDING CLADDING ATTACHMENT OR FOR ATTACHMENT OF OTHER ITEMS (2)
  6. FORMWORK, SHORING, BACKSHORING (1, 2)
  7. UNDERPINNING, SHORING, BRACING (1, 3)
  8. PENETRATIONS IN BEAMS AND JOISTS
  9. PREFABRICATED WOOD TRUSSES (1, 3)
F. SUBMIT ITEMS MARKED (1) SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED. SUBMIT ITEMS MARKED (2) FOR OWNER'S RECORD ONLY, AND WILL NOT HAVE THE ENGINEER'S SHOP DRAWING STAMP AFFIXED. SUBMIT ITEMS MARKED (3) WITH DESIGN CALCULATIONS SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED.
  1. THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED.
G. THE USE OF ELECTRONIC FILES OR REPRODUCTIONS OF CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES THEM TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.

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LICENSED PROFESSIONAL ENGINEER
12/19/2025

IONNA RECHARGERY

INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
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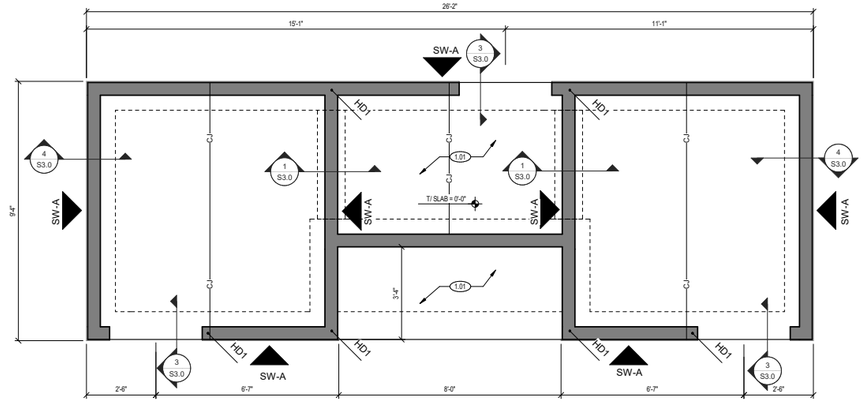
OWNER PROJECT CODE IL-0008
ARCH. PROJECT # RDU 25-174

GENERAL NOTES

SCALE: 12" = 1'-0"

SHEET # **S0.0**



1 FOUNDATION PLAN - EXTERIOR RESTROOM

1/2" = 1'-0"

FOUNDATION PLAN NOTES

1. REF PLAN FOR TOP OF SLAB ELEVATION (T/SLAB). COORD W/ ARCH AND CIVIL.
2. PROVIDE WOOD SHEATHING ON EXTERIOR SIDE OF EXTERIOR WALLS.
3. CONTRACTOR TO VERIFY ALL SLAB EDGE DIMENSIONS WITH ARCH DRAWINGS PRIOR TO CONSTRUCTION.
4. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR SLAB PENETRATIONS AND UNDERGROUND UTILITIES.
5. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENTS AND DIMENSIONS OF RAISED/DEPRESSED SLABS AND AREAS REQUIRING SLOPES AND DRAINS.
6. DIMS ARE FROM OUR/SIDE FACE OF SHEATHING.

FOUNDATION PLAN LEGEND

(##) DENOTES SHEET NOTE, REF SCHEDULE THIS SHEET

SW DENOTES WOOD SHEAR WALL, REF SCHEDULE AND TYPICAL DETAILS

CJ DENOTES SLAB CONTROL OR CONSTRUCTION JOINT, REF TYPICAL DETAILS

SHEAR WALL LEGEND

SW#
SHEAR WALL DESIGNATION

INDICATES WHICH SIDE OF WALL WOOD STRUCTURAL PANELS ARE TO BE LOCATED. SHEATHING SHALL BE CONTINUOUS TO TOP BEARING/CLOSURE PLATES. DO NOT TERMINATE SHORT.

HD#
INDICATES HOLDOWN. REF SCHEDULE.

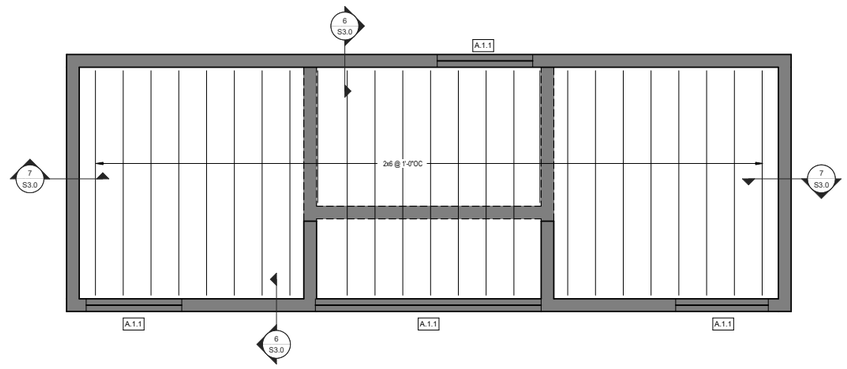
SHEET NOTE SCHEDULE - FOUNDATION PLAN	(##)
REF PLANS AND DETAILS FOR SHEET NOTES REQUIRED, NOT ALL NOTES APPLICABLE TO THIS SHEET	
MARK	**DESCRIPTION**
1.01	4" CONCRETE SLAB WITH 6x6-W2.9xW2.9 WWR OVER 15 MIL VAPOR BARRIER ON 4" DRAINAGE COURSE

SHEAR WALLS - WOOD (WSW)					
SHEAR WALL ID	SHEATHING	EDGE FASTENING	FIELD FASTENING	SHEAR CAPACITY	REMARKS
SW-A	(1) 15/32" WSP	8d @ 6" OC	8d @ 12" OC	336	

NOTES:
1. SHEAR WALL SHEATHING: 15/32 PLYWOOD OR OSB, UNO.
2. FOR HOLDOWN INFORMATION, REF SCHEDULE THIS SHEET.
3. DO NOT INTERRUPT SHEAR WALL SHEATHING WHEN WALLS ARE FRAMED INTO SHEAR WALL.
4. PROVIDE DOUBLE 2x FRAMING AT ADJOINING PANEL EDGES WHERE EDGE NAILING IS 2" OR 3" OC.
5. SHEAR CAPACITY IS SERVICE WIND CAPACITY.
6. REF DETAIL 11/S2.0

HOLDOWN SCHEDULE (WOOD)				
HOLDOWN ID	HOLDOWN SPEC	CAPACITY (ASD), lb	REQD END STUDS (MIN)	ANCHOR
HD1	DTT2Z	1835	(2) 2x6	SIMPSON PAB4

NOTES:
1. HOLDOWNS ARE SIMPSON PRODUCTS. SUBSTITUTIONS SHALL BE APPROVED BY ENGINEER OF RECORD.
2. ALL JACK AND KING STUDS ARE TO BE SYP #2.
3. ALL STUDS SHALL BE SYP #2 OR BETTER, TYP UNO.
4. FOR WALL HOLDOWN REF DETAIL 2/S3.0



2 ROOF FRAMING PLAN - EXTERIOR RESTROOM

1/2" = 1'-0"

ROOF FRAMING PLAN NOTES

1. PROVIDE ROOF SHEATHING ACROSS ROOF FRAMING, REF GENERAL NOTES.

ROOF FRAMING PLAN LEGEND

(##) DENOTES SHEET NOTE, REF SCHEDULE THIS SHEET

H# DENOTES WOOD HEADER/ BEAM, REF SCHEDULE THIS SHEET

WOOD HEADER LEGEND

HEADER DESIGNATION — (###) — QUANTITY OF KING STUDS / QUANTITY OF JACK STUDS

WOOD SHEAR WALL SILL PLATE ANCHORAGE SCHEDULE	
SHEAR WALL ID	CONCRETE ANCHOR REQUIREMENTS
SW-A	5/8"DIA TITEN HD @ 32" OC

NOTES:
1. REF SECTIONS AND DETAILS FOR FURTHER REQUIREMENTS.
2. SWA ATTACHMENT REQUIREMENTS APPLICABLE TO ALL EXTERIOR (AND INTERIOR) WALLS NOT DESIGNATED AS SHEAR WALLS.

WOOD HEADER SCHEDULE	#.##
CALLOUT	SIZE	COMMENTS
A	(3) 2x6	2x6 JACK & KINGS

NOTES:
1. ALL DIMENSIONAL LUMBER HEADERS ARE TO BE SYP #2.
2. ALL JACK AND KING STUDS ARE TO BE SYP #2.
3. CONNECT HEADERS/ BEAMS TO JACK STUDS WITH MINIMUM (1) SIMPSON LSTA18 OR CS16 STRAP PER JACK.
4. "NJ" = QUANTITY OF JACK STUDS REQUIRED IN EACH SIDE OF OPENING.
5. "NK" = QUANTITY OF KING STUDS REQUIRED IN EACH SIDE OF OPENING.
6. FOR MULTI-PLY HEADER CONNECTION REQUIREMENTS REF DETAIL 12/S2.0

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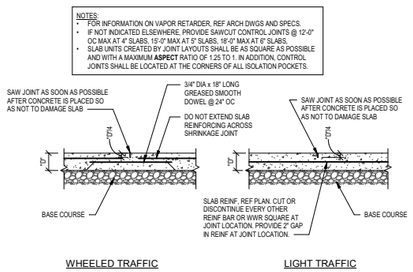
OWNER PROJECT CODE IL-0008
ARCH. PROJECT # RDU 25-174

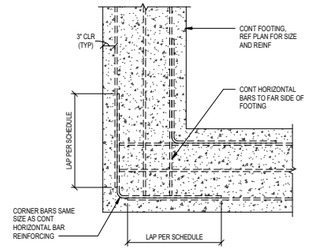
STRUCTURAL PLANS

SCALE: As indicated

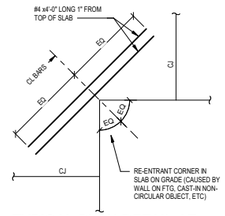
SHEET # **S1.0**



1 **TYPICAL SAWCUT CONTROL JOINT**
3/4" = 1'-0"



2 **TYPICAL FOOTING CORNER REINFORCING DETAIL**
3/4" = 1'-0"

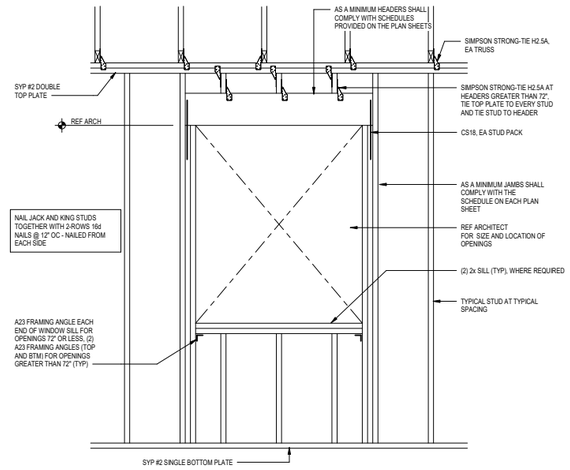


3 **TYPICAL PLAN DETAIL AT RE-ENTRANT CORNER**
3/4" = 1'-0"

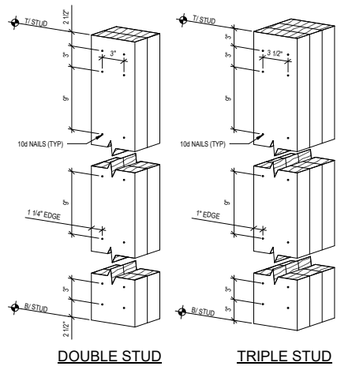
REINFORCING BAR LAP LENGTH SCHEDULE (CLASS B)				
GRADE 60 STEEL				
NORMAL WEIGHT CONCRETE STRENGTH				
BAR	3000 PSI	4000 PSI	5000 PSI	7000 PSI
#3	21"	18"	17"	14"
#4	28"	25"	22"	19"
#5	36"	31"	28"	23"
#6	43"	37"	33"	28"
#7	62"	54"	48"	41"
#8	71"	62"	55"	47"
#9	80"	70"	62"	53"
#10	90"	78"	70"	59"
#11	100"	87"	78"	66"

LAP SCHEDULE NOTES:
1. LENGTH SHOWN CONFORM TO NON-SEISMIC PROVISIONS OF ACI 318 FOR UNCOATED BARS ENCLOSED BY PROPERLY SPACED TIES OR STIRRUPS
2. LENGTH IN TABLE SHALL BE FACTORED FOR THE FOLLOWING CONDITIONS
   - HORIZONTAL BARS MORE THAN 12" ABOVE BOTTOM OF CAST MEMBER: 1.3xTABLE LENGTH
   - LIGHT WEIGHT CONCRETE: 1.3xTABLE LENGTH
   - BAR CLEAR SPACING SHALL BE NO LESS THAN ONE BAR DIAMETER AND/OR BAR CLEAR COVER LESS THAN ONE BAR DIAMETER: 1.5xTABLE LENGTH
   - WHERE MORE THAN ONE CONDITION APPLIES, ALL APPLICABLE FACTORS SHALL BE APPLIED TO LENGTH INDICATED IN TABLE
3. THIS TABLE SHALL APPLY UNLESS SPECIFICALLY NOTED, DETAILED OR SCHEDULED OTHERWISE
4. UNLESS NOTED OTHERWISE ALL REINFORCING BARS SHALL LAP AROUND CORNERS

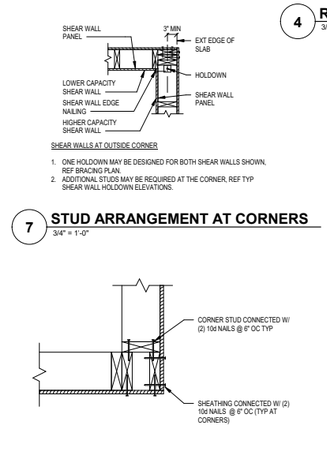
4 **REINF BAR LAP LENGTH SCHEDULE**
3/4" = 1'-0"



5 **TYPICAL FRAMED WALL OPENING**
NTS

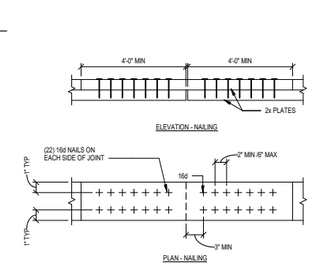


6 **BUILT-UP STUD DETAILS**
NTS

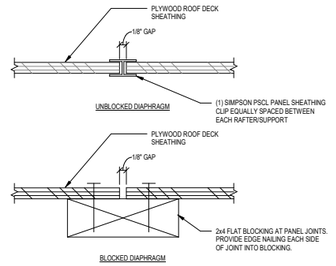


7 **STUD ARRANGEMENT AT CORNERS**
3/4" = 1'-0"

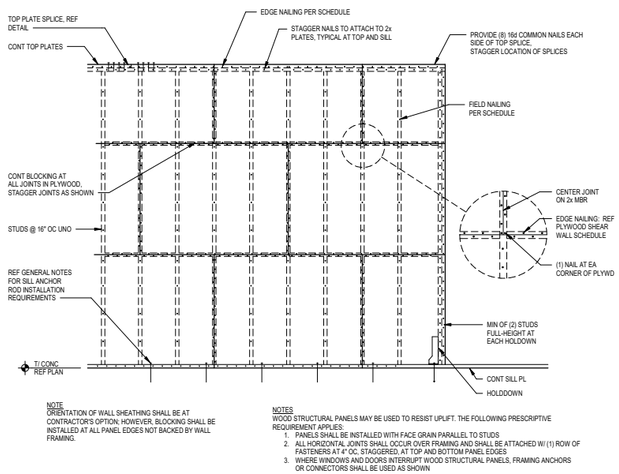
8 **TYPICAL WALL FRAMED CORNER**
NTS



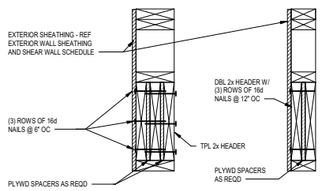
9 **DOUBLE PLATE SPLICE**
NTS



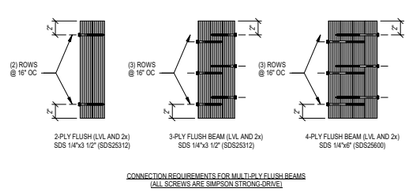
10 **PLYWOOD EDGE SUPPORT**
NTS



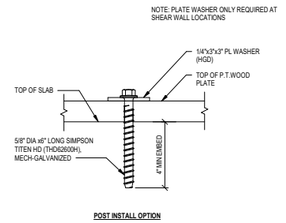
11 **TYPICAL SHEAR WALL SHEATHING ATTACHMENT**
NTS



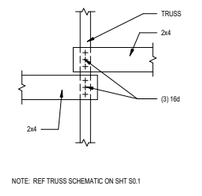
12 **CONNECTION REQUIREMENTS FOR MULTI-PLY HEADERS**
NTS



13 **MULTI-PLY FLUSH BEAM**
NTS



14 **TYPICAL SILL PLATE ANCHORAGE**
NTS



15 **TYPICAL BRIDGING LAP**
NTS

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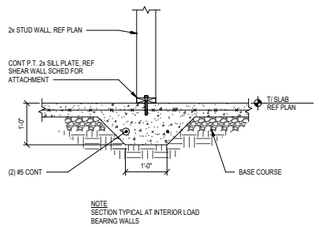
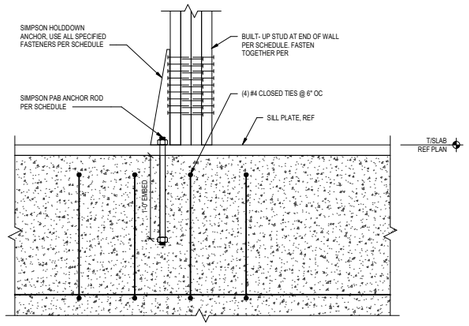
TYPICAL DETAILS

SCALE: As indicated

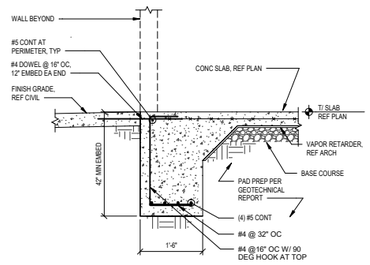
SHEET # **S2.0**



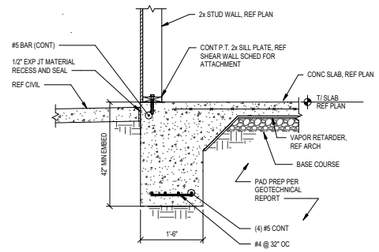
1 INTERIOR TURNDOWN
3/4" = 1'-0"



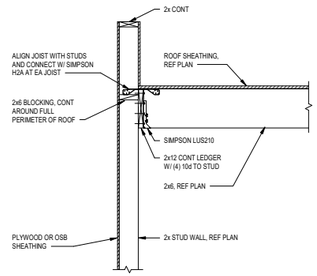
2 WALL HOLDDOWN DETAIL
NTS



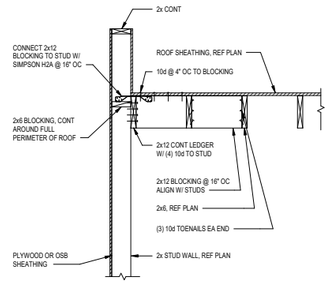
3 TURNDOWN AT DOOR/STOREFRONT
3/4" = 1'-0"



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



6 WOOD WALL, WOOD JOIST, PARAPET
NTS



7 WOOD WALL, WOOD JOIST, PARAPET
NTS

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WILLIAM BRET UNDERWOOD
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PROFESSIONAL ENGINEER
12/19/2025

IONNA RECHARGERY

INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
OAK PARK, MI 48237

#	△	DESCRIPTION	DATE
1		ISSUED FOR PERMIT	12.19.25
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OWNER PROJECT CODE IL-0008
ARCH. PROJECT # RDU 25-174

SECTIONS AND DETAILS

SCALE: As indicated

SHEET # **S3.0**

FLOOR PLAN LEGEND

X/A4.X	INTERIOR/EXTERIOR ELEVATION TAG - INDICATES DIRECTION OF VIEW. SEE SHEET # AND DRAWING # INDICATED FOR ASSOCIATED DETAIL.
X/A4.X	BUILDING SECTION TAG - INDICATES LOCATION OF SECTION CUT AND DIRECTION. SEE SHEET # AND DRAWING # INDICATED FOR ASSOCIATED DETAIL.
X	CONSTRUCTION KEY NOTE - INDICATES ELEMENT THAT REQUIRES MORE SCOPE DEFINITION VIA NOTATION.
NORTH	NORTH ARROW - INDICATES EITHER TRUE NORTH OR 'PLAN NORTH'
	NEW INTERIOR METAL STUD AND GWB WALL - SEE WALL TYPES FOR DETAILED INFORMATION REGARDING WALL CONSTRUCTION AND FRAMING HEIGHTS. GC SHALL RESPONSIBLE FOR SIZING LIGHT GAUGE STEEL STUD THICKNESS PER SPANS REQUIRED. PROVIDE GWB EXPANSION JOINTS EVERY 15' X 15'.
	WORK POINT / STARTING POINT FOR FINISH MATERIAL INSTALLATION
XXX	NEW DOOR/FRAME IN NEW WALL - SEE DOOR SCHEDULE FOR MORE INFORMATION REGARDING DOOR/FRAME/HARDWARE.
	NEW MASONRY WALL - SEE WALL TYPES FOR DETAILED INFORMATION REGARDING WALL CONSTRUCTION & HEIGHTS. SEE STRUCTURAL DRAWINGS FOR FOOTING, REINFORCING & WATER-PROOFING REQUIREMENTS.
1	REVISION TRIANGLE - INDICATES ELEMENT OR AREA OF BUILDING THAT HAS BEEN REVISED FROM THE ORIGINAL CONTRACT SCOPE.
ROOM NAME 100	ROOM NAME & NUMBER
CR	CARD READER - WALL-MOUNTED CARD READER DEVICE ADJACENT TO DOOR FOR SECURE ENTRY. REFER TO DOOR SCHEDULE FOR MORE INFORMATION.

GENERAL CONSTRUCTION NOTES

1	GC SHALL COMPLETELY CLEAN ENTIRE LEASED PREMISES IMMEDIATELY PRIOR TO OCCUPANCY.	7	GC SHALL MAINTAIN ALL LIFE SAFETY SYSTEMS IN GOOD WORKING ORDER THROUGHOUT THE DURATION OF THE PROJECT, INCLUDING EXIT LIGHTING, SPRINKLER SYSTEMS, SMOKE DETECTION, AND EMERGENCY LIGHTING.
2	GC SHALL FAMILIARIZE THEMSELF WITH THE PREMISES AND THE CONTRACT DRAWINGS AND SHALL REPORT ANY DISCREPANCIES IN THE FIELD TO THE ARCHITECT IMMEDIATELY UPON DISCOVERY.	8	UNO, ON DRAWINGS, THERE SHALL BE NO SUBSTITUTIONS OF MATERIALS MADE WITHOUT WRITTEN PERMISSION FROM OWNER AND ARCHITECT.
3	GC SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL NOTIFY ARCH. OF ANY CONFLICTS BETWEEN THE CONTRACT DOCUMENTS AND THE EXISTING CONDITIONS. GC AND SUBS SHALL NOT SCALE DRAWINGS.	9	UNO, ALL SURFACES TO BE PATCHED OR HOLES TO BE FILLED SHALL MATCH THE ADJACENT CONSTRUCTION AND FINISHES.
4	GC SHALL COORDINATE WITH THE BUILDING OWNER OR MGMT. ON ALL MATERIAL DELIVERY AND UNLOADING, DOOR ACCESS, AND ANY DISRUPTIONS IN THE NORMAL UTILITIES.	10	PROVIDE WOOD BLOCKING AT ALL LOCATIONS OF TOILET ACCESSORIES, ETC.
5	GC SHALL NOTIFY ARCH. OF ANY REQUIRED MATERIALS THAT ARE NOT READILY AVAILABLE AND THAT MAY DELAY COMPLETION.	11	SEE PARTITION TYPES ON SHEET A8.0 FOR MORE INFORMATION.
6	GC SHALL INSTALL AND MAINTAIN REQD. PROTECTIVE COVERINGS, TEMPORARY DOORS AND WALLS, DUST BARRIERS, FLOOR PROTECTION, ETC. GC SHALL KEEP ALL AREAS NOT IN CONTRACT FREE OF DUST AND DEBRIS.		

RCP SYMBOLS LEGEND

	CEILING TYPE 'ACT-1': SEE INTERIOR FINISH SPECIFICATIONS
	CEILING TYPE 'C1': SEE INTERIOR SPECIFICATIONS
	CEILING TYPE 'C2': SEE INTERIOR SPECIFICATIONS
XX'-X"	HEIGHT OF BOTTOM OF CEILING PLANE ABOVE FINISH FLOOR ELEVATION.
OTS	OPEN TO STRUCTURE - SYMBOL DESIGNATES AREA WHICH HAS NO CEILING - REFER TO KEY NOTES REGARDING FINISH OF EXPOSED CEILINGS.
LA	2x2 LAY-IN LED LIGHT FIXTURE WITH DIRECT/INDIRECT DISTRIBUTION. (PROVIDE DIMMABLE FIXTURE & DIMMER SWITCHES - TYP.) SEE ELEC. DWGS.
	SUSPENDED LINEAR LED FIXTURE. SEE RCP FOR MOUNTING LOCATIONS AND TRIM NEEDED.
SUPPLY	2'X2' LAY-IN MECHANICAL SUPPLY DIFFUSER - SEE MECHANICAL DWGS FOR SIZE, TYPE, CFM. PROVIDE WHITE FINISH UNO.
RETURN	2'X2' LAY-IN MECHANICAL RETURN DIFFUSER - SEE MECHANICAL DWGS FOR SIZE, TYPE, CFM. PROVIDE WHITE FINISH UNO.
SD	SMOKE DETECTOR (PER CODE)
OS	OCCUPANCY SENSOR
	DECORATIVE WALL MOUNTED LED LIGHT FIXTURE. SEE ELEC. DWGS.

GENERAL RCP NOTES

1	THE ARCHITECTURAL CEILING PLANS SHALL GOVERN ALL LOCATIONS OF LIGHT FIXTURES, MECHANICAL DIFFUSERS AND CLG. GRID LAYOUTS.	7	UNO, ALL SUSPENDED ACOUSTICAL CEILINGS SHALL BE 9'-0" AFF TO THE FINISHED SURFACE OF THE TILE. GC TO VERIFY HEIGHT IS ACHIEVABLE IN FIELD AND NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS.
2	UNO, ALL CEILING FIXTURES INCLUDING FIRE ALARM HORNS, STROBES, ENUNCIATORS, SPRINKLER HEADS ETC. SHALL BE WHITE IN COLOR AND CEILING MOUNTED AS CODE ALLOWS. IF BUILDING STANDARD EXISTS WHICH CONFLICTS WITH THIS CONDITION, COORDINATE FINISH WITH ARCHITECT.	8	UNO, FACE OF ALL GWB SOFFITS ADJACENT TO EXPOSED CEILING AREAS OR CORRIDORS SHALL HAVE GWB EXTENDING TO FLOOR STRUCTURE ABOVE. SEE CONSTRUCTION PLAN FOR WALL TYPES, AND COORD. WITH RCP AS REQUIRED.
3	SEE ELEC. DWGS. FOR EXACT LIGHTING SPECS. ARCHITECT TO APPROVE FIXTURE SPECS PRIOR TO GC ORDER. DESCRIPTIONS OF FIXTURES ON THIS DRAWING ARE FOR REFERENCE ONLY.		
4	UNO, ON DRAWINGS, REMOVE ALL UNUSED CABLE, CONDUIT, DUCTWORK, HANGER WIRES, CLAMPS, PIPING, ETC.		
5	SEE ELECTRICAL DRAWINGS FOR INFORMATION REGARDING LOCATIONS OF EMERGENCY LIGHTING, FIRE ALARM DEVICES, OCCUPANCY SENSORS, AND OTHER CEILING DEVICES NOT SHOWN.		
6	UNO, CENTER ALL FIXTURES AND DEVICES IN CEILING TILES, SOFFITS, OR PORTALS. NOTIFY ARCHITECT OF CONFLICTS. COORDINATE FINISH OF DIFFUSERS LOCATED IN SPECIALTY CEILINGS WITH ARCHITECT.		

ROOF PLAN LEGEND

DS	6"X6" PREFINISHED (KYNAR 500) ALUMINUM SHOP-FABRICATED BOX DOWNSPOUTS FROM GUTTER OR SCUPPER ABOVE. SEE EXTERIOR ELEVATIONS FOR EXTERIOR FINISHES. HIDDEN SEAM, TYP.
DS CH	COMBINATION THRU-WALL SCUPPER, CONDUCTOR HEAD AND DOWNSPOUT. PREFINISHED (KYNAR 500) ALUMINUM FINISH. SEE WALL SECTIONS FOR DETAILS.
SC	EMERGENCY OVERFLOW THRU-WALL SCUPPER. PREFINISHED (KYNAR 500) ALUMINUM FINISH. SEE WALL SECTIONS FOR DETAILS.
SLOPE	ARROW INDICATES DIRECTION OF DOWNWARD ROOF SLOPE. ROOF SLOPE MINIMUM OF 1/4" PER FOOT (INCLUDING ALL VALLEYS).

GENERAL ROOF PLAN NOTES

1	GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR VERIFICATION OF ALL ROOF DIMENSIONS INCLUDING SIZES AND LOCATION OF ALL EXISTING ROOF MOUNTED EQUIPMENT AND ACCESSORIES.	6	GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO PROPERLY FLASH ALL PLUMBING VENTS, EQUIPMENT CURBS, MECHANICAL/ELECTRICAL CONNECTIONS, ETC.	11	LOCATIONS OF CRICKETS AND TAPERED RIGID INSULATION ARE SHOWN FOR DESIGN INTENT ONLY. THE ROOFING CONTRACTOR IS RESPONSIBLE FOR PROVIDING A DETAILED ROOFING PLAN TO PROVIDE REQUIRED DRAINAGE AND WATER-TIGHT ENVELOPE.
2	GENERAL CONTRACTOR'S SHALL ENSURE THAT THE ROOF STRUCTURE IS NOT OVERLOADED BY WEIGHTS OF CONSTRUCTION EQUIPMENT, MATERIALS, AND PERSONNEL DURING CONSTRUCTION AND SHALL PROVIDE ADEQUATE FALL PROTECTION.	7	RAISE ALL PLUMBING VENTS A MIN. OF 12" ABOVE TOP OF ROOF SYSTEM. RAISE ALL EQUIPMENT CURBS A MIN. OF 8-1/2" ABOVE TOP OF ROOF SYSTEM USING TREATED WOOD BLOCKING.	12	CONTRACTOR SHALL ENSURE THAT ALL ROOF DRAINS, GUTTERS, DOWNSPOUTS, AND ROOF LEADERS WITHIN BLDG. ARE FREE AND CLEAR OF DEBRIS, DAMAGE AND ARE FULLY-FUNCTIONING.
3	THE GENERAL CONTRACTOR SHALL CONFINE HIS OPERATIONS TO THE IMMEDIATE VICINITY OF THE WORK SITE AS DIRECTED BY THE OWNER/ARCHITECT AND SHALL ACCESS THE ROOF ONLY FROM THE OUTSIDE OF THE BUILDING AT AREAS DIRECTED.	8	GENERAL CONTRACTOR SHALL PROPERLY DISPOSE OF ALL DEBRIS OFF SITE DAILY, INCLUDING FROM ROOF.	13	CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURING THAT NO NEW WORK AFFECTS CURRENT MFR. WARRANTIES ON ANY EXISTING MECHANICAL UNITS OR OTHER ROOFTOP EQUIPMENT.
4	GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF COMPLETED ROOF SECTIONS DURING ADJACENT ROOF OPERATIONS.	9	MECHANICAL AND PLUMBING CONTRACTORS SHALL SUPPLY THEIR OWN CURBS UNLESS NOTED OTHERWISE.	14	ROOF SLOPES TO BE 1/4" PER FOOT MINIMUM, INCLUDING VALLEYS.
5	DURING CONSTRUCTION, GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE BUILDING AND ITS CONTENTS FROM THE ELEMENTS AND SHALL PROVIDE TEMPORARY ROOF PROTECTION AND COVERING AS NECESSARY.	10	ROOFING DETAILS SHOWN ARE FOR REFERENCE AND DESIGN INTENT ONLY. ROOFING CONTRACTOR SHALL UTILIZE APPROPRIATE MFR. DETAILS/ASSEMBLIES AS REQUIRED FOR THE ROOF SYSTEM WARRANTY. SUBMIT DETAILS TO ARCHITECT FOR APPROVAL.	15	SEE MECHANICAL/PLUMBING DRAWINGS FOR EXACT EQUIPMENT PLACEMENT. EQUIPMENT SHOWN IS FOR COORDINATION ONLY.

FINISH GENERAL NOTES

1	ALL INTERIOR WALL AND CEILING FINISHES SHALL COMPLY WITH 803 AND TABLE 803.11 OF THE IBC. ALL FLOORING FINISHES SHALL COMPLY 804 OF THE IBC. ALL FABRICS AND TEXTILES SHALL COMPLY WITH SECTION 803.1.4 OF THE IBC.	7	PAINTING SUBCONTRACTOR SHALL PROVIDE ZERO-VOC PRIMERS AND FINISH-COAT MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH THE SUBSTRATES INDICATED.
2	ALL FINISHES SPECIFIED ARE APPROVED BY THE TENANT. NO SUBSTITUTIONS ALLOWED	8	REFER TO BUILDING DETAILS FOR TRANSITION STRIP DETAILS.
3	UNLESS NOTED OTHERWISE (UNO), PROVIDE FINISH TRANSITION STRIPS BY SCHLUTER OR EQUAL AT ALL FLOOR FINISH TRANSITIONS. FINISH: VARIES - SEE SPECS. VINYL AND MARBLE THRESHOLDS WILL NOT BE ACCEPTED. UNO, TRANSITION FINISHES AT CENTER OF DOOR. FLOAT OR FEATHER ALL FLOORING MATERIALS AS REQUIRED TO ENSURE A LEVEL TRANSITION BETWEEN MATERIALS OF VARYING THICKNESS. TRANSITIONS TO COMPLY WITH ACCESSIBILITY REQUIREMENTS ICC A117.1 SECTION 303.	9	PREPARE ALL SURFACES FOR INSTALLATION OF NEW FLOORING MATERIALS. SUBCONTRACTORS SHALL PROVIDE FINISH-COAT MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH THE SUBSTRATES INDICATED. PROVIDE CURING COMPOUND AS NECESSARY. PROVIDE WATERPROOF AND CRACK ISOLATION MEMBRANE IN ALL AREAS RECEIVING PORCELAIN FLOOR TILE. PROVIDE APPROPRIATE EXPANSION AND CONTROL JOINTS PER CURRENT T.C.N.A. RECOMMENDATIONS AND COORDINATE FINAL LOCATIONS WITH DESIGNER.
4	SUBMIT FINISH SUBMITTALS (INCLUDING TRANSITION STRIPS) TO ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO ORDERING AND INSTALLATION. SUBMIT ALL FINISHES TOGETHER IN ONE FINISH SUBMITTAL PACKAGE.	10	REFER TO DOOR SCHEDULE FOR ALL DOOR FINISH INFORMATION.
5	REFER TO THE CONSTRUCTION PLAN DIMENSIONS FOR ALL PRELIMINARY FINISH MATERIAL TAKE-OFFS. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDER PLACEMENT.	11	CEMENT BACKER BOARD TO BE INSTALLED IN LIEU OF DRYWALL AT ALL WALLS RECEIVING WALL TILE.
6	UNO, ALL PTD. HOLLOW METAL FRAMES SHALL RECEIVE A WATERBASED ALKYD SEMI-GLOSS PAINT WITH ZERO VOC'S. COLOR (TBD).		

PLUMBING FIXTURE LEGEND

	TANK TYPE FLOOR-MOUNTED TOILET (PRESSURE-ASSISTED FLUSH WHERE PRESSURE ALLOWS AND IS NEEDED). WHITE VITREOUS CHINA. PROVIDE ADA HEIGHT FIXTURE IN ADA STALLS. SEE PLUMBING FIXTURE SCHEDULE FOR SPECIFICATIONS.
	SINGLE COMPARTMENT STAINLESS STEEL SINK. PROVIDE TOP-MOUNTED SINK WITH RIM FOR PLASTIC LAMINATE COUNTERS. PROVIDE UNDER-MOUNTED SINK FOR SOLID SURFACE/STONE COUNTERS. SEE INTERIOR ELEVATIONS. SEE PLUMBING FIXTURE SCHEDULE.
	WALL-MOUNTED ADA COMPLIANT WHITE VITREOUS CHINA SINK. SEE PLUMBING FIXTURE SCHEDULE.
FD	FLOOR DRAIN. DO NOT PROVIDE ROUND FLOOR DRAINS. PROVIDE SLOTTED, HEEL-PROOF, STAINLESS STEEL COVER PLATES (NO BRASS PERMITTED).

INTERIOR FINISH SPECIFICATIONS

ID	NAME	MANUFACTURER	MODEL	COLOR	NOTES
TILE:					
T-1	FLOOR TILE - RESTROOM	DALTILE	CERAMIC TILE	WATERFALL VL66	12"x24"
T-2	WALL TILE	DALTILE	GLAZED CERAMIC	ARCTIC WHITE, 0190	3"x6" (SEE RESTROOM ELEVATIONS FOR LOCATIONS)
T-3	WALL TILE	DALTILE	GLAZED CERAMIC	ORANGE BURST 1097	3"x6" (SEE RESTROOM ELEVATIONS FOR LOCATIONS)
FLOOR:					
CONC-1	FLOOR FINISH	-	EXPOSED CONCRETE	-	-
PAINT:					
P-2	PAINT-SOFT DARK	SHERWIN WILLIAMS	PAINT SHEEN:	SW 7605 GALE FORCE	CLOSEST MATCH TO PMS 5395 C
P-3	PAINT-SOFT LIGHT	SHERWIN WILLIAMS	WALLS: FLAT	SW 7563 RESTFUL WHITE	CLOSEST MATCH TO PMS PASTEL 9224C
P-4	PAINT-ROBBINS EGG 1	SHERWIN WILLIAMS	BASE: SEMI-GLOSS	SW 0063 BLUE SKY	CLOSETS MATCH TO PMS 7464 C
P-5	PAINT-WHITE	SHERWIN WILLIAMS	ACT: FLAT	SW 7006 EXTRA WHITE	
			DRYWALL CEILING: FLAT		
			DOORS: EGGSHELL		
			HM FRAMES: SEMI-GLOSS		
ACOUSTIC CEILING TILE:					
ACT-1	CEILING TILE	USG	MARS HIGH - NRC ACOUSTICAL PANELS, FLB PROFILE 88136, TILES: FLAT WHITE 050, FINE TEXTURED, 88136, 2'x2'x7/8"	WHITE	GRID: FLAT WHITE 050, DONN CENTRICTEE DXT, 9/16" PERIMETER TRIM: MS174" HEAVY DUTY SYSTEM REQUIRED AT SEISMIC CATGORIZED D,E,F
C-1	SOFFIT BOARD	JAMES HARDIE	HARDIE SOFFIT VENTED SMOOTH	TO MATCH SIDING EP-3	VENTING TO BE SET BACK 12"

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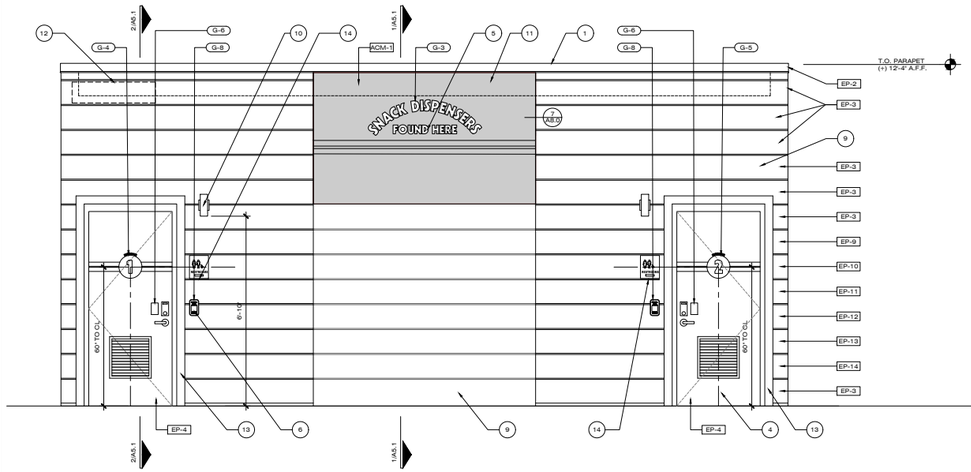
OWNER PROJECT CODE MI-0008
ARCH PROJECT # RDU 25-174

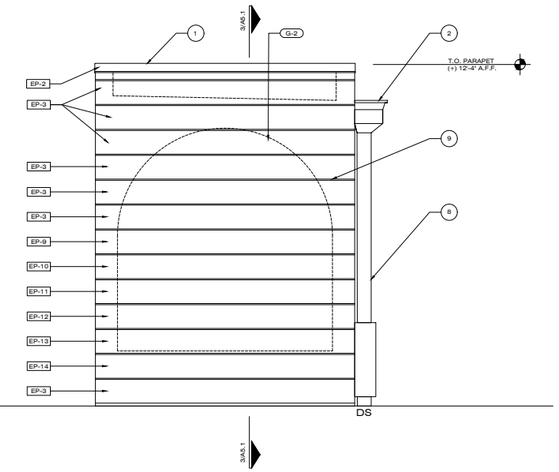
SYMBOLS LEGENDS

SCALE: NTS

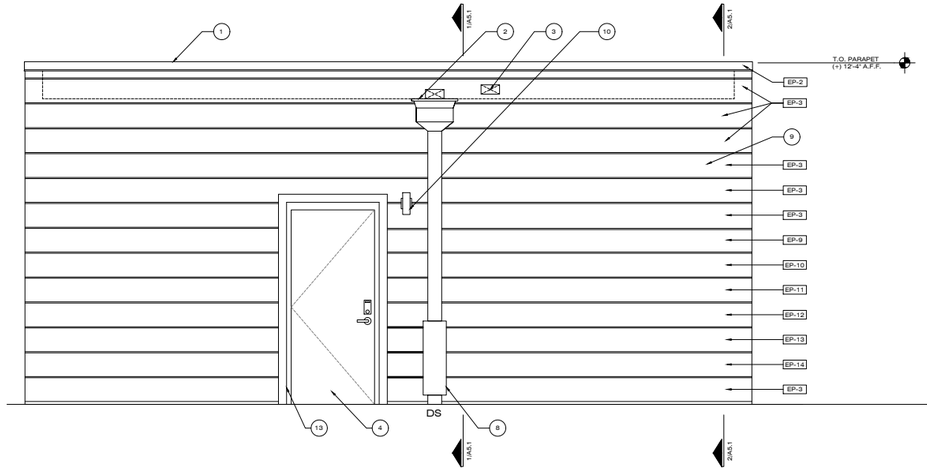
SHEET # **A1.2**



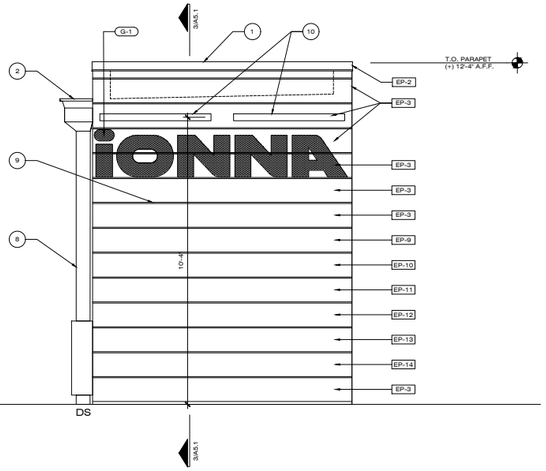
1 EXTERIOR ELEVATION (FRONT)
SCALE: 1/2" = 1'-0"



2 EXTERIOR ELEVATION (RIGHT)
SCALE: 1/2" = 1'-0"



3 EXTERIOR ELEVATION (REAL)
SCALE: 1/2" = 1'-0"



4 EXTERIOR ELEVATION (LEFT)
SCALE: 1/2" = 1'-0"

EXT. ELEVATION KEY NOTES

1	G.S.M. PARAPET COPING. SEE ROOF PLAN FOR EXTENTS. SLOPE TOWARD ROOF, TYP. PAINT PER ELEVATION KEYNOTES
2	METAL THROUGH-WALL SCUPPER, CONDUCTOR HEAD & 6"x6" DOWNSPOUT. COLOR TO MATCH EP-2 WALL COLOR.
3	METAL THROUGH-WALL OVERFLOW SCUPPER. COLOR TO MATCH EP-2 WALL COLOR.
4	HOLLOW METAL DOOR, SEE DOOR SCHEDULE.
5	SIGNAGE PROVIDED BY IONNA VENDER TYPICAL.
6	ACCESS CONTROL PLAQUE PER IONNA
7	VENDING MACHINES, TO BE PROVIDED BY OWNER
8	6"x6" METAL DOWNSPOUT. COLOR TO MATCH PARAPET COPING.
9	10 1/4" SHIPLAP PLANK SIDING WITH 1/2" REVEAL: HARDIE, ARTISAN SIDING, SQUARE CHANNEL, PRIMED FOR PAINT
10	EXTERIOR WALL LIGHT: SEE ELECTRICAL DRAWINGS
11	ACM PANEL SYSTEM, MAXIMUM 1/2" DRY JOINT. PAINT TO MATCH RAL #5008.
12	ILLUMINATED ADDRESS SIGNAGE, SEE ELECTRICAL DRAWINGS
13	3 1/2" HARDIE TRIM BOARD AT HEAD AND JAMB. TO MATCH DOOR COLOR
14	ACCESSIBLE RESTROOM SIGNAGE PER ANSI A117.1 SECTION 703.

LEGEND

1	NOTE DESIGNATOR - REFER TO DRAWING NOTES ON THIS SHEET
EG-X	GRAPHICS DESIGNATOR - REFER TO NOTES ON THIS SHEET
X-7	FINISH DESIGNATOR - REFER TO NOTES ON THIS SHEET

EXTERIOR GRAPHICS SCHEDULE

G-1	NAME:	IONNA LOGO - PAINTED
	FURNISHED BY:	IONNA VENDOR
	INSTALLED BY:	IONNA VENDOR
G-2	NAME:	TOMBSTONE GRAPHIC
	FURNISHED BY:	IONNA VENDOR
	INSTALLED BY:	IONNA VENDOR
G-3	NAME:	SNACK DISPENSERS
	FURNISHED BY:	IONNA VENDOR
	INSTALLED BY:	IONNA VENDOR
G-4	NAME:	RESTROOM 1
	FURNISHED BY:	IONNA VENDOR
	INSTALLED BY:	IONNA VENDOR
G-5	NAME:	RESTROOM 2
	FURNISHED BY:	IONNA VENDOR
	INSTALLED BY:	IONNA VENDOR
G-6	NAME:	PUSH/PULL DOOR
	FURNISHED BY:	IONNA VENDOR
	INSTALLED BY:	IONNA VENDOR
G-8	NAME:	DOOR ACCESS QR - ACRYLIC
	FURNISHED BY:	IONNA VENDOR
	INSTALLED BY:	IONNA VENDOR
G-9	NAME:	RESTROOM CSR QR CODE
	FURNISHED BY:	IONNA VENDOR
	INSTALLED BY:	IONNA VENDOR
G-10	NAME:	DO NOT FLUSH WASTE - ACRYLIC
	FURNISHED BY:	IONNA VENDOR
	INSTALLED BY:	IONNA VENDOR

EXTERIOR PAINT SPECIFICATIONS

ID	NAME	MFGR.	COLOR
EP-1	PAINT-ION ORANGE	SHERWIN WILLIAMS	SW 6886 INVIGORATE
EP-2	PAINT-SOFT DARK	SHERWIN WILLIAMS	SW 7605 GALE FORCE
EP-3	PAINT- SOFT LIGHT	SHERWIN WILLIAMS	SW 7563 RESTFUL WHITE
EP-4	PAINT- ROBINSEGG1	SHERWIN WILLIAMS	SW 0063 BLUE SKY
EP-6	PAINT-BLACK	SHERWIN WILLIAMS	SW 6258 TRICORN BLACK
EP-8	PAINT-DUSTYBLUE	SHERWIN WILLIAMS	CLOSEST MATCH TO PMS5483 C
EP-9	PAINT-IO2	SHERWIN WILLIAMS	CLOSEST MATCH TO PMS7630 C
EP-10	PAINT-IO3	SHERWIN WILLIAMS	CLOSEST MATCH TO PMS484 C
EP-11	PAINT-IO4	SHERWIN WILLIAMS	CLOSEST MATCH TO PMS2349 C
EP-12	PAINT-IO5	SHERWIN WILLIAMS	CLOSEST MATCH TO PMS165 C
EP-13	PAINT-IO6	SHERWIN WILLIAMS	CLOSEST MATCH TO PMS148 C
EP-14	PAINT-IO7	SHERWIN WILLIAMS	CLOSEST MATCH TO PMS475 C
ACM-1	PAINT-AUB BLUE	SHERWIN WILLIAMS	CLOSEST MATCH TO RAL 5008

GENERAL EXT. ELEVATION NOTES

1	DS - INDICATES LOCATION OF DOWNSPOUT. COORDINATE WITH CIVIL DRAWINGS TO DETERMINE WHETHER OR NOT THE DOWNSPOUTS DUMP OUT ONTO GRADE OR TIE INTO THE STORM SEWER SYSTEM.
2	ALL PARAPET COPING SHALL BE PREFINISHED (KYNAR 500) ALUMINUM FINISH. COLOR SHALL BE PER THE FINISH SCHEDULE. COPING DETAIL EQUAL TO PAC-CLAD 'PAC-CONTINUOUS CLEAT COPING' W/ INTEGRAL SPLICE PLATES.
3	GENERAL CONTRACTOR TO ENSURE THAT OPENINGS WITHIN EXTERIOR WALLS ARE PROPERLY TAPED/FLASHED TO PREVENT WATER INFILTRATION INTO THE BUILDING.
4	GC SHALL ENSURE THAT THE ENTIRE STRUCTURE IS "DRIED-IN" PRIOR TO INSTALLATION OF INSULATION AND DRYWALL.
5	ALL EXTERIOR EXPOSED PAINTED STEEL SHALL RECEIVE INDUSTRIAL GRADE URETHANE ALKYD ENAMEL (SEMI-GLOSS). COLOR SHALL BE PER EXT. FINISH SCHEDULE.
6	GC SHALL ENSURE POSITIVE SLOPE AWAY FROM BUILDING PERIMETER FOR PROPER DRAINAGE. GC SHALL TAKE MEASURES TO PROTECT NEW EXTERIOR MATERIALS FROM DIRT MIGRATION DURING RAINS @ PERIMETER (STRAW, DRAINAGE MATTING, ETC.)
7	PRIOR TO APPLICATION, PROVIDE ACM SAMPLES TO ARCHITECT FOR APPROVAL OF COLOR AND FINISH.
8	SIGNAGE WILL BE PERMITTED SEPARATELY.

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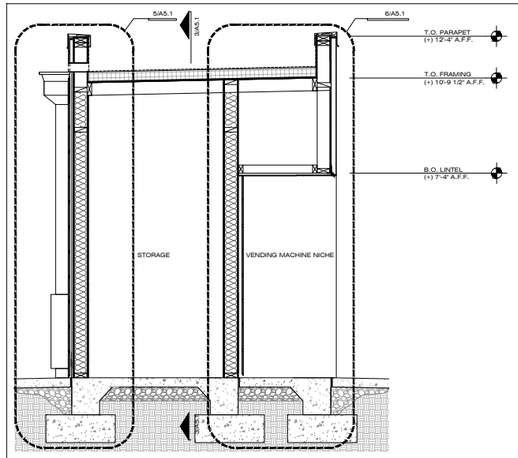
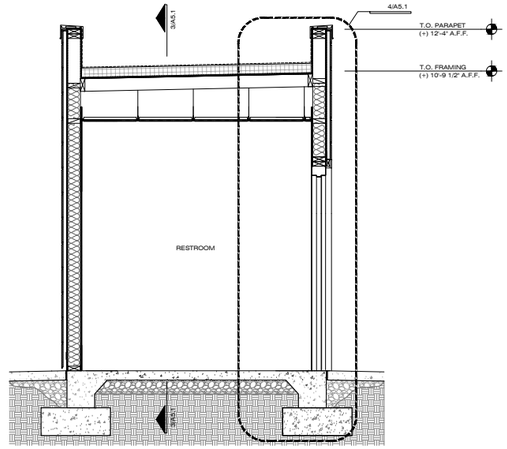
EXTERIOR ELEVATIONS

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

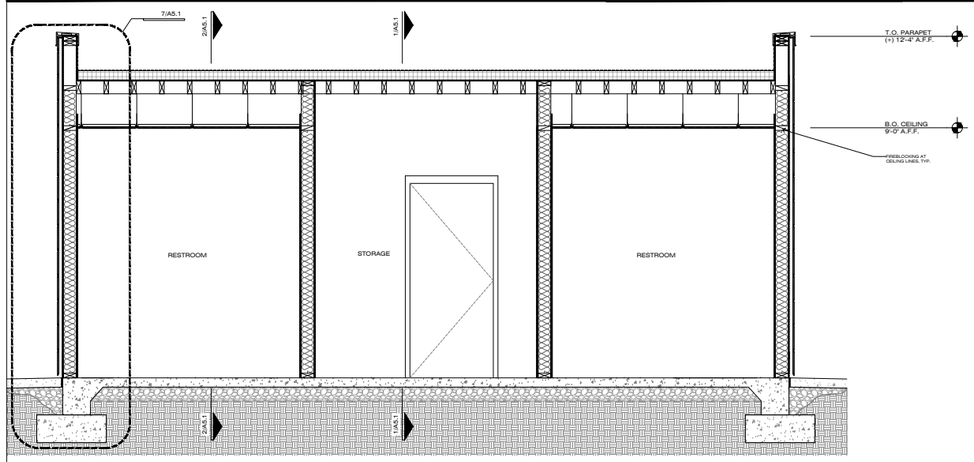
SHEET # **A5.0**



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



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



3 BUILDING SECTION
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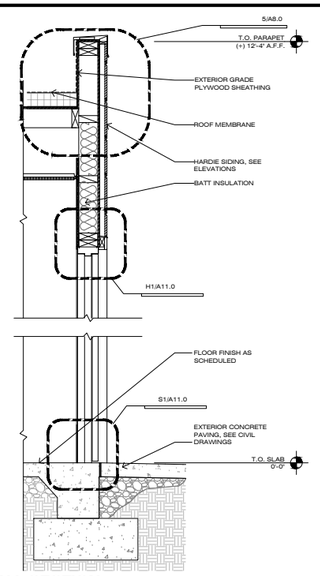
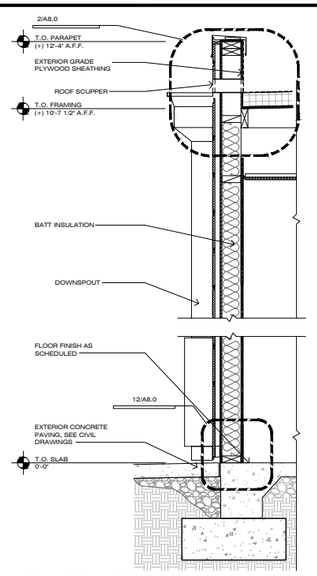
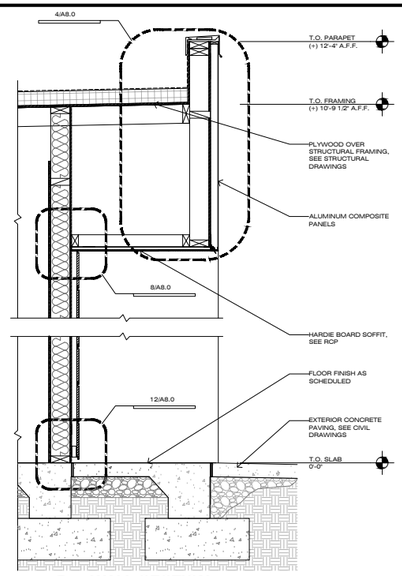


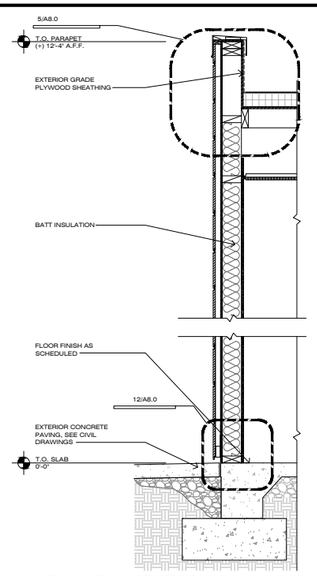
4 WALL SECTION
SCALE: 3/4" = 1'-0"



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



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



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

GENERAL NOTES	
1	SEE STRUCTURAL FOR ALL CONCRETE SLAB, SLAB EDGE, FOOTINGS, AND FOUNDATION CONDITIONS.
2	SEE EXTERIOR ELEVATIONS A5.0 FOR ACM INFO, COLORS, AND LOCATIONS. PROVIDE RAIN SCREEN SYSTEM AND WRAP AS REQUIRED FOR SYSTEM.
3	GENERAL CONTRACTOR TO ENSURE THAT OPENINGS WITHIN EXTERIOR WALLS ARE PROPERLY TAPED/FLASHED TO PREVENT WATER INFILTRATION INTO THE BUILDING.
4	SEE STRUCTURAL DRAWINGS FOR METAL STUD INFO AND REQUIREMENTS. PROVIDE ENGINEERED SIGNED AND STAMPED METAL STUD SHOP DRAWINGS.
5	FACED BATT INSULATION IN STUD SPACES AND WHERE INDICATED.
6	GC SHALL ENSURE THAT THE ENTIRE STRUCTURE IS "DRIED-IN" PRIOR TO INSTALLATION OF INSULATION & DRYWALL.
7	MAIN ROOF AREAS TO RECEIVE POLYISO RIGID ROOF INSULATION.
8	SEE A5.0 FOR TYPICAL EXTERIOR FINISH MATERIALS.
9	SEE FINISH DRAWINGS FOR ALL FLOOR FINISHES, PAINTING, AND WALL BASE REQUIREMENTS.

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12/16/2025

IONNA RECHARGERY

INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
OAK PARK, MI. 48237

#	△	DESCRIPTION	DATE
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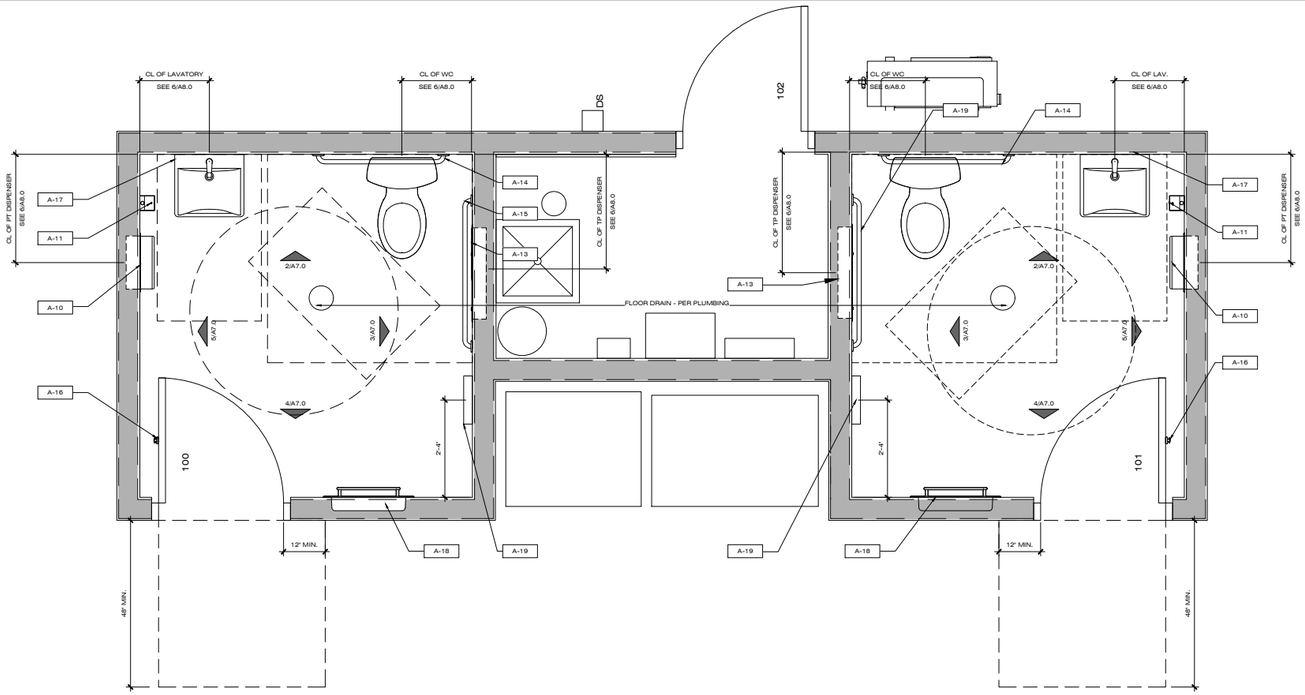
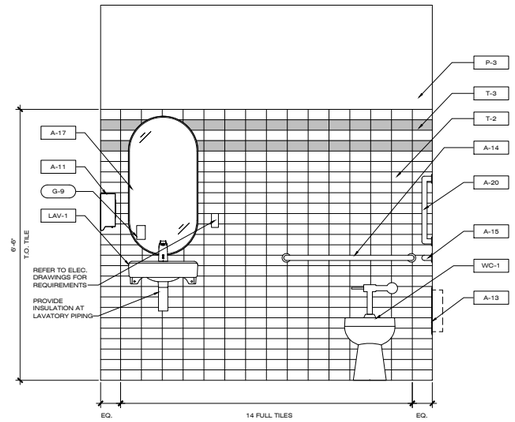
OWNER PROJECT CODE MI-0008
ARCH PROJECT # RDU 25-174
BUILDING SECTIONS

SCALE: AS NOTED

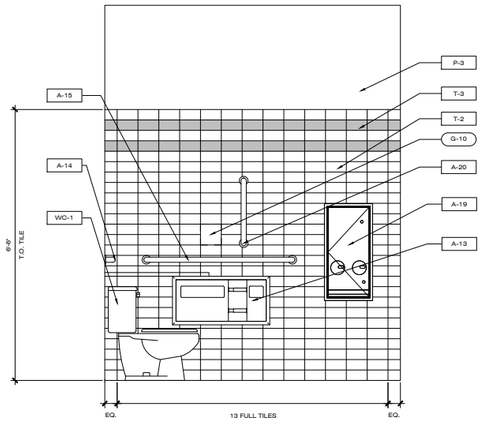
SHEET # **A5.1**



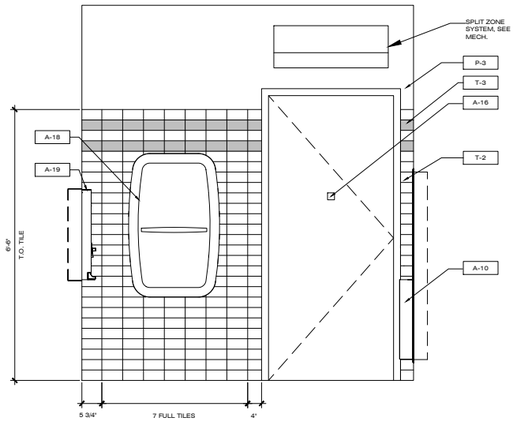
1 ENLARGED RESTROOM PLAN
SCALE: 3/4" = 1'-0"



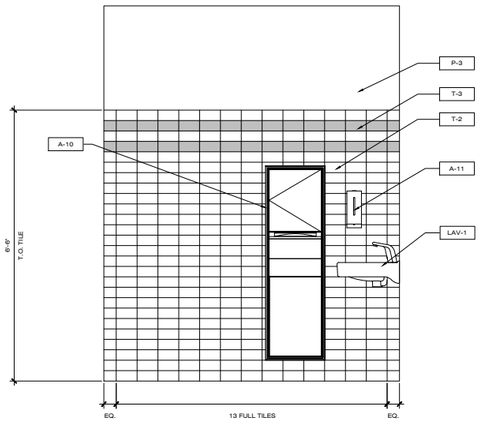
2 ELEVATION @ RESTROOM
SCALE: 3/4" = 1'-0"



3 ELEVATION @ RESTROOM
SCALE: 3/4" = 1'-0"



4 ELEVATION @ RESTROOM
SCALE: 3/4" = 1'-0"



5 ELEVATION @ RESTROOM
SCALE: 3/4" = 1'-0"

TOILET ACCESSORIES LEGEND

A-10	RECESSED CONVERTIBLE PAPER TOWEL DISPENSER AND WASTE RECEPTACLE BOBRICK # B-3944	A-16	SURFACE-MOUNTED DOUBLE COAT HOOK, CUBICLE COLLECTION, SATIN FINISH BOBRICK # B-549	LAV-1	LAVATORY WALL MOUNT SEE PLUMBING DRAWINGS FOR MODEL INFORMATION
A-11	AUTOMATIC WALL-MOUNTED FOAM SOAP DISPENSER BOBRICK: B-2013	A-17	20"X40" ESSENTIAL CAPSULE FRAMED MIRROR KOHLER # K-26051-BLL	WC-1	WATER CLOSET - PRESSURE ASSISTED TANKS, LOW FLOW SEE PLUMBING DRAWINGS FOR MODEL INFORMATION
A-13	RECESSED TOILET SEAT-COVER DISPENSER, WASTE DISPOSAL, AND TOILET TISSUE DISPENSER BOBRICK: #B-3092	A-18	BABY CHANGING TABLE KOALA KARE # KB311-SSRE	T-2	FIXTURE TAG NOTE
A-14	STRAIGHT GRAB BAR - 36" BOBRICK: #B-5806 X 36	A-19	SANITARY NAPKIN DISPENSER BOBRICK: #B-3706C	G-10	GRAPHICS TAG NOTE
A-15	STRAIGHT GRAB BAR - 42" BOBRICK: #B-5806 X 42	A-20	18" HANDICAPPED VERTICAL GRAB BAR W/ SMOOTH SATIN FINISH - NO PEENED GRIP SURFACE. BOBRICK: #B-6806-18		

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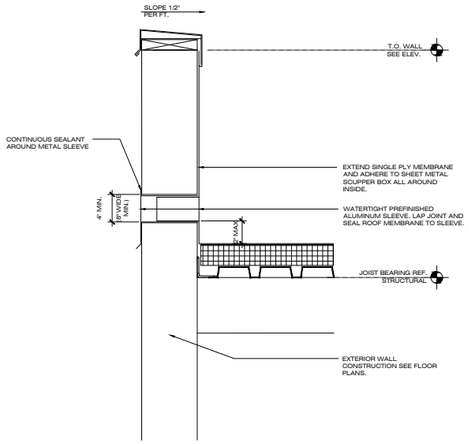
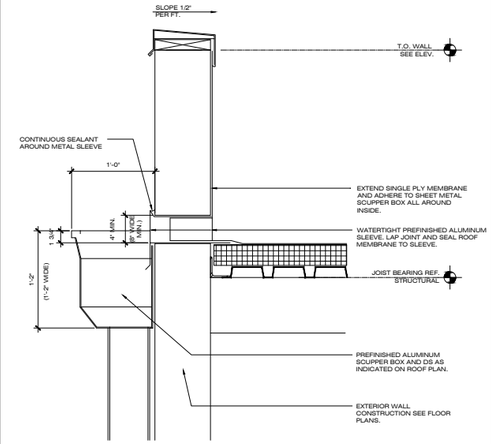
ENLARGED PLANS & INTERIOR ELEVATIONS
SCALE: 3/4" = 1'-0"

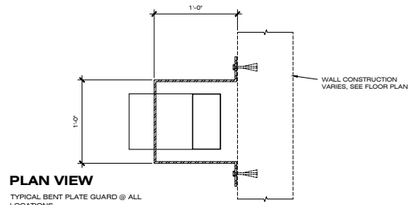
SHEET # **A7.0**



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

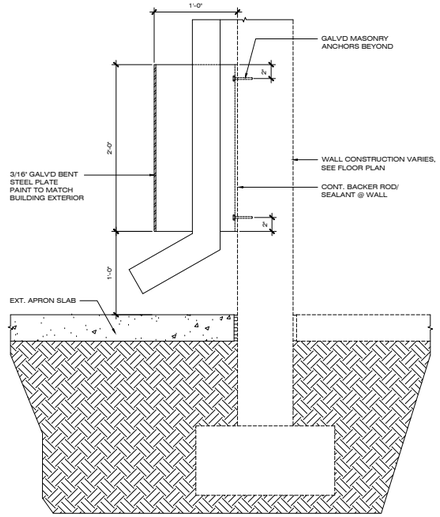


2 COLLECTOR BOX DETAIL
SCALE: 1-1/2" = 1'-0"

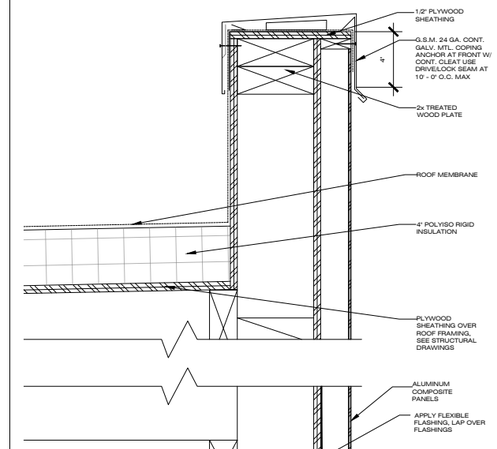


PLAN VIEW

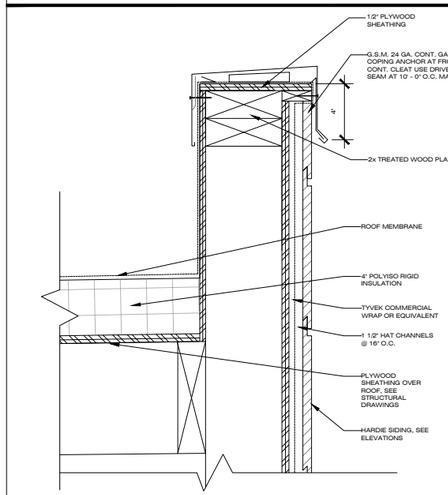
TYPICAL BENT PLATE GUARD @ ALL LOCATIONS



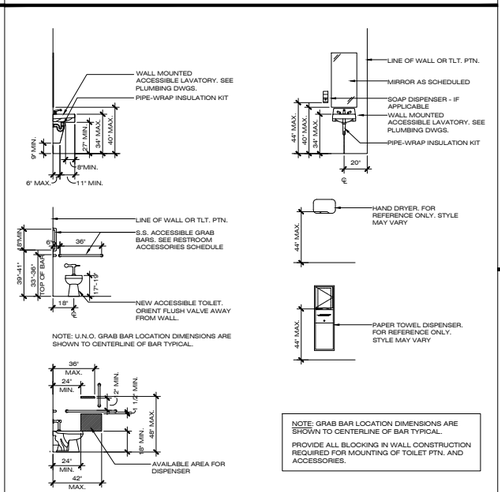
3 DOWNSPOUT GUARD DETAIL
SCALE: 1-1/2" = 1'-0"



4 PARAPET/SOFFIT DETAIL @ VENDING MACHINES
SCALE: 3" = 1'-0"



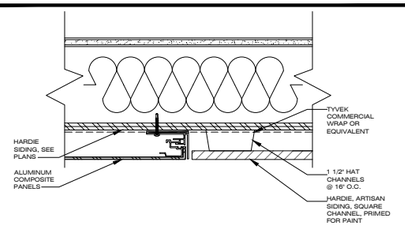
5 PARAPET DETAIL
SCALE: 3" = 1'-0"



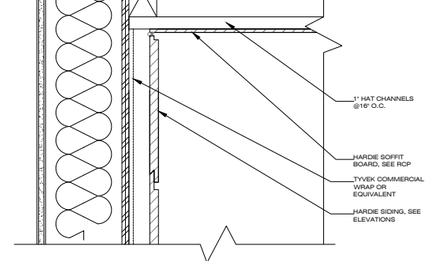
6 ANSI SPECIFICATIONS
1/4" = 1'-0"

NOTE: GRAB BAR LOCATION DIMENSIONS ARE SHOWN TO CENTERLINE OF BAR TYPICAL.

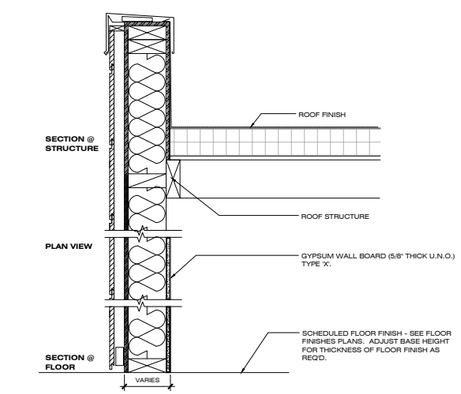
PROVIDE ALL BLOCKING IN WALL CONSTRUCTION REQUIRED FOR MOUNTING OF TOILET PTN. AND ACCESSORIES.



7 SIDING TRANSITION @ VENDING MACHINE NICHE
SCALE: 3" = 1'-0"

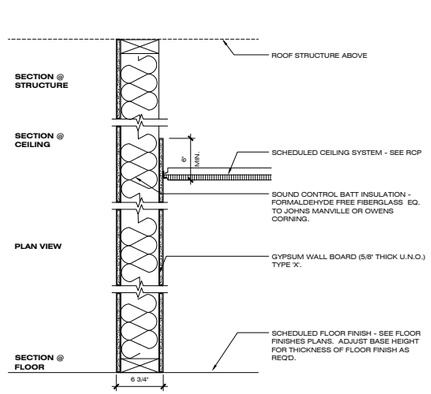


8 SOFFIT DETAIL @ WALL
SCALE: 3" = 1'-0"



WALL TYPE	STUD SIZE	SHEATHING & THICKNESS	WALL THICKNESS	INSULATION THICKNESS	REMARKS
A1	2"x6"	5/8" GWB	6-5/8"	R-19 THERMAL BATTS	

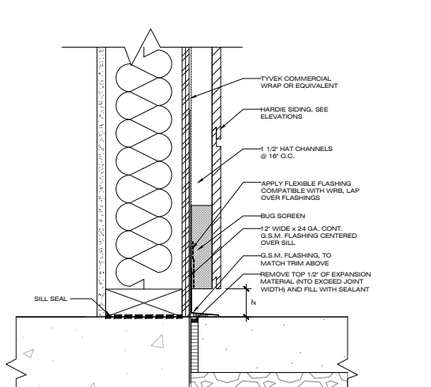
9 WALL TYPE A
SCALE: 1 1/2" = 1'-0"



WALL TYPE	STUD SIZE	SHEATHING & THICKNESS	WALL THICKNESS	INSULATION THICKNESS	REMARKS
B1	2"x6"	5/8" GWB	6-3/4"	5-1/2" SOUND BATTS	

10 WALL TYPE B
SCALE: 1-1/2" = 1'-0" (FULL HT. STUDS / PART. HT. GWB BOTH SIDES)

11 NOT USED
SCALE: N.T.S.



12 BASE - WOOD STUD WITH HARDIE SIDING
3" = 1'-0"

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ARCH PROJECT # RDU 25-174

BUILDING DETAILS

SCALE: VARIES

SHEET # **A8.0**

GENERAL NOTES

1	ALL DOORS AND ASSOCIATED HARDWARE WITHIN SCOPE OF WORK AREA ARE TO COMPLY WITH CHAPTER 4 OF THE ANSI A117.1-2017 CODE AS WELL AS CHAPTER 10 OF THE 2022 OREGON STRUCTURAL SPECIALTY CODE.	9	-
2	GC TO PROVIDE A COMPLETE DOOR/FRAME AND FINISH HARDWARE SUBMITTAL PACKAGE FOR ARCHITECT REVIEW AND APPROVAL. PLEASE NOTE: ANY SUBSTITUTIONS OR CHANGES FROM THE ORIGINAL INTENT SHALL BE IDENTIFIED WITHIN THE SUBMITTAL.	10	-
3	ALL DOORS AND FRAMES SHALL BE PRE-MACHINED FOR FINISH HARDWARE, INCLUDING ELECTRIFIED HARDWARE.	11	-
4	UNO, PROVIDE FLOOR STOPS AT ALL DOOR LOCATIONS (626 FINISH) W/GRAY RUBBER BUMPERS. PROVIDE OVERHEAD STOPS AS SPECIFIED IN DOOR SCHEDULE.	12	-
5	UNO, WHERE NEEDED, CONCEALED OVERHEAD CLOSERS SHALL BE EQUAL TO DORMA RTS 88 SERIES. UNO, WHERE NEEDED, SURFACE MOUNTED CLOSERS SHALL BE EQUAL TO LCN4010/4110.	13	-
6	PROVIDE DOOR SILENCERS TYP. AT ALL DOORS. PRE-DRILL FRAMES FOR (3) JAMB SILENCERS AND (2) HEAD SILENCERS FOR DOORS UNDER 8' TALL. PROVIDE (4) JAMB SILENCERS FOR ANY DOOR OVER 8' TALL.	14	-
7		15	-
8		16	-

SECURITY SCHEDULE

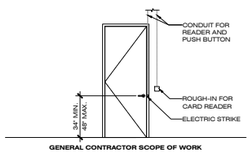
CODE	DESCRIPTION	PROVIDED BY	INSTALLED BY	FINAL CONNECTION / HOOKUP / TESTING BY	NOTES
CR	CARD READER	SECURITY VENDOR	SECURITY VENDOR	SECURITY VENDOR	-
ELECTRIC STRIKE ASSEMBLY SUMMARY					
ES	ELECTRIC STRIKE	GC	GC	SECURITY VENDOR	-
	DOOR / FRAME PREPARATION	GC	GC	N / A	-
	JUNCTION BOXES	GC	GC	N / A	-
	CONDUIT	GC	GC	N / A	-

GENERAL NOTES:

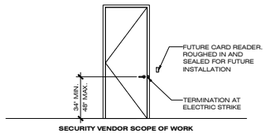
1. GC TO PROVIDE CONDUIT TO CARD READER AND ELECTRIC STRIKE AS NEEDED BASED ON PLANS. FOR BOTH CONCEALED PLENUM SPACES AND OPEN CEILING CONDITIONS, PROVIDE CONDUIT AND PULL STRING.

2. SECURITY VENDOR TO PROVIDE ALL WIRING TO ELECTRIC STRIKE AND CARD READER LOCATIONS.

3. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

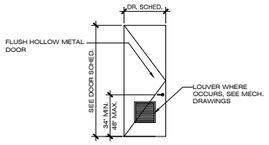


GENERAL CONTRACTOR SCOPE OF WORK

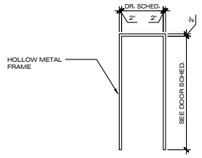


SECURITY VENDOR SCOPE OF WORK

ELECTRIC STRIKE ASSEMBLY



D1 FLUSH HOLLOW METAL DOOR



HM1 HOLLOW METAL FRAME

DOOR SCHEDULE

RESTROOMS

DOOR #	ROOM NAME	OPENING SIZE (W X H)	DOOR TYPE	DOOR FINISH	FIRE RATING	FRAME TYPE	HEAD TYPE	JAMB TYPE	HARDWARE SET	REMARKS
100	RESTROOM	3'-0" x 7'-0"	D1	PAINT	-	HM-1	H-1	J-1	DH-02	LOUVER
101	RESTROOM	3'-0" x 7'-0"	D1	PAINT	-	HM-1	H-1	J-1	DH-02	LOUVER
102	STORAGE	3'-0" x 7'-0"	D1	PAINT	-	HM-1	H-1	J-1	DH-07	-

DH-02-RR DOOR-SECURE

3 EA.	HINGE	MCKINNEY	MPB79 4.5 x 4.5	626
1 EA.	LOCKSET - MORTISE PRIVACY	YALE	SL8800: AUR-8840FL 626 W/V20 OCC INDICATOR	626
1 EA.	ELECTRIC STRIKE	HES	HES 1600-CDB-630-LM	N/A
1 EA.	SURFACE CLOSER	YALE	2721	689
2 EA.	KICK PLATE	ROCKWOOD	K1050 10" x 34"	PAINT TO MATCH DOOR
1 EA.	GASKETING	ZERO INTERNATIONAL	188SBK PSA	BK
3 EA.	SILENCER	ROCKWOOD	608-RKW	GRAY
1 EA.*	WALL STOP	ROCKWOOD	409-CONCAVE WROUGHT WALL STOP	626
1 EA.*	FLOOR STOP	ROCKWOOD	440/441AS REQUIRED	626
1 EA.	DOOR CONTACT SENSOR	GRI	180-12WG	PAINT TO MATCH FRAME
1 EA.	OCCUPANCY SENSOR	MAGNASPHERE MOTION	MSK-101-MK	WHITE
*	ARCHITECT TO SPECIFY DOOR STOP APPROPRIATE FOR FOH / BOH WALL CONDITION			

DH-07-EXT BOH DOOR SECURE

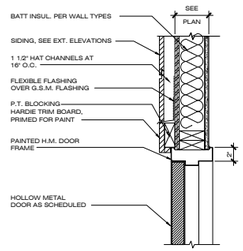
3 EA.	HINGE	MCKINNEY	MPB79 4.5 x 4.5	626
1 EA.	LOCKSET - MORTISE PRIVACY	YALE	SL8800: CRR-8805FL BSP	626
1 EA.	ELECTRIC STRIKE	HES	HES 1006	N/A
1 EA.	SURFACE CLOSER	YALE	2721	689
1 EA.	THRESHOLD	NATIONAL GUARD	513 x 36"	DKB
1 EA.	GASKETING	NATIONAL GUARD	160V 3'x7'	DKB
1 EA.*	WALL STOP	ROCKWOOD	409-CONCAVE WROUGHT WALL STOP	626
1 EA.*	FLOOR STOP	ROCKWOOD	440/441 AS REQUIRED	626
1 EA.	DOOR CONTACT SENSOR	GRI	180-12WG	PAINT TO MATCH FRAME
1 EA.	LATCH PROTECTOR	DONJO	SPECIFY APPROPRIATE LATCH PROTECTOR MODEL	
*	ARCHITECT TO SPECIFY DOOR STOP APPROPRIATE FOR FOH / BOH WALL CONDITION			

SECTION 1010.2.10 NOTE

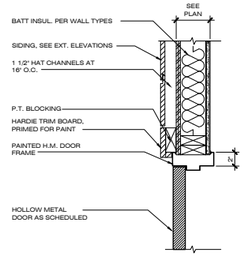
DOOR HARDWARE RELEASE OF ELECTRICALLY LOCKED EGRESS DOORS

DOOR HARDWARE RELEASE OF ELECTRICAL LOCKING SYSTEMS SHALL BE PERMITTED ON DOORS IN THE MEANS OF EGRESS IN ANY OCCUPANCY EXCEPT GROUP H WHERE INSTALLED AND OPERATED IN ACCORDANCE WITH ALL OF THE FOLLOWING:

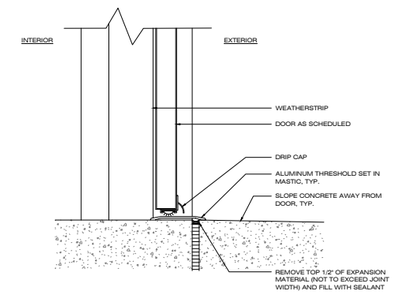
1. THE DOOR HARDWARE THAT IS AFFIXED TO THE DOOR LEAF HAS AN OBVIOUS METHOD OF OPERATION THAT IS READILY OPERATED UNDER ALL LIGHTING CONDITIONS.
2. THE DOOR HARDWARE IS CAPABLE OF BEING OPERATED WITH ONE HAND AND SHALL COMPLY WITH SECTION 1010.2.1.
3. OPERATION OF THE DOOR HARDWARE DIRECTLY INTERRUPTS THE POWER TO THE ELECTRIC LOCK AND UNLOCKS THE DOOR IMMEDIATELY.
4. LOSS OF POWER TO THE ELECTRICAL LOCKING SYSTEM AUTOMATICALLY UNLOCKS THE ELECTRIC LOCK.
5. WHERE PANIC OR FIRE EXIT HARDWARE IS REQUIRED BY SECTION 1010.2.8, OPERATION OF THE PANIC OR FIRE EXIT HARDWARE ALSO RELEASES THE ELECTRIC LOCK.
6. THE ELECTROMECHANICAL OR ELECTROMAGNETIC LOCKING DEVICE SHALL BE LISTED IN ACCORDANCE WITH EITHER UL 294 OR UL1034.



H1 H.M. FRAME IN STUD/GWB WALL



J1 H.M. FRAME IN STUD/GWB WALL



S1 H.M. DOOR SILL

BRIAN BAILEY
ARCHITECT

6601 Six Forks Rd
Suite 130
Raleigh, NC 27615

919.878.1660

STATE OF MICHIGAN
BRIAN BAILEY
License No. 1301072832
LICENSED ARCHITECT

12/16/2025

IONNA RECHARGERY

INTEGRATED VENDING ENCLOSURE

21500 GREENFIELD RD
OAK PARK, MI. 48237

#	△	DESCRIPTION	DATE
1		ISSUED FOR PERMIT	12.19.25
2			
3			
4			
5			
6			
7			
8			
9			
10			

OWNER PROJECT CODE MI-0008
ARCH PROJECT # RDU 25-174

DOOR SCHEDULE

SCALE: VARIES

SHEET # **A11.0**