City of Rochester

400 Sixth Street
Rochester, MI 48307
P: (248) 733-3700
F: (248) 733-3170
www.rochestermi.org

PLANNING COMMISSON
REGULAR MEETING AGENDA

Chair David Gassen
Vice Chair & Council Member Christian Hauser
Mayor Nancy Salvia
Members: Daniel Bachmann, Jessica Clauser, David Hardin, Richard Kendziuk, Laura Murphy & Matthew Stone

See Attached Document for Virtual Meeting Instructions

400 Sixth Street	**June 2, 2025**	**7:00 PM**

1. Call to Order and Roll Call

2. Pledge of Allegiance

3. Public Comment

4. Approval of the Minutes

   A. Consideration of the Minutes of the Regular Meeting of May 5, 2025.

5. Public Hearings

   A. Notice of Public Hearing: 406 S. Main – Consideration for Site Plan Approval, Facade Change and Payment in Lieu of Parking requirements.

6. Considerations:

   A. Consideration to Amend The City of Rochester Official Zoning Map, in Accordance with the Michigan Zoning Enabling Act Pub Act 110 of 2006, as Amended.

   B. Consideration of 210 Diversion Street: Special Project & Site Plan Review Request for Public Hearing.

   C. Consideration of 125 S. Main – Request for Special Exception for Payment in Lieu of Parking requirements.

7. Miscellaneous

A. May 2025 Parking Study

8. Public Comment

9. Adjourn

NOTE: Anyone planning to attend the meeting who has need of special assistance under the Americans with Disabilities Act (ADA) is asked to contact the City Clerk's Office at 248-733-3700 forty-eight (48) hours prior to the meeting. Staff will be pleased to make the necessary arrangements to provide necessary reasonable accommodations, including auxiliary aids and services, such as signers for the hearing impaired and audiotapes of printed materials being considered at the meeting.

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Procedure for Hybrid Public Meeting

The City has returned to in-person public meetings as of September 7, 2023, with limited online capabilities. The public bodies (our boards and commissions) are meeting in-person; however, some staff, consultants, and guests will still be able to participate remotely. While in-person audience seating is now available, with limited COVID-19 procedures in place, staff asks that anyone who feels sick not attend in-person.

If you choose to participate virtual, please follow the links and information below:

- Live stream audio and video content on two (2) separate streaming platforms available at the City's YouTube and at the City's website at www.rochestermi.org/201/City-Webcasts. (Click the "Live" links to go there.)

- The City remains committed to accessibility; however, due to the limitations of technology, City staff encourages residents to send an email with your comments to rsvp@rochestermi.org prior to the meeting, but not later than Noon on the day of the meeting, so that your comments can be read into the record. This will decrease the demand on our virtual meeting infrastructure. (After Noon on the day of the meeting, email comments to: (jpeckens@rochestermi.org)

- For those who prefer to use a telephone to participate, you will need to call (312) 626-6799 and enter meeting **ID: 848 3675 9961** When prompted, enter a participant number or just touch the # key. During the call, use *9 to raise hand and you will be "called on" by the last 3-digits of your phone number. (For example, my last digits are 8029. Callers will be asked to speak by referencing the last 4-digits of their phone number.) Note: Phone participants will have their numbers masked, for privacy.

- To provide additional opportunity to participate, members of the public are welcome to join the meeting by copying and pasting the following link in their browser: **https://us02web.zoom.us/j/84836759961 (**Downloading Zoom is required.)

- We appreciate your understanding as staff will do our best to assist everyone; but, **please be advised for virtual meetings there is a three (3) minute limit for public comments**.

ROCHESTER
Where you live.

CITY OF ROCHESTER
400 SIXTH STREET
ROCHESTER, MI 48307

PLANNING COMMISSION
REGULAR MEETING MINUTES
May 5, 2025

1. CALL TO ORDER AND ROLL CALL

A meeting of the City of Rochester Planning Commission (PC) was called to order on May 5, 2025, at 7:00 p.m. by Chairman Gassen.

PRESENT: David Gassen, Chairman
Christian Hauser, Vice Chairman
Nancy Salvia, Mayor
Dan Bachmann, Commissioner
Jessica Clauser, Commissioner
Richard Kendziuk, Commissioner
Laura Murphy, Commissioner

ABSENT: David Hardin, Commissioner
Matt Stone, Commissioner

quorum was present.

Also Present: Nik Banda, City Manager
Jeff Kragt, City Attorney
Vidya Krishnan, McKenna Planner (Zoom)
Jeremy Peckens, Planning and Zoning Administrator
Rose McKinney, Planning Clerk (Zoom)

2. PLEDGE OF ALLEGIANCE

Chairman Gassen led the reciting of the Pledge of Allegiance.

3. PUBLIC COMMENT NON-AGENDA ITEMS

Jeff Russell of 326 Albertson thanked the commission for setting up the office hours for the zoning map. Questions were asked about the next steps in the process. John Jackson of McKenna will address the steps Via phone call.

Jane Turner of 712 Parkdale spoke about the apartment complex at Walnut and First street. City Manager Nik Banda they had to go through many steps and will be having a preconstruction meeting next week to kick off the project construction could be in about sixty days.

4. APPROVAL OF MINUTES

A. Consideration of the Minutes of the Planning Commission Meeting of April 7, 2025.

MOTION by Hauser supported by Murphy to approve the minutes of April 7, 2025.

Ayes: Gassen, Hauser, Salvia, Bachmann, Clauser, Kendziuk, Murphy
Nays:
Absent: Hardin, Stone

MOTION Carried.

DRAFT

5. PUBLIC HEARINGS

Notice of Public Hearing: 203 E. University – Request for Special Exception for outdoor dining and payment in lieu of parking requirements.

Vidya, McKenna Planner gave her an overview of this project. The space will be used to sell refreshments and sell artisan chocolates. The space will also be for private rentals for special events with outdoor dining. A wooden screen will be placed to make the trash receptables nonvisible. Lighting is already existing with the current DDA lighting. Boxwoods are noted on the plan and will be replaced with flowering shrubs. The large tree on the property will be replaced. It is recommended that the planning commission approve the special exception and site plan with the following stipulations.

1. Parking in lieu of two spaces.
2. Boxwoods to be replaced with flowering shrubs.
3. Release the city easement or terminate city easement to applicant to maintain.

The large tree that is on the property has needle cast disease and will die in the near future.

Grant Koche the petitioner was present and gave a brief overview of the plans with chocolate and event space. Small private functions, lectures. Flowering Hydrangeas will be placed in the landscaping. Outdoor tables will be shaded maybe sail shade type of structure. Shade structures are not on the plan and will need to come back for an amendment.

Chairman Gassen opened the public hearing at 7:29 p.m.

There was no public online or in person that wished to be heard.

Chairman Gassen closed the public hearing at 7:30 p.m.

Motion by Murphy supported by Salvia to approve the Special Exception with the three stipulations noted in McKenna letter dated April 25th.

Jeremy Peckens, Planning Administrator, gave an overview of the parking in lieu of for this space requesting two spaces.

Motion by Salvia, supported by Bachmann, to approve payment in lieu of parking for two spaces.

Ayes: Gassen, Hauser, Salvia, Bachmann, Clauser, Kendziuk, Murphy
Nays:
Absent: Hardin, Stone

MOTION Carried.

DRAFT

6.CONSIDERATIONS

A. Consideration of 406 S. Main – Request to set public hearing for Site Plan Approval, Façade change and payment in lieu of parking requirements.

Vidya McKenna Planner gave her overview of the proposed project. A preliminary review was done, and items need to be addressed before they come back to the planning commission. The petitioner is asking for eight spaces parking in lieu of. New brick, metal canopy and limestone windows are proposed. Illumination at the back of the building will be needed for safety. Wall signage and trash removal will need to be noted on the revised plans. It is recommended to add this request on the next available agenda for a public hearing.

Eric, the architect for the project, was present along with Tom Kalaj Owner. The landscaping will be replaced, and the rooftop unit will be screened. Lighting is addressed. The brick has been repainted and that is why they would like to replace it with a new brick front. The two apartments above will be replaced with offices for the cocktail lounge below. New windows will also be installed. Tom spoke about the cocktail lounge the lounge will be an English style manor with craft organic cocktails, like a modern classy old English lounge.

Brief discussion ensued discussing using anything historic to reuse in the project. There is no plan to keep the units above residential. If there is a way to bring in recycled materials and energy efficient items, it will be looked into.

Motion by Hauser supported by Bachmann to move this request to a public hearing with revised drawings for façade change and parking in lieu of at the next available meeting.

Ayes: Gassen, Hauser, Salvia, Bachmann, Clauser, Kendziuk, Murphy
Nays:
Absent: Hardin, Stone

MOTION Carried.

8.MISCELLANEOUS

There will be a meeting in early June with the parking committee, and they will be coming forth with parking information at a later date.

Brownstones are graded and cleaned up and digging will start when the other unit is sold. Alley will be repaved.

The 210 Diversion project will be coming back for a modification.

Brief discussion ensued on the proposed zoning ordinances/map. John Jackson of McKenna was here and met with residents on the proposed zoning changes. Next month in June we should have another update in John's report.

9.PUBLIC COMMENT

Jane Turner of 712 Parkdale spoke and stated it would be nice to have planning commission updates of ongoing projects. The City Manager stated there is a banner on the City's website in January and June.

10.ADJOURNMENT

Hearing there is no further business to discuss, the meeting was Adjourned at 8:22 P.M.

Respectfully Submitted,
Rose McKinney, Building and Planning Clerk

DRAFT

MCKENNA

May 25, 2025

Planning Commission
City of Rochester
400 Sixth Street
Rochester, MI 48307

Subject: **The Cocktail Lounge/406 S. Main Street; Site Plan Review**; Site plan dated 3/31/25, received by City on 5/8/2025.

Dear Commissioners:

At the City's request we have reviewed a proposal from Tom Kalaj on behalf of F and P Companies to operate a cocktail lounge on the first floor and office space on the second floor of an existing two-story building in the downtown. The site is located on the east side of Main Street between W. Fourth and W. University Drive. The site is located within the CBD (Central Business District) and was formerly occupied by Smith Jewelers.

The site plan must be corrected to note the site address as "S. Main," not "N. Main."

REVIEW COMMENTS

We have reviewed the request based on sound planning and design principles and offer the following comments for your consideration:

1. **Use.** Restaurants are principal permitted uses in the CBD per Section 1101 (3) of the Zoning Ordinance. Professional and administrative offices are permitted by right in the district per Section 1101 (5) only on the second story (not at street level). The applicant appeared before the Planning Commission for a preliminary hearing on May 5, 2025 and was scheduled for a public hearing.

2. **Access and vehicular circulation.** The subject site fronts Main Street and has access on the west side via a public alley. The site has an extensive paved area on the east side of which 42' immediately abutting the building is to be striped off for "no parking" while the remaining area abutting the alley is to be striped for two (2) on-site parking spaces reserved for use by owner and manager of the facility.

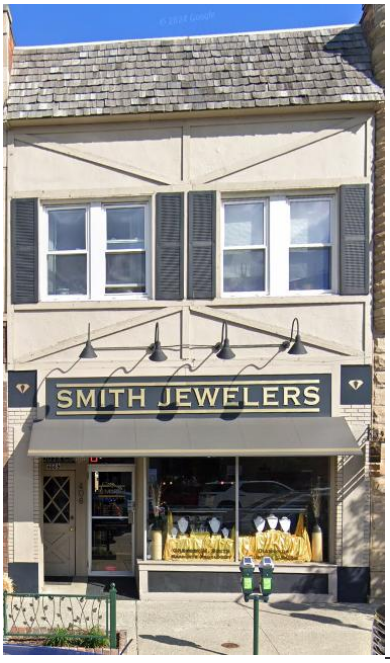
3. **Pedestrian circulation.** The subject site fronts onto Main Street with an approximately 13' wide public sidewalk. The access door off Main Street will be designed for ADA compliance and be barrier-free accessible.

4. **Parking.** Per the City's calculations, the use of the existing space as a restaurant (1,572 sq. ft at the rate of 1 space per 100 sq. ft of GFA) and office (1,572 sq. ft at the rate of 1 space per 300 sq. ft of GFA), the site will require a total of 21 parking spaces. The plan notes the provision of 2 on-site spaces on the rear of the site. Per the City, the prior use of the site for retail on the first floor grandfathered it in for 6 parking spaces, resulting in a shortfall of 13 spaces (credit for 6+2 on-site spaces). The site plan incorrectly notes the parking requirement as 20 and the parking shortfall of 8 spaces. The discrepancy must be corrected. The applicant intends to seek approval from the Planning Commission for payment in lieu of parking for 13 parking spaces. The site abuts the City parking deck to the east which serves its parking needs.

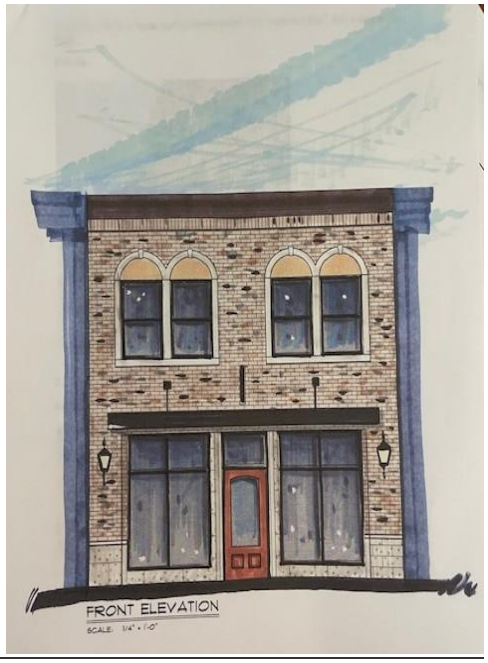
HEADQUARTERS
235 East Main Street
Suite 105
Northville, Michigan 48167
O 248.596.0920
F 248.596.0930
MCKA.COM

5. **Dumpster.** The site plan indicates an existing dumpster built integrated into the public parking deck to the east of the subject site, to serve its needs.

6. **Façade changes.** The proposed front façade is to be renovated with removal of the mansard and wood paneling, addition of new brick face, metal canopy, windows, limestone window surrounds, crown detail and a centered window design. The applicant has provided renderings of the proposed material colors indicating limestone of natural colors, brick in cocoa brown, composite paneling above windows in a neutral brown shade, black metal canopy/awning and a deep red colored door. The applicant had stated at the PC meeting that an exploratory demo revealed that the existing brick is covered in several layers of paint and attempting to remove it would cause further damage to the brick making it non-salvageable. Therefore, the new materials are being installed are to stay true to the historic character of downtown.



Existing front façade



Proposed front facade

The rear façade is not in a well maintained condition. We had previously noted that the rear façade faces the City's main parking deck and as such is as visible as the Main Street façade, and needs to be improved. As recommended, the applicant is proposing to update the rear elevation by replacing the windows, installing new guardrails for the second-story balcony and elevated first floor porch area, adding limestone over the existing block foundation, painting the vertical siding in brown color to match the front façade brick, installing a new door and decorative lighting. The proposed improvements to the front and rear facades are attractive and consistent with the architectural character of the core downtown area.

The Planning Commission had requested additional information on the history of the building and its use to the extent feasible. Address this question to the satisfaction of the Planning Commission.

7. **Lighting.** The elevations note the installation of two (2) decorative lantern style fixtures on the front and rear facades of the building. Photograph and manufacturer's model specifications have been provided and are acceptable. The fixtures are designed to match the proposed architecture.

8. **Landscaping.** The plan proposes the installation of perennials in two (2) raised wooden planter boxes on either side of the main entrance door off Main Street and four (4) planters on the east side of the building. Planter or planting details have not been provided; however, the planters must be sealed to be weather-resistant and the plant species, evergreens, to provide year-round cover.

9. **Signage.** Per the applicant signage will be limited to decal signage on the door and a projecting sign (aka blade sign) on the Main Street façade. The projecting sign is limited to 4 sq. ft in area per side and must be at least 7 feet above the sidewalk. The sign area is subject to administrative review and approval.

10. **Mechanical Equipment.** The existing HVAC equipment is located on the rear landing of the building with no screening. The plan proposes a 42" tall metal screen around the east, south and north sides with an opening for access, to screen it from public view.

RECOMMENDATION

The applicant has made numerous revisions in response to comments in our preliminary review letter and Planning Commission feedback. The plans submitted at this time address the outstanding issues with a few minor corrections. Therefore, we recommend that the Planning Commission grant site plan and façade modification approval for The Cocktail Lounge to be located at 406 S. Main Street, subject to the following conditions:

1. Correction to site address on the site plan sheet.
2. Correction of parking calculations to note the need for 9 parking spaces for payment in lieu of parking.
3. Installation of weather-resistant planter boxes with evergreen plantings.
4. Submission of signage for administrative review, prior to installation.

Respectfully,
McKENNA

Ms. Vidya Krishnan
Senior Principal Planner

Cc: Jeremy Peckens
Nik Banda
Rose McKinney
Jeff Kragt
John Cieslik

City of Rochester

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Rochester, MI 48307
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F: (248) 651-2624
www.rochestermi.org

To: Honorable Planning Commission Members

From: Jeremy Peckens, Planning and Zoning Administrator

Date: April 23, 2025

RE: Request of Site Plan Approval and Payment in Lieu of providing parking request of 8 additional spaces for 406 S. Main.

We are in receipt of a request from the new tenants of the former Smith Jewelers, located at 406 S. Main. The applicant is requesting a façade change and Payment in lieu of Parking

The request for payment in lieu of parking, based on the use change to from general retail to a restaurant with alcohol on the first floor and office on the second floor. This property is credited with 8 parking spaces, this change in use put them into a parking deficit of required parking by 13 spaces. They are now seeking a Special Exception for payment in lieu of providing for the 13 spaces.

In reviewing their new floor plan layout, we determined that on the first floor 1572 sq. feet of space must be designated as a restaurant by our Zoning Ordinance Standards. The calculation for required parking for a restaurant with alcohol is 1 parking space per 100 gross sq. ft. of area or 16 spaces. The second floor of 1572 sq. feet of space must be designated as an office by our Zoning Ordinance Standards. The calculation for required parking for a office is 1 space per 300 gross sq. feet of area or 5 spaces.

This space is credited at a rate which is calculated at 1 space per 200 gross sq. feet of area (general retail) or 6 spaces plus the 2 on site. That leaves the applicant with a 13 parking spaces deficit. The cost per space is $1,000 and they are seeking the special exception for 13 spaces.

Staff is in support of their request; we think the use of this space fits nicely into our downtown retail/service offerings.

We would suggest that you set a public hearing for their special exception request at your next available meeting.

Please feel free to call me if you have any questions.

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PLANNING COMMISSION SITE PLAN PROCEDURE GUIDE

The Rochester Zoning Ordinance requires site plan approval in a number of situations. This Procedure Guide is intended to assist you in processing a site plan. This guide does not replace nor supersede any provisions of the Zoning Ordinance or any other Code of Ordinance of the City. It is recommended that you obtain a copy of the Zoning Ordinance, as amended. The attached form must be submitted with your request for site plan review.

The Planning Commission will examine the impact of the proposed development on adjoining and nearby properties, persons and activities and will, therefore, be interested in the configuration of the new structures, durability and standards of design. The site plan submittal shall accurately depict the location, height, mass of buildings, grading plans and typical elevations and all other data required by Article 27 of the Zoning Ordinance. Site plans deemed to be incomplete may be returned by the city without placing them on the Planning Commission agenda or the Planning Commission may table (postpone) the site plan review without discussion. Final building plans are not required as part of the site plan submittal; however, a Building Permit cannot be issued except for the plans that conform to the site plan and final engineering approval. Site plan approval by the City does not include a finding of conformance with deed restrictions. If the site plan involves a need for variance from the Board of Appeals, the site plan should first be submitted to the Planning Commission so that the Board of Appeals may benefit from the findings of the Planning Commission. In such cases, the Planning Commission may, in its discretion, grant a site plan approval conditioned on Board of Appeals action. The Planning Commission may also refer the matter to the Board of Appeals without taking action on the proposed site plan.

DEADLINES

- Site plan submittals must be received by the Permit Coordinator no later than 4:00 p.m., four (4) weeks prior to the next regular meeting of the Planning Commission.
- On items that have been previously considered by the Planning Commission, the revised submittals must be submitted to the Permit Coordinator no later than 4:00 p.m., three (3) weeks prior to the next regular meeting of the Planning Commission.
- The city will review the submitted documents and inform the applicant when it will be on the schedule for Planning Commission consideration. There are no set timelines for submittals, as they are dependent on thoroughness of the submitted documents and any revisions that are needed .

Note: The Planning Commission normally meets the first Monday of each month at 7:00 p.m. in the Municipal Building, 400 Sixth Street. Please check the city website for the date of each meeting.

REQUIREMENTS

- Provide all required documentation and appropriate fee(s) to the Permit Coordinator at Jpeckens@rochestermi.org
- Provide 1 DIGITAL (flash drive) & 9 COPIES of the blueprint drawings of the site plan (pre-folded to ¼ size with the blueprint seal on the outside), including the completed application, any correspondence & written supporting documents.

- Provide a check payable to the City of Rochester for the site plan/special exception/special project/rezoning submittal fee (see page 2 for appropriate fee amounts).

APPEARANCE IS REQUIRED:

APPLICANT OR A REPRESENTATIVE FOR THE APPLICANT MUST ATTEND THE PLANNING COMMISSION MEETING IN ORDER TO ANSWER ANY QUESTIONS BY THE COMMISSION MEMBERS. FAILURE OF THE APPLICANT OR APPLICANT REPRESENTATIVE TO ATTEND THE PLANNING COMMISSION MEETING MAY RESULT IN TABLING CONSIDERATION OF THE SITE PLAN OR DENIAL OF THE SITE PLAN.

SCHEDULE OF FEES:

Until all applicable fees have been paid in full, no action shall be taken on any application or appeal. The schedule of fees shall be as follows:

APPLICATION FOR:	FEE:
ZONING BOARD OF APPEALS	$400
Administrative Processing Fee	$100
Special Planning Commission Meeting	$1500
REZONING APPLICATION	
Administrative Processing Fee	$100
Rezoning Application, less than one acre	$750
Rezoning Application, more than one acre	$50 per each additional
SITE PLAN APPLICATION	
Administrative Processing Fee	$100
Site Plan Review, less than one acre	$1,250 first review, $500 each review, thereafter, subject to $500 resubmittal fee.
Site Plan Review, more than one acre	$1,250 for 1st acre + $50 per each additional acre, each review, thereafter, subject to $500 resubmittal fee.
CONDOMINIUM PLAN APPLICATION	
Administrative Processing Fee	$100
Condo Project Application, less than one acre	$1,000 first review. Each review, thereafter, subject to $500 resubmittal fee.
Condo Project Application, more than one acre	$1,000 first review + $50 per each additional acre, each review, thereafter, subject to $500 resubmittal fee.

2

OTHER	
Special Exception Hearing Application	$500
Special Project Application within a Potential Intensity Change Area (PICA)	$500
Community / Traffic Impact Study Review	As billed by City Consultant

In addition to the aforementioned fees, the applicant shall be responsible for all necessary engineering costs incurred by the City in processing applications for rezoning and/or site plan approval. A cash deposit (as determined by Administration) shall be deposited by the applicant with the City before any such engineering costs are incurred. Thereafter, all engineering costs shall be deducted from said deposit as incurred from time to time. In the event that said deposit shall be insufficient to cover all such engineering costs, the applicant shall be required to deposit additional sums as determined by the City to be necessary to completely recover the remainder of said engineering costs prior to the continuation of such engineering services. An applicant's failure to deposit such additional sums shall result in a cessation of further engineering services or building inspections by the City and may constitute an abandonment of the application. Upon completion or abandonment, as provided for below, all remaining deposits on hand shall be refunded to the applicant.

Inactivity on the part of an applicant for a period of ninety (90) days or longer in the processing of a rezoning request and/or a site plan approval request, shall be deemed an abandonment of the application requiring submission of a new application and repayment of the above fees, unless prior approval of the applicable board or commission is obtained for a longer period of delay due to extenuating circumstances.

PLANNING COMMISSION - APPLICATION FOR APPROVAL OF SITE PLAN/SPECIAL EXCEPTION/SPECIAL PROJECT

Return to Permit Coordinator with check & required documents listed on page 1

Date Filed : 4/07/2025 **Amount of Review Fee Paid : $** 2,350

Approval of the site plan is hereby requested for the following parcel of land in the City of Rochester. This application is submitted with the required number of copies of the site plan and payment of the appropriate review fee. The checklist below has been completed to certify the data contained on the site plan. If the required data is not reflected in the site plan, the appropriate box has been checked and a detailed statement is attached explaining why the data is not provided. I understand that if my site plan is deemed to be incomplete, it may be returned by the city without being placed on the Planning Commission agenda or the Planning Commission my table (postpone) the site plan without discussion. By signing this application, the undersigned hereby grants full authority to the City of Rochester, its agents, employees, representatives and/or appointees to enter upon the undersigned lands and properties for the purpose of inspection and examination incidental hereto.

PROJECT COORDINATOR'S NAME: Tom Kaley

PROJECT COORDINATOR'S E-MAIL ADDRESS:
fandpcompanies@gmail.com

PROJECT COORDINATOR'S PRIMARY PHONE NUMBER:
586-604-6976

1. Name of proposed development:
Cocktail lounge

2. Location of property: East side of Main St. Road, between
University and
Fourt St Roads.

3. Street address: 406 S. Main St.

4. The property is presently zoned as:
B1

5. The total site area is 0.035 acres(s).

6. Portion of total site being developed:

7. It is proposed the property will be developed as:
Cocktail lounge

8. A Special Exception is being requested. X Yes ____ No.

9. Site Plan - Required Data: Check the appropriate line. If "not provided" line is checked, attach detailed explanation.

PROVIDED	NOT PROVIDED	DESCRIPTION
X		a. Date, including revision.
X		b. Plan scale of 1" equals 10', 1" = 40'
X		c. North arrow.

X		d. Inserted location sketch showing location of subject property in the mile section.
X		e. The seal of one or more of the following: registered architect, registered civil engineer, registered land surveyor, registered landscape architect or registered community planner.
	X	f. Existing and proposed grades at all lot corners and catch basins, and at a plan grid interval of not more than fifty (50) feet along all lot lines, road center lines and on the site and beyond for at least fifty (50) feet. Any proposed change of more than twenty-four (24) inches in the existing grade shall require specific approval by the Planning Commission as part of a site plan. Highlight any grade changes in excess of 24".
X		g. Existing building(s) and street(s) on site and within one hundred (100) feet of site.
X		h. Center line and existing and proposed right-of-way lines of all streets and roads on property or adjoining roads or streets.
X		i. Boundaries of subject property including distances and bearings.
X		j. Proposed buildings and structures on property, including off street parking; walkways, walls, carports and trash receptacles; dimensions of improvements; and acceleration, deceleration and passing lanes, designation of fire lanes and/or other areas in which parking will be prohibited.
X		k. Any proposed sidewalks or walkways within the right-of-way of adjoining roads or streets.
X		l. Sufficient information describing the proposed use and occupancy of the premises to ascertain compliance with the use of regulations of the district.
X		m. As applicable, number of dwelling units, number of bedrooms, number of off-street parking spaces per dwelling unit and per bedroom, percentage of land covered by buildings, total and usable floor areas for purposes of determining off-street parking requirements.
X		n. Landscape plan including tree inventory. (Section 2800).
	X	o. Description of utilities including storm drainage; sewage disposal; electrical distribution; telephone and/or television system; natural gas distribution; exterior lighting; water distribution and source; fire hydrant locations; proposed method of solid waste storage, collection and disposal.
X		p. The cover letter, signed by the owner and prospective developer holding an equitable interest in the property, shall include legal description and acreage of property; existing zoning classification and proposed zoning classification, if different; general description or proposed development; and estimation of timetable of development.

X		q. The site plan shall be accompanied by architectural sketches showing the proposed building elevations and maximum heights. The site plan package shall also include architectural sketches showing the relationships of the subject building to buildings located to the rear. 1) Clearly demonstrate the impact of the proposed building height and bulk on neighboring buildings with "model", color photo or video display.
X		r. As applicable, the site plan submittal shall be accompanied by an application form, furnished by the Administrative Office, for rezoning.
	X	s. Exterior lighting plan and design, with photometrics.

10. Present landowner: Peter Khalaj

E-MAIL: fandpcompanies@gmail.com

Address: 300 Camelot Way

City: Rochester State: MI Zip: 48306 Phone: 586-604-6976

11. Firm or individual requesting site plan approval: individual

E-MAIL: fandpcompanies@gmail.com

Address: 300 Camelot Way

City: Rochester State: MI Zip: 48306 Phone: 586-604-6976

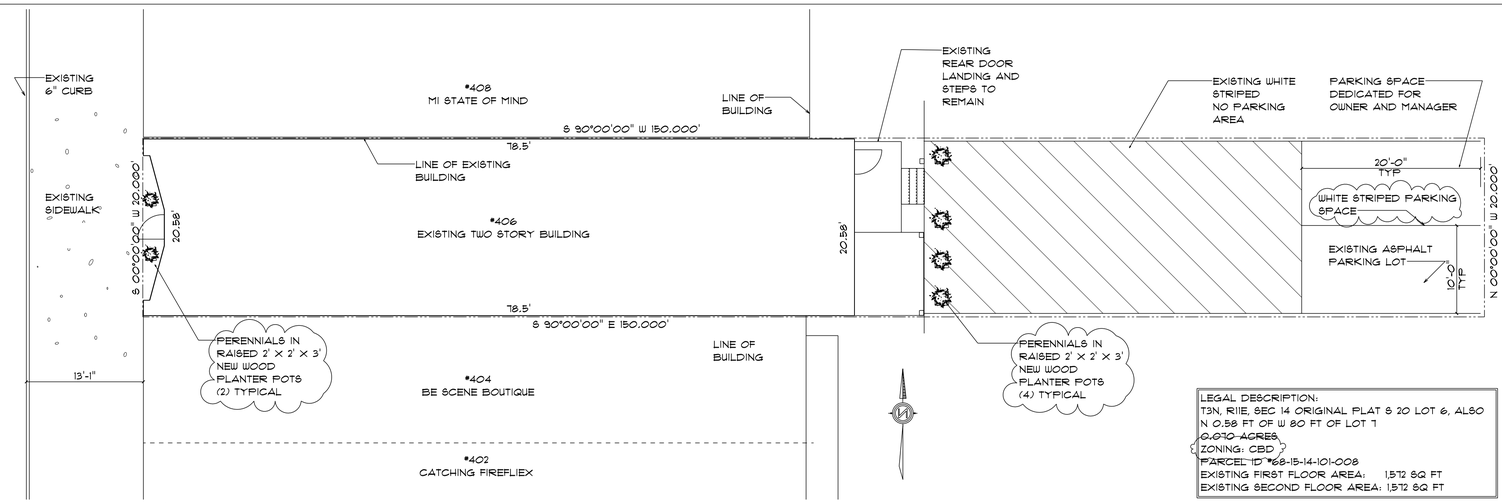
Signature of Applicant

Print Name Peter Khalaj Date 4/01/25

FRONT ELEVATION

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

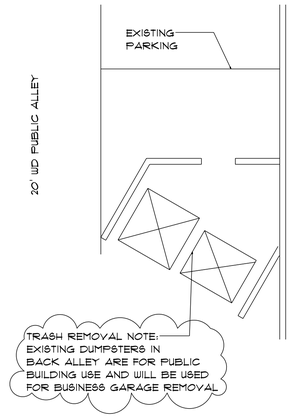
MAIN ST 100' R.O.W.

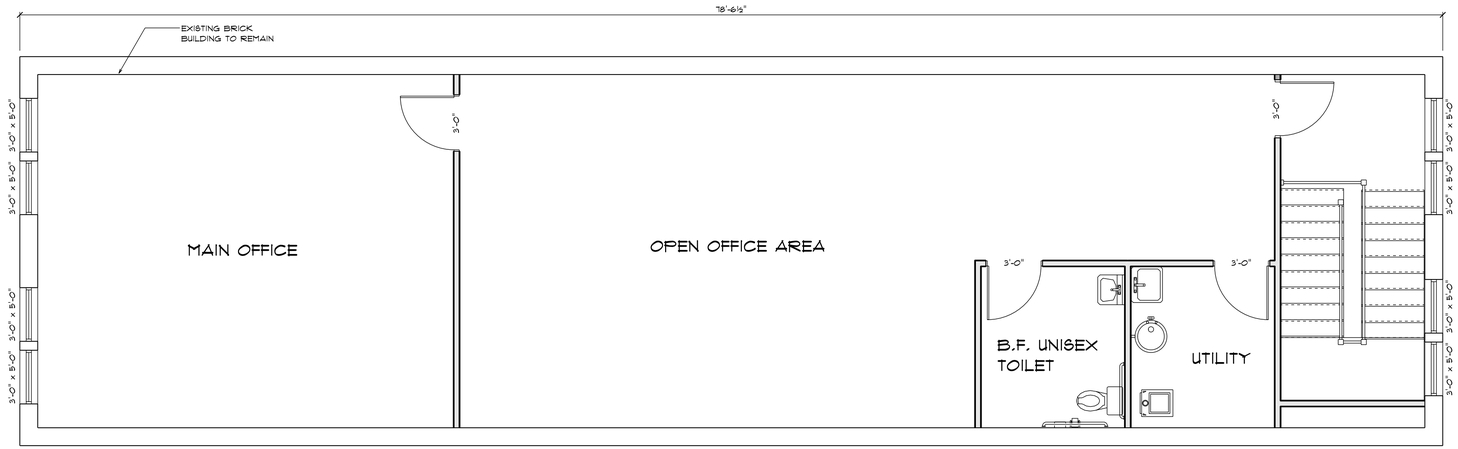


SITE PLAN

SCALE: 1/8" = 1'-0"

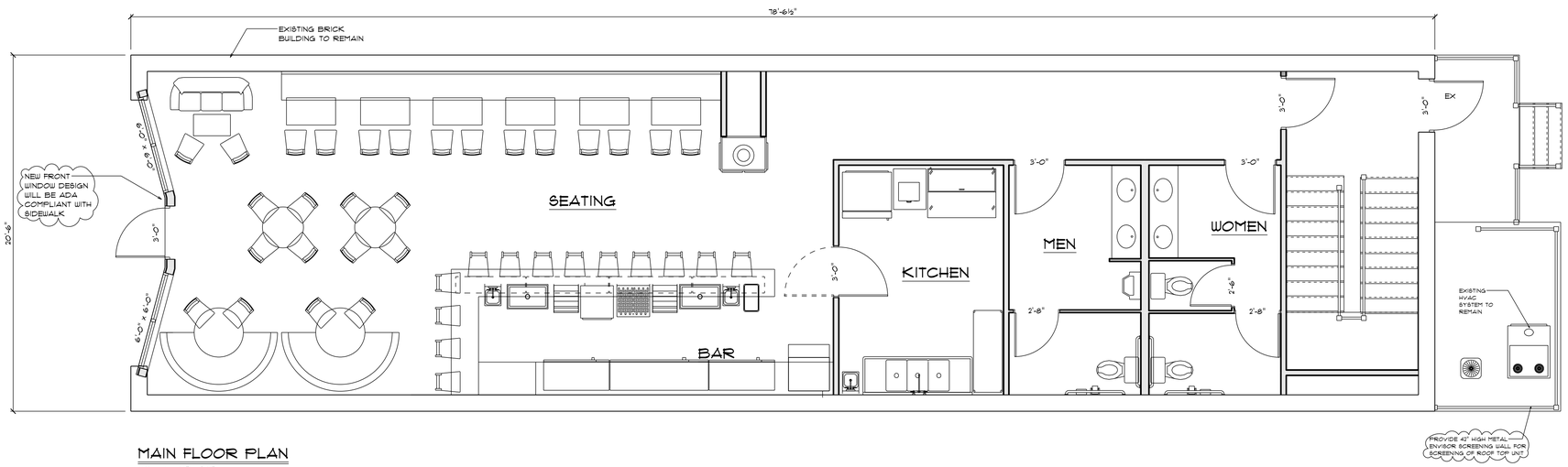
LEGAL DESCRIPTION:
T3N, R11E, SEC 14 ORIGINAL PLAT S 20 LOT 6, ALSO N 0.58 FT OF W 80 FT OF LOT 7
0.070 ACRES
ZONING: CBD
PARCEL ID #68-15-14-101-008
EXISTING FIRST FLOOR AREA: 1,572 SQ FT
EXISTING SECOND FLOOR AREA: 1,572 SQ FT





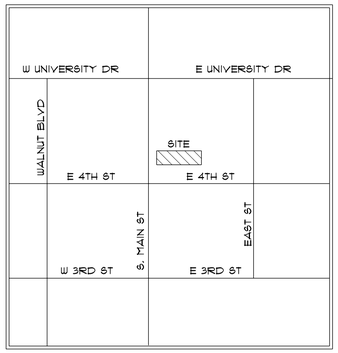
SECOND FLOOR PLAN

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



MAIN FLOOR PLAN

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



LOCATION MAP

SCALE: NO SCALE

PARKING REQUIREMENTS:	AREAS	TOTAL PARKING
MAIN FLOOR BAR// LOUNGE AREA:	1572 SF/100	15 SPACES
SECOND FLOOR AOFFICE AREA:	1572 SF/300	5 SPACES
BASEMENT UTILITY STORAGE		
TOTAL PARKING REQUIRED:		20 SPACES
TOTAL PARKING PROVIDED ON SITE:		2 SPACES
TOTAL OF PARKING CREDITED:		10 SPACES
CREDITED FROM EXISTING JEWELRY STORE AND 2 UNIT APARTMENT ON SECOND FLOOR		
TOTAL PARKING SPACES NEEDED:		8 SPACES
EXISTING (2) ON-SITE SPACES DEDICATED FOR OWNER AND MANAGER		

PROPOSED USE OF PROJECT:
EXISTING JEWELRY STORE IS TO BE RENOVATED WITH A COMPLETE INTERIOR REMODEL AND ALTERATION INTO A NEW COCKTAIL LOUNGE.

THE SECOND FLOOR WILL BE TURNED INTO PRIVATE OFFICE SPACE FOR THE COCKTAIL LOUNGE BELOW.
THE EXISTING APARTMENT UNITS WILL BE COMPLETELY REMOVED.

FRONT FACADE WITH HAVE THE EXISTING MANSARD AND WOOD PANELING REMOVED WITH THE EXISTING BRICK AND NEW BRICK FACE, NEW METAL CANOPY, WINDOWS, LIMESTONE WINDOW SURROUNDS, LIMESTONE BASE, CROWN DETAIL AND NEW MAIN CENTERED WINDOW DESIGN

POLYARCH INC.
44045 N. GRATIOT AVE.
CLINTON TWP., MI 48036
(O)586.468.4790 (F)586.468.1859

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ENGINEER:

STATE OF MICHIGAN
ROBERT ALAN WALZ
ENGINEER
NO. 6201026704
LICENSED PROFESSIONAL ENGINEER

CLIENT: THE COCKTAIL LOUNGE
406 N. MAIN ST
ROCHESTER, MI

PROJECT: INTERIOR ALTERATION OF EXISTING BUILDING AND FRONT FACADE RENOVATION

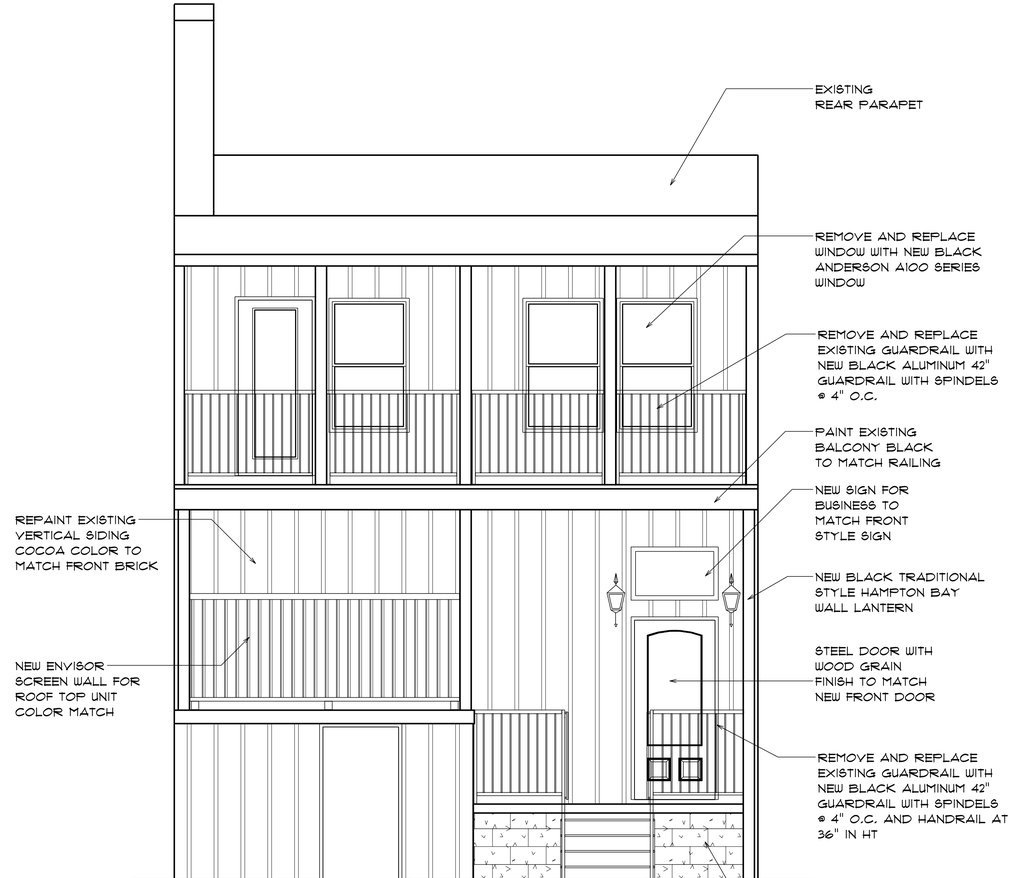
DATE:	3-31-25
PROJECT NO.	25-034
DRAWN BY:	EKH
CHECKED BY:	RAW
REVISION DATE:	

SHEET #

A-1

FRONT ELEVATION

SCALE: 3/8" = 1'-0"



REAR ELEVATION

SCALE: 3/8" = 1'-0"

POLYARCH INC.
44045 N. GRATIOT AVE.
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DRAWN BY:	EKH
CHECKED BY:	RAW
REVISION DATE:	

SHEET #

A-2

MCKENNA

Memorandum

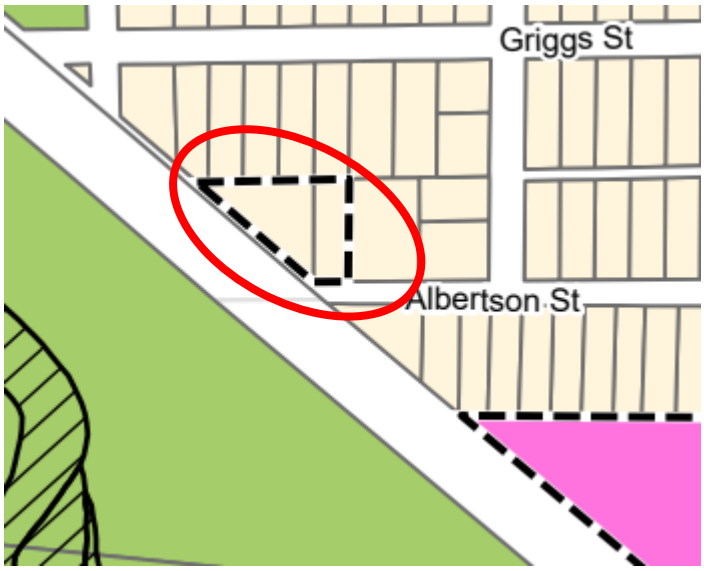
TO: Planning Commission

FROM: Vidya Krishnan
John Jackson, AICP

SUBJECT: **Master Plan Zoning Implementation**

DATE: May 19, 2025

Based on public comments at the previous planning commission meeting, follow up meetings with property owners and residents, and ongoing review of the proposed zoning map, we recommend the following changes to the proposed zoning map.



322 Albertson

Current Zoning:	R-1 One Family Residential
Current Use:	Industrial; Helro Corporation (Non-conforming use and building)
FLU map:	Industrial/Special Projects
Proposed Zoning:	R-1 One Family Residential/Special Projects

Recommendation:
We recommend maintaining the current R-1 Single Family Residential zoning with the Special Projects designation based on the fact that the site represents a number of unique challenges including a non-conforming industrial building, non-conforming use(s), irregular shaped site, environmental constraints, proximity to stable residential neighborhoods and regional recreational amenities. The Special Projects designation allows the property owners to petition the City for a custom zoning approach that would allow the existing building to become conforming, and a range of acceptable uses, along with a pre-determined public review process for future use changes. This approach would allow the current and future owners to market and finance future improvements on the property and engage the neighbors in decisions regarding future uses of the property.

HEADQUARTERS
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Suite 105
Northville, Michigan 48167

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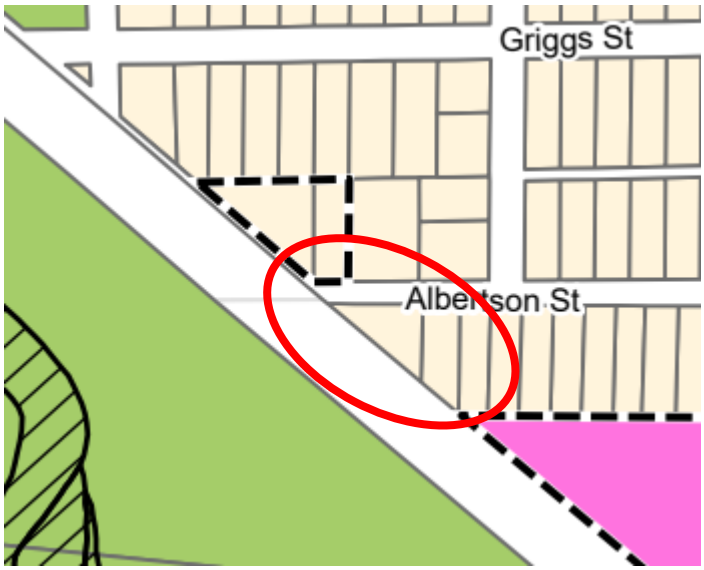
177 Albertson and adjacent vacant parcel

Current Zoning: R-1 One Family Residential

Current Use:	One Family and vacant parcel
FLU map:	Two-Family Residential
Proposed Zoning:	RT, Two-Family

Recommendation:

We recommend maintaining the current R-1 One Family Residential with potential to rezone to RT, two family in the future based on the fact that there is no immediate desire to redevelop this property for two-family residential on the part of the property owner or the city.



Walnut between 1st and 2nd Street

Current Zoning:	CBD Central Business District
Current Use:	Residential, office, and services uses
FLU map:	Multiple Family/Mixed Residential special projects
Proposed Zoning:	T, Transition

Recommendation:

Change the property on the west side of Walnut from 1st Street to 2nd Street from CBD to T, Transition to more accurately reflect the policies of the master plan and to allow a range of residential uses as well as appropriate, low-intensity commercial uses.

302 W. University Drive

Current Zoning:	B-1 General Business
Current Use:	Retail
FLU map:	Office
Proposed Zoning:	O-1 Limited Office

Recommendation:

We recommend changing this property to DE-2 based on the existing retail use and providing an appropriate transition from the DE-2 on the east side of Pine Street to the O-1 district to the west.

ZONING DISTRICT

- R-1 One Family Residential
- R-2 One Family Residential
- R-3 One Family Residential
- R-4 One Family Residential
- R-5 One Family Residential
- RM-1 Multiple Family Residential (Mixed Residential)
- RM-2 Multiple Family Residential
- RT Two Family Residential
- O-1 Limited Office
- O-2 Restricted Office
- CBD Central Business
- B-1 General Business
- DE-1 Downtown Edge 1
- DE-2 Downtown Edge 2
- MU Mixed Use
- MU-1 Mixed Use 1
- T Transition
- RTECH Research Tech
- LI Light Industrial
- P-1 Vehicular Parking
- PUB Public/Quasi-Public
- POS Parks and Open Space
- RV River Valley
- Bistro Overlay
- Conditionally Rezoned - See City for Details
- Special Project Area

Proposed Zoning Map

City of Rochester, Oakland County, MI

ZONING DISTRICT

- R-1 One Family Residential
- R-2 One Family Residential
- R-3 One Family Residential
- R-4 One Family Residential
- R-5 One Family Residential
- RM-1 Multiple Family Residential (Mixed Residential)
- RM-2 Multiple Family Residential
- RT Two Family Residential
- O-1 Limited Office
- O-2 Restricted Office
- CBD Central Business
- B-1 General Business
- DE-1 Downtown Edge 1
- DE-2 Downtown Edge 2
- MU Mixed Use
- MU-1 Mixed Use 1
- T Transition
- RTECH Research Tech
- LI Light Industrial
- P-1 Vehicular Parking
- PUB Public/Quasi-Public
- POS Parks and Open Space
- RV River Valley
- Bistro Overlay
- Conditionally Rezoned - See City for Details
- Special Project Area

THIS IS TO CERTIFY THAT THIS IS THE OFFICIAL ZONING MAP REFERRED TO IN SECTION 100 OF THE ZONING ORDINANCE NUMBER 1977-4, AS AMENDED, OF THE CITY OF ROCHESTER, MICHIGAN, ADOPTED JULY 25, 1977, AS AMENDED THROUGH FEBRUARY__, 2025 (AMENDING ORDINANCE NO. 2025-xx).

Mayor

Attested by City Clerk

Date

Seal

0 500 1,000 2,000 Feet

Basemap Source: Oakland County GIS, Michigan Center for Geographic Information Data Source: McKenna

MCKENNA

May 8, 2025
DRAFT

MCKENNA

May 27, 2025

Planning Commission
City of Rochester
400 Sixth Street
Rochester, MI 48307

Subject: **210 Diversion Street;** Preliminary plan review#1 for scheduling only; site plan dated 3/10/2025, cover sheet dated 4/1/2025.

Dear Planning Commissioners:

At the City's request, we have reviewed a proposal from Roger Berent on behalf of 210 Diversion LLC to **amend** a previously special projects approval from the City Council in March 2024 to construct a 4-story, 21-unit multi-family residential building. The site is located on the south side of Diversion Street as it curves to the east from First Street.

BACKGROUND. The site is split zoned into O-2 Restricted Office and I-2 Industrial-2 districts. Residential uses are not permitted in the I-2 District. Upper story apartments are permitted as a special exception in the O-2 District per Section 1504 (5) of the Zoning Ordinance. Due to the split zoned nature of the parcel the applicant sought special projects approval from the PC per Section 2115 of the Zoning Ordinance, which facilitates the development of a project on a site, in an innovative manner which cannot be accomplished by a strict application of the regulations of the Zoning Ordinance.

The site is identified in the Master Land Use Plan map as a "Special Projects Area." Per the Master Plan adopted by the City in April 2022, the site is designated as multi-family/mixed residential. Under the description of the district in the Master Plan, the proposed use would be allowable on the subject site, without the need for a 'use deviation' being sought as a 'special project.'

REQUEST. The applicant received special projects approval from the City Council in March 2024, after a recommendation of approval from the Planning Commission. Since then, the applicant has been working on engineering and construction drawings and recently submitted a revised site plan to the City seeking "minor" site plan changes. However, in our review, the changes being proposed are not minor since they involve a change in building size, footprint, circulation, landscaping, trash enclosure and more (outlined in comment below). This is a major amendment to the site plan.

PROCESS. Special projects are governed by the procedures set forth in Section 2115, which does not address the issue of an amendment. Per our discussion with the City Attorney, we believe the correct procedure to follow would be as set forth for any special projects i.e., all the steps, including recommendation from Planning Commission after a public hearing and subsequent final action by the City Council.

Step 1: Application to PC ***- current stage of project***;

Step 2: Public hearing at PC meeting;

Step 3: PC forwarding all materials to City Council with a recommendation on the project;

Step 4: City Council action on project – disapproval/approval /approval with conditions in writing.

HEADQUARTERS
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Suite 105
Northville, Michigan 48167

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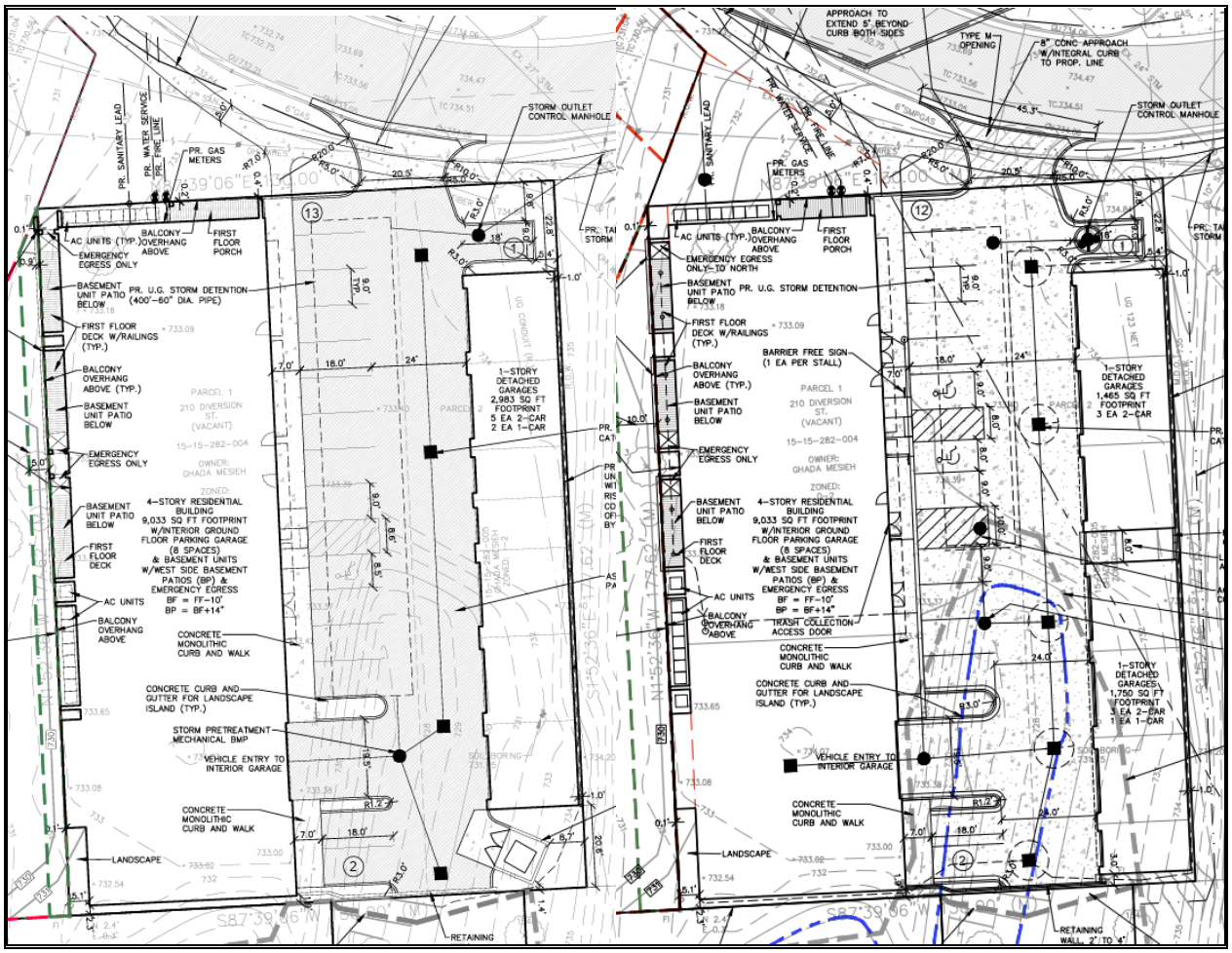
MCKA.COM

The comments below are intended to provide an overview of the project's main elements and identify a list of items that must be addressed on a future submission to the Planning Commission. The comments presented do not constitute a complete site plan review.



Approved Special Projects Site Plan *Amended Plan*

SUMMARY OF CHANGES. The following is the list of changes we observed, which may not be comprehensive. The ***applicant must provide*** side to side comparisons of all aspects of the site plan and elevation to identify any and all changes from the approved plans.

1. A single one-story detached 2,983 sq. ft garage building has been replaced with TWO (2) one-story detached garage buildings with a total area of 3,215 sq. ft (1,750 sq. ft and 1,465 sq. ft).

2. Trash enclosure shown on the southeast corner of site has been eliminated and replaced with trash collection inside the building.

3. A new 8' wide landscape area has been created between the two (2) detached garage buildings.

4. The approved plan provided for 8 interior parking spaces including one (1) handicap accessible space, 12 spaces within the detached garage building and 16 exterior spaces including one (1) handicap accessible space. The amended plan notes 8 interior spaces, 13 spaces within the garage buildings and 15 exterior parking spaces.

5. The balconies on the west, north and south sides have been extended by 1 foot for "better flow and usage".

6. An elevator shaft is shown projecting 1.83 feet above the flat roof height for "clearance requirements."

7. The south elevation has been revised to change the design for the lower-level garage ventilation. The east elevation has been revised to eliminate a window above the building signage for "consistency with below hallways."

COMMENTS

1. Since the applicant is seeking special projects site plan amendment approval, the submittal must be complete with every sheet, detail and supporting document provided with the original submission. This amended set, if approved, will replace the previously approved site.

2. Provide updated lot coverage calculations.

3. The amended plan notes that trash collection has been relocated to the interior of the building and a circulation diagram has been included on Sheet C04. The diagram submitted provides no idea of how access will be accomplished. It merely shows the wheel path in and out of the site but no explanation of how the trash truck will access the trash door, how trash will be removed, how the truck will turn and exit the site. Revise the diagram to show full turn movements.

4. Per the amended plan the balcony is being extended by 1 foot on the west, north and south sides. The site plan previously showed a 0.1' setback from the west property line. The extension of the balcony to the west creates an encroachment into the neighboring property to the west. The original plan was approved with a landscape easement on the property to the west to allow for planting of shrubs to screen the mechanical equipment. The easement was not approved for structural encroachment.

5. The plan previously noted a 0.2' setback from the north property line. The amended plan proposes an extension of the balcony by 1-foot but does not show an alteration to the setback. Clarify. An encroachment into the public right-of-way to the north cannot be approved.

6. Clarify what is meant by "better flow and usage" for increased balcony depth.

7. Provide floor plans for the detached garage buildings.

8. Provide colored elevations for the proposed detached garage buildings.

9. Colored renderings of the proposed elevations must be provided next to the approved elevations to give a clear visual of the changes proposed.

10. Clarify if additional light fixtures are to be added to the detached garage buildings. Include manufacturer's cut sheet detail previously approved to maintain consistency.

11. Provide a summary of landscaping changes including plant material counts.

RECOMMENDATION

As a special project, the applicant was required to demonstrate significant public benefit to the entire community. Per a written narrative submitted at the time of the original plan approval in March 2024, the public benefit offered by the project is: sidewalk connection along Diversion extended to the overpass allowing for access to main street via the new stairway, new 'loft-style' apartments contributing to pedestrian traffic and customers to downtown businesses; contributing to the tax base and a visually appealing site.

The public benefit being offered remains unchanged at this time; however, as part of the process for approval, the narrative and any other justification provided must be resubmitted. We recommend that the Planning Commission provide the applicant with feedback regarding the changes and their acceptability, direct the applicant to make all of the changes noted in underlined text above, and schedule the project for a public hearing at a future meeting.

A revised submittal must include all sheets for a complete site plan set including but not limited to site plan, landscape plan, floor plan, circulation plan, renderings, elevations and cut sheets.

Respectfully,
McKENNA

Ms. Vidya Krishnan
Senior Principal Planner

Cc: Jeremey Peckens
Nik Banda
Rose McKinney
Jeff Kragt
John Ceislik

MATERIAL LEGEND

1. MODULAR BRICK VENEER (BRICK 1) - MODULAR FACE BRICK VENEER, BELDEN BELCREST 760, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
2. MODULAR BRICK VENEER (BRICK 2) - MODULAR FACE BRICK VENEER, BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
3. KNOTWOOD SIDING - KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, ALUMINUM SIDING WITH WOODGRAIN FINISH AND FLASHING DETAILS.
4. METAL FASCIA AND SOFFIT - BLACK METAL CLADDING PANELS, PRE-FINISHED ALUMINUM OR STEEL, FOR MOISTURE PROTECTION.
5. METAL PARAPET CAP - BLACK METAL PARAPET CAP, PRE-FINISHED ALUMINUM OR STEEL, WEATHER-RESISTANT AND SECURELY ANCHORED.
6. ALUMINUM RAILING - 42" HIGH ALUMINUM RAILING, BLACK FINISH, DESIGNED FOR DURABILITY AND SAFETY.
7. PELLA IMPERVIA WINDOW - PELLA IMPERVIA FIBERGLASS WINDOWS, BLACK EXTERIOR AND INTERIOR COLOR, WITH CLEAR GLASS AND ENERGY-EFFICIENT GLAZING.
8. STOREFRONT ALUMINUM FRAMING - ALUMINUM STOREFRONT FRAMING SYSTEM, BLACK FINISH, WITH CLEAR GLASS FOR WEATHER RESISTANCE AND NATURAL LIGHT.
9. HOLLOW METAL DOOR - BLACK HOLLOW METAL DOORS WITH BLACK FRAMES, WITH WEATHERSTRIPPING AND THRESHOLD FOR DURABILITY.
10. METAL DOWNSPOUTS - 6" SQUARE BLACK METAL DOWNSPOUTS, PRE-FINISHED ALUMINUM OR STEEL, FOR ROOF RUNOFF DIRECTION.
11. STANDING SEAM METAL ROOF - STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
12. STONE CAP - STONE CAP SPANNING BETWEEN CMU AND BRICK, WEATHER-RESISTANT AND SECURELY ANCHORED.

1 EAST ELEVATION

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

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

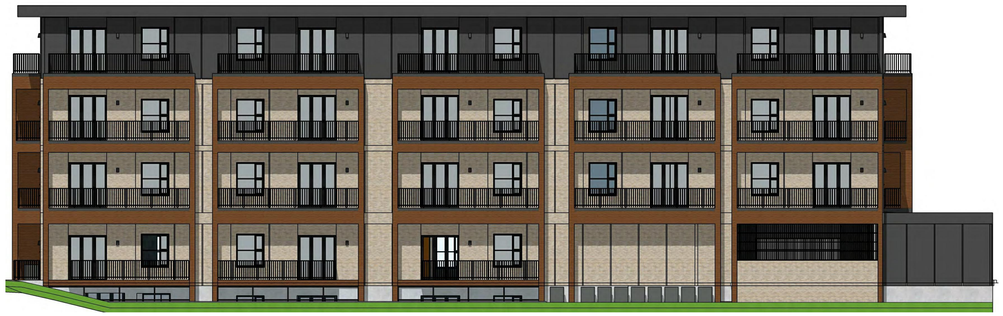
No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: EXTERIOR ELEVATIONS

Drawing Number: A-200

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT



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12. STONE CAP - STONE CAP SPANNING BETWEEN CMU AND BRICK, WEATHER-RESISTANT AND SECURELY ANCHORED.

30" GLASS GUARDRAIL ON CONCRETE WALL SPEC:
30" HIGH GLASS GUARDRAIL INSTALLED ON TOP OF 12" THICK CONCRETE BASEMENT WALL FORMING WALKOUT WELL FOR BASEMENT UNITS, DESIGNED PER 2015 IBC SECTION 1015 (GUARDS) AND 1607 (LOADS). GUARDRAIL CONSISTS OF 3/8" TEMPERED GLASS PANELS (FULL HEIGHT, 30" X PANEL WIDTH), SUPPORTED BY ALUMINUM SHOE BASE (E.G., CRL TAPER-LOC SYSTEM), ANCHORED TO CONCRETE WALL TOP WITH 1/2" DIA. STAINLESS STEEL ANCHOR BOLTS AT 12" O.C., EMBEDDED 3" INTO 4000 PSI CONCRETE (ACI 318 SECTION 17.5). GLASS PANELS PROVIDE 200 LBF CONCENTRATED LOAD RESISTANCE AT TOP EDGE AND 50 PSF UNIFORM LOAD OVER ENTIRE SURFACE (IBC 1607.8.1), WITH NO OPENINGS EXCEEDING 4" SPHERE (IBC 1015.4). ALUMINUM SHOE FINISHED IN BLACK POWDER-COAT TO MATCH BUILDING AESTHETIC, INSTALLED WITH LEVEL BASE (±1/4" TOLERANCE) ON GROUTED WALL TOP. GUARDRAIL HEIGHT (30") ADDS TO CONCRETE WALL HEIGHT, ENSURING TOTAL HEIGHT FROM WALKOUT WELL FLOOR ≥42" (IBC 1015.3), VERIFIED BY STRUCTURAL ENGINEER. INSTALLATION TO BE WEATHERPROOFED WITH SILICONE SEALANT AT BASE (IBC 1403.2). AFFORDABLE AND EASY-TO-INSTALL SYSTEM WITH PRE-FABRICATED COMPONENTS.

2 WEST ELEVATION (WITH BALCONIES)

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

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: EXTERIOR ELEVATIONS

Drawing Number: A-210

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52091 · LICENSED ARCHITECT

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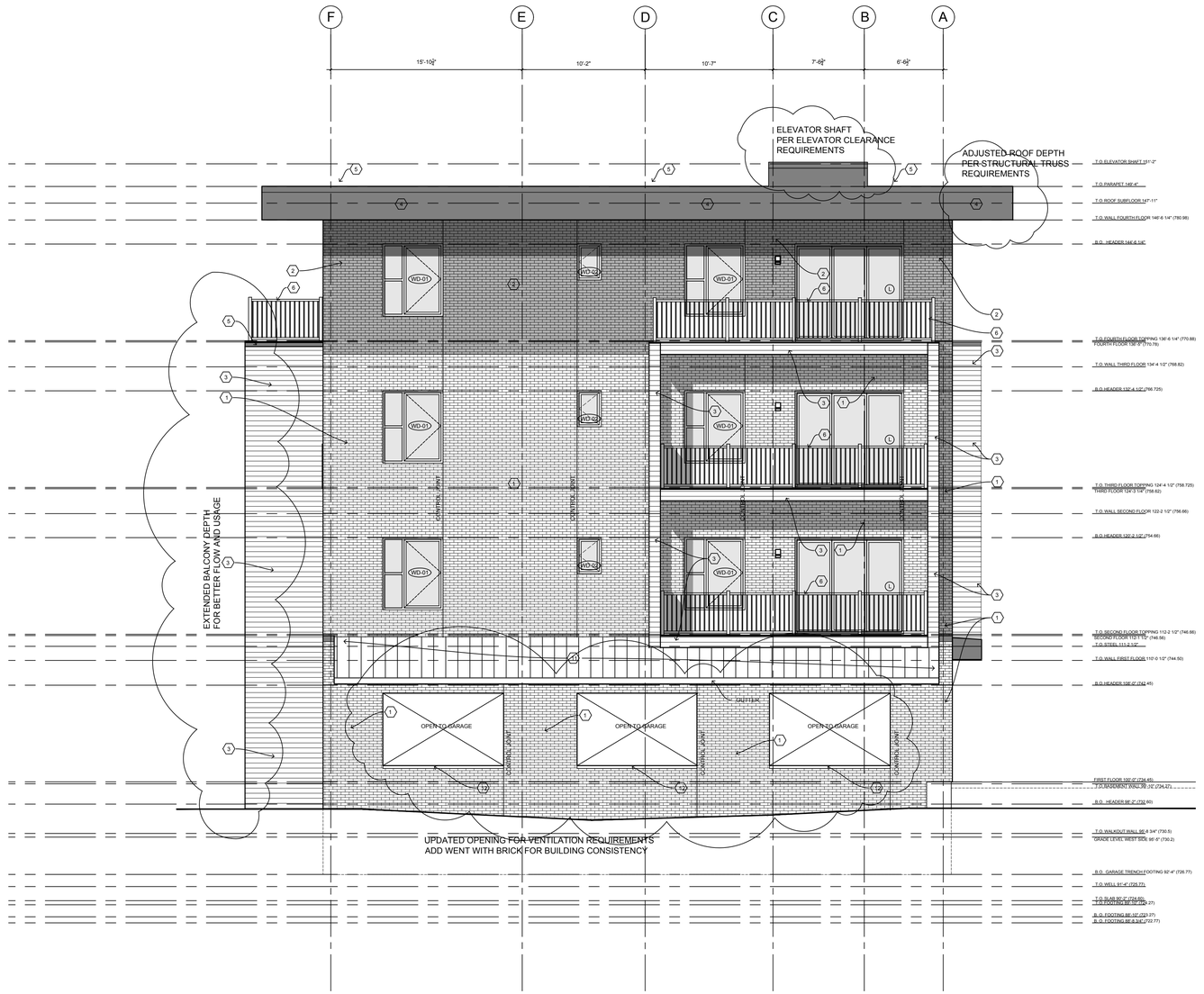
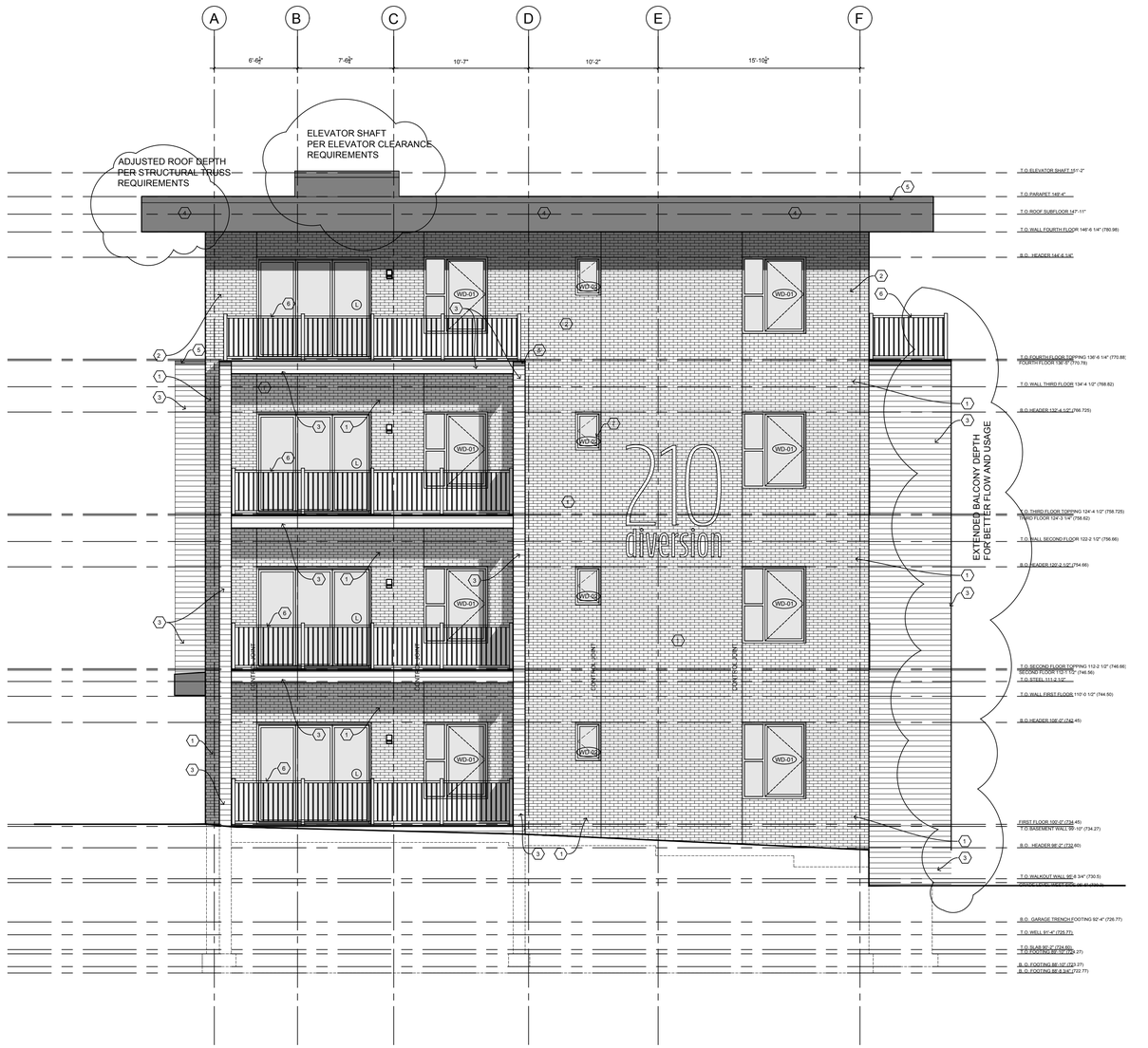


4 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"

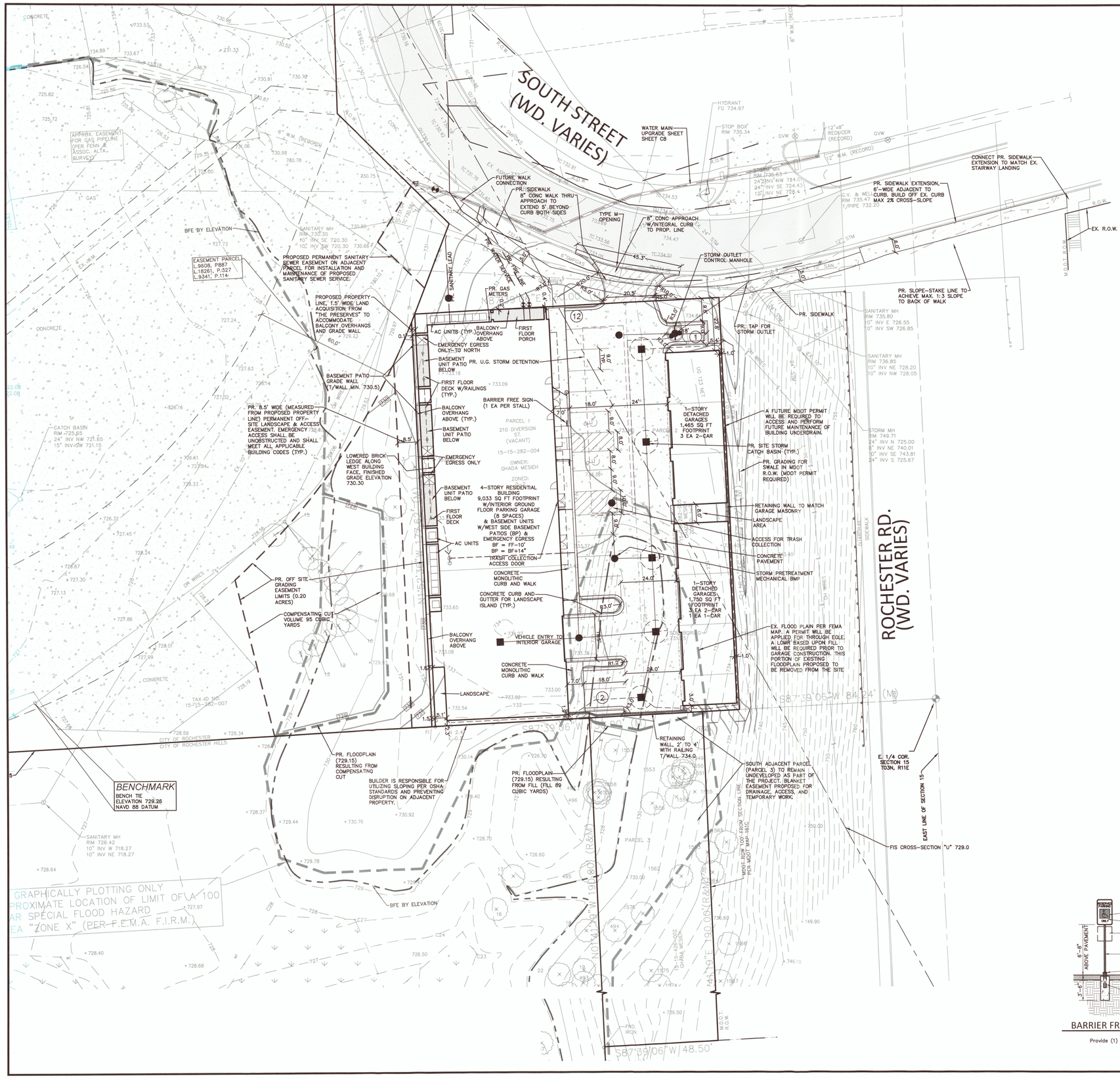


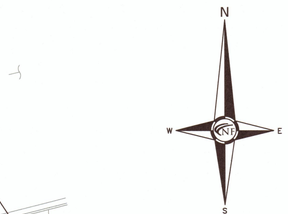
3 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan

Date:	Drawn By:	Drawing Number: A-220
Scale:	Checked By:	
DRAWING TITLE: EXTERIOR ELEVATIONS		

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT





SITE NOTES

PROPOSED USE: RESIDENTIAL APARTMENT BUILDING

PARCEL CONSOLIDATION: THE DEVELOPMENT PROPOSES TO CONSOLIDATE TWO (2) OF EXISTING ROCHESTER PARCELS INTO ONE (1) PROPOSED PARCEL AS SHOWN IN PLAN VIEW AND AS FOLLOWS:

EXISTING PARCELS 1 & 2 TO BE COMBINED.
PROPOSED PARCEL AREA (EX. PARCELS): 23,089.72 SQUARE FEET OR 0.53 ACRES
PARCEL 3 (0.21 ACRES – ROCHESTER HILLS PARCEL) TO BE LEFT UNDEVELOPED AS PART OF PROJECT.
PROPOSED 1.5' WIDE LAND ACQUISITION ALONG WEST PROPERTY LINE: 263.87 SQ. FT.
PROPOSED TOTAL PARCEL AREA (EX. PLUS PR.): 23,353.59 SQ. FT. OR 0.54 ACRES

SITE ZONING:

PARCEL 1: O–2
PARCEL 2: I–1

PROPOSED SETBACKS:

DIMENSIONS SHOWN IN PLAN VIEW

PROPOSED BUILDING HEIGHT:

4–STORIES @ 48 FEET, W/ADDITIONAL 4' ROOF MECHANICAL SCREEN AND 10' BASEMENT BELOW.

OPEN SPACE/IMPERVIOUS AREA:

EXISTING BUILDING FOOTPRINT:	0.00 AC
EXISTING PAVEMENT/GRAVEL:	0.00 AC
EXISTING IMPERVIOUS AREA:	0.00 AC/0.54 AC=0.00%

PROPOSED DEVELOPMENT:	(WITH ACQUISITION)	(WITH PARCEL 3):
PROPOSED BUILDING FOOTPRINT:	0.21 AC/0.54 AC=38.89%	(0.21/0.75 = 28.00%)
PROPOSED GARAGE FOOTPRINTS:	0.07 AC/0.54 AC=12.96%	(0.07/0.75 = 9.33%)
PROPOSED CURB & PAVEMENT:	0.19 AC/0.54 AC=35.19%	(0.19/0.75 = 25.33%)
PROPOSED WALKS & PATIOS:	0.03 AC/0.54 AC= 5.56%	(0.03/0.75 = 4.00%)
PROPOSED IMPERVIOUS:	0.50 AC/0.54 AC=92.59%	(0.50/0.75 = 66.67%)

DENSITY CALCULATIONS:

PROPOSED 1–BEDROOM UNITS:	13 UNITS
PROPOSED 2–BEDROOM UNITS:	8 UNITS
TOTAL NUMBER OF UNITS:	21

21 UNITS / 0.54 ACRES = 38.89 UNITS PER ACRE (W/PARCEL 3: 21/0.75 = 28.00)

REQUIRED PARKING CALCULATIONS:

1.5 PARKING SPACES PER 1–BEDROOM UNIT & 2.0 PARKING SPACES PER 2–BEDROOM UNIT
1.5 X 13 + 2.0 X 8 = 36 SPACES REQUIRED

PROVIDED PARKING SUMMARY:

INTERIOR GARAGE:	8 SPACES INCLUDES 1 BARRIER FREE VAN SPACE
DETACHED GARAGES:	13 SPACES
EXTERIOR SPACES:	15 SPACES INCLUDES 1 BARRIER FREE VAN SPACE
TOTAL SPACES:	36 SPACES, INCLUDING 2 BARRIER FREE VAN SPACES

TEMPORARY OFF SITE GRADING EASEMENT REQUIRED

AN OFF SITE GRADING EASEMENT IS REQUIRED ON THE ADJACENT PARCEL TO PERFORM COMPENSATING CUTS TO OFFSET THE FLOOD PLAIN FILL REQUIRED ON 210 DIVERSION.

THE PROJECT OWNER IS RESPONSIBLE FOR OBTAINING THE REQUIRED EASEMENT FROM THE ADJACENT PROPERTY OWNER PRIOR TO SITE PLAN APPROVAL.

PERMANENT OFF SITE EASEMENT

AN OFF SITE PERMANENT EASEMENT FOR LANDSCAPE AND EMERGENCY ACCESS, 8.5' WIDE, IS PROPOSED ON THE ADJACENT PARCEL TO ALLOW INSTALLATION OF LANDSCAPING FOR 210 DIVERSION.

THE PROJECT OWNER IS RESPONSIBLE FOR OBTAINING THE REQUIRED EASEMENT FROM THE ADJACENT PROPERTY OWNER PRIOR TO SITE PLAN APPROVAL.

EQUIPMENT SCREENING

APPLICANT WILL COORDINATE FINAL LOCATION AND SCREENING METHODS OF ELECTRIC TRANSFORMER, METERS, AND UTILITIES, WITH DTE, THE CITY'S ENGINEERING AND PLANNING DEPARTMENTS, AND THE CITY'S FIRE CHIEF. FINAL LOCATION AND SCREENING METHODS WILL BE DEPICTED ON FINAL ENGINEERING AND PERMIT DRAWINGS FOR REVIEW AND FINAL APPROVAL.

TRASH COLLECTION

APPLICANT HAS REVISED TRASH COLLECTION TO THE INTERIOR OF THE BUILDING, WHICH THEREFORE NO LONGER REQUIRES AN EXTERIOR TRASH ENCLOSURE. THE PREVIOUS EXTERIOR TRASH ENCLOSURE HAS BEEN REMOVED FROM THE SITE PLAN AND REPLACED WITH 1 PARKING SPACE, AND SAID TRASH COLLECTION DOOR AND ACCESS SHOWN HEREON (AS OF 09/03/24).

PARCEL COMBINATION & LAND ACQUISITION

THE TWO (2) EXISTING ROCHESTER PARCELS WILL BE COMBINED, ALONG WITH A PROPOSED 1.5' WIDE STRIP OF LAND TO BE ACQUIRED FROM "THE PRESERVES". SEE SHEET C1 FOR PROPOSED COMBINED PARCEL DESCRIPTION

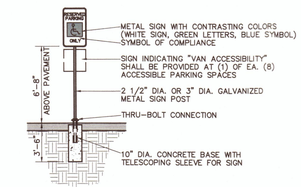
PAVING LEGEND

PROPOSED CONCRETE PAVEMENT

PROPOSED ASPHALT PAVEMENT

LEGEND

EXISTING SANITARY SEWER
SAN. CLEAN OUT
EXISTING WATERMAIN
EXISTING STORM SEWER
EX. R. Y. CATCH BASIN
EXISTING BURIED CABLES
OVERHEAD LINES
LIGHT POLE
SIGN
EXISTING GAS MAIN
PR. SANITARY SEWER
PR. WATER MAIN
PR. STORM SEWER
PR. R. Y. CATCH BASIN
PROPOSED LIGHT POLE



BARRIER FREE PARKING SIGN DETAIL
N.T.S.
Provide (1) for each accessible parking space

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NFE-ENGR.COM

SEAL

STATE OF MICHIGAN
BRETT J. BUCHHOLZ
ENGINEER
NO. 45606
LICENSED PROFESSIONAL ENGINEER

PROJECT
210 Diversion

CLIENT
LoChirco Custom Homes

PROJECT LOCATION
Part of the NE ¼ of Section 15 T.3N. , R.11E. City of Rochester, Oakland County, Michigan

SHEET
Site & Dimension Plan

811 Know what's below Call before you dig.

DATE	ISSUED/REVISED
01-18-23	ISSUED FOR OWNER REVIEW
03-03-23	PRE-SPA REVIEW
06-30-23	REV. PER OWNER
11-06-23	REV. PER CITY
12-20-23	UPDATE PER MCKENNA REVIEW
03-06-24	REVISED PER PC MEETING
09-03-24	REV. PER OWNER (TRASH COLLECTION)
10-18-24	ISSUE FOR PERMITS
12-12-24	REV. PER CITY ENG. REVIEW 1
03-10-25	REV. PER CITY ENG. REVIEW 2
04-02-25	REV. BALCONY OVERHANGS

DRAWN BY: M. Hani
DESIGNED BY: B. Buchholz
APPROVED BY: B. Buchholz
DATE: January 18, 2023
SCALE: 1" = 20'
20 10 0 10 20 30

NFE JOB NO. I778-04
SHEET NO. C03

MATERIAL LEGEND

1. MODULAR BRICK VENEER (BRICK 1) - MODULAR FACE BRICK VENEER, BELDEN BELCREST 780, WITH MORTAR JOINTS AND WEEP HOLES FOR
2. MODULAR BRICK VENEER (BRICK 2) - MODULAR FACE BRICK VENEER, BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEE
3. KNOTWOOD SIDING - KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, ALUMINUM SIDING WITH WOODGRAIN FINISH AND FLASHING
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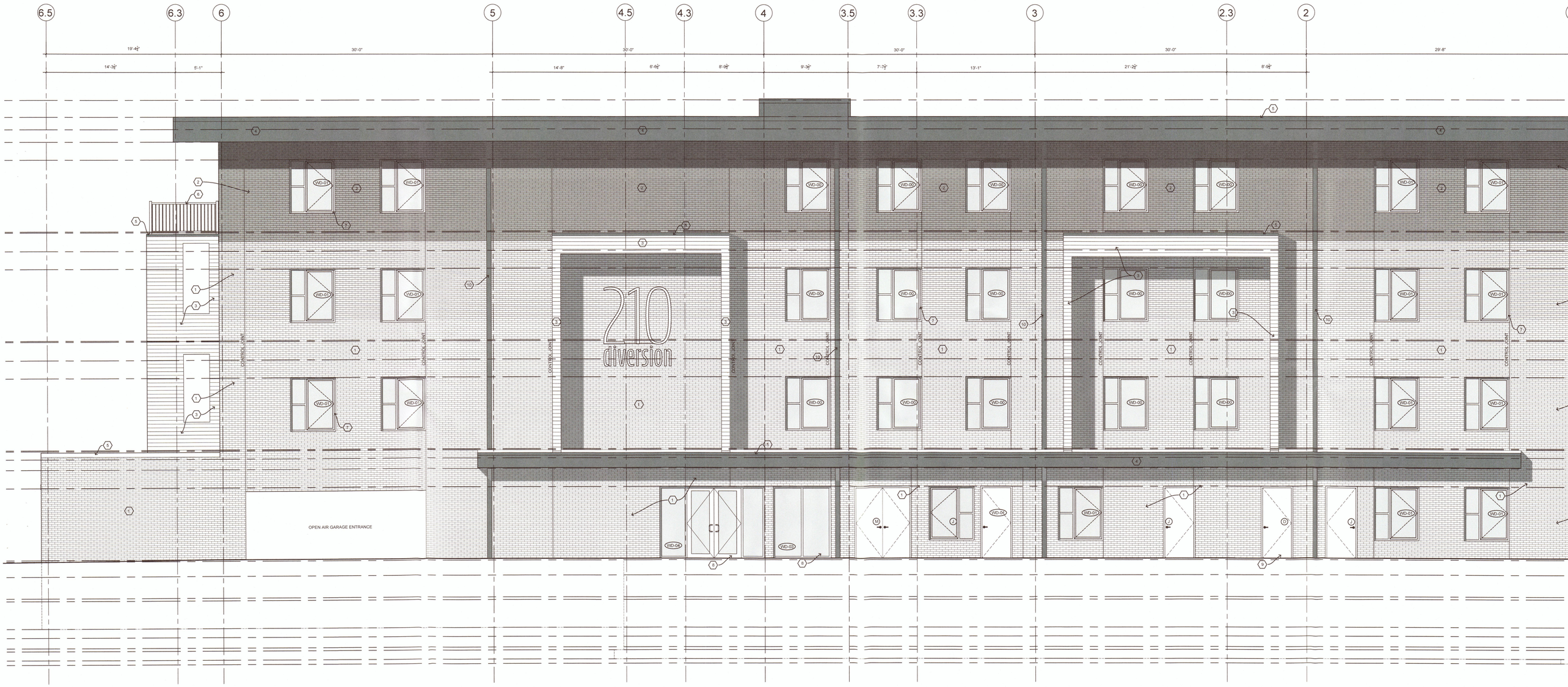

1 EAST ELEVATION
SCALE: 3/16" = 1'-0"

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
6435 Apple Orchard Lane, Rochester Hills, MI 48306
248.800.6505
roger@rogerberent.com

Owner:
LOCHIRCO
CUSTOM HOMES
202 Walnut Blvd. Suite B Rochester, MI

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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date:
Scale:
Drawn By:
Checked By:
DRAWING TITLE:
EXTERIOR ELEVATIONS

Drawing Number:
A-200

MATERIAL LEGEND

1. MODULAR BRICK VENEER (BRICK 1) - MODULAR FACE BRICK VENEER, BELDEN BELCREST 760, WITH MORTAR JOINTS AND WEEP HOLES FOR MOIS
2. MODULAR BRICK VENEER (BRICK 2) - MODULAR FACE BRICK VENEER, BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOL
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11. STANDING SEAM METAL ROOF - STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR
12. STONE CAP - STONE CAP SPANNING BETWEEN CMU AND BRICK, WEATHER-RESISTANT AND SECURELY ANCHORED.

30" GLASS GUARDRAIL ON CONCRETE WALL SPEC:
30" HIGH GLASS GUARDRAIL INSTALLED ON TOP OF 12" THICK CONCRETE BASEMENT WALL FORMING WALKOUT WELL FOR BASEMENT UNITS, DESIGNED PER 2015 IBC SECTION 1015 (GUARDS) AND 1607 (LOADS). GUARDRAIL CONSISTS OF 3/8" TEMPERED GLASS PANELS (FULL HEIGHT, 30" X PANEL WIDTH), SUPPORTED BY ALUMINUM SHOE BASE (E.G., CRL TAPER-LOC SYSTEM), ANCHORED TO CONCRETE WALL TOP WITH 1/2" DIA. STAINLESS STEEL ANCHOR BOLTS AT 12" O.C., EMBEDDED 3" INTO 4000 PSI CONCRETE (ACI 318 SECTION 17.5). GLASS PANELS PROVIDE 200 LBF CONCENTRATED LOAD RESISTANCE AT TOP EDGE AND 50 PSF UNIFORM LOAD OVER ENTIRE SURFACE (IBC 1607.8.1), WITH NO OPENINGS EXCEEDING 4" SPHERE (IBC 1015.4). ALUMINUM SHOE FINISHED IN BLACK POWDER-COAT TO MATCH BUILDING AESTHETIC, INSTALLED WITH LEVEL BASE (±1/4" TOLERANCE) ON GROUTED WALL TOP. GUARDRAIL HEIGHT (30") ADDS TO CONCRETE WALL HEIGHT, ENSURING TOTAL HEIGHT FROM WALKOUT WELL FLOOR ≥42" (IBC 1015.3), VERIFIED BY STRUCTURAL ENGINEER. INSTALLATION TO BE WEATHERPROOFED WITH SILICONE SEALANT AT BASE (IBC 1403.2). AFFORDABLE AND EASY-TO-INSTALL SYSTEM WITH PRE-FABRICATED COMPONENTS.

2 WEST ELEVATION (WITH BALCON

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

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
6435 Apple Orchard Lane, Rochester Hills, MI 48306
248.800.6505
roger@rogerberent.com

Owner:
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CUSTOM HOMES
202 Walnut Blvd, Suite B Rochester, MI

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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: EXTERIOR ELEVATIONS

Drawing Number:
A-210

MATERIAL LEGEND

1. MODULAR BRICK VENEER (BRICK 1) - MODULAR FACE BRICK VENEER, BELDEN BELCREST 760, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
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5 WEST ELEVATION (WITHOUT BALCONIES)
SCALE: 3/16" = 1'-0"

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE:
EXTERIOR ELEVATIONS

Drawing Number:
A-215

Seal:
STATE OF MICHIGAN
ROGER JASON BERENT
ARCHITECT
No. 52391
LICENSED ARCHITECT

MATERIAL LEGEND

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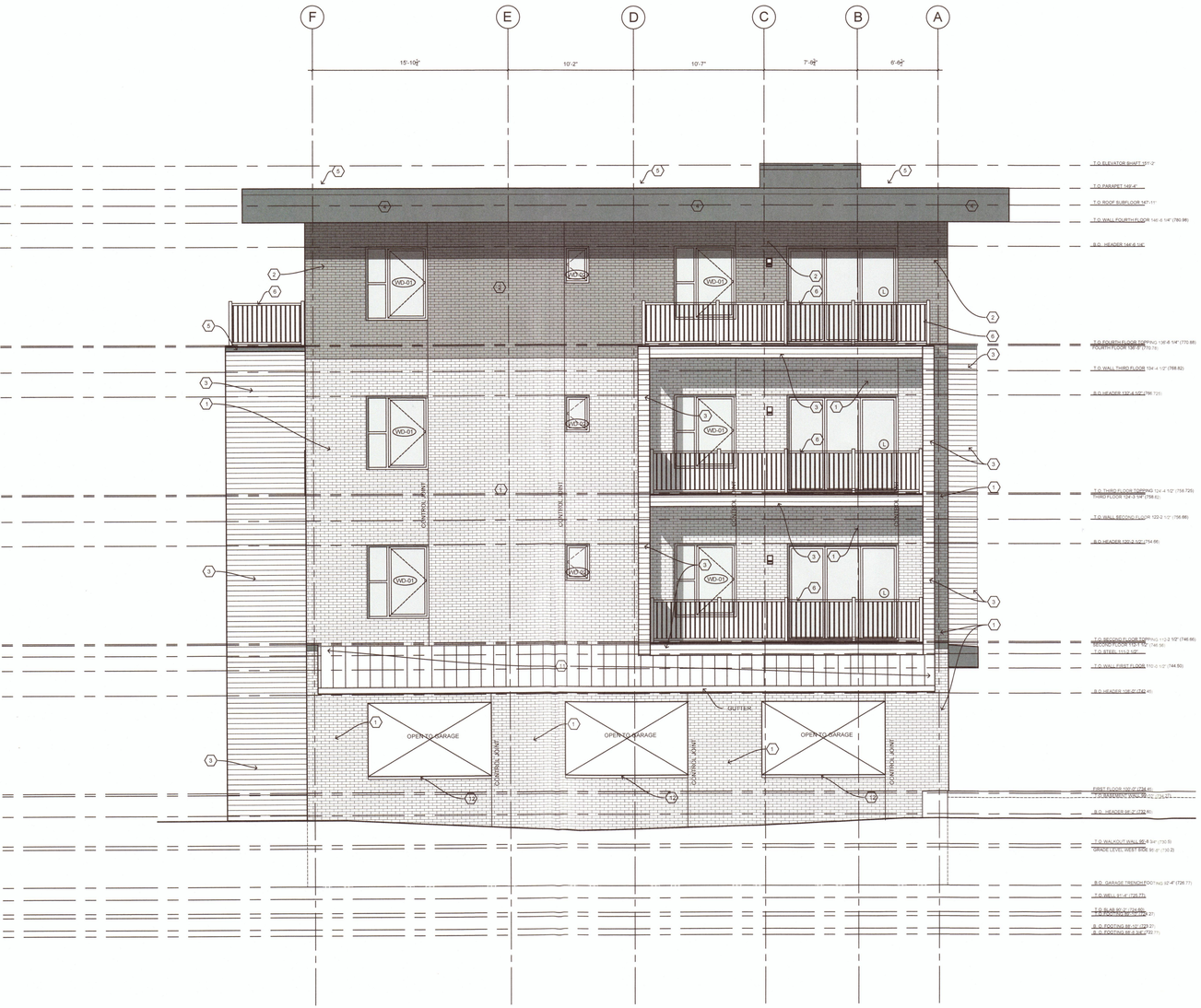
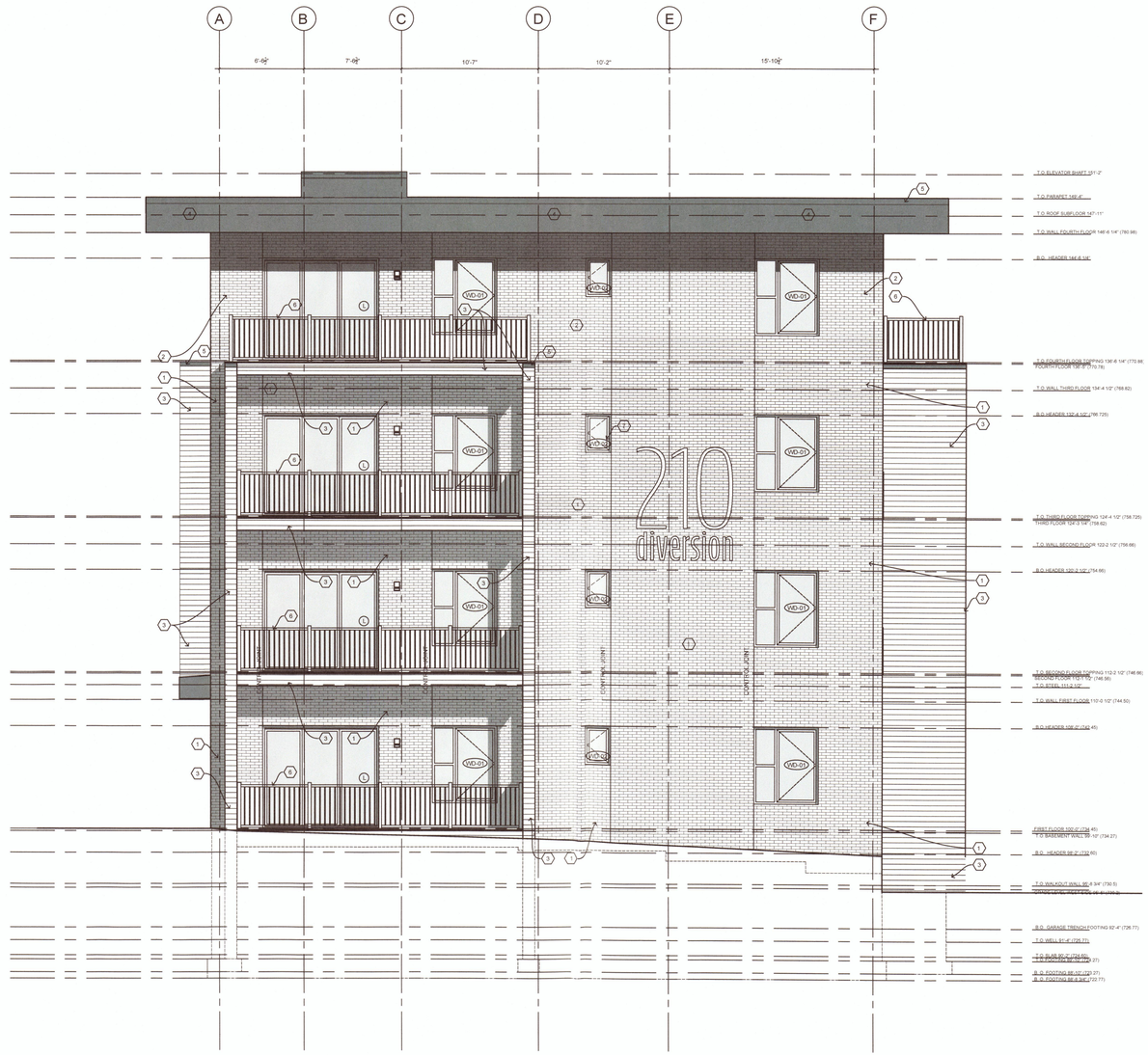


4 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



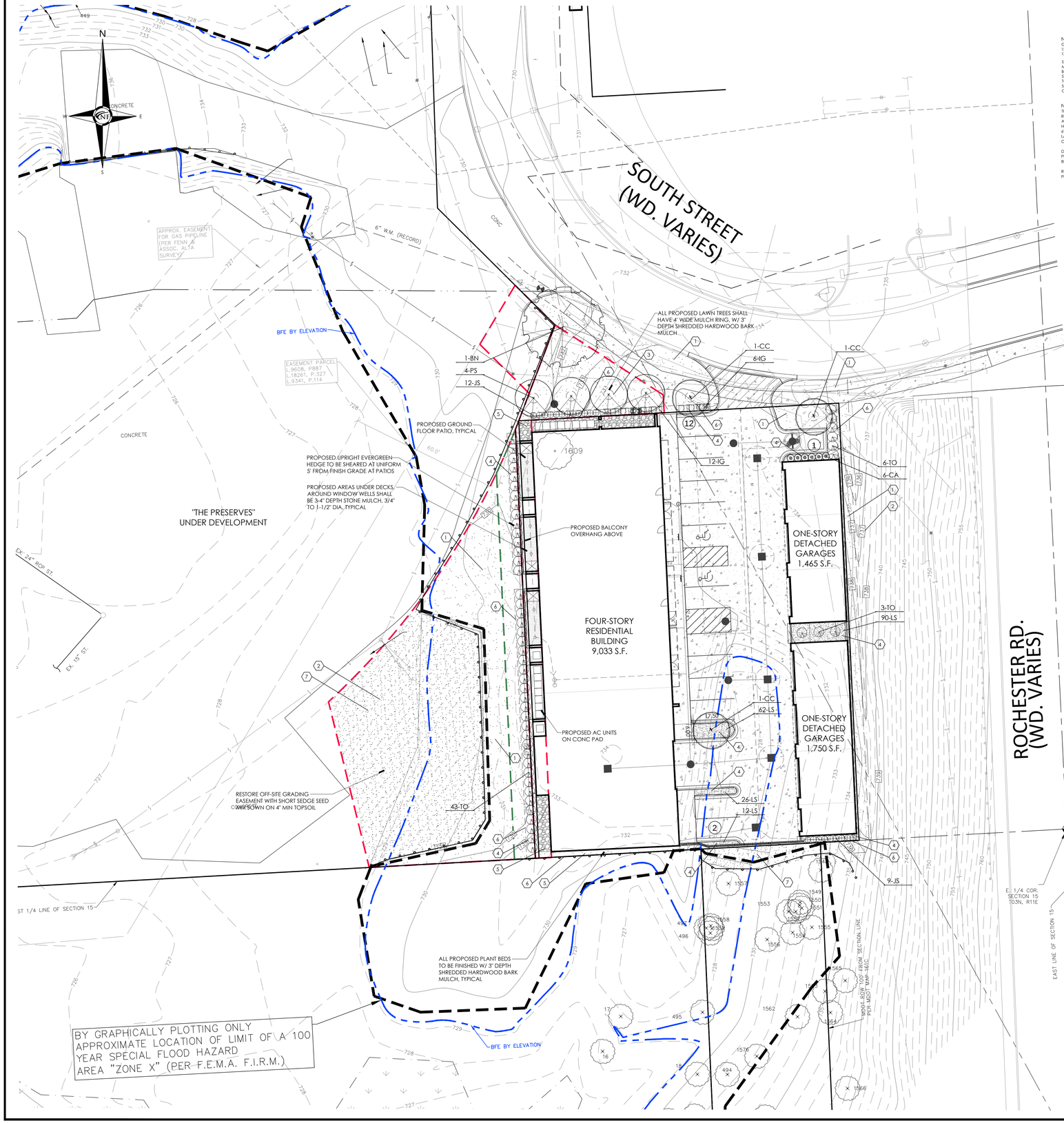
3 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

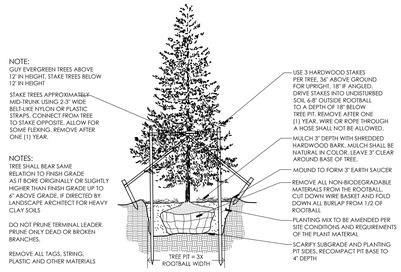
Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: EXTERIOR ELEVATIONS

Drawing Number: A-220

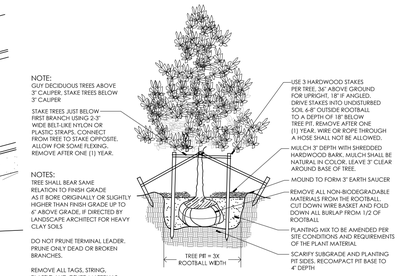
Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52381 LICENSED ARCHITECT





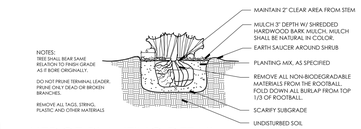
EVERGREEN TREE PLANTING DETAIL

NTS



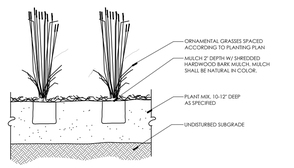
DECIDUOUS TREE PLANTING DETAIL

NTS



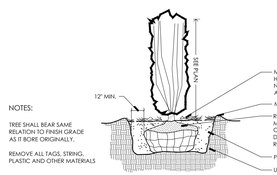
HEDGE PLANTING DETAIL

NTS



ORNAMENTAL GRASS PLANTING DETAIL

NTS



UPRIGHT EVERGREEN SHRUB PLANTING DETAIL

NTS

PLANT SCHEDULE

KEY	QTY	BOTANICAL/COMMON NAME	SIZE	SPACING	ROOT	COMMENT
TREES						
BN	1	Betula nigra River Birch	14' HT	SEE PLAN	B&B	FULLY BRANCHED HEADS
CC	3	Carpinus caroliniana 'Ubridge' Rising Fire American Hornbeam	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
PS	4	Prunus sargentii 'Pink Flair' Pink Flair Flowering Cherry	2.5" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
SHRUBS						
IG	18	Ilex glabra 'Nordic' Nordic Holly	30" HT	30" OC	B&B	MAINTAIN AS HEDGE
JS	21	Juniperus scopulorum 'Skyrocket' Skyrocket Juniper	6' HT	30" OC	B&B	
TO	52	Thuja occidentalis 'DeGroot's Spire' DeGroot's Spire Arborvitae	6' HT	30" OC	B&B	
GROUNDCOVERS/PERENNIALS						
CA	6	Calamagrostis a. 'Karl Foerster' Karl Foerster Feather Reed Grass	3 GAL	30" OC	CONT	
LS	190	Liriope spicata Creeping Lilyturf	1 GAL	15" OC	CONT	TRIANGULAR SPACING

LOCATION MAP

N.T.S.

GENERAL LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR SHALL VISIT SITE. INSPECT EXISTING CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, THE PLAN SHALL GOVERN QUANTITIES. CONTACT THE LANDSCAPE ARCHITECT WITH ANY CONCERNS.
2. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIS/HER PHASE OF WORK. ANY DAMAGE OR INTERUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES, AND SHALL REPORT ANY UNACCEPTABLE SITE CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT.
4. PLANTS SHALL BE FULL, WELL-BRANCHED, AND IN HEALTHY VIGOROUS GROWING CONDITION.
5. PLANTS SHALL BE WATERED BEFORE AND AFTER PLANTING IS COMPLETE.
6. ALL TREES MUST BE STAKED, FERTILIZED AND MULCHED AND SHALL BE GUARANTEED TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST ONE (1) YEAR FOLLOWING PLANTING.
7. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED IN THE MOST RECENT EDITION OF THE "AMERICAN STANDARDS FOR NURSERY STOCK."
8. CONTRACTOR WILL SUPPLY FINISHED GRADE AND EXCAVATE AS NECESSARY TO SUPPLY PLANT MIX DEPTH IN ALL PLANTING BEDS AS INDICATED IN PLANT DETAILS AND NOTES ON THE PLANTING PLAN.
9. PROVIDE CLEAN BACKFILL SOIL, USING MATERIAL STOCKPILED ON-SITE. SOIL SHALL BE SCREENED AND FREE OF DEBRIS, FOREIGN MATERIAL, AND STONE.
10. SLOW-RELEASE FERTILIZER SHALL BE ADDED TO THE PLANT PITS BEFORE BEING BACKFILLED. APPLICATION SHALL BE AT THE MANUFACTURERS RECOMMENDED RATES.
11. AMENDED PLANT MIX (PREPARED TOPSOIL) SHALL CONSIST OF 1/3 SCREENED TOPSOIL, 1/3 SAND, AND 1/3 "DARBY DOG" COMPOST. MIXED WELL AND SPREAD TO A DEPTH AS INDICATED IN PLANTING DETAILS.
12. ALL PLANTINGS SHALL BE MULCHED WITH SHREDDED HARDWOOD BARK. SPREAD TO A DEPTH OF 3" FOR TREES AND SHRUBS, AND 2" ON ANNUALS, PERENNIALS, AND GROUNDCOVER PLANTINGS. MULCH SHALL BE FREE FROM DEBRIS AND FOREIGN MATERIAL, AND PIECES ON INCONSISTENT SIZE.
13. NO SUBSTITUTIONS OR CHANGES OF LOCATION, OR PLANT TYPE SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE.
14. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO INSTALLATION.
15. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL IN A VERTICAL CONDITION THROUGHOUT THE GUARANTEED PERIOD.
16. THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIAL THAT DOES NOT MEET THE REQUIREMENTS OF THE PLANS AND/OR SPECIFICATIONS.
17. THE LANDSCAPE CONTRACTOR SHALL SEED AND MULCH OR SOD (AS INDICATED ON PLANS) ALL AREAS DESIGNATED AS SUCH ON THE PLANS, THROUGHOUT THE CONTRACT LIMITS. FURTHER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING AREAS DISTURBED DURING CONSTRUCTION, NOT IN THE CONTRACT LIMITS, TO EQUAL OR GREATER CONDITION.
18. ALL LANDSCAPE AREAS SHALL HAVE PROPER DRAINAGE THAT PREVENTS EXCESSIVE WATER FROM PONDING ON LAWN AREAS OR AROUND TREES AND SHRUBS.
19. ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND SYSTEM.

GENERAL SEED NOTE:

ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDRO-SEEDED WITH SPECIFIED BLENDS, AND STABILIZED WITH WOOD CELLULOSE FIBER MULCH (2,000 LBS PER ACRE) . IN AREAS SUBJECT TO EROSION, SEEDED LAWN SHALL BE FURTHER STABILIZED WHERE NECESSARY WITH BIODEGRADABLE EROSION BLANKET AND STAKED UNTIL ESTABLISHED. ALL SEED SHALL BE APPLIED OVER A MINIMUM 3" PREPARED TOPSOIL, AND SHALL BE KEPT MOIST AND WATERED DAILY UNTIL ESTABLISHED.
SEEDING INSTALLATION SHALL OCCUR ONLY:
SPRING: APRIL1 TO JUNE1
FALL: AUGUST 15 TO OCTOBER 15

TYPICAL SEEDED LAWN MIX:

ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDROSEEDED WITH TYPICAL DROUGHT TOLERANT, DURABLE BLENDED SEED MIX, AT A RATE OF 220 LBS PER ACRE
MIX IS COMPRISED OF
- 30% NITE HAWK PERENNIAL RYE
- 30% KENTUCKY BLUEGRASS
- 20% CREEPING RED FESCUE
- 10% MERIT KENTUCKY BLUEGRASS
- 10% NEWPORT KENTUCKY BLUEGRASS

SHORT SEDGE SEED MIX

*CONTAINS 10 NATIVE GRASSES AND 2 TEMPORARY GRASSES

30% NATIVE GRASSES	70% TEMPORARY GRASSES
COSMOS SEDGE	SEED OATS
FRINGED SEDGE	AMERICAN SLOUGH GRASS
LURID SEDGE	ANNUAL RYE
FOX SEDGE	
CREEPING SPIKE RUSH	
FOWL MANNA GRASS	
COMMON RUSH	
HARDSTEM BULRUSH	
GREEN BULRUSH	
WOOL GRASS	
SOFT-STEM BULRUSH	
GIANT BUR REED	

RECOMMENDED SEEDING RATE: 40 LBS/ACRE

SEED MIX AVAILABLE:
NATIVESCAPE, LLC
PO BOX 122
MANCHESTER, MI 48158
T.517.456.9696

GROUNDCOVER KEY

1. TYPICAL SEED LAWN AREAS, SOWN ON 3" TOPSOIL
7. RESTORE DISTURBED LAWN AREAS W/ HYDROSEED AND MULCH
3. 4' DIA SPADE CUT EDGE W/ 3" SHREDDED BARK MULCH
4. 3" DEPTH DOUBLE SHREDDED HARDWOOD BARK MULCH
5. 3/4" - 1 1/2" STONE MULCH, 3-4" DEPTH ON WEED BARRIER
6. 3/16" X 4" STEEL EDGING, STAKED
7. SHORT SEDGE SEED MIX, SOWN AT A RATE OF 40 LBS/AC

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
210 Diversion

CLIENT
LoChirco Custom Homes

PROJECT LOCATION
Part of the NE ¼
of Section 15
T.3N. , R.11E.
City of Rochester,
Oakland County, Michigan

SHEET
Landscape Plan

Know what's below Call before you dig.

REVISIONS
- 01/31/2023 SPA SUBMITTAL
- 03/03/2023 ISSUED FOR SPA REVIEW
- 06/30/2023 REVISED PER OWNER
- 11/06/2023 REVISED PER CITY REVIEW
- 03/06/2024 REVISED PER PC MTG
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- 12/12/2024 REVISED PER CITY REVIEW
- 03/10/2024 REVISED PER CITY REVIEW
- 04/02/2025 REVISED BALCONY OVERHANGS

DRAWN BY:
G. Ostrowski

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
01-23-2023

SCALE: 1" = 20'
20 10 0 10 20 30

NFE JOB NO. I778-04
SHEET NO. L2

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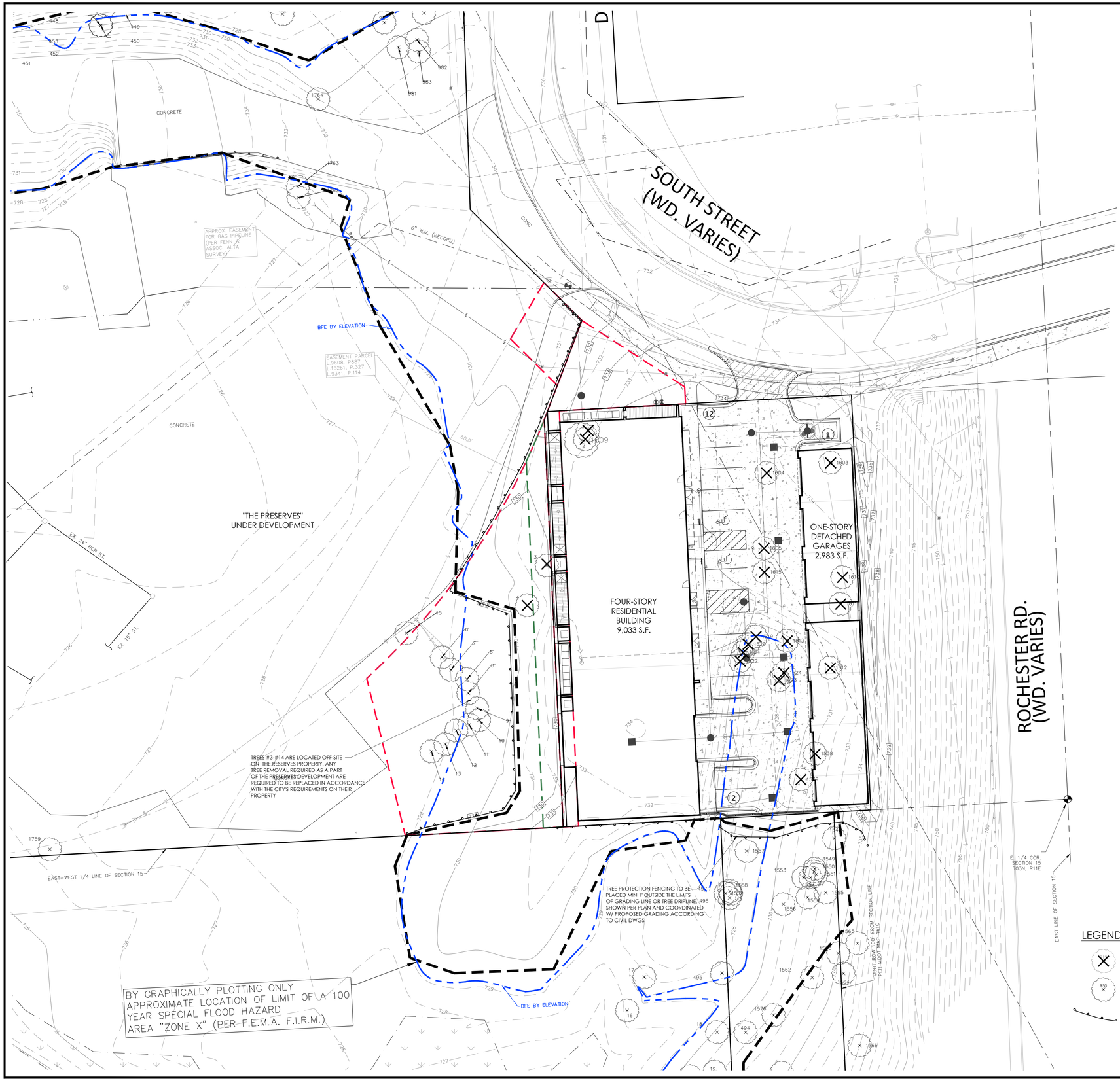
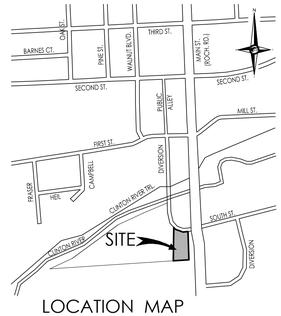
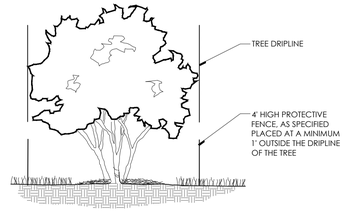
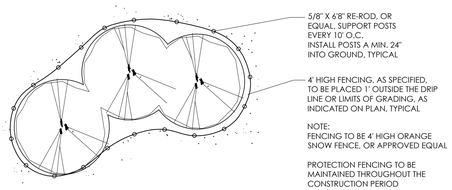




LOCATION MAP
N.T.S.



TREE PROTECTION DETAIL-SECTION
NTS



TREE PROTECTION DETAIL-PLAN
NTS

GENERAL TREE PROTECTION NOTES

1. APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL THE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
2. ALL UNDERSTORY VEGETATION WITHIN THE LIMITS OF PROTECTIVE FENCING SHALL BE PRESERVED.
3. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINE.
4. WHERE GROUPINGS OF TREES ARE TO REMAIN, TREE FENCING SHALL BE PLACED AT THE LIMITS OF GRADING LINE.
5. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY TREE, SCHEDULED TO REMAIN.
6. ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
7. SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
8. TREES LOCATED ON ADJACENT PROPERTIES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
9. ROOT ZONES OF PROTECTED TREES SHOULD BE SURROUNDED WITH RIGIDLY STAKED FENCING.
10. THE PARKING OF IDLE AND RUNNING EQUIPMENT SHALL BE PROHIBITED UNDER THE DRIP LINE OF PROTECTED TREES.
11. THE STRIPPING OF TOPSOIL FROM AROUND PROTECTED TREES SHALL BE PROHIBITED.
12. ALL TREES TO BE REMOVED SHALL BE CUT AWAY FROM TREES TO REAMIN.
13. THE GRUBBING OF UNDERSTORY VEGETATION WITHIN CONSTRUCTION AREAS SHOULD BE CLEARED BY CUTTING VEGETATION AT THE GROUND WITH A CHAIN SAW OR MINIMALLY WITH A HYDRO-AXE.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT PER ORDINANCE GUIDELINES, FOR THE DAMAGE OR REMOVAL OF ANY TREE DESIGNATED TO REMAIN.
15. TREES TO BE REMOVED SHALL BE FIELD VERIFIED, EVALUATED AND FLAGGED FOR REMOVAL, BY THE LANDSCAPE ARCHITECT OR FORESTER, ONLY AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.

LEGEND:

- TREES TO BE REMOVED
- TREES TO REMAIN
- TREE PROTECTION FENCING

TREE PRESERVATION SUMMARY:

TOTAL NUMBER OF TREES SURVEYED:	59
TOTAL REGULATED TREES ON-SITE:	8
TOTAL UNREGULATED TREES ON-SITE:	10
TOTAL REGULATED TREES OFF-SITE:	9
TOTAL UNREGULATED OFF-SITE TREES:	3
TOTAL REGULATED ON-SITE REMOVAL:	8 (86")
TOTAL UNREGULATED REMOVAL (ON AND OFF-SITE)	2
TREE REPLACEMENT ON-SITE REPLACEMENT TREES REQUIRED (86" x 50% / 2.5"):	17 TREES
TOTAL REPLACEMENT TREES PROVIDED: MONEY FOR 9 TREES TO BE PAID INTO THE CITY TREE FUND	8 TREES

NF ENGINEERS
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LAND SURVEYORS
LAND PLANNERS
NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
210 Diversion

CLIENT
LoChirco Custom Homes

PROJECT LOCATION
Part of the NE ¼
of Section 15
T.3N. , R.11E.
City of Rochester,
Oakland County, Michigan

SHEET
Tree Preservation Plan

811 Know what's below Call before you dig.

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01/31/2023 SPA SUBMITTAL
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DRAWN BY:
G. Ostrowski
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
01-23-2023
SCALE: 1" = 20'
20 10 0 10 20 30

NFE JOB NO. I778-04
SHEET NO. L1

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CONCEPTUAL RENDERING

LOCATION AERIAL MAP

Project:

210 Diversion

New Construction

210 Diversion St.
Rochester Hills, MI 48307

Owner:

LoChirco Custom Homes
202 Walnut Blvd. Suite B
Rochester, MI

CIVIL ENGINEER AND LANDSCAPE ARCHITECT
NOWAK AND FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342
CONTACT: BRETT BUCHHOLZ, P.E.
T: 248.332.7931

C00 Cover Sheet
C01 Topo-Tree Survey
C02 Demolition Plan
C03 Site & Dimension Plan
C04 Truck Turns
C05 Paving-Grading Plan
C06 Utility Plan
C07 Profile Plan
C08 Water Main Plan
C09 Soil Erosion Plan
C10 Project Notes, Details & Calculations C11 Detention Details 1 of 2
C12 Detention Details 2 of 2
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L2 Landscape Plan
Oakland County WRC SESC Detail sheet
City of Rochester Detail Sheets:
SAN1 & SAN2 (STANDARD SANITARY SEWER DETAILS - 2 SHEETS)
W1 & W2 (STANDARD WATER MAIN DETAILS - 2 SHEETS)
STM1 & STM2 (STANDARD STORM SEWER DETAILS-2 SHEETS)
PAV1 & PAV2 (STANDARD PAVING DETAILS - 2 SHEETS)

OUTSIDE CONSULTANT INDEX

ENVIRONMENTAL / ECOLOGICAL CONSULTING
KING & McGREGOR ENVIRONMENTAL
3005 BOARDWALK ST., SUITE 203
ANN ARBOR, MI
CONTACT: WOODY HELD
T: 734.558.9288

GEOTECHNICAL ENGINEERING
G2 CONSULTING
1866 WOODSLESS STREET
TROY, MI
CONTACT: AMY SCHNIEDER
T: 248.680.0400

Architectural

Roger Berent Architects, PLLC
6435 Apple Orchard Lane
Rochester Hills, MI 48306

ph: 248-462-9627
email: rogerberent@gmail.com
contact: Roger Berent

A-000 TITLE SHEET
A-010 PROJECT DATA, KEY PLAN FIRE SEPARATIONS
A-020 WALL TYPES
A-030 ROOM FINISH SCHEDULE
A-040 DOOR SCHEDULE AND DETAILS
A-100 GARDEN/BASEMENT FLOOR PLAN
A-110 GRADE FLOOR PLAN
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A-340 BUILDING SECTION DETAILS
A-350 BUILDING SECTION DETAILS

STRUCTURAL

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S-080 BASEMENT FOUNDATION WALL PLAN
S-100 FIRST FLOOR FRAMING PLAN
S-110 SECOND FLOOR FRAMING PLAN
S-120 THIRD AND FOURTH FLOOR FRAMING PLAN
S-130 ROOF STRUCTURE PLAN
S-200 STRUCTURAL CONNECTIONS

Structural Engineer:	Architect:	Owner:	
	RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:		
No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:	Date:	Drawn By:	Drawing Number:
210 DIVERSION Rochester, Michigan	Scale:	Checked By:	A-000 TITLE-000
	DRAWING TITLE:		

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52391 · LICENSED ARCHITECT

Builder
LOCHIRCO CUSTOM HOMES
202 Walnut Boulevard, Suite B
Rochester, MI 48307

CONTACT: Mr. Joe LoChirco
Tel. (248) 250-0950

Architect
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6435 Apple Orchard Lane
Rochester Hills, MI 48306

CONTACT: Mr. Roger Jason Berent, AIA
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Civil Engineer
NOWAK & FRAUS ENGINEERS
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Pontiac, MI 48342-5032
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Fax. (248) 332-8257

CONTACT: Mr. George Ostrowski, PLA, LEED AP
Tel. (248) 332-7931
Fax. (248) 332-8257

City of Rochester, Oakland County, Michigan SITE PLAN DOCUMENTS Prepared For LoChirco Custom Homes

PART OF THE NE 1/4 OF SECTION 15,
CITY OF ROCHESTER,
OAKLAND COUNTY, MICHIGAN

LOCATION MAP

REQUIRED ITEMS:
- SITE PLAN APPROVAL
- SOIL EROSION PERMIT
- FIRE DEPARTMENT APPROVAL (RECEIVED 12/18/24)
- TREE REMOVAL PERMIT
- OFF-SITE EASEMENTS
- EGLE PERMIT (FLOODPLAIN)
- MDOT PERMIT (ROW)
- STORM MAINTENANCE AGREEMENT
- LOMR-F (AFTER GRADING CAN OCCUR, PRIOR TO GARAGE CONSTRUCTION)

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C04 Truck Turns
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PAV1 & PAV2 (Standard Paving Details - 2 sheets)

LEGAL DESCRIPTION
PER ATA NATIONAL TITLE GROUP TITLE COMMITMENT NO. 63-20709493-GCM, DATED FEBRUARY 10, 2022, AT 8:00 AM:

THE LAND IS DESCRIBED AS FOLLOWS: SITUATED IN THE CITY OF ROCHESTER, COUNTY OF OAKLAND, STATE OF MICHIGAN

PARCEL 1:
TOWN 3 NORTH, RANGE 11 EAST, SECTION 15, PART OF NORTHEAST 1/4 BEGINNING AT POINT DISTANCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST 124.24 FEET FROM EAST 1/4 CORNER. THENCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST, 90 FEET, THENCE NORTH 01 DEGREES 52 MINUTES 36 SECONDS WEST, 177.62 FEET, THENCE NORTH 87 DEGREES 39 MINUTES 06 SECONDS EAST, 90 FEET, THENCE SOUTH 01 DEGREES 52 MINUTES 36 SECONDS EAST, 177.62 FEET TO BEGINNING.

PARCEL 2:
A PARCEL OF LAND IN THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: BEGINNING AT A POINT ON THE SOUTH LINE OF DIVERSION STREET, SAID POINT BEGINNING AT THE WEST SIDE OF CONCRETE ABUTMENT SET APPROXIMATELY 284.50 FEET SOUTH OF THE POINT WHERE THE MAIN STREET HIGHWAY CROSSES THE CLINTON RIVER, THENCE FROM SAID POINT OF BEGINNING, WEST ALONG THE SOUTH LINE OF DIVERSION STREET, 70 FEET; THENCE SOUTH TO THE SOUTH LIMITS OF THE VILLAGE OF ROCHESTER; THENCE EAST ALONG SAID SOUTH VILLAGE LIMITS 70 FEET; THENCE NORTH TO THE POINT OF BEGINNING. EXCEPTING THEREFROM THE EAST 30 FEET.

ASSESSED FOR TAXES AS:
T.3N., R.11E., SECTION 15, PART OF THE NORTHEAST 1/4 BEGINNING AT INTERSECTION OF SOUTH LINE OF DIVERSION STREET, WITH WEST EDGE OF CONCRETE ABUTMENT IN MAIN STREET, THENCE WEST 70 FEET, THENCE SOUTH TO EAST AND WEST 1/4 LINE, THENCE EAST 70 FEET, THENCE NORTH TO BEGINNING EXCEPT EAST 30 FEET TAKEN FOR HIGHWAY.

PARCEL 3: (ADJACENT TO THE SOUTH OF THE PROJECT)
A PARCEL OF LAND IN THE SOUTHEAST 1/4 OF SECTION 15, T.3N., R.11E., CITY OF ROCHESTER HILLS (FORMERLY AVON TOWNSHIP), OAKLAND COUNTY, MICHIGAN, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 15; THENCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST 100 FEET, ALONG THE EAST-WEST 1/4 LINE OF SAID SECTION 15, TO THE POINT OF BEGINNING; THENCE SOUTH 01 DEGREES 41 MINUTES 19 SECONDS EAST, 190.00 FEET; THENCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST, 48.50 FEET; THENCE NORTH 01 DEGREES 41 MINUTES 19 SECONDS WEST, 190.00 FEET; THENCE NORTH 87 DEGREES 39 MINUTES 06 SECONDS EAST, 48.50 FEET, ALONG THE EAST-WEST 1/4 LINE OF SAID SECTION 15 TO POINT OF BEGINNING.

ASSESSED FOR TAXES AS:
T.3N., R.11E., SECTION 15, EAST 148.50 FEET OF NORTH 190 FEET OF SOUTHEAST 1/4 EXCEPT EAST 100 FEET IN HIGHWAY.

Project Name

210 DIVERSION APARTMENTS

LEGAL DESCRIPTION (PROPOSED COMBINATION OF PARCEL 1 & PARCEL 2)
LAND SITUATED IN THE CITY OF ROCHESTER, COUNTY OF OAKLAND, STATE OF MICHIGAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST 1/4 CORNER OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST; THENCE ALONG THE EAST-WEST 1/4 LINE OF SAID SECTION 15 SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST 84.24 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID EAST-WEST 1/4 LINE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST, 130.00 FEET; THENCE NORTH 01 DEGREES 52 MINUTES 36 SECONDS WEST, 177.62 FEET, THENCE NORTH 87 DEGREES 39 MINUTES 06 SECONDS EAST, 130.00 FEET, THENCE SOUTH 01 DEGREES 52 MINUTES 36 SECONDS EAST, 177.62 FEET TO THE POINT OF BEGINNING.

CONTAINING 23,089.72 SFT OR 0.53 ACRES

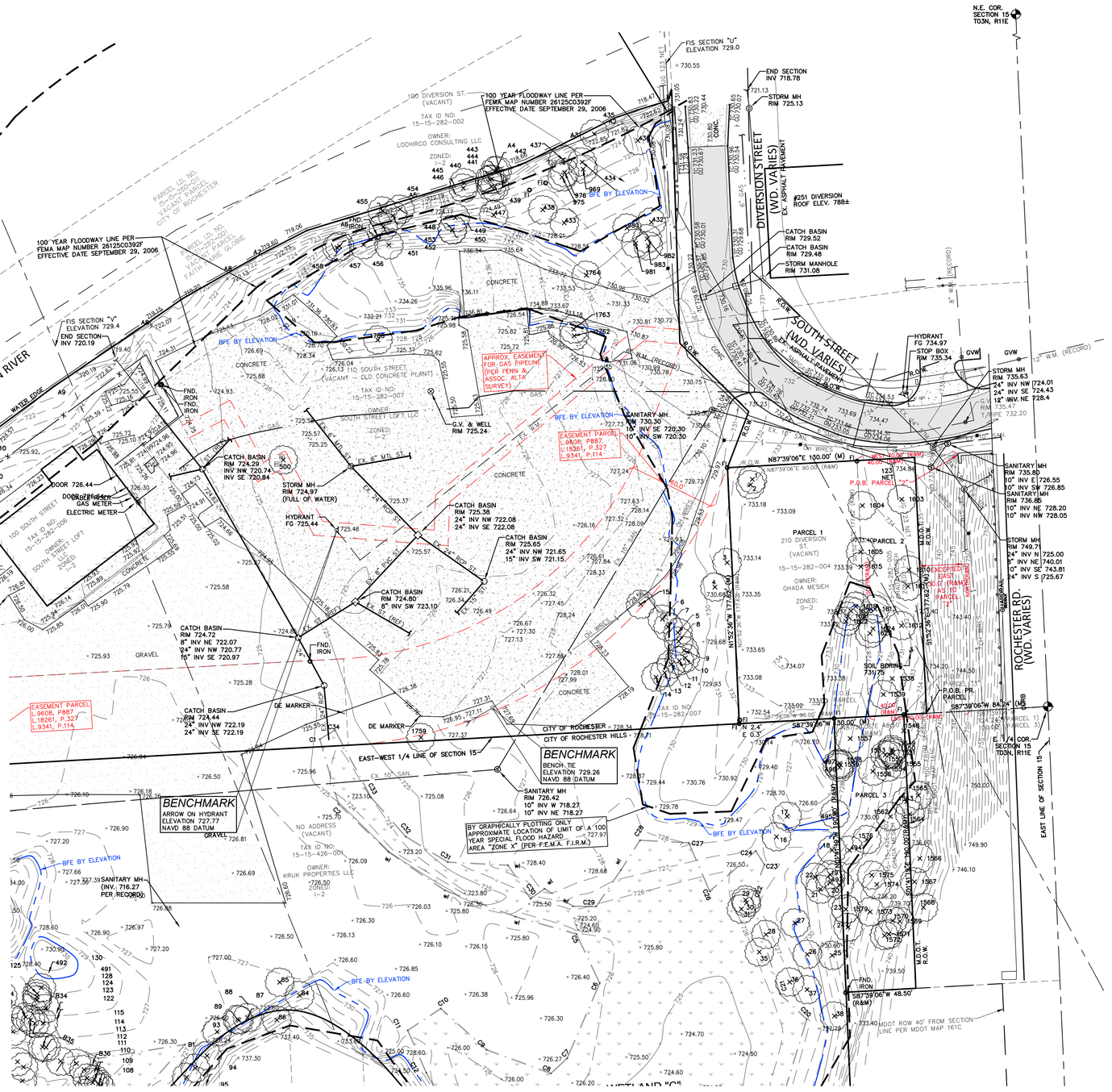
REVISIONS:
01-18-23 ISSUED FOR OWNER REVIEW
03-03-23 PRE-SPA SUBMITTAL
06-30-23 REV. PER OWNER
11-06-23 REV. PER CITY
12-20-23 UPDATE PER MCKENNA REVIEW
03-06-24 PER PLANNING COMMISSION MEETING
09-03-24 OWNER REVISIONS (TRASH COLLECTION)
10-18-24 ISSUE FOR PERMITS
12-12-24 REV. PER CITY ENG. REVIEW 1
03-10-25 REV. PER CITY ENG. REVIEW 2

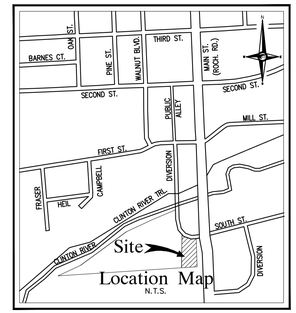
Know what's below Call before you dig.

N & F JOB #I778-04

STATE OF MICHIGAN
BRETT J. BUCHHOLZ
ENGINEER NO. 45606
LICENSED PROFESSIONAL ENGINEER

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS
NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NFE-ENGR.COM





TREE NUMBER	STEM SIZE W/DESCRIPTION	NOTES
1	12.2" POPLAR	FROM NFE SURVEY - INSIDE PROJECT **(REMOVE)**
2	17" 13.8" POPLAR	FROM NFE SURVEY - INSIDE PROJECT **(REMOVE)**
1538	14" WALNUT	INSIDE PROJECT LIMITS **(REMOVE)**
1539	6" BOXELDER	INSIDE PROJECT LIMITS **(REMOVE)**
1548	8" 10" WALNUT	OUTSIDE PROJECT LIMITS
1549	6" ELM	OUTSIDE PROJECT LIMITS
1550	6" ELM	OUTSIDE PROJECT LIMITS
1551	10" ELM	OUTSIDE PROJECT LIMITS
1552	7" ELM	OUTSIDE PROJECT LIMITS
1553	7" ELM	OUTSIDE PROJECT LIMITS
1554	7" 8" 8" WALNUT	OUTSIDE PROJECT LIMITS
1555	7" WALNUT	OUTSIDE PROJECT LIMITS
1556	9" WALNUT	OUTSIDE PROJECT LIMITS
1557	7" 16" WALNUT	OUTSIDE PROJECT LIMITS
1558	18" WALNUT	DUPLICATE TO 497 NFE - OUTSIDE LIMITS
1559	8" BOXELDER	DUPLICAT TO 496 NFE - OUTSIDE LIMITS
1562	7" 7" 9" WALNUT	OUTSIDE PROJECT LIMITS
1563	7" 7" 8" 12" ELM	OUTSIDE PROJECT LIMITS
1564	10" 11" WALNUT	OUTSIDE PROJECT LIMITS
1565	6" CATALPA	OUTSIDE PROJECT LIMITS
1566	7" 7" 8" 8" 10" WALNUT	OUTSIDE PROJECT LIMITS
1567	26" POPLAR	OUTSIDE PROJECT LIMITS
1568	7" WALNUT	OUTSIDE PROJECT LIMITS
1569	7" WALNUT	OUTSIDE PROJECT LIMITS
1570	7" WALNUT	OUTSIDE PROJECT LIMITS
1571	7" WALNUT	OUTSIDE PROJECT LIMITS
1572	8" WALNUT	OUTSIDE PROJECT LIMITS
1573	20" POPLAR	OUTSIDE PROJECT LIMITS
1574	6" CATALPA	OUTSIDE PROJECT LIMITS
1575	6" ELM	OUTSIDE PROJECT LIMITS
1576	8" WALNUT	OUTSIDE PROJECT LIMITS
1579	10" WALNUT	OUTSIDE PROJECT LIMITS
1603	6" 6"CATALPA	INSIDE PROJECT LIMITS **(REMOVE)**
1604	16" MAPLE	INSIDE PROJECT LIMITS **(REMOVE)**
1605	21" BOXELDER	INSIDE PROJECT LIMITS **(REMOVE)**
1609	SEE TREE NOS. 1 & 2 ABOVE	DUPLICATE TAG (NOT SHOWN)
1610	7" MAPLE	INSIDE PROJECT LIMITS **(REMOVE)**
1611	9" BOXELDER	INSIDE PROJECT LIMITS **(REMOVE)**
1612	8" POPLAR	INSIDE PROJECT LIMITS **(REMOVE)**
1613	15" POPLAR	INSIDE PROJECT LIMITS **(REMOVE)**
1615	8" MAPLE	INSIDE PROJECT LIMITS **(REMOVE)**
1619	6" 8" BOXELDER	INSIDE PROJECT LIMITS **(REMOVE)**
1620	8" ELM	INSIDE PROJECT LIMITS **(REMOVE)**
1621	6" ELM	INSIDE PROJECT LIMITS **(REMOVE)**
1622	15" ELM	INSIDE PROJECT LIMITS **(REMOVE)**
1623	11" POPLAR	INSIDE PROJECT LIMITS **(REMOVE)**
1624	12" POPLAR	INSIDE PROJECT LIMITS **(REMOVE)**
3	15.2" POPLAR	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
4	22.1" 12.5" POPLAR	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
5	8" RED PINE	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
6	13.4" RED PINE	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
7	12" RED PINE	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
8	11.3" RED PINE	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
9	9.1" RED PINE	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
10	6.6" 5.4" TREE OF HEAVEN	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
11	8.4" RED PINE	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
12	8" RED PINE	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
13	8" RED PINE	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***
14	11.8" RED PINE	FROM NFE SURVEY - OFF SITE GRADING **(REMOVE)***

"OFF SITE TREE REMOVAL IN TEMPORARY GRADING EASEMENT, AND REPLACEMENTS, ARE COUNTED AS PART OF "THE PRESERVES" PROJECT, AND ARE NOT BEING COUNTED AS PART OF REPLACEMENT TREES FOR "210 DIVERSION".

LEGAL DESCRIPTION (PROPOSED COMBINATION OF PARCEL 1 & PARCEL 2)

LAND SITUATED IN THE CITY OF ROCHESTER, COUNTY OF OAKLAND, STATE OF MICHIGAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST 1/4 CORNER OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST; THENCE ALONG THE EAST–WEST 1/4 LINE OF SAID SECTION 15 SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST 84.24 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID EAST–WEST 1/4 LINE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST, 130.00 FEET; THENCE NORTH 01 DEGREES 52 MINUTES 36 SECONDS WEST, 177.62 FEET, THENCE NORTH 87 DEGREES 39 MINUTES 06 SECONDS EAST, 130.00 FEET. THENCE SOUTH 01 DEGREES 52 MINUTES 36 SECONDS EAST, 177.62 FEET TO THE POINT OF BEGINNING.

CONTAINING 23,089.72 SFT OR 0.53 ACRES

LEGAL DESCRIPTION

PER ATA NATIONAL TITLE GROUP TITLE COMMITMENT NO. 63–20709493–GCM, DATED FEBRUARY 10, 2022, AT 8:00 AM:

THE LAND IS DESCRIBED AS FOLLOWS: SITUATED IN THE CITY OF ROCHESTER, COUNTY OF OAKLAND, STATE OF MICHIGAN

PARCEL 1:
TOWN 3 NORTH, RANGE 11 EAST, SECTION 15, PART OF NORTHEAST 1/4 BEGINNING AT POINT DISTANCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST 124.24 FEET FROM EAST 1/4 CORNER. THENCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST, 90 FEET, THENCE NORTH 01 DEGREES 52 MINUTES 36 SECONDS WEST, 177.62 FEET, THENCE NORTH 87 DEGREES 39 MINUTES 06 SECONDS EAST, 90 FEET, THENCE SOUTH 01 DEGREES 52 MINUTES 36 SECONDS EAST, 177.62 FEET TO BEGINNING.

PARCEL 2:
A PARCEL OF LAND IN THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: BEGINNING AT A POINT ON THE SOUTH LINE OF DIVERSION STREET, SAID POINT BEGINNING AT THE WEST SIDE OF CONCRETE ABUTMENT SET APPROXIMATELY 284.50 FEET SOUTH OF THE POINT WHERE THE MAIN STREET HIGHWAY CROSSES THE CLINTON RIVER, THENCE FROM SAID POINT OF BEGINNING, WEST ALONG THE SOUTH LINE OF DIVERSION STREET, 70 FEET; THENCE SOUTH TO THE SOUTH LIMITS OF THE VILLAGE OF ROCHESTER; THENCE EAST ALONG SAID SOUTH VILLAGE LIMITS 70 FEET; THENCE NORTH TO THE POINT OF BEGINNING. EXCEPTING THEREFROM THE EAST 30 FEET.

ASSESSED FOR TAXES AS:
T.3N., R.11E., SECTION 15, PART OF THE NORTHEAST 1/4 BEGINNING AT INTERSECTION OF SOUTH LINE OF DIVERSION STREET, WITH WEST EDGE OF CONCRETE ABUTMENT IN MAIN STREET, THENCE WEST 70 FEET, THENCE SOUTH TO EAST AND WEST 1/4 LINE, THENCE EAST 70 FEET, THENCE NORTH TO BEGINNING EXCEPT EAST 30 FEET TAKEN FOR HIGHWAY.

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A PARCEL OF LAND IN THE SOUTHEAST 1/4 OF SECTION 15, T.3N., R.11E., CITY OF ROCHESTER HILLS (FORMERLY AVON TOWNSHIP), OAKLAND COUNTY, MICHIGAN, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 15; THENCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST 100 FEET, ALONG THE EAST–WEST 1/4 LINE OF SAID SECTION 15, TO THE POINT OF BEGINNING; THENCE SOUTH 01 DEGREES 41 MINUTES 19 SECONDS EAST, 190.00 FEET; THENCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST, 48.50 FEET; THENCE NORTH 01 DEGREES 41 MINUTES 19 SECONDS WEST, 190.00 FEET; THENCE NORTH 87 DEGREES 39 MINUTES 06 SECONDS EAST, 48.50 FEET, ALONG THE EAST–WEST 1/4 LINE OF SAID SECTION 15 TO POINT OF BEGINNING.

ASSESSED FOR TAXES AS:
T.3N., R.11E., SECTION 15, EAST 148.50 FEET OF NORTH 190 FEET OF SOUTHEAST 1/4 EXCEPT EAST 100 FEET IN HIGHWAY.

MISS DIG / UTILITY DISCLAIMER NOTE

A MISS DIG TICKET NUMBER B02871317, PURSUANT TO MICHIGAN PUBLIC ACT 174 WAS ENTERED FOR THE SURVEYED PROPERTY. DUE TO THE EXTENDED REPORTING PERIOD FOR UNDERGROUND FACILITY OWNERS TO PROVIDE THEIR RECORDS, THE SURVEY MAY NOT REFLECT ALL THE UTILITIES AT THE TIME THE SURVEY WAS ISSUED ON DECEMBER 20, 2020. THE SURVEY ONLY REFLECTS THOSE UTILITIES WHICH COULD BE OBSERVED BY THE SURVEYOR IN THE FIELD OR AS DEPICTED BY THE UTILITY COMPANY RECORDS FURNISH PRIOR TO THE DATE THIS SURVEY WAS ISSUED. THE CLIENT AND/OR THEIR AUTHORIZED AGENT SHALL VERIFY WITH THE FACILITY OWNERS AND/OR THEIR AUTHORIZED AGENTS, THE COMPLETENESS AND EXACTNESS OF THE UTILITIES LOCATION.

TOPOGRAPHIC SURVEY NOTES

ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.

UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS, OR EXACTNESS OF LOCATION.

THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD AFTER THE DATE OF THE SURVEY UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER, AND THE SURVEYOR IS ENGAGED TO PERFORM AN UPDATE.

TREE SURVEY PROVIDED BY OWNER/ARCHITECT SHOWN HEREON (PERFORMED BY OTHERS).

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- EXISTING SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R.Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NFE-ENGR.COM

SEAL

PROJECT
210 Diversion

CLIENT
LoChirco Custom Homes

PROJECT LOCATION
Part of the NE ¼ of Section 15 T.3N. , R.11E. City of Rochester, Oakland County, Michigan

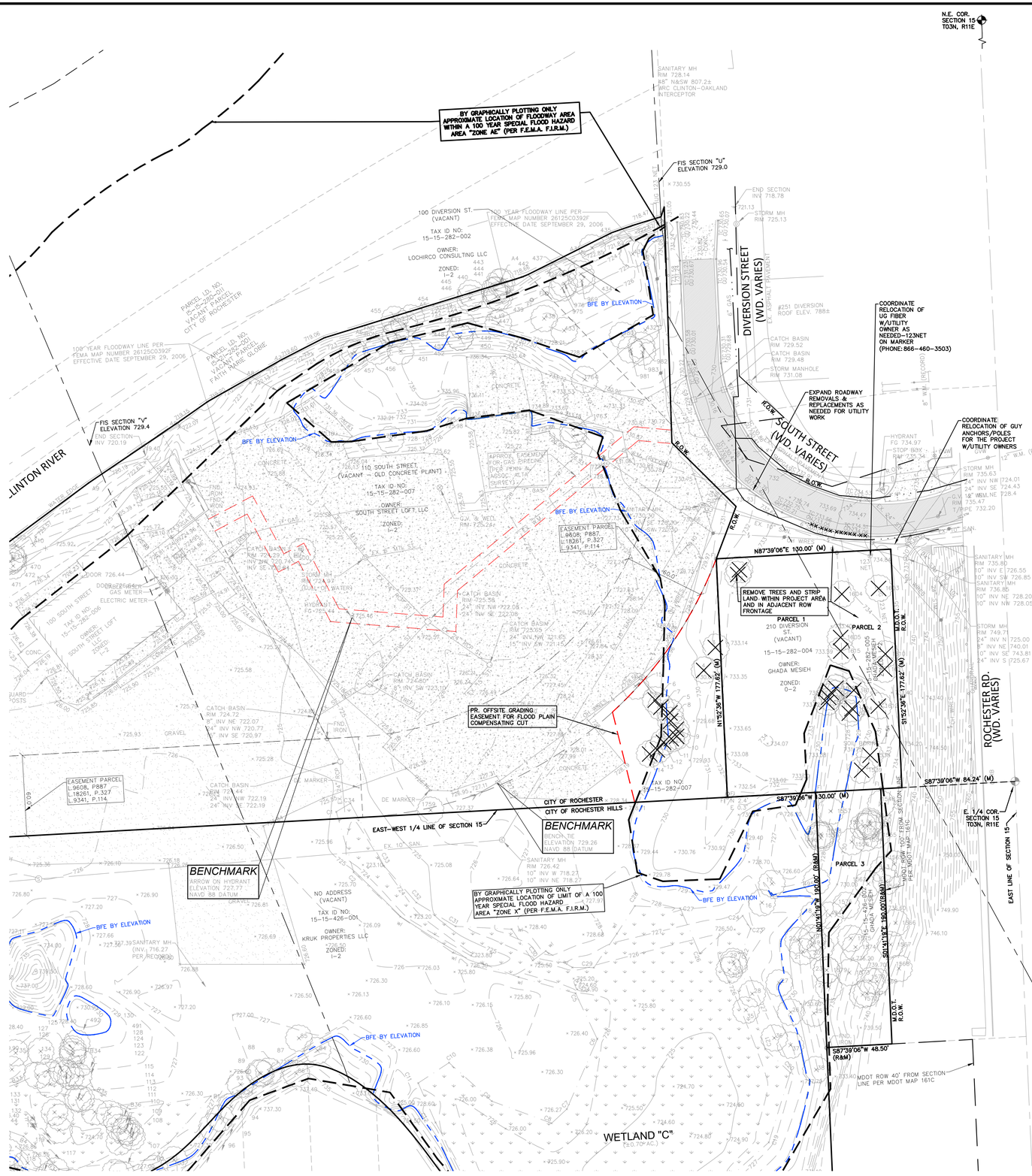
SHEET
Topo-Tree Survey

Know what's below Call before you dig.

DATE	ISSUED/REVISED
01-18-23	ISSUED FOR OWNER REVIEW
11-06-23	REV. PER CITY
12-12-24	REV. PER CITY ENG. REVIEW 1

DRAWN BY: M. Hani
DESIGNED BY: -
APPROVED BY: B. Buchholz
DATE: January 18, 2023
SCALE: 1" = 40'
40 20 0 20 40 60

NFE JOB NO. I778-04
SHEET NO. C01



DEMOLITION NOTES

DEMOLITION OF SITE IMPROVEMENTS SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE PUBLIC AGENCY HAVING JURISDICTION OVER SAID DEMOLITION.

FOR ANY DEMOLITION WITHIN PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR, AND SECURE, ALL NECESSARY PERMITS AND LIKEWISE SHALL ARRANGE FOR ALL SITE INSPECTIONS.

SITE DEMOLITION INCLUDES THE COMPLETE REMOVAL OF SITE IMPROVEMENTS AND OFF-SITE DISPOSAL. DEBRIS SHALL BE TRANSPORTED TO AN APPROPRIATE DISPOSAL FACILITY THAT IS LICENSED FOR THAT TYPE OF DEBRIS.

THE CONTRACTOR SHALL COORDINATE TRUCK ROUTES WITH THE MUNICIPALITY PRIOR TO COMMENCEMENT OF SITE DEMOLITION. ALL TRUCKS SHALL BE TARPED OR PROPERLY SECURED TO CONTAIN DEMOLITION DEBRIS PRIOR TO LEAVING SITE.

EXISTING ON-SITE UNDERGROUND UTILITIES AND BUILDING SERVICES HAVE BEEN INDICATED BASED UPON THE BEST AVAILABLE UTILITY RECORDS AND/OR ON-SITE INSPECTION. NO GUARANTEE IS MADE BY THE DESIGN ENGINEER, AS TO THE COMPLETENESS OR ACCURACY OF UTILITY DATA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF UTILITY INFORMATION (THE DESIGN ENGINEER MAKES NO GUARANTEE NOR ASSUMES ANY LIABILITY AS TO THE COMPLETENESS AND/OR ACCURACY OF UTILITY DATA).

PRIOR TO THE REMOVAL OR ABANDONMENT OF ANY EXISTING UNDERGROUND UTILITY OR BUILDING SERVICE LINES CALLED FOR IN THE PLANS OR DISCOVERED DURING EXCAVATION, THE CONTRACTOR MUST DETERMINE IF THE UTILITY LINE OR BUILDING SERVICE IS STILL IN USE. IF THE UTILITY LINE OR BUILDING SERVICE IS STILL IN USE/ACTIVE THE CONTRACTOR MUST TAKE ALL THE NECESSARY STEPS TO GUARANTEE THAT THE UTILITY LINE OR BUILDING SERVICE IS RECONNECTED WITHOUT AN INTERRUPTION IN SERVICE. THE RECONNECTION OF THE UTILITY LINE OR BUILDING SERVICE MUST BE IN ACCORDANCE WITH THE STANDARDS AND REQUIREMENTS OF THE APPROPRIATE GOVERNMENTAL AGENCY OR PRIVATE UTILITY COMPANY.

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO SITE DEMOLITION.

* THE CONTRACTOR SHALL NOTIFY MISS DIG (1-800-482-7171) A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF THE SITE DEMOLITION.

THE CONTRACTOR SHALL COORDINATE THE REMOVAL AND/OR RELOCATION OF EXISTING UTILITY POLES AND BUILDING SERVICES WITH UTILITY COMPANY. REMOVAL OF THE UTILITY COMPANIES ELECTRICAL SERVICES SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND REQUIREMENTS OF THE UTILITY COMPANY.

THE CONTRACTOR SHALL COORDINATE THE REMOVAL AND/OR RELOCATION OF EXISTING UTILITY POLES AND BUILDING SERVICES WITH UTILITY COMPANY. REMOVAL OF THE UTILITY COMPANIES GAS SERVICES SHALL BE IN ACCORDANCE WITH THE STANDARDS AND REQUIREMENTS OF THE UTILITY COMPANY.

THE CONTRACTOR SHALL COORDINATE THE REMOVAL AND/OR RELOCATION OF EXISTING UTILITY POLES AND BUILDING SERVICES WITH THE UTILITY COMPANY. REMOVAL OF THE UTILITY COMPANIES COMMUNICATION SERVICES SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND REQUIREMENTS OF THE UTILITY COMPANY.

THE CONTRACTOR SHALL COORDINATE THE REMOVAL AND/OR RELOCATION OF EXISTING UTILITY POLES AND BUILDING SERVICES WITH THE APPROPRIATE CABLE MEDIA COMPANY. REMOVAL OF CABLE SERVICES SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND REQUIREMENTS OF THE CABLE COMPANY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF PRIVATE UTILITY COMPANIES AND COORDINATE UTILITY SERVICE SHUT OFF/DISCONNECT, PRIOR TO DEMOLITION OF EXISTING STRUCTURES OR PROPERTIES.

ALL UTILITY METERS SHALL BE REMOVED BY THE APPROPRIATE UTILITY COMPANY.

ANY ON-SITE STORM SEWER FACILITIES LOCATED DURING DEMOLITION SHALL BE REMOVED AND BULK HEADED AT THE PROPERTY LINE IF INDICATED FOR REMOVAL ON THE PLANS.

PRIOR TO BUILDING DEMOLITION, ALL HAZARDOUS MATERIAL SHALL BE REMOVED BY OTHERS. THE DEMOLITION CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER SHOULD ANY SUSPICIOUS MATERIAL BE FOUND.

WATER SERVICES AND/OR STOP-BOX SHALL BE PRESERVED AND BULK HEADED AT THE PROPERTY LINE OR AS DIRECTED BY THE OWNER'S REPRESENTATION.

WHERE EXISTING BUILDINGS PLANED FOR DEMOLITION FALL WITHIN PROPOSED BUILDING FOOT PRINTS, BASEMENT FLOOR SLABS, FOUNDATION WALLS AND FOOTINGS SHALL BE COMPLETELY REMOVED AND BACK FILLED WITH MDOT CLASS II GRANULAR MATERIAL AND BE MACHINE COMPACTED TO A MINIMUM OF 98% OF MATERIALS MAXIMUM DENSITY.

GENERAL TREE PROTECTION NOTES

1. APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL THE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
2. ALL UNDERSTORY VEGETATION WITHIN THE LIMITS OF PROTECTIVE FENCING SHALL BE PRESERVED.
3. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINE.
4. WHERE GROUPINGS OF TREES ARE TO REMAIN, TREE FENCING SHALL BE PLACED AT THE LIMITS OF GRADING LINE.
5. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVCE OR WIRE TO ANY TREE, SCHEDULED TO REMAIN.
6. ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
7. SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
8. TREES LOCATED ON ADJACENT PROPERTIES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
9. ROOT ZONES OF PROTECTED TREES SHOULD BE SURROUNDED WITH RIGIDLY STAKED FENCING.
10. THE PARKING OF IDLE AND RUNNING EQUIPMENT SHALL BE PROHIBITED UNDER THE DRIP LINE OF PROTECTED TREES.
11. THE STRIPPING OF TOPSOIL FROM AROUND PROTECTED TREES SHALL BE PROHIBITED.
12. ALL TREES TO BE REMOVED SHALL BE CUT AWAY FROM TREES TO REAMIN.
13. THE GRUBBING OF UNDERSTORY VEGETATION WITHIN CONSTRUCTION AREAS SHOULD BE CLEARED BY CUTTING VEGETATION AT THE GROUND WITH A CHAIN SAW OR MINIMALLY WITH A HYDRO-AXE.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT PER ORDINANCE GUIDELINES, FOR THE DAMAGE OR REMOVAL OF ANY TREE DESIGNATED TO REMAIN.
15. TREES TO BE REMOVED SHALL BE FIELD VERIFIED, EVALUATED AND FLAGGED FOR REMOVAL BY THE LANDSCAPE ARCHITECT OR FORESTER, ONLY AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.

PERMITS

OBTAIN ALL REQUIRED PERMITS FOR REMOVAL.

TOPOGRAPHIC SURVEY NOTES

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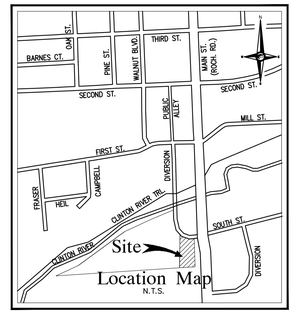
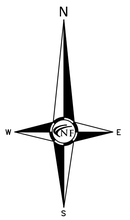
- HYDRANT / GATE VALVE — EXISTING SAN. CLEAN OUT
- MANHOLE CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE GUY POLE / GUY WIRE — EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- EXISTING CURB TO BE REMOVED
- EXISTING UTILITY TO BE ABANDONED
- 12" MAPLE — INDICATES EXISTING TREE TO BE REMOVED
- INDICATES AREAS OF PAVEMENT, BUILDINGS, ETC. TO BE REMOVED





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SEAL

STATE OF MICHIGAN
BRETT J. BUCHHOLZ
ENGINEER
NO. 45606
LICENSED PROFESSIONAL ENGINEER

PROJECT
210 Diversion

CLIENT
LoChirco Custom Homes

PROJECT LOCATION
Part of the NE ¼ of Section 15 T.3N. , R.11E. City of Rochester, Oakland County, Michigan

SHEET
Demolition Plan

Know what's below Call before you dig.

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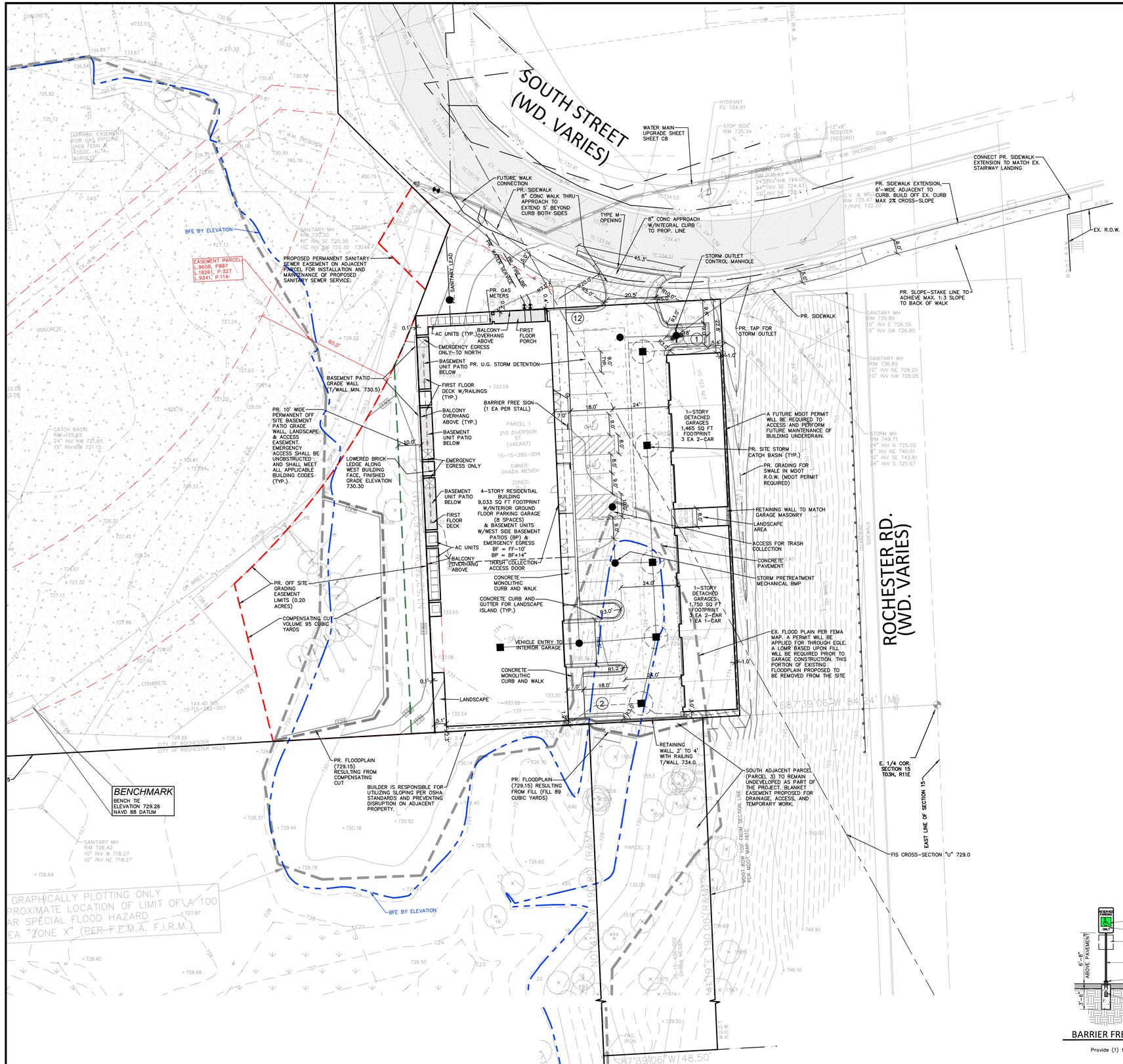
DRAWN BY: M. Hani
DESIGNED BY: B. Buchholz
APPROVED BY: B. Buchholz
DATE: January 18, 2023
SCALE: 1" = 40'

40 20 0 20 40 60

NFE JOB NO. I778-04
SHEET NO. C02



SITE NOTES

PROPOSED USE: RESIDENTIAL APARTMENT BUILDING

PARCEL CONSOLIDATION: THE DEVELOPMENT PROPOSES TO CONSOLIDATE TWO (2) OF EXISTING ROCHESTER PARCELS INTO ONE (1) PROPOSED PARCEL AS SHOWN IN PLAN VIEW AND AS FOLLOWS:

EXISTING PARCELS 1 & 2 TO BE COMBINED.
PROPOSED PARCEL AREA: 23,089.72 SQUARE FEET OR 0.53 ACRES
PARCEL 3 (0.21 ACRES – ROCHESTER HILLS PARCEL) TO BE LEFT UNDEVELOPED AS PART OF PROJECT.

SITE ZONING:

PARCEL 1: O-2
PARCEL 2: I-1

PROPOSED SETBACKS:

DIMENSIONS SHOWN IN PLAN VIEW

PROPOSED BUILDING HEIGHT:

4-STORIES @ 48 FEET, W/ADDITIONAL 4' ROOF MECHANICAL SCREEN AND 10' BASEMENT BELOW.

OPEN SPACE/IMPERVIOUS AREA:

EXISTING BUILDING FOOTPRINT:	0.00 AC	
EXISTING PAVEMENT/GRAVEL:	0.00 AC	
EXISTING IMPERVIOUS AREA:	0.00 AC/0.53 AC=0.00%	
PROPOSED DEVELOPMENT:		(WITH PARCEL 3):
PROPOSED BUILDING FOOTPRINT:	0.21 AC/0.53 AC=39.62%	(0.21/0.74 = 28.37%)
PROPOSED GARAGE FOOTPRINTS:	0.07 AC/0.53 AC=12.92%	(0.07/0.74 = 9.45%)
PROPOSED CURB & PAVEMENT:	0.19 AC/0.53 AC= 35.85%	(0.19/0.74 = 25.67%)
PROPOSED WALKS & PATIOS:	0.03 AC/0.53 AC= 5.66%	(0.03/0.74 = 4.05%)
PROPOSED IMPERVIOUS:	0.50 AC/0.53 AC=94.34%	(0.50/0.74 = 67.56%)

DENSITY CALCULATIONS:

PROPOSED 1-BEDROOM UNITS:	13 UNITS
PROPOSED 2-BEDROOM UNITS:	8 UNITS
TOTAL NUMBER OF UNITS:	21

21 UNITS / 0.53 ACRES = 39.62 UNITS PER ACRE (W/PARCEL 3: 21/0.74 = 28.38)

REQUIRED PARKING CALCULATIONS:

1.5 PARKING SPACES PER 1-BEDROOM UNIT & 2.0 PARKING SPACES PER 2-BEDROOM UNIT
1.5 X 13 + 2.0 X 8 = 36 SPACES REQUIRED

PROVIDED PARKING SUMMARY:

INTERIOR GARAGE:	8 SPACES INCLUDES 1 BARRIER FREE VAN SPACE
DETACHED GARAGES:	13 SPACES
EXTERIOR SPACES:	15 SPACES INCLUDES 1 BARRIER FREE VAN SPACE
TOTAL SPACES:	36 SPACES, INCLUDING 2 BARRIER FREE VAN SPACES

TEMPORARY OFF SITE GRADING EASEMENT REQUIRED

AN OFF SITE GRADING EASEMENT IS REQUIRED ON THE ADJACENT PARCEL TO PERFORM COMPENSATING CUTS TO OFFSET THE FLOOD PLAIN FILL REQUIRED ON 210 DIVERSION.

THE PROJECT OWNER IS RESPONSIBLE FOR OBTAINING THE REQUIRED EASEMENT FROM THE ADJACENT PROPERTY OWNER PRIOR TO SITE PLAN APPROVAL.

PERMANENT OFF SITE EASEMENT

AN OFF SITE PERMANENT EASEMENT FOR LANDSCAPE AND EMERGENCY ACCESS, 10' WIDE, IS PROPOSED ON THE ADJACENT PARCEL TO ALLOW INSTALLATION OF LANDSCAPING FOR 210 DIVERSION.

THE PROJECT OWNER IS RESPONSIBLE FOR OBTAINING THE REQUIRED EASEMENT FROM THE ADJACENT PROPERTY OWNER PRIOR TO SITE PLAN APPROVAL.

EQUIPMENT SCREENING

APPLICANT WILL COORDINATE FINAL LOCATION AND SCREENING METHODS OF ELECTRIC TRANSFORMER, METERS, AND UTILITIES, WITH DTE, THE CITY'S ENGINEERING AND PLANNING DEPARTMENTS, AND THE CITY'S FIRE CHIEF. FINAL LOCATION AND SCREENING METHODS WILL BE DEPICTED ON FINAL ENGINEERING AND PERMIT DRAWINGS FOR REVIEW AND FINAL APPROVAL.

TRASH COLLECTION

APPLICANT HAS REVISED TRASH COLLECTION TO THE INTERIOR OF THE BUILDING, WHICH THEREFORE NO LONGER REQUIRES AN EXTERIOR TRASH ENCLOSURE. THE PREVIOUS EXTERIOR TRASH ENCLOSURE HAS BEEN REMOVED FROM THE SITE PLAN AND REPLACED WITH 1 PARKING SPACE, AND SAID TRASH COLLECTION DOOR AND ACCESS SHOWN HEREON (AS OF 09/03/24).

PARCEL COMBINATION

THE TWO (2) EXISTING ROCHESTER PARCELS WILL BE COMBINED. SEE SHEET C1 FOR PROPOSED COMBINED PARCEL DESCRIPTION

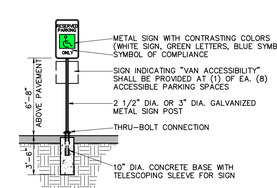
PAVING LEGEND

PROPOSED CONCRETE PAVEMENT

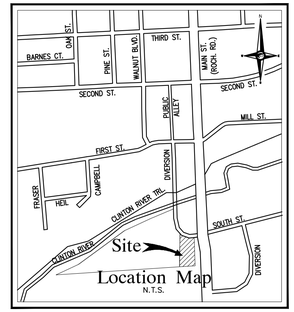
PROPOSED ASPHALT PAVEMENT

LEGEND

EXISTING SANITARY SEWER
SAN. CLEAN OUT
EXISTING WATERMAIN
EXISTING STORM SEWER
EX. R. Y. CATCH BASIN
EXISTING BURIED CABLES
OVERHEAD LINES
LIGHT POLE
SIGN
EXISTING GAS MAIN
PR. SANITARY SEWER
PR. WATER MAIN
PR. STORM SEWER
PR. R. Y. CATCH BASIN
PROPOSED LIGHT POLE



BARRIER FREE PARKING SIGN DETAIL
N.T.S.
Provide (1) for each accessible parking space



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SHEET
Site & Dimension Plan

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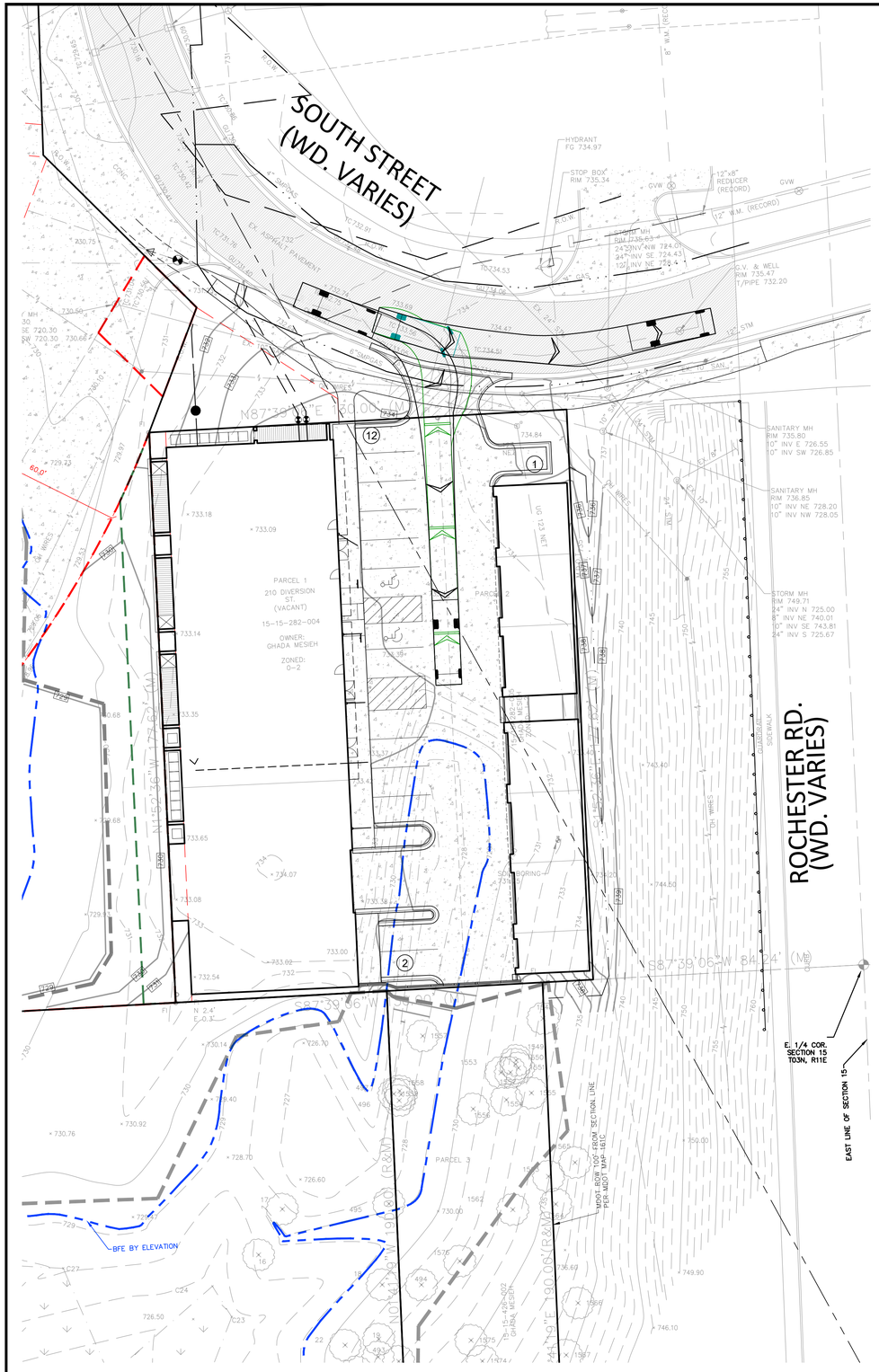
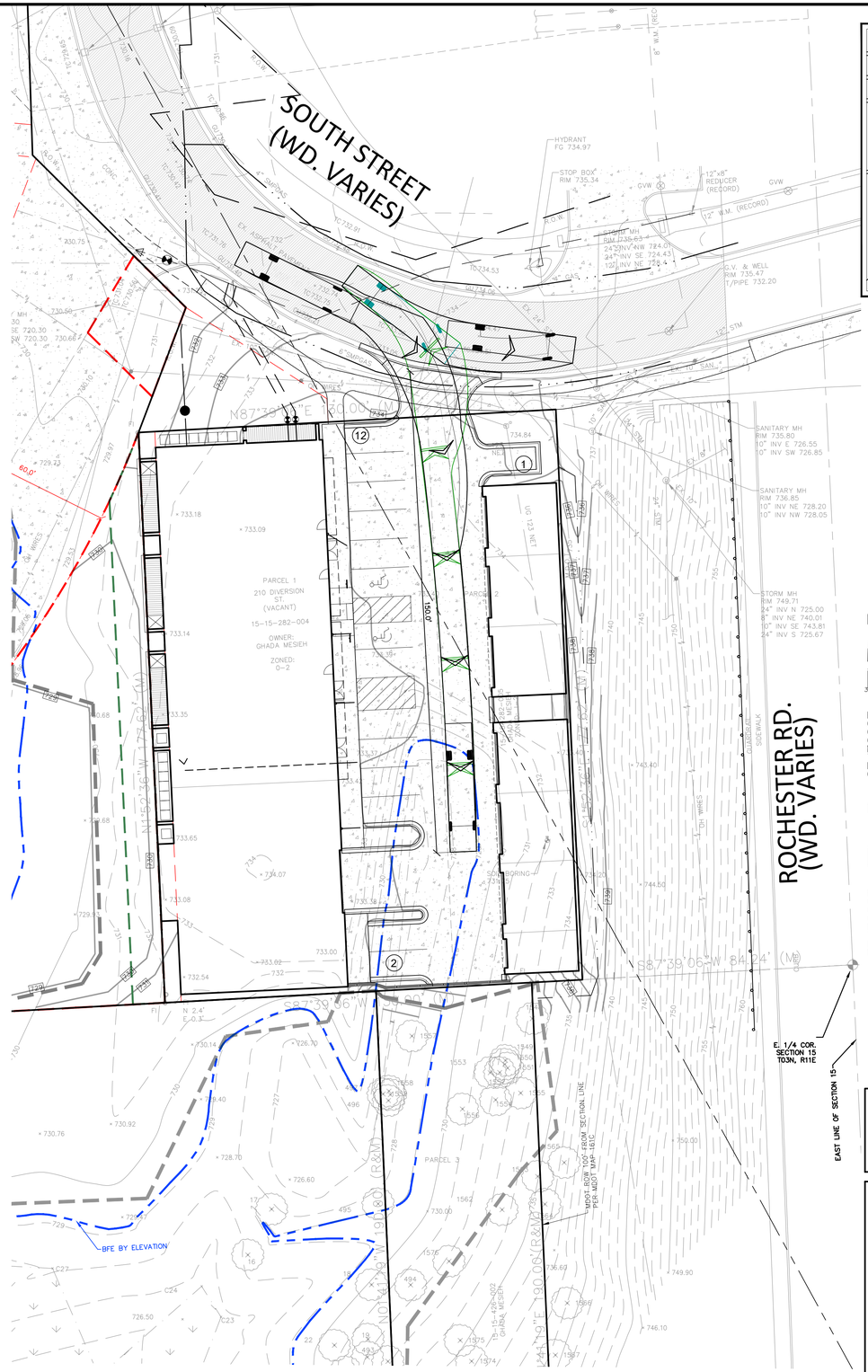
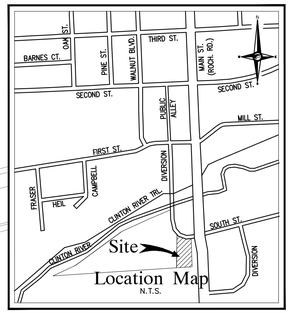
NFE JOB NO. I778-04
SHEET NO. C03

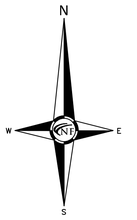


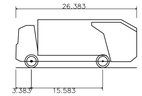
TRASH VEHICLE MANEUVERING



FIRE VEHICLE MANEUVERING

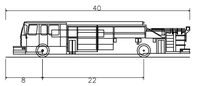






Hino 338 L + Wayne Royal GT14 Refuse Truck

Overall Length	26.383ft
Overall Width	8.042ft
Overall Body Height	10.488ft
Min Body Ground Clearance	1.318ft
Track Width	8.042ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	25.200ft



Pumper Fire Truck

Overall Length	40.000ft
Overall Width	8.167ft
Overall Body Height	7.745ft
Min Body Ground Clearance	0.656ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

PAVING LEGEND

- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALT PAVEMENT

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATERMAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE, GUY POLE, GUY WIRE — EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
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- PROPOSED LIGHT POLE

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SHEET
Truck Turns

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DRAWN BY: M. Hani
DESIGNED BY: B. Buchholz
APPROVED BY: B. Buchholz
DATE: January 18, 2023
SCALE: 1" = 20'

20 10 0 10 20 30

NFE JOB NO. I778-04
SHEET NO. C04

GENERAL PAVING NOTES

PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:

CONCRETE: PORTLAND CEMENT TYPE IA (AIR–ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES.

ASPHALT: BASE COURSE – MDOT BITUMINOUS MIXTUR HMA 4E1, 20AA; SURFACE COURSE – MDOT BITUMINOUS MIXTURE HMA 5E1, 20AA; ASPHALT CEMENT PENETRATION GRADE 85–100, BOND COAT – MDOT SS–1H EMULSION AT 0.10 GALLON PER SQUARE YARD; MAXIMUM 2 INCH LIFT.

PAVEMENT BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB–BASE SHALL BE PROOF–ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.

ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.

ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS–S164.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.

ALL SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.

CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.

FOR ANY WORK WITHIN THE PUBLIC RIGHT–OF–WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKEWISE ARRANGE FOR ALL INSPECTION.

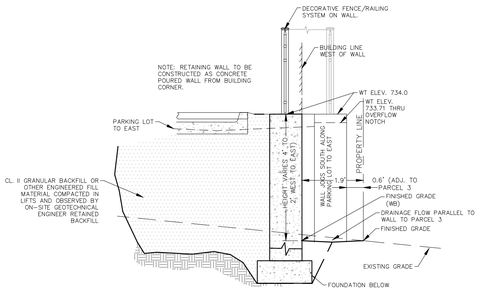
EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS.

EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RADII.

SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.

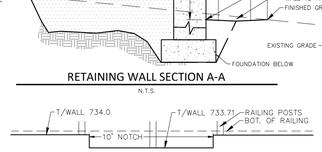
ALL PAVEMENT AREAS SHALL BE PROOF–ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.

FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT & SLABS.



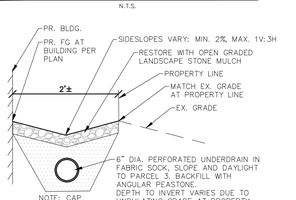
RETAINING WALL SECTION A-A

N.T.S.



SOUTH RETAINING WALL NOTCH FOR OVERFLOW WEIR

N.T.S.



SOUTH FRENCH DRAIN DETAIL

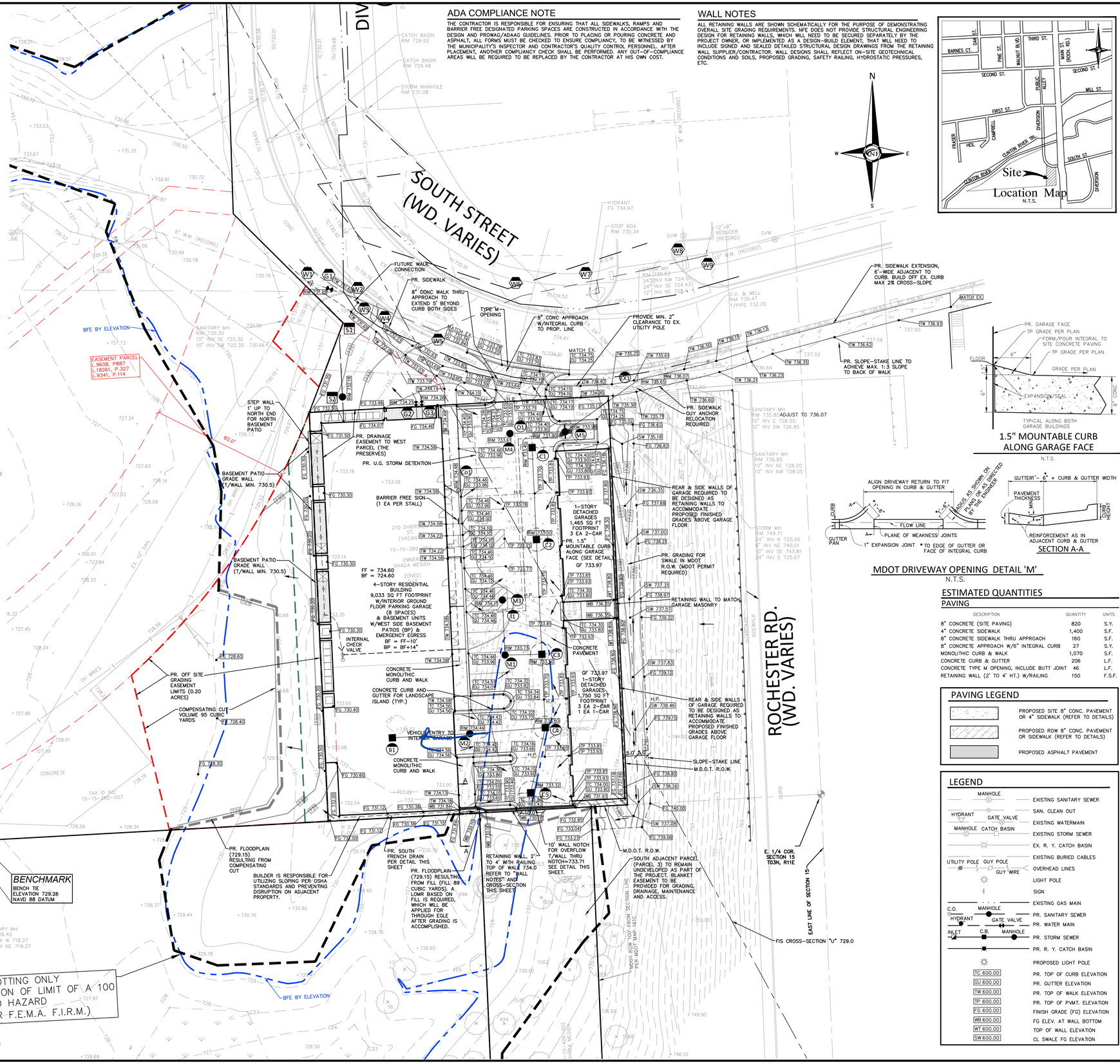
N.T.S.

ADA COMPLIANCE NOTE

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIDEWALKS, RAMPS AND BARRIER FREE DESIGNATED PARKING SPACES ARE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN AND PROWAG/ADAAG GUIDELINES. PRIOR TO PLACING OR POURING CONCRETE AND ASPHALT, ALL FORMS MUST BE CHECKED TO ENSURE COMPLIANCY, TO BE WITNESSED BY THE MUNICIPALITY'S INSPECTOR AND CONTRACTOR'S QUALITY CONTROL PERSONNEL. AFTER PLACEMENT, ANOTHER COMPLIANCY CHECK SHALL BE PERFORMED. ANY OUT–OF–COMPLIANCE AREAS WILL BE REQUIRED TO BE REPLACED BY THE CONTRACTOR AT HIS OWN COST.

WALL NOTES

ALL RETAINING WALLS ARE SHOWN SCHEMATICALLY FOR THE PURPOSE OF DEMONSTRATING OVERALL SITE GRADING REQUIREMENTS. NFE DOES NOT PROVIDE STRUCTURAL ENGINEERING DESIGN FOR RETAINING WALLS, WHICH WILL NEED TO BE SECURED SEPARATELY BY THE PROJECT OWNER, OR IMPLEMENTED AS A DESIGN–BUILD ELEMENT, THAT WILL NEED TO INCLUDE SIGNED AND SEALED DETAILED STRUCTURAL DESIGN DRAWINGS FROM THE RETAINING WALL SUPPLIER/CONTRACTOR. WALL DESIGNS SHALL REFLECT ON–SITE GEOTECHNICAL CONDITIONS AND SOILS, PROPOSED GRADING, SAFETY RAILING, HYDROSTATIC PRESSURES, ETC.

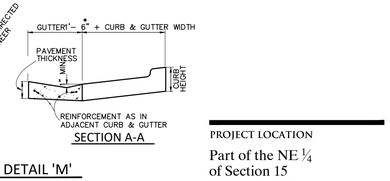


1.5" MOUNTABLE CURB ALONG GARAGE FACE

N.T.S.

MDOT DRIVEWAY OPENING DETAIL 'M'

N.T.S.



SECTION A-A

ESTIMATED QUANTITIES

PAVING

DESCRIPTION	QUANTITY	UNITS
8" CONCRETE (SITE PAVING)	820	S.Y.
4" CONCRETE SIDEWALK	1,400	S.F.
8" CONCRETE SIDEWALK THRU APPROACH	160	S.F.
8" CONCRETE APPROACH W/6" INTEGRAL CURB	27	S.Y.
MONOLITHIC CURB & WALK	1,070	S.F.
CONCRETE CURB & GUTTER	206	L.F.
CONCRETE TYPE M OPENING, INCLUDE BUTT JOINT	46	L.F.
RETAINING WALL (2' TO 4' HT.) W/RAILING	150	F.S.F.

PAVING LEGEND

PROPOSED SITE 8" CONC. PAVEMENT OR 4" SIDEWALK (REFER TO DETAILS)

PROPOSED ROW 8" CONC. PAVEMENT OR SIDEWALK (REFER TO DETAILS)

PROPOSED ASPHALT PAVEMENT

LEGEND

MANHOLE — EXISTING SANITARY SEWER
HYDRANT, GATE VALVE — EXISTING WATERMAIN
MANHOLE, CATCH BASIN — EXISTING STORM SEWER
EX. R. Y. CATCH BASIN
UTILITY POLE, GUY POLE — EXISTING BURIED CABLES
GUY WIRE — OVERHEAD LINES
LIGHT POLE
SIGN
EXISTING GAS MAIN
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HYDRANT, GATE VALVE — PR. WATER MAIN
INLET, C.B., MANHOLE — PR. STORM SEWER
PR. R. Y. CATCH BASIN
PROPOSED LIGHT POLE
TC 600.00 — PR. TOP OF CURB ELEVATION
GU 600.00 — PR. GUTTER ELEVATION
TW 600.00 — PR. TOP OF WALK ELEVATION
TP 600.00 — PR. TOP OF PVMT. ELEVATION
FG 600.00 — FINISH GRADE (FG) ELEVATION
WB 600.00 — FG ELEV. AT WALL BOTTOM
WT 600.00 — TOP OF WALL ELEVATION
SW 600.00 — CL SWALE FG ELEVATION

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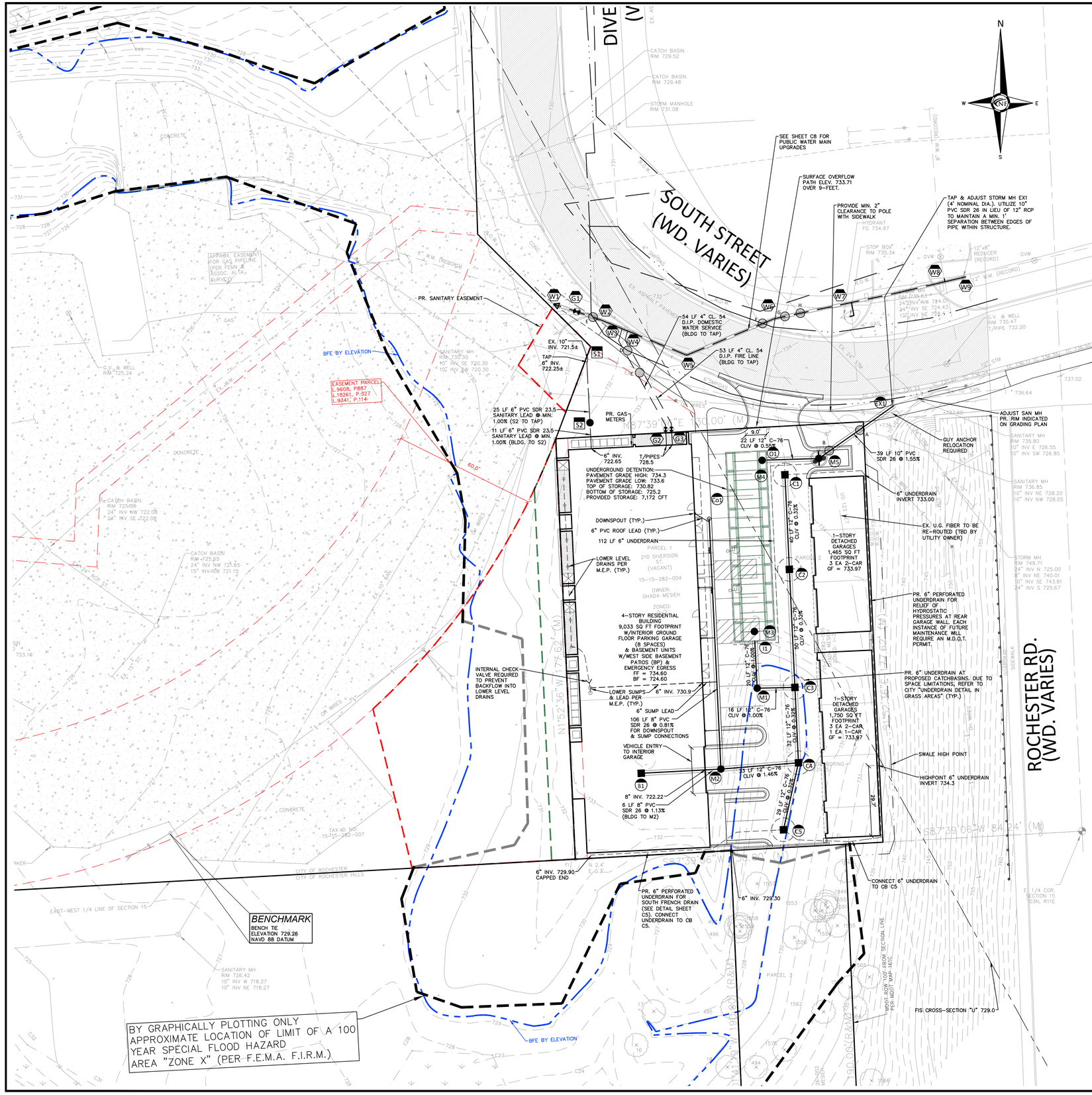
DRAWN BY: M. Hani
DESIGNED BY: B. Buchholz
APPROVED BY: B. Buchholz
DATE: January 18, 2023
SCALE: 1" = 20'
20 10 0 10 20 30

NFE JOB NO. I778-04
SHEET NO. C05



UTILITY CROSSING SCHEDULE

A. EX. 10" SANITARY B/P = 727.3± (V.I.F.)
PR. 10" STORM T/P = 725.6
PR. FG = 735.0

B. EX. U.G. 123NET FIBER = UNKNOWN (V.I.F.)
PR. 12" STORM T/P = 726.3
PR. FG = 734.0

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EX. U.G. 123NET FIBER = UNKNOWN (V.I.F.)
PR. WATER & FIRE LINES = 727.1
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D. EX. 6" GAS MAIN = UNKNOWN (V.I.F.)
PR. WATER & FIRE LINES = 726.7
PR. FG = 732.2

E. EX. 6" SMP GAS = UNKNOWN (V.I.F.)
EST. B/P = 727.5
PR. 12" WATER MAIN T/P = 726.0
EX. FG = 731.5

F. EX. 4" SMP GAS = UNKNOWN (V.I.F.)
EST. B/P = 730.5
PR. 12" WATER MAIN T/P = 728.9
EX. FG = 734.0

G. EX. SEWER LEAD = UNKNOWN (V.I.F.)
EST. 6" T/P = 726.5
PR. 12" WATER MAIN B/P = 728.1
EX. FG = 734.3

H. EX. 24" STORM T/P = 725.5 (V.I.F.)
PR. 12" WATER MAIN B/P = 728.0
EX. FG = 734.5

Water Service Schedule

Confirm Sizes w/M.E.P.

#G2 4" GATE VALVE IN BOX RIM 734.21
#G3 4" FIRE LINE GATE VALVE IN BOX RIM 734.26
#W3 12"X4" TEE FOR DOMESTIC SERVICE FG 731.94
#W4 12"X4" TEE FOR FIRE LINE FG 732.02

Sanitary Structure Schedule

Structure Name	Structure Details
#S1 6" SEWER TAP BELOW GRADE CONNECTION	PR. FG 731.44
#S2 4' DIA SAN MONITORING MH	PR. RIM 732.18

ESTIMATED QUANTITIES

STORM SEWER

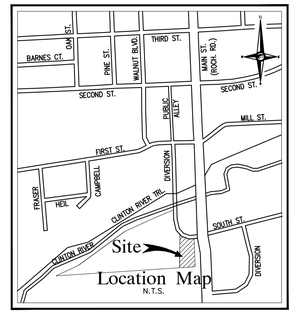
DESCRIPTION	QUANTITY	UNITS
12" C-76, CLASS IV, SEWER PIPE	209	L.F.
10" PVC SDR 26, SEWER PIPE	39	L.F.
8" PVC SDR 26, SEWER PIPE	145	L.F.
6" PVC ROOF/SUMP LEAD (OUTSIDE BUILDING)	30	L.F.
6' DIA. OUTLET CONTROL STRUCTURE	1	EA.
6" PERFORATED UNDERDRAIN	563	L.F.
MECHANICAL PRE-TREATMENT DEVICE	1	EA.
UNDERGROUND DETENTION	7,338	CFT.
4' DIA. MANHOLE	1	EA.
4' DIA. CATCH BASIN W/ 2' SUMP	5	EA.
6" CLEANOUT - SOLID CAP, FLUSH	1	EA.
6" CLEANOUT - W/DRAIN CAP, FLUSH	9	EA.
TAP/CONNECTION	1	EA.

SANITARY SEWER (Private Service)

DESCRIPTION	QUANTITY	UNITS
6" PVC, SDR 23.5, BUILDING LEAD	36	L.F.
4' MONITORING MANHOLE	1	EA.
TAP/CONNECTION	1	EA.

WATER MAIN (Private Services)

DESCRIPTION	QUANTITY	UNITS
4" DOMESTIC BUILDING SERVICE	52	L.F.
4" FIRE LINE SERVICE	51	L.F.
DOMESTIC SERVICE GATE VALVE IN BOX	1	EA.
FIRE LINE SERVICE GATE VALVE IN BOX	1	EA.
DOMESTIC SERV. CONNECTION AT MAIN	1	EA.
FIRE LINE SERV. CONNECTION AT MAIN	1	EA.



Storm Drainage Structure Schedule

Structure Name	Structure Details
#B1 GARAGE DRAIN CONFIRM W/ M.E.P.	PR. RIM 734.00 PR. 8" E. INV. 730.30
#C1 4' DIA. CB W/2' SUMP CONNECT 6" CB U.D. CONNECT 6" U.D. FROM REAR GARAGE	PR. RIM 733.45 PR. 12" S. INV. 729.30 PR. 6" E. INV. 729.80 PR. 6" N. INV. 729.80
#C2 4' DIA. CB W/2' SUMP CONNECT 6" CB U.D.	PR. RIM 733.50 PR. 12" N. INV. 729.17 PR. 12" S. INV. 729.17 PR. 6" E. INV. 729.67
#C3 4' DIA. CB W/2' SUMP CONNECT 6" CB U.D.	PR. RIM 733.50 PR. 12" N. INV. 729.01 PR. 12" S. INV. 729.01 PR. 12" W. INV. 729.01 PR. 6" E. INV. 729.51
#C4 4' DIA. CB W/2' SUMP CONNECT 6" CB U.D.	PR. RIM 733.50 PR. 12" N. INV. 729.11 PR. 12" W. INV. 729.11 PR. 12" S. INV. 729.11 PR. 6" E. INV. 729.61
#C5 4' DIA. CB W/2' SUMP CONNECT 6" CB U.D.	PR. RIM 733.32 PR. 12" N. INV. 729.20 PR. 6" W. INV. 729.30 PR. 6" SE. INV. 729.70
#Co1 6" CLEANOUT W/FLUSH CAP	PR. RIM 734.48 PR. 8" S. INV. 730.78
#EX1 TAP & ADJUST EX. STORM MH EX. & PR. INVERTS	PR. RIM 735.65 PR. 10" SW. INV. 724.50 EX. 24" NW. INV. 724.01 EX. 24" SE. INV. 724.43
#I1 12" INLET AT DETENTION BELOW GRADE CONNECTION	PR. FG 734.09 PR. 12" S. INV. 728.65
#M1 PRE-TREATMENT MH	PR. RIM 733.73 PR. 12" E. INV. 728.85 PR. 12" N. INV. 728.85
#M2 4' DIA. MH	PR. RIM 734.44 PR. 12" E. INV. 729.59 PR. 8" N. INV. 729.92 PR. 8" W. INV. 729.92
#M3 ACCESS MH	PR. RIM 734.11
#M4 ACCESS MH	PR. RIM 733.61
#M5 6' DIA. OUTLET CONTROL MH SEE DETAIL SHT. C10	PR. RIM 733.98 (EAST) PR. RIM 733.90 (WEST) PR. 10" NE. INV. 725.10 PR. 12" W. INV. 725.10 PR. 6" SW. INV. 725.14
#O1 12" OUTLET AT U.G. DETENTION BELOW GRADE CONNECTION	PR. FG 733.57 PR. 12" E. INV. 725.22

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- UTILITY POLE, GUY POLE, GUY WIRE — EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

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BRETT J. BUCHHOLZ
ENGINEER NO. 45606
LICENSED PROFESSIONAL ENGINEER

PROJECT
210 Diversion

CLIENT
LoChirco Custom Homes

PROJECT LOCATION
Part of the NE ¼ of Section 15 T.3N. , R.11E. City of Rochester, Oakland County, Michigan

SHEET
Utility Plan

811 Know what's below Call before you dig.

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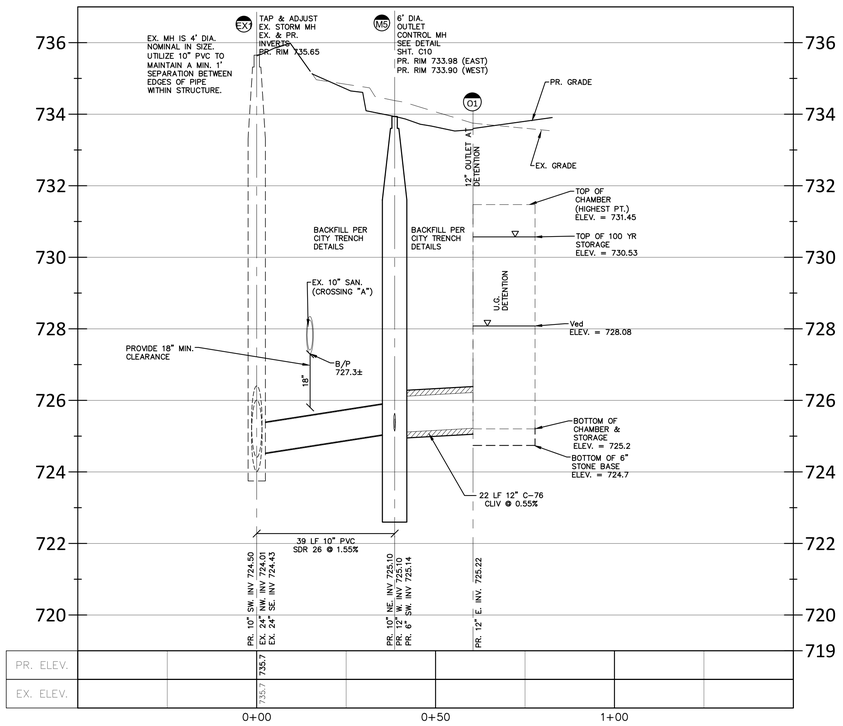
NFE JOB NO. I778-04
SHEET NO. C06



Storm Sewer Profile
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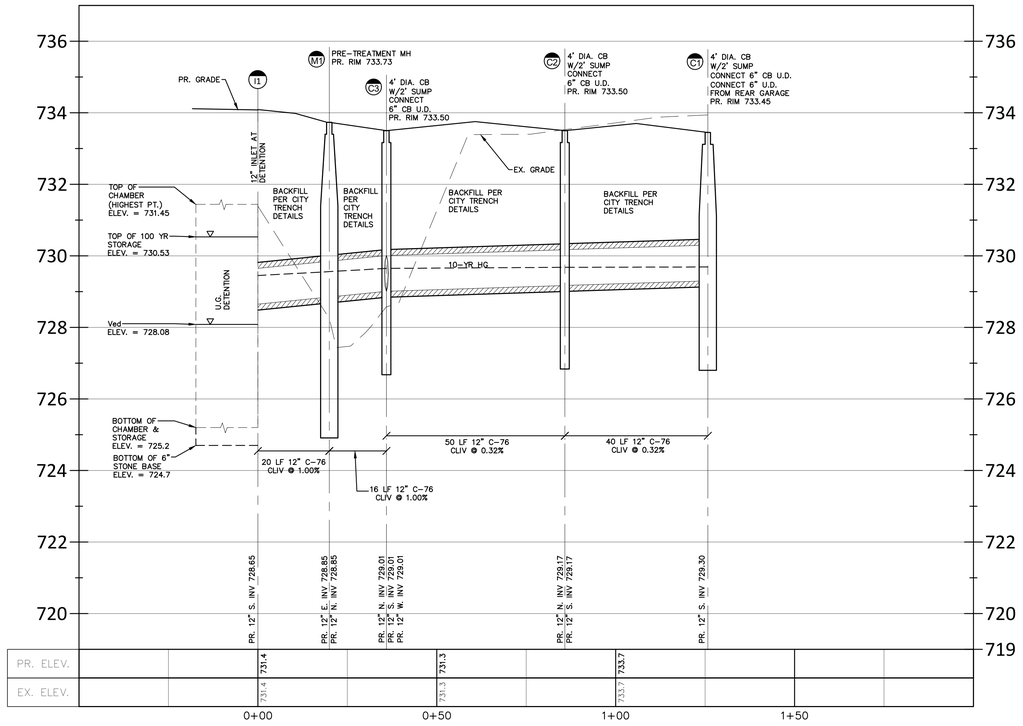

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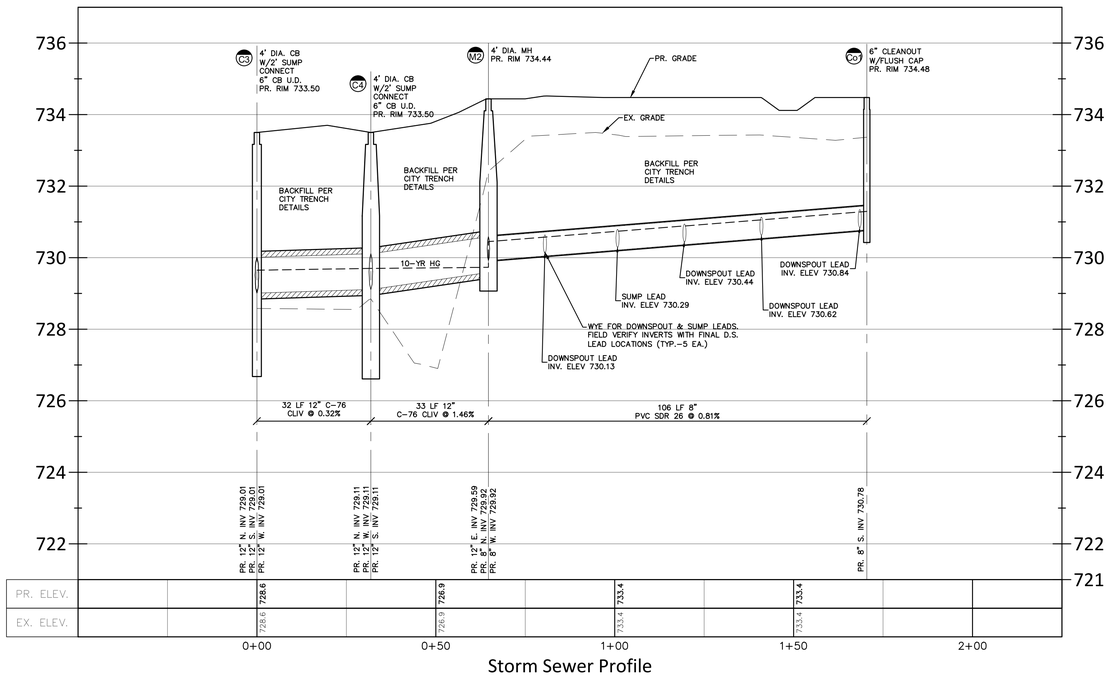

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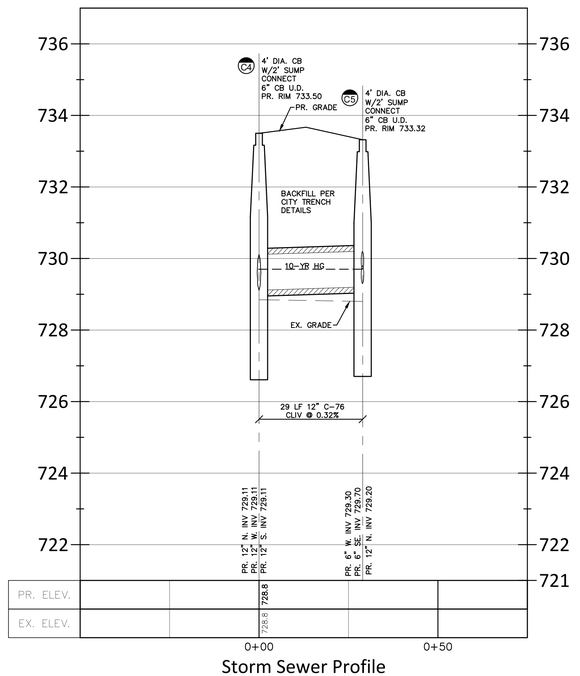

Storm Sewer Profile
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UTILITY CROSSING SCHEDULE

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PR. 10" STORM T/P = 725.6
PR. FG = 735.0

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D. EX. 6" GAS MAIN = UNKNOWN (V.I.F.)
PR. WATER & FIRE LINES = 726.7
PR. FG = 732.2

E. EX. 6" SMP GAS = UNKNOWN (V.I.F.)
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EX. FG = 734.0

G. EX. SEWER LEAD = UNKNOWN (V.I.F.)
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DRAWN BY:
P. Tulikangas

DESIGNED BY:
B. Buchholz

APPROVED BY:
B. Buchholz

DATE:
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SHEET NO. C07

ADA COMPLIANCE NOTE

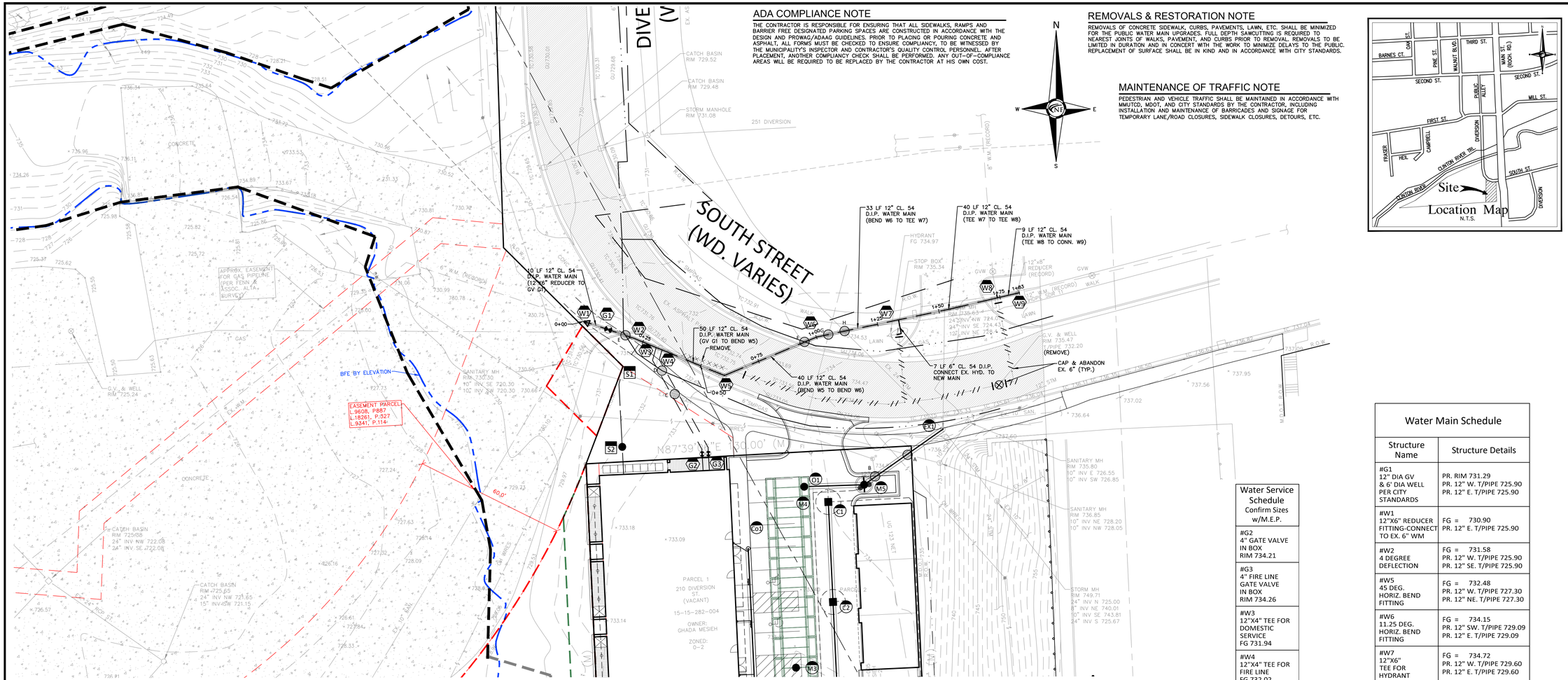
THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIDEWALKS, RAMPS AND BARRIER FREE DESIGNATED PARKING SPACES ARE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN AND PROWAG/ADAAG GUIDELINES. PRIOR TO PLACING OR POURING CONCRETE AND ASPHALT, ALL FORMS MUST BE CHECKED TO ENSURE COMPLIANCY, TO BE WITNESSED BY THE MUNICIPALITY'S INSPECTOR AND CONTRACTOR'S QUALITY CONTROL PERSONNEL. AFTER PLACEMENT, ANOTHER COMPLIANCY CHECK SHALL BE PERFORMED. ANY OUT-OF-COMPLIANCE AREAS WILL BE REQUIRED TO BE REPLACED BY THE CONTRACTOR AT HIS OWN COST.

REMOVALS & RESTORATION NOTE

REMOVALS OF CONCRETE SIDEWALK, CURBS, PAVEMENTS, LAWN, ETC. SHALL BE MINIMIZED FOR THE PUBLIC WATER MAIN UPGRADES. FULL DEPTH SAWCUTTING IS REQUIRED TO NEAREST JOINTS OF WALKS, PAVEMENT, AND CURBS PRIOR TO REMOVAL. REMOVALS TO BE LIMITED IN DURATION AND IN CONCERT WITH THE WORK TO MINIMIZE DELAYS TO THE PUBLIC. REPLACEMENT OF SURFACE SHALL BE IN KIND AND IN ACCORDANCE WITH CITY STANDARDS.

MAINTENANCE OF TRAFFIC NOTE

PEDESTRIAN AND VEHICLE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH MMUTCD, MDOT, AND CITY STANDARDS BY THE CONTRACTOR, INCLUDING INSTALLATION AND MAINTENANCE OF BARRICADES AND SIGNAGE FOR TEMPORARY LANE/ROAD CLOSURES, SIDEWALK CLOSURES, DETOURS, ETC.



Water Service Schedule

Confirm Sizes w/M.E.P.

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#G3 4" FIRE LINE GATE VALVE IN BOX RIM 734.26
#W3 12"X4" TEE FOR DOMESTIC SERVICE FG 731.94
#W4 12"X4" TEE FOR FIRE LINE FG 732.02

Water Main Schedule

Structure Name	Structure Details
#G1 12" DIA GV & 6' DIA WELL PER CITY STANDARDS	PR. RIM 731.29 PR. 12" W. T/PIPE 725.90 PR. 12" E. T/PIPE 725.90
#W1 12"X6" REDUCER FITTING-CONNECT TO EX. 6" WM	FG = 730.90 PR. 12" E. T/PIPE 725.90
#W2 4 DEGREE DEFLECTION	FG = 731.58 PR. 12" W. T/PIPE 725.90 PR. 12" SE. T/PIPE 725.90
#W5 45 DEG. HORIZ. BEND FITTING	FG = 732.48 PR. 12" W. T/PIPE 727.30 PR. 12" NE. T/PIPE 727.30
#W6 11.25 DEG. HORIZ. BEND FITTING	FG = 734.15 PR. 12" SW. T/PIPE 729.09 PR. 12" E. T/PIPE 729.09
#W7 12"X6" TEE FOR HYDRANT	FG = 734.72 PR. 12" W. T/PIPE 729.60 PR. 12" E. T/PIPE 729.60
#W8 12"X8" TEE CONNECTION 8" NORTH 12" EAST	FG = 735.46 PR. 12" W. T/PIPE 730.20 PR. 12" E. T/PIPE 730.20
#W9 12" D.I.P. TO 12" HDPE SDR 11 CONNECTION REMOVE REDUCER	FG = 735.90 PR. 12" W. T/PIPE 730.20

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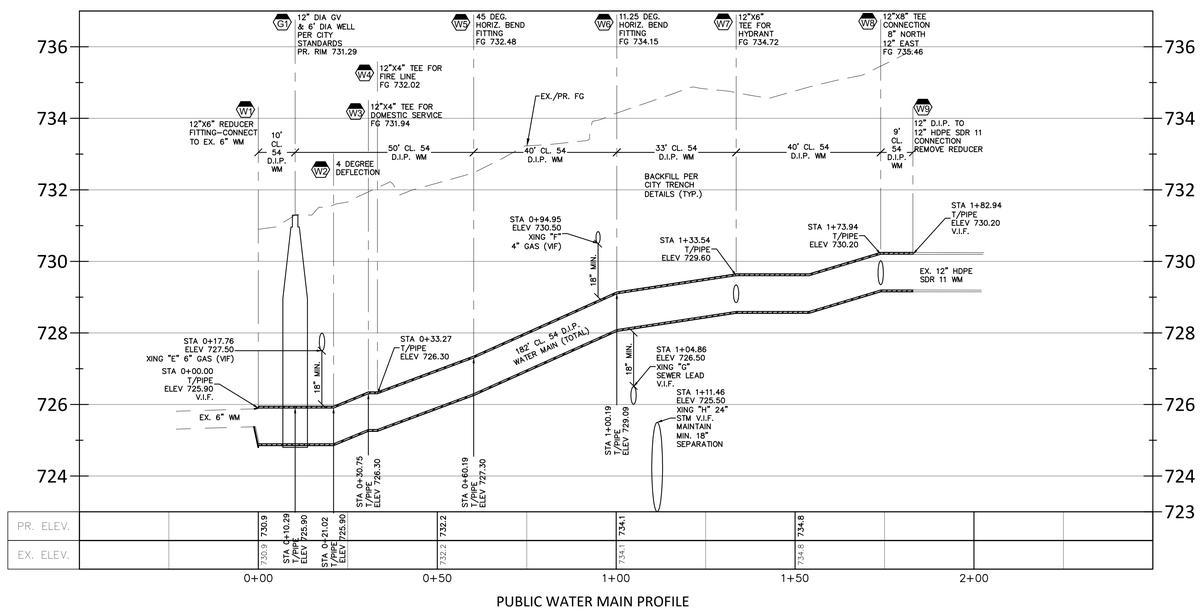

PUBLIC WATER MAIN PROFILE

ESTIMATED QUANTITIES

WATER MAIN (Public)

DESCRIPTION	QUANTITY	UNITS
12" CL. 54 D.I.P. WATER MAIN	182	L.F.
6" CL. 54 D.I.P. WATER MAIN (HYD LEAD)	7	L.F.
12" GATE VALVE & 6' DIA. WELL	1	EA.

LEGEND

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- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
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20 10 0 10 20 30

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CONSTRUCTION SEQUENCE / TIMING SCHEDULE

1.	INSTALL PERIMETER FILTER FABRIC FENCING AND STONE FILTER WHERE REQUIRED.	1ST MONTH
2.	MASS GRADE SITE.	1ST MONTH
3.	COMMENCE UNDERGROUND UTILITY WORK.	1ST MONTH
4.	INSTALL INLET FILTERS ON PROPOSED DRAINAGE STRUCTURES.	2ND MONTH
5.	FILL IN SEDIMENTATION TRAPS AND PAVE SITE.	6TH MONTH
6.	COMPLETE ALL BUILDINGS AND LANDSCAPE ACTIVITY.	10TH MONTH
7.	JET VAC NEW STORM SEWER SYSTEM AS REQUIRED.	11TH MONTH
8.	REMOVE ALL TEMPORARY SOIL EROSION MEASURES.	12TH MONTH

SOIL EROSION CONTROL - SEQUENCE OF OPERATION (NEW CONSTRUCTION)

INSTALL CRUSHED CONCRETE ACCESS DRIVE AND TEMPORARY CULVERTS AT THE SITE ENTRANCE AS INDICATED ON THE PLANS.

INSTALL SILT FENCE OR SIMILAR APPROVED SILT BARRIER ALONG PROPERTY LINES AND AROUND SENSITIVE NATURAL FEATURES AS INDICATED ON THE PLANS.

EXCAVATE A SHALLOW SWALE/DITCH AROUND PERIMETER OF SITE. GRADE THE TEMPORARY SWALE TO AN EXISTING DRAINAGE FACILITY. PLACE OUTLET FILTER IN EXISTING UPSTREAM STORM SEWER FACILITIES.

IF INDICATED ON CONSTRUCTION PLANS, SEDIMENTATION BASINS, DETENTION POND, ETC., SHALL BE CONSTRUCTED PRIOR TO THE INSTALLATION OF ANY OTHER WORK.

STRIP EXISTING TOPSOIL, VEGETATION AND ORGANIC MATTER FROM BUILDING PAD AND PARKING AREAS. COMMENCE LAND BALANCE AND MASS GRADING OPERATIONS. MAINTAIN A MINIMUM BUFFER OF 15' OF EXISTING VEGETATION WHEREVER POSSIBLE AROUND SITE PERIMETER. STOCK PILES SHALL BE LOCATED AWAY FROM EXISTING DRAINAGE FACILITIES.

EXCAVATE AND INSTALL UNDERGROUND UTILITIES. INSTALL PEASTONE INLET FILTERS AROUND ALL NEW STORM SEWER FACILITIES AS INDICATED ON THE PLANS. EXISTING AND PROPOSED STORM SEWER FACILITIES SHALL BE PROTECTED FROM EROSION AND SEDIMENT INFILTRATION AT ALL TIMES.

COMMENCE FINAL GRADING AND TRIMMING OPERATIONS. PREPARE SUBGRADE FOR INSTALLATION OF PROPOSED PAVEMENT.

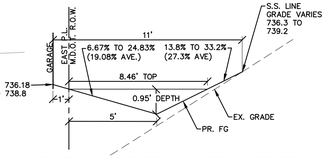
SEED AND MULCH ALL DISTURBED SITE AREAS AND INSTALLED SITE LANDSCAPING.

REMOVE CONSTRUCTION DEBRIS AND JET VAC NEWLY INSTALLED STORM SEWER SYSTEM AS REQUIRED BY THE MUNICIPALITY.

REMOVE ALL REMAINING TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ONCE PERMANENT MEASURES ARE ESTABLISHED.

WHENEVER POSSIBLE, THE SITE SHALL BE GRADED TO WITHIN SIX INCHES (6") OF THE PROPOSED FINISH GRADE PRIOR TO INSTALLATION OF UNDERGROUND FACILITIES.

STAGING OF PROPOSED WORK SHALL BE COMPLETED BY THE CONTRACTOR AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED AREAS.



MDOT SWALE DETAIL (NORTH-OFFSITE 1)

N.T.S.

Trapezoidal Shaped Swale:

Ave. swale width (bottom):	0.00 feet
Ave. swale depth:	0.95 feet
Ave. Left side swale sideslope:	19.08% <1:3
Ave. Right side swale sideslope:	27.30% <1:3
Calculated swale width (top):	8.46 feet
Mannings coefficient:	0.0350
Ave. Running Slope:	2.770 %
Area (calculated):	4.018 sq. feet
Wp (calculated wetted perimeter):	8.670
Rh = A/Wp (hydraulic radius):	0.463 feet
$Rh^{2/3}$ (calculated):	0.599 feet
Q (Mannings Eq. - capacity):	**17.00 cfs**
V (calculated velocity):	**4.23 f/s**
Est. Contributing Runoff (10-year):	0.28 cfs

SOIL EROSION CONTROL

CUTTING, FILLING AND GRADING SHALL BE MINIMIZED AND THE NATURAL TOPOGRAPHY OF THE SITE SHALL BE PRESERVED TO THE MAXIMUM POSSIBLE EXTENT, EXCEPT WHERE SPECIFIC FINDINGS DEMONSTRATE THAT MAJOR ALTERATIONS WILL STILL MEET THE PURPOSES AND REQUIREMENTS OF THIS ORDINANCE.

DEVELOPMENT SHALL BE STAGED TO KEEP THE EXPOSED AREAS OF SOIL AS SMALL AS PRACTICABLE.

SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED BETWEEN THE DISTURBED AREA AND ANY WATERCOURSES, INCLUDING RIVERS, STREAMS, CREEKS, LAKES, PONDS AND OTHER WATERCOURSES, WETLANDS, OR ROADWAYS ON OR NEAR THE SITE.

SEDIMENT RESULTING FROM ACCELERATED SOIL EROSION SHALL BE REMOVES FROM RUNOFF WATER BEFORE THAT WATER LEAVES THE SITE.

TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF WATER AROUND, THROUGH, OR AWAY FROM THE SITE SHALL BE DESIGNED TO LIMIT THE WATER FLOW TO A NON-ERODIVE VELOCITY.

TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE REMOVED AFTER PERMANENT SOIL EROSION CONTROL MEASURES HAVE BEEN IMPLEMENTED. ALL SITES SHALL BE STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES.

IF LAKES, PONDS, CREEKS, STREAMS, OR WETLANDS ARE LOCATED ON OR NEAR THE SITE, EROSION CONTROL MEASURES WHICH OVERT AWAY AND TRAP SEDIMENT MUST BE PROVIDED AT STRATEGIC LOCATIONS. STRAW BALE BERMS MAY BE USED AS TEMPORARY STORMWATER DIVERSION STRUCTURES, BUT WILL NOT BE CONSIDERED SUFFICIENT FOR TRAPPING SEDIMENT. THE USE OF SEDIMENT BASINS, FILTER FABRIC, VEGETATED BUFFER STRIPS, AND ROCK FILTERS IN LIEU OF STRAW BALE BERMS SHALL BE STRONGLY ENCOURAGED. OTHER MEASURES MAY BE REQUIRED IF REASONABLY DETERMINED TO BE NECESSARY TO PROTECT A WATERCOURSE OR WETLAND.

WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHEN SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED.

PERMANENT EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 15 (FIFTEEN) CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED.

VEGETATED BUFFER STRIPS SHALL BE CREATED OR RETAINED ALONG THE EDGES OF ALL LAKES, PONDS, CREEKS, STREAMS, OTHER WATERCOURSES, OR WETLANDS.

EROSION AND SEDIMENTATION CONTROL MEASURES SHALL RECEIVE REGULAR MAINTENANCE TO ASSURE PROPER FUNCTIONING.

ALL GRADING PLANS AND SPECIFICATIONS, INCLUDING EXTENSIONS OF PREVIOUSLY APPROVED PLANS, SHALL INCLUDE PROVISIONS FOR EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH, BUT NOT LIMITED TO, THE STANDARDS CONTAINED IN THE "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", PUBLISHED BY THE OAKLAND SOIL CONSERVATION DISTRICT.

LEGAL DESCRIPTION

PER ATA NATIONAL TITLE GROUP TITLE COMMITMENT NO. 63-20709493-GCM, DATED FEBRUARY 10, 2022, AT 8:00 AM.

THE LAND IS DESCRIBED AS FOLLOWS: SITUATED IN THE CITY OF ROCHESTER, COUNTY OF OAKLAND, STATE OF MICHIGAN

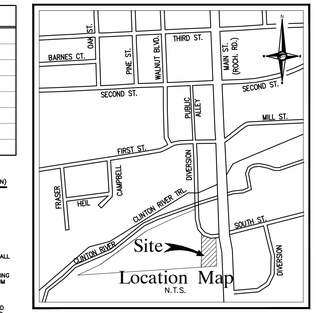
PARCEL 1:
TOWN 3 NORTH, RANGE 11 EAST, SECTION 15, PART OF NORTHEAST 1/4 BEGINNING AT POINT DISTANCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST 124.24 FEET FROM EAST 1/4 CORNER, THENCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST, 90 FEET, THENCE NORTH 01 DEGREES 52 MINUTES 36 SECONDS WEST, 177.62 FEET, THENCE NORTH 87 DEGREES 39 MINUTES 06 SECONDS EAST, 90 FEET, THENCE SOUTH 01 DEGREES 52 MINUTES 36 SECONDS EAST, 177.62 FEET TO BEGINNING.

PARCEL 2:
A PARCEL OF LAND IN THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 15, TOWN 3 NORTH, RANGE 11 EAST, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: BEGINNING AT A POINT ON THE SOUTH LINE OF DIVERSION STREET, SAID POINT BEGINNING AT THE WEST SIDE OF CONCRETE ABUTMENT SET APPROXIMATELY 284.50 FEET SOUTH OF THE POINT WHERE THE MAIN STREET HIGHWAY CROSSES THE CLINTON RIVER; THENCE FROM SAID POINT OF BEGINNING, WEST ALONG THE SOUTH LINE OF DIVERSION STREET, 70 FEET; THENCE SOUTH TO THE SOUTH LIMITS OF THE VILLAGE OF ROCHESTER; THENCE EAST ALONG SAID SOUTH VILLAGE LIMITS 70 FEET; THENCE NORTH TO THE POINT OF BEGINNING. EXCEPTING THEREFROM THE EAST 30 FEET.

ASSESSED FOR TAXES AS:
T.3N., R.11E., SECTION 15, PART OF THE NORTHEAST 1/4 BEGINNING AT INTERSECTON OF SOUTH LINE OF DIVERSION STREET, WITH WEST EDGE OF CONCRETE ABUTMENT IN MAIN STREET, THENCE WEST 70 FEET, THENCE SOUTH TO EAST AND WEST 1/4 LINE, THENCE EAST 70 FEET, THENCE NORTH TO BEGINNING EXCEPT EAST 30 FEET TAKEN FOR HIGHWAY.

PARCEL 3: (ADJACENT TO THE SOUTH OF THE PROJECT)
A PARCEL OF LAND IN THE SOUTHEAST 1/4 OF SECTION 15, T.3N., R.11E., CITY OF ROCHESTER HILLS (FORMERLY AVON TOWNSHIP), OAKLAND COUNTY, MICHIGAN, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 15; THENCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST 100 FEET, ALONG THE EAST-WEST 1/4 LINE OF SAID SECTION 15, TO THE POINT OF BEGINNING; THENCE SOUTH 01 DEGREES 41 MINUTES 19 SECONDS EAST, 190.00 FEET; THENCE SOUTH 87 DEGREES 39 MINUTES 06 SECONDS WEST, 48.50 FEET; THENCE NORTH 01 DEGREES 41 MINUTES 19 SECONDS WEST, 190.00 FEET; THENCE NORTH 87 DEGREES 39 MINUTES 06 SECONDS EAST, 48.50 FEET, ALONG THE EAST-WEST 1/4 LINE OF SAID SECTION 15 TO POINT OF BEGINNING.

ASSESSED FOR TAXES AS:
T.3N., R.11E., SECTION 15, EAST 148.50 FEET OF NORTH 190 FEET OF SOUTHEAST 1/4 EXCEPT EAST 100 FEET IN HIGHWAY.



NOTES

REFER TO THE WRC SOIL EROSION AND SEDIMENTATION CONTROL DETAIL SHEET FOR ALL ADDITIONAL NOTES & DETAILS (TYP)

A DISTANCE OF 382 FEET TO THE NEAREST BODY OF WATER (CLINTON RIVER).

THE TOTAL AREA OF EARTH DISRUPTION IS 0.9 ACRES.

THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY SITE CONTRACTOR.

A SOIL EROSION PERMIT IS REQUIRED FROM OAKLAND COUNTY.

SOIL DATA

THIS SITE CONSISTS OF

Marlette sandy loam, 6 to 12 percent slopes
Cohoctah-Fox association

BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE.

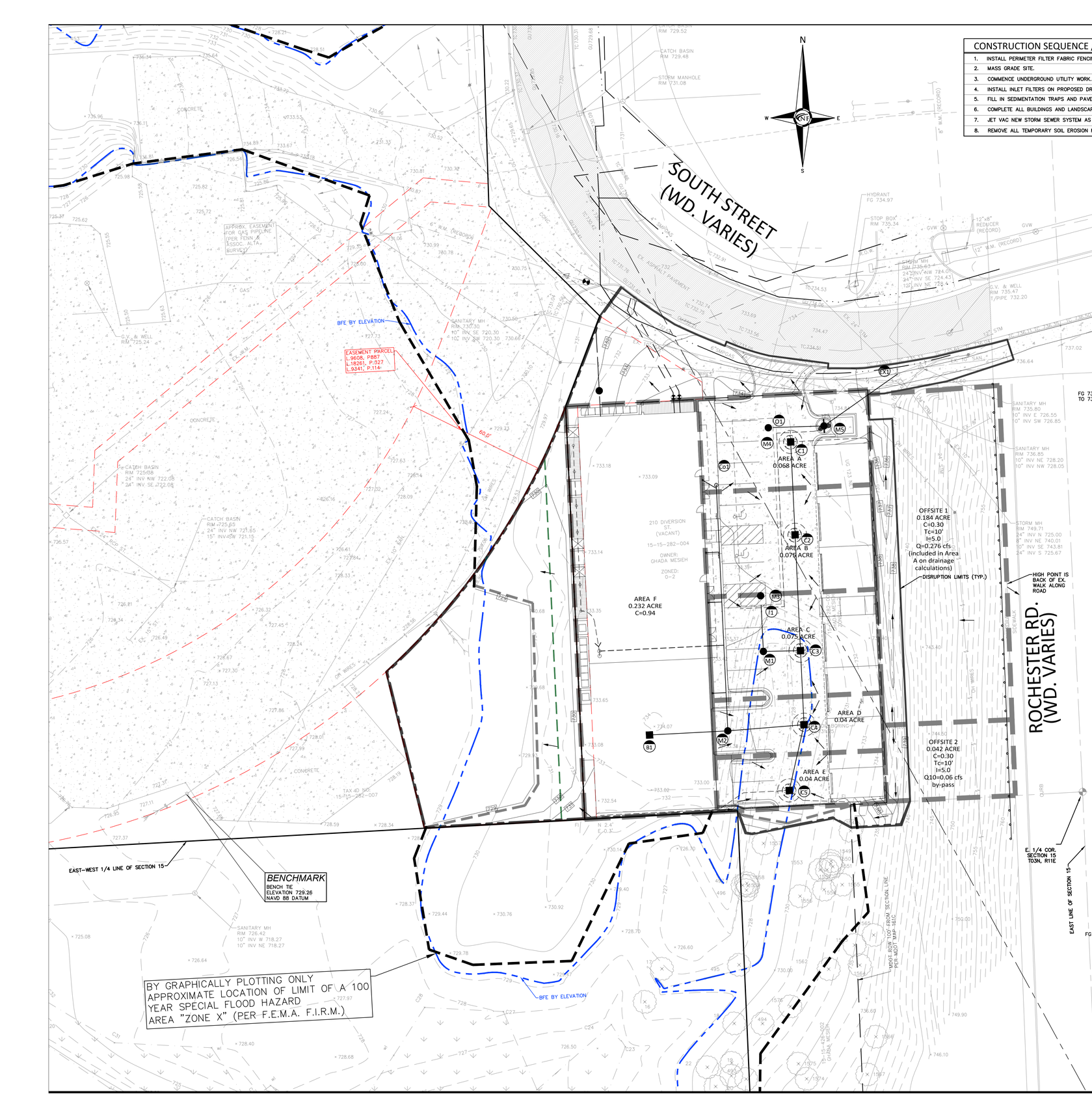
ESTIMATED QUANTITIES

SOIL EROSION

DESCRIPTION	QUANTITY	UNITS
SILT FABRIC FENCING	470	L.F.
INLET FILTER	5	EA.
SILT SACK OR EQUAL	–	EA.

LEGEND

- INDICATES LIMITS OF SILT FABRIC FENCE
- INDICATES LIMITS OF DRAINAGE DISTRICT AREA
- INDICATES LIMITS OF SOIL DISRUPTION
- INDICATES LOW POINT INLET FILTER OR PROPOSED DRAINAGE STRUCTURE
- INDICATES SILT SACK OR EQUAL ON EXISTING DRAINAGE STRUCTURE
- AREA A 0.00 ACRE — INDICATES DRAINAGE DISTRICT AREA



MDOT SWALE DETAIL (SOUTH-OFFSITE 2)

N.T.S.

Trapezoidal Shaped Swale:

Ave. swale width (bottom):	0.00 feet
Ave. swale depth:	0.38 feet
Ave. Left side swale sideslope:	7.50% <1:3
Ave. Right side swale sideslope:	21.90% <1:3
Calculated swale width (top):	6.80 feet
Mannings coefficient:	0.0350
Running Slope:	0.650 %
Area (calculated):	1.292 sq. feet
Wp (calculated wetted perimeter):	6.844
Rh = A/Wp (hydraulic radius):	0.189 feet
$Rh^{2/3}$ (calculated):	0.329 feet
Q (Mannings Eq. - capacity):	**1.46 cfs**
V (calculated velocity):	**1.13 f/s**
Est. Contributing Runoff (10-year):	0.06 cfs

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NFE-ENGR.COM

SEAL

STATE OF MICHIGAN
BRETT J. BUCHHOLZ
ENGINEER
NO. 45606
LICENSED PROFESSIONAL ENGINEER

PROJECT
210 Diversion

CLIENT
LoChirco Custom Homes

PROJECT LOCATION
Part of the NE ¼
of Section 15
T.3N. , R.11E.
City of Rochester,
Oakland County, Michigan

SHEET
Soil Erosion Plan

811
Know what's **below**
Call before you dig.

DATE	ISSUED/REVISED
01-18-23	ISSUED FOR OWNER REVIEW
03-03-23	PRE-SPA REVIEW
06-30-23	REV. PER OWNER
11-06-23	REV. PER CITY
12-20-23	UPDATE PER MCKENNA REVIEW
03-06-24	REVISED PER PC MEETING
09-03-24	REV. PER OWNER (TRASH COLLECTION)
10-18-24	ISSUE FOR PERMITS
12-12-24	REV. PER CITY ENG. REVIEW 1
03-10-25	REV. PER CITY ENG. REVIEW 2

DRAWN BY: B. Islam
DESIGNED BY: B. Buchholz
APPROVED BY: B. Buchholz
DATE: January 18, 2023
SCALE: 1" = 20'

20 10 0 10 20 30

NFE JOB NO. I778-04
SHEET NO. C08

DAMAGE TO PRIVATE PROPERTY

ALL SIDEWALKS, DRIVEWAYS, LAWNS, FENCING, TREES, SHRUBS, SPRINKLERS, LANDSCAPING, ETC., THAT ARE DAMAGED DURING CONSTRUCTION MUST BE REPAIRED OR REPLACED, IN KIND OR BETTER, BY THE CONTRACTOR. ALL STREET SIGNS, MAIL BOXES, ETC., REMOVED SHALL BE REPLACED IN KIND OR BETTER, BY THE CONTRACTOR. ALL THE REPAIRS OR REPLACEMENTS DUE TO THE CONTRACTOR'S WORK ARE TO BE INCLUDED IN THE CONTRACT PRICE(S) AND SHALL NOT BE AN EXTRA TO THE CONTRACT.

THE CONTRACTOR SHALL SECURE PERMISSION IN WRITING FROM ADJACENT PROPERTY OWNERS PRIOR TO ENTERING UPON ANY ADJOINING PROPERTIES, UNLESS OFFSITE PERMITS HAVE ALREADY BEEN OBTAINED BY THE OWNER AND ARE PART OF THE CONTRACT DOCUMENTS.

DEWATERING OF TRENCH AND EXCAVATIONS

IF NOT SPECIFICALLY PROVIDED FOR IN THE CONSTRUCTION DESIGN DOCUMENTS, THE DESIGN OR QUALITATIVE ANALYSIS OF GROUND WATER DEWATERING SYSTEMS IS BEYOND THE SCOPE OF DESIGN FOR THESE DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING AND PROVIDING APPROPRIATE EXCAVATION DEWATERING SYSTEMS FOR USE DURING CONSTRUCTION.

THE DEWATERING METHOD SELECTED BY THE CONTRACTOR WILL NOT ADVERSELY AFFECT ADJACENT PAVEMENTS OR STRUCTURES PRIOR TO BEGINNING DEWATERING CONDITIONS. MEANS AND METHODS OF DEWATERING ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. THE COST OF DEWATERING WILL BE CONSIDERED INCLUDED IN THE WORK OF CONSTRUCTING THE UNDERGROUND UTILITIES UNLESS SPECIFICALLY INDICATED OTHERWISE.

BY-PASS PUMPING

FROM TIME TO TIME IT MAY BE NECESSARY FOR THE CONTRACTOR TO BY-PASS PUMP TO COMPLETE THE WORK INDICATED ON THE PLANS. THE COST OF BY-PASS PUMPING, THE METHODS, EQUIPMENT AND MEANS OF PROVIDING THAT WORK ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE CONSIDERED PART OF THE WORK WHETHER SPECIFICALLY CALLED OUT ON THE PLANS OR NOT.

MEANS AND METHODS FOR PIPE CONSTRUCTION

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE MEANS AND METHODS FOR CONSTRUCTING THE UNDERGROUND PIPE SYSTEMS PROPOSED ON THE PLANS, INCLUDING BUT NOT LIMITED TO THE NEED FOR SHORING/BRACING OF TRENCHES, DEWATERING OF TRENCHES, SCHEDULING THE WORK AT OFF PEAK HOURS, AND/OR MAINTAINING EXISTING FLOWS THAT MAY BE ENCOUNTERED VIA PUMPING, BY-PASS PIPING OR OTHER MEANS. THE CONTRACTOR SHALL NOT BE PAID ANY ADDITIONAL COMPENSATION TO IMPLEMENT ANY MEANS AND METHODS TO SATISFACTORILY COMPLETE THE CONSTRUCTION.

PAVEMENT REMOVAL

THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE THICKNESS OF THE PAVEMENT REMOVAL. PAVEMENT CORE SAMPLES ARE FOR INFORMATIONAL PURPOSES ONLY AS TO THE THICKNESS OF THE PAVEMENT AT THE LOCATION OF THE SAMPLE. THE OWNER AND ENGINEER MAKE NO REPRESENTATION, WARRANTY OR GUARANTY THAT THE SAMPLES ACCURATELY REFLECT THE PAVEMENT THICKNESS ON THE PROJECT.

MAINTENANCE OF TRAFFIC

DURING THE PROGRESS OF THE WORK THE CONTRACTOR SHALL ACCOMMODATE BOTH VEHICULAR AND PEDESTRIAN TRAFFIC IN THE ROAD RIGHTS OF WAY. THE CONTRACTOR'S EQUIPMENT AND OPERATIONS ON PUBLIC STREETS SHALL BE GOVERNED BY ALL APPLICABLE LOCAL, COUNTY AND STATE ORDINANCES, REGULATIONS AND LAWS. THE CONTRACTOR SHALL OBTAIN AND SATISFY ANY AND ALL PERMIT REQUIREMENTS BY THE LOCAL, COUNTY AND STATE GOVERNMENTAL AGENCIES.

IN ADDITION, WHERE THE WORK REQUIRES THE CLOSURE OF ONE OR MORE LANES OR IS WITHIN THE INFLUENCE OF THE ROAD OR PEDESTRIAN RIGHT OF WAY, THE CONTRACTOR SHALL PROVIDE ALL SIGNS, BARRICADES, FLAG PERSONS AND OTHER TRAFFIC CONTROL MEASURES AS REQUIRED BY MDOT, THE COUNTY, OR THE COMMUNITY HAVING JURISDICTION OF THE ROAD AND IN CONFORMANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

COMPENSATION FOR TRAFFIC CONTROL SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE(S) UNLESS SPECIFIC TRAFFIC CONTROL ITEMS ARE INCLUDED IN THE ACCEPTED BID PROPOSAL.

IRRIGATION

THE CONTRACTOR SHALL MAINTAIN OR REPAIR ANY EXISTING IRRIGATION SYSTEMS WITHIN THE PROJECT AREA UNLESS THE DRAWINGS CALL FOR THE IRRIGATION SYSTEM TO BE REMOVED. THE OWNER AND NFE MAKE NO REPRESENTATIONS, WARRANTY OR GUARANTY AS TO THE LOCATION OF THE IRRIGATION SYSTEM. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT THE IRRIGATION SYSTEM DURING CONSTRUCTION ACTIVITIES. COMPENSATION FOR MAINTAINING OR REPAIRING EXISTING IRRIGATIONS SYSTEMS SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE(S) UNLESS SPECIFIC IRRIGATION SYSTEM REPAIR ITEMS ARE INCLUDED IN THE ACCEPTED BID PROPOSAL.

SUB-SOIL CONDITIONS

ANY SOIL BORING PROVIDED BY THE OWNER AND/OR ENGINEER IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THIS INFORMATION IS NOT OFFERED AS EVIDENCE OF GROUND CONDITIONS THROUGHOUT THE PROJECT AND ONLY REFLECT THE GROUND CONDITIONS AT THE LOCATION OF THE BORING ON THE DATE THEY WERE TAKEN.

THE ACCURACY AND RELIABILITY OF THE SOIL LOGS AND REPORT ARE NOT WARRANTED OR GUARANTEED IN ANY WAY BY THE OWNER OR ENGINEER AS TO THE SUB-SOIL CONDITIONS FOUND ON THE SITE. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION AND SUB-SOIL INVESTIGATION AND SECURE OTHER SUCH INFORMATION AS THE CONTRACTOR CONSIDERS NECESSARY TO DO THE WORK PROPOSED AND IN PREPARATION OF THEIR BID.

SUBGRADE UNDERCUTTING AND PREPARTION

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ANY AND ALL SOILS WHICH DO NOT CONFORM TO THE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A SUBGRADE IN CONFORMANCE WITH THE PROJECT PLANS AND/OR SPECIFICATIONS. THE MEANS AND METHODS USED TO ACHIEVE THE REQUIRED RESULT SHALL REST SOLELY WITH THE CONTRACTOR.

ANY AREAS OF UNDERCUTTING THAT RESULT IN ADDITIONAL OR EXTRA WORK BECAUSE THEY COULD NOT BE IDENTIFIED BY THE CONTRACTOR'S PRE-BID SITE OBSERVATION OR ARE NOT SET FORTH IN THE PLANS AND SPECIFICATIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER BEFORE ANY EXTRA WORK IS PERFORMED. THE CONTRACTOR SHALL MAKE A REQUEST FOR ANY ADDITIONAL COMPENSATION FOR THE UNDERCUTTING IN WRITING AND THE REQUEST SHALL CONFORM TO THE CONTRACT'S CHANGE ORDER PROVISIONS.

STRUCTURE BACKFILL

STRUCTURAL BACKFILL SHALL BE PLACED IN CONFORMANCE WITH THE PROJECT PLANS, SPECIFICATIONS OR AS REQUIRED BY THE COMMUNITY, GOVERNMENT AGENCY OR UTILITY THAT HAS JURISDICTION OVER THE WORK.

TRENCH BACKFILL

TRENCH BACKFILL SHALL BE PLACED IN CONFORMANCE WITH THE PLANS AND/OR SPECIFICATIONS. TRENCH BACKFILL SHALL ALSO BE INSTALLED IN CONFORMANCE WITH THE COMMUNITY REQUIREMENTS OR AGENCY/UTILITY GOVERNING SAID TRENCH CONSTRUCTION. IN THE CASE OF CONFLICTING REQUIREMENTS, THE MORE STRINGENT SHALL APPLY.

EARTH BALANCE / GRADING

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHETHER THE SITE EARTHWORK BALANCES OR NOT. ANY EXCESS CUT MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR. IN A LIKE MANNER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IMPORT APPROVED FILL MATERIAL AND PLACE IT AS REQUIRED TO ATTAIN THE SITE GRADE AND COMPACTION REQUIREMENTS PER THE ENGINEER'S PLAN AND ALL APPLICABLE GOVERNMENTAL STANDARDS. THE ENGINEER AND OWNER MAKE NO REPRESENTATION AS TO THE QUANTITIES THAT MAY BE NEEDED TO CREATE A BALANCED EARTHWORK CONDITION OR THAT THE SITE EARTHWORK IS BALANCED.

SOIL EROSION / SEDIMENTATION CONTROL

THE CONTRACTOR SHALL OBTAIN THE REQUIRED SOIL EROSION PERMIT AND SATISFY ALL REGULATORY REQUIREMENTS FOR CONTROLLING SOIL EROSION AND SEDIMENT TRANSPORT. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS. THE ENGINEER AND OWNER ARE NOT RESPONSIBLE FOR INSPECTION OR APPROVAL OF THE CONTRACTOR'S WORK IN CONNECTION WITH SATISFYING THE SOIL EROSION PERMIT REQUIREMENTS UNLESS SPECIFICALLY STATED IN THE CONTRACT DOCUMENTS.

UTILITIES

AT LEAST 72 HOURS (3 WORKING DAYS) PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY MISS DIG AND THE LOCAL COMMUNITY (WHERE APPLICABLE) TO STAKE LOCATIONS OF EXISTING UTILITIES.

THE CONTRACTOR SHALL EXPOSE AND VERIFY EXISTING UTILITIES FOR LOCATION, SIZE, DEPTH, MATERIAL AND CONFIGURATION PRIOR TO CONSTRUCTION. COSTS FOR EXPLORATORY EXCAVATION IS AN INCIDENTAL COST AND SHALL NOT BE CONSIDERED AN EXTRA TO THE CONTRACT.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY EXISTING UTILITIES WHICH DO NOT MATCH THE PLANS AND SPECIFICATIONS PRIOR TO COMMENCING WORK. ANY FIELD CHANGES OF THE PROPOSED UTILITIES SHALL BE APPROVED BY THE OWNER AND ENGINEER BEFORE THE WORK IS DONE.

THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE. ANY SERVICE OR UTILITY DAMAGED OR REMOVED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR, IN CONFORMANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY PROVIDER.

FRAMES AND COVERS

UTILIZE FRAMES AND COVERS ON PROPOSED STORM, SANITARY, & WATER MAIN AS INDICATED IN THE LOCAL MUNICIPALITY'S STANDARD DETAIL SHEETS INCLUDED AS PART OF THIS SET.

CONCRETE PAVEMENT NOTES & DETAILS

THE PROJECT PROPOSES PLACEMENT OF CONCRETE PAVEMENT.
IF THE WORK INCLUDES WIRE MESH REINFORCEMENT, LANE TIES AND DOWEL BARS, IT IS TO BE PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS ADHERED TO IN SOUTHEAST MICHIGAN AND AS FOLLOWS.

THE CONTRACTOR IS RESPONSIBLE FOR THE JOINT LAYOUT, JOINT DEPTHS, AND PLACEMENT OF REINFORCEMENT AND LOAD TRANSFER ASSEMBLIES (LANE TIES, DOWEL BARS AND HOOK BOLTS), AND SHALL SUBMIT A SHOP DRAWING SKETCH OF THE JOINT SPACING LAYOUT AND LOAD TRANSFER ASSEMBLY MATERIALS FOR REVIEW BY AN ENGINEER SPECIALIZED IN PAVEMENT DESIGN. IN GENERAL, ALL STEEL, LANE TIES AND DOWEL BARS SHALL BE IN ACCORDANCE WITH MICHIGAN DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, AND SHALL BE EPOXY COATED.

WEIGHTED RUNOFF COEFFICIENT CALCULATIONS

Surface Type			C (Average) = Area 1 * C1 + Area 2 * C2 + Area 3 * C3 / Area 1 + Area 2 + Area 3
	Pervious	0.30	
	Impervious	0.95	
	Pond	1.00	

Drainage Area	Total Area		Pervious		Impervious		Pond		C (Average)
A*	10,978 Sq.Ft.		8,395 Sq.Ft.		2,583 Sq.Ft.		0 Sq.Ft.		0.45
	0.252 Ac.		0.193 Ac.		0.059 Ac.		0.000 Ac.		
*Includes Offsite 1									
B	3,268 Sq.Ft.		45 Sq.Ft.		3,223 Sq.Ft.		0 Sq.Ft.		0.94
	0.075 Ac.		0.001 Ac.		0.074 Ac.		0.000 Ac.		
C	3,268 Sq.Ft.		269 Sq.Ft.		2,999 Sq.Ft.		0 Sq.Ft.		0.90
	0.075 Ac.		0.006 Ac.		0.069 Ac.		0.000 Ac.		
D	1,742 Sq.Ft.		97 Sq.Ft.		1,645 Sq.Ft.		0 Sq.Ft.		0.91
	0.040 Ac.		0.002 Ac.		0.038 Ac.		0.000 Ac.		
E	1,742 Sq.Ft.		154 Sq.Ft.		1,588 Sq.Ft.		0 Sq.Ft.		0.89
	0.040 Ac.		0.004 Ac.		0.036 Ac.		0.000 Ac.		
F	10,106 Sq.Ft.		284 Sq.Ft.		9,822 Sq.Ft.		0 Sq.Ft.		0.93
	0.232 Ac.		0.007 Ac.		0.225 Ac.		0.000 Ac.		
Overall	31,104.72 Sq.Ft.		9,244.00 Sq.Ft.		21,860.72 Sq.Ft.		0.00 Sq.Ft.		0.76
	0.714 Ac.		0.212 Ac.		0.502 Ac.		0.000 Ac.		
Overall Less Offsite 1	23,089.72 Sq.Ft.		1,229.00 Sq.Ft.		21,860.72 Sq.Ft.		0.00 Sq.Ft.		0.92
	0.530 Ac.		0.028 Ac.		0.502 Ac.		0.000 Ac.		

100-YEAR OVERFLOW ANALYSIS

Name of Project:	210 Diversion
Location of Project:	Rochester, MI
100-year Storm Overflow Calculations:	
From Line 7. of Required Detention	
Volume Calculations (County Standards):	3.570 cfs
OVERFLOW WEIR 10' NOTCH IN SOUTH WALL (USE L=9' FOR EQ.):	
Broad-Crested Weir Equation	Q=3L*(H)^3/2
Length (L)	9 feet
Height (H)	0.26 feet*
Q Capacity	3.58 CFS*
* Analysis is between overflow grade at top of wall through 10' notch, less 1' for railing post (733.71) and proposed garage floor elevation (733.97).	
OVERFLOW SURFACE AT DRIVEWAY:	
Broad-Crested Weir Equation	Q=3L*(H)^3/2
Length (L)	9 feet
Height (H)	0.26 feet*
Q Capacity	3.58 CFS*
* Analysis is between overflow grade at driveway (733.71) and proposed garage floor elevation (733.97).	

SANITARY SEWER BASIS OF DESIGN

Use	Qty.		Unit Factor			
Multiple Family Residences	21 Units	@	1.00 Per	1 Units	=	21.00 REUs

Total REUs = 21.00 REUs
Equivalent Population = 2.50 People Per REU
Total Population = 53 People

Average Flow	=	100 Gal/Per/Day * Population / 7.48 gal/cf * 86,400 sec/day				
	=	**5250.00 GPD**	=	**0.0081 CFS**		
Peak Factor	=	18 + (# of Persons/1000) ^ 0.50 / 4 + (# of Persons/1000) ^ 0.50			=	4.31
Peak Flow	=	Peak Factor * Average Flow				
	=	**22629.47 GPD**	=	**0.0350 CFS**		
Proposed Sanitary Sewer	=	6 In.	@	1.00 %	=	0.561 CFS

WATER MAIN BASIS OF DESIGN

Use	Qty.		Unit Factor			
Multiple Family Residences	21 Units	@	1.00 Per	1 Units	=	21.00 REUs

Total REUs = 21.00 REUs
Equivalent Population = 2.50 People Per REU
Total Population = 53 People

Average Flow	=	150 Gal/Per/Day * Population / 7.48 gal/cf * 86,400 sec/day				
	=	**7,875.00 GPD**	=	**0.0122 CFS**		
	=	**0.0079 MGPD**				
Peak Factor	=	2.00				
Peak Flow	=	Peak Factor * Average Flow				
	=	**15,750.00 GPD**	=	**0.0244 CFS**		
	=	**0.0158 MGPD**				

T= 10 minutes — Time of Concentration
I= 175/(T+25) — 10 Year Storm Event Intensity
n (Conc.) 0.013 — Manning's Roughness Coefficient
n (PVC) 0.013 — Manning's Roughness Coefficient
n (CMP) 0.025 — Manning's Roughness Coefficient

Rochester, Oakland County, MI
Storm Sewer Calculations

Project No: I778-04
Project Name: 210 Diversion
Location: Rochester, MI
Dated: 03/10/27

Drainage Area (Location)	From Manhole Number	To Manhole Number	Drainage Area (Acres)	Runoff Coefficient (C)	Equivalent Area (C * A)	Total Area (Sum C * A)	Time of Concentration (Minutes)	Rainfall Intensity (Inches/Hr.)	Actual Discharge (CFS)	Pipe Size (Inches)	Pipe Slope (% Slope)	Pipe Length (Feet)	Flow Full Velocity (Ft / Sec)	Time of Flow (Minutes)	Full Pipe Capacity (CFS)	H. G. Elev. Upper End (Feet)	H. G. Elev. Lower End (Feet)	H. G. Slope (% Slope)	Theoretical Velocity (Ft / Sec)	Ground Elevation (Upper)	Change in Elevation (Feet)	Invert Elev. Upper End (Feet)	Invert Elev. Lower End (Feet)	Upper Rim To HGL (Feet)
A*	C1	C2	0.252	0.45	0.114	0.114	10.00	5.000	0.571	12	0.32	40	2.566	0.26	2.02	729.69	729.68	0.026	0.727	733.45	0.13	729.30	729.17	3.76
B	C2	C3	0.075	0.94	0.071	0.185	10.26	4.963	0.917	12	0.32	50	2.566	0.32	2.02	729.68	729.65	0.066	1.168	733.50	0.16	729.17	729.01	3.82
C	C3	M1	0.075	0.90	0.067	0.540	10.88	4.878	2.636	12	1.00	16	4.536	0.06	3.56	729.65	729.56	0.547	3.357	733.50	0.16	729.01	728.85	3.85
F	Roof (Co1)	M2	0.232	0.93	0.216	0.216	10.00	5.000	1.081	8	0.81	106	3.116	0.57	1.09	731.30	730.45	0.800	3.096	734.48	0.86	730.78	729.92	3.18
E	C5	C4	0.040	0.89	0.036	0.036	10.00	5.000	0.188	12	0.32	29	2.566	0.19	2.02	729.70	729.70	0.003	0.240	733.32	0.09	729.20	729.11	3.62
D	C4	C3	0.040	0.91	0.037	0.288	10.67	4.906	1.415	12	0.32	32	2.566	0.21	2.02	729.70	729.65	0.158	1.802	733.50	0.10	729.11	729.01	3.80
--	M2	C4	0.000	--	0.000	0.216	10.57	4.920	1.064	12	1.46	33	5.481	0.10	4.30	729.73	729.70	0.089	1.354	734.44	0.48	729.59	729.11	4.71
--	M1	Detention	0.000	--	0.000	0.540	10.93	4.870	2.632	12	1.00	20	4.536	0.07	3.56	729.56	729.45	0.546	3.351	733.73	0.20	728.85	728.65	4.17
--	Detention	M5	0.000	--	0.000	0.540	11.01	4.860	2.627	12	0.55	22	3.364	0.11	2.64	725.84	725.72	0.543	3.344	733.61	0.12	725.22	725.10	7.77
--	M5	EX1	0.000	--	0.000	0.540	11.12	4.845	2.619	10	1.55	39	5.001	0.13	2.73	725.72	725.17	1.428	4.801	733.94	0.60	725.10	724.50	8.22

REQUIRED DETENTION VOLUME CALCULATIONS

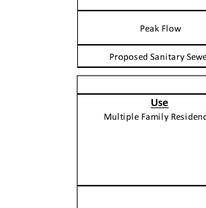
100 Year Post-Development Detention Volume

Name of Project:	**210 Diversion**
Location of Project:	**Rochester**
NFE Project No.:	**I778-04**
Contributing Acreage "A": (For MSTS Qwq Rate, Use "Overall" area = 0.714ac)	0.530 *ac*
Weighted Runoff Coefficient "C": (For MSTS Qwq Rate, Use "Overall" = 0.76)	0.92
Time of Concentration "Tc":	10.93 *min*
1. Calculate Required Water Quality Volume (Vwq) (P=2.07" Rainfall Event)	
Vwq = 3630(C)(A)(P)	3,664 *cft*
2. Calculate Required Water Quality Rate (Qwq)	
Qwq = (C)(A)30.20/(Tc+9.17)^.81	1.44 *cfs*
3. Calculate Required Channel Protection Volume (Vcp-r) (1.3" Rainfall Event)	
Vcp-r = 4719(C)(A)	2,301 *cft*
4. Calculate Required Extended Detention Volume (Ved) (1.9" Rainfall Event)	
Ved = 6897(C)(A) - FOR MSTS, USE Vwq as Ved	3,363 *cfs*
5. Calculate Extended Detention Outlet Rate (Qed) (48 hour discharge)	
Qed = Ved / [(48 hr)(60 min)(60 sec)] = Ved/172800	0.02 *cfs*
6. Calculate 100-year Rainfall Intensity (I100)	
I100 = 83.3/(Tc+9.17)^0.81))	7.33 *in/hr*
7. Calculate 100-year Storm Inlet Rate (Q100-in)	
Q100-in = (C)(I100)(A)	3.57 *cfs*
8. Determine the Variable Release Rate (Qvrr)	
Qvrr =	1.00 *cfs/ac*
Restricted Outlet rate per local municipality	0.200 *cfs/ac*
9. Calculate Allowable 100-year Storm Outlet Rate (Q100P)	
Q100p = (Qvrr)(A)	0.11 *cfs*
10. Calculate Storage Curve Factor (R)	
R = 0.206-(0.15)(LN(Q100P/Q100-in))	0.734
11. Calculate Required 100-year Storm Volume In (V100R)	
V100R = 18,985(C)(A)	9,257 *cft*
12. Calculate 100-year Storm Detention Storage Volume (V100D)	
V100D = (V100R)(R)	6,792 *cft*
Vcp(credit)	0 *cft*
TOTAL DETENTION VOLUME REQUIRED:	**6,792** *cft*

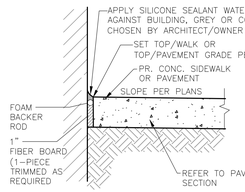
MULTI-STAGE DETENTION OUTLET CALCULATIONS

Extended Detention & 100-Year - Circular Orifice

Contributing Acreage "A":	0.530 *ac*
Weighted Runoff Coefficient "C":	0.92
100-Year Storm Allowable Outlet Rate "Q100p":	0.106 *cfs*
Extended Detention Volume Discharge Rate "Qed":	0.021 *cfs*
Top of Detention Storage "Ztop":	730.53
Bottom of Detention Storage "Zbot":	725.20
Elevation of Outlet Control "Zout":	725.10
EXTENDED DETENTION OUTLET CALCULATIONS	
Extended Detention Volume "Ved": For MTST, Use higher "Vwq":	3,664 *cft*
Extended Detention Elevation "Zed":	728.08
Calculate Average Head "Hed":	
Hed = 0.5*(Zed-Zout)	1.490 *ft*
Calculate Required Orifice Area "Aed":	
Aed = Qed / (0.62*(2*g*Hed)^0.5)	0.003 *sft*
Provided Number of Holes	1 *Hole*
Required Diameter of Holes	1 *in*
Provided Orifice Area "Aed-act":	0.005 *sft*
Calculate Actual Average Release Rate "Qed-act":	
Qed-act = 0.62*Aed-act*(2*g*Hed)^0.5)	0.033 *cfs*
Calculate Actual Holding Time "Ted":	
Ted = (Ved/Qed-act)/3600	30.72 *hr*
**** Use (1) 1'' Hole @ 725.10 ****	
100-YEAR FLOOD VOLUME OUTLET CALCULATIONS	
Calculate Head on Extended Detention Holes "Hout":	
Hout = Ztop - Zout	5.430 *ft*
Calculate Flow through Extended Detention Holes "Q100p-ed":	
Q100p-ed = (0.62*Aed-act(2*32.2*Hout)^0.5)	0.063 *cfs*
Calculate Adjusted Required Outlet Release Rate "Q100p-adj":	
Q100p-adj = Q100p - Q100p-ed	0.043 *cfs*
Calculate Head on 100-year Holes "H100p":	
H100p = Ztop - Zed	2.45 *ft*
Calculate Required Orifice Area "A100p":	
A100p = (Q100p-adj / (0.62*(2*g*H100p)^0.5))	0.005 *sft*
Provided Number of Holes	1 *Hole*
Required Diameter of Holes	1 *in*
Provided Orifice Area "A100p-act":	0.005 *sft*
Calculate Actual Peak Release Rate "Q100p-act":	
Q100p-act = (0.62*A100p-act)*(2*g*H100p)^0.5)	0.042 *cfs*
Calculate Total Release Rate "Q100p-tot":	
Q100p-tot = Q100p-ed + Q100p-act	0.106 *cfs*
**** Use (1) 1'' Hole @ 728.08 ****	



CONCRETE CURB DETAIL 'B'
N.T.S.



EXPANSION JOINT DETAIL AT BUILDING
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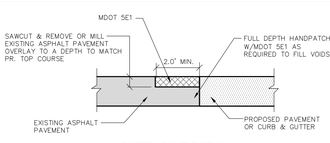
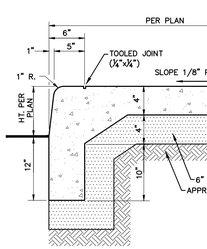
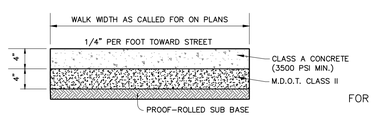


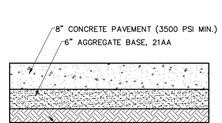
BUTT JOINT DETAIL
N.T.S.



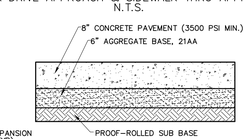
MONOLITHIC CURB AND WALK
N.T.S.



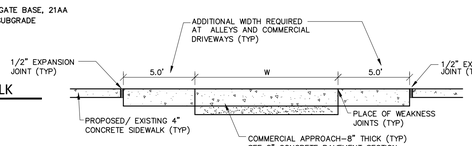
CONCRETE SIDEWALK SECTION
N.T.S.



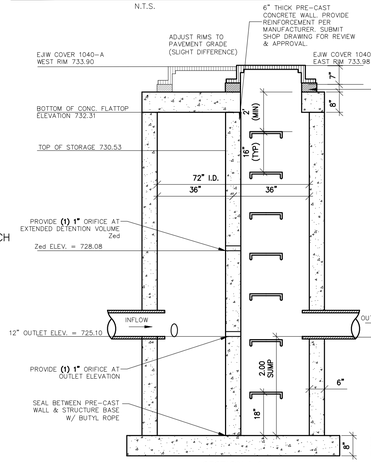
8" CONCRETE PAVEMENT SECTION
FOR DRIVE APPROACH & SIDEWALK THRU APPROACH
N.T.S.



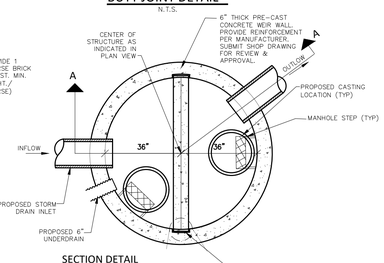
8" CONCRETE PAVEMENT SECTION
FOR SITE PARKING LOT & DRIVE AISLE
N.T.S.



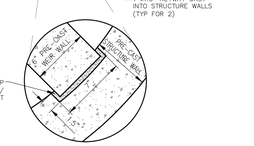
COMMERCIAL CONCRETE SIDEWALK DETAIL
N.T.S.



SECTION A-A



SECTION DETAIL



KEYWAY DETAIL

M5 6' DIAMETER OUTLET CONTROL MANHOLE (SCHEMATIC DETAIL)
N.T.S.

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

STORM ARC INSTALLATION SPECIFICATIONS

1. STORM ARC SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891 STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRE-CAST CONCRETE UTILITY STRUCTURES. THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:

2. . IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.

3. THE AGGREGATE FOUNDATION HAS BEEN DESIGNED BASED ON THE FOLLOWING ASSUMPTIONS. THESE ASSUMPTIONS WILL NEED TO BE VERIFIED BY A GEOTECHNICAL ENGINEER WHICH WILL NEED TO BE EMPLOYED BY THE OWNER.

3.1. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY THE OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS BELOW THE PROPOSED ENGINEERED STONE FOUNDATION. IF A STONE FOUNDATION DESIGN IS TO BE USED, THE BEARING CAPACITY OF THE SOILS BELOW THE STONE WILL NEED TO BE EVALUATED FOR ACCEPTABILITY. IF THE SOILS ARE DEEMED TO BE UNACCEPTABLE, THE STONE FOUNDATION MAY NOT BE AN OPTION FOR THIS LOCATION.

3.2. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY THE OWNER, TO EVALUATE THE SOURCE OF STONE AGGREGATES THAT WILL BE PLACED ON PROPERLY COMPACTED SOILS. THE FOUNDATION FOR THE STORM ARC MODULES SHALL CONSIST OF A LEVEL BASE WHICH SHALL CONSIST OF A 6" THICK BED OF 3/4" TO 1-1/2" DIAMETER ANGULAR STONE, NEWLY COMPACTED AND SEATED, WITH NO FINES, AND A 9" THICK BED OF 2" ANGULAR AGGREGATE (SEE DETAIL 2005/2.0 ON SHEET 2). PLEASE NOTE THAT THESE ARE ONLY MINIMUM RECOMMENDATIONS AND A QUALIFIED GEOTECHNICAL ENGINEER SHALL BE USED TO DETERMINE THE EXACT REQUIREMENTS FOR THE LOCATION(S) THAT THE STORM ARC SYSTEM IS TO BE LOCATED.

3.3. THE CONTRACTOR SHALL REMOVE ANY AND ALL EXPANDABLE OR COLLAPSIBLE SOILS AT THE DIRECTION OF A QUALIFIED GEOTECHNICAL ENGINEER.

3.4. THE AGGREGATE FOUNDATION SHALL BE INSTALLED SUCH THAT THE AGGREGATE EXTENDS A MINIMUM OF 1'-0" PAST THE OUTSIDE OF THE SYSTEM (SEE DETAIL 2005/2.0).

3.5. THE 3/4" TO 1-1/2" AGGREGATE SHALL BE COMPACTED USING A VIBRATING ROLLER OR PLATE COMPACTOR CAPABLE OF APPLYING A MINIMUM OF 4,000 LBS OF FULL DYNAMIC FORCE TO ACHIEVE A FLAT SURFACE.

3.6. DISK, DRY, AND COMPACT THE TOP 8" OF THE SUBGRADE SOILS TO SIDE OF THE STANDARD DRY DENSITY AND 110% OPTIMUM MOISTURE CONTENT.

3.7. AGGREGATE SHALL BE GRADED WITHIN +/-1/4" OF THE GRADE SHOWN ON THE PLANS.

4. THE STORM ARC MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED 3/4" (SEE DETAIL 2004/SLICE). IF THE SPACE EXCEEDS 3/4" THE MODULES SHALL BE RESET WITHIN APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.

5. STORM ARC MODULES ARE NOT WATERTIGHT. IF A WATERTIGHT SOLUTION IS REQUIRED, CONTACT STORM ARC FOR RECOMMENDATIONS. THE WATERTIGHT APPLICATION IS TO BE PROVIDED AND IMPLEMENTED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SELECTED WATERTIGHT SOLUTION PERFORMS AS SPECIFIED BY THE MANUFACTURER.

6. ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORM ARC MODULES SHALL BE SEALED WITH 6" WIDE PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN, BONDED TO A WOVEN , HIGH-Y PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY STORM ARC. THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SILT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:

6.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE THE JOINT WRAP IS TO BE APPLIED.

6.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORM ARC MODULE SURFACE WHEN APPLYING.

7. IF THE CONTRACTOR NEEDS TO CANCEL ANY SHIPMENTS, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE. IF CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.

8 . IF THE STORM ARC MODULE(S) IS DAMAGED IN ANY WAY PRIOR, DURING, OR AFTER INSTALL, GOODFLOW SOLUTIONS, MUST BE CONTACTED IMMEDIATELY TO ASSESS THE DAMAGE AND TO DETERMINE WHETHER OR NOT THE MODULE(S) WILL NEED TO BE REPLACED. . IF ANY MODULE ARRIVES AT THE JOBSITE DAMAGED DO NOT UNLOAD IT. CONTACT STORM ARC IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.

9. STORM ARC MODULES CANNOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM GOODFLOW SOLUTIONS.

PRODUCT IDENTIFICATION CHART

GOODFLOW STORM ARC – GFA
GOODFLOW CHAMBERS:
3.25' TALL X 8' L – GFC – 3
4.25' TALL X 8' L – GFC – 4
5.25' TALL X 8' L – GFC – 5
6.25' TALL X 8' L – GFC – 6

GOODFLOW END SLABS :
GOODFLOW 3' TALL END SLAB SOLID "NO KNOCKOUT" – GFS – 3
GOODFLOW 3' TALL END SLAB "WITH PIPE KNOCKOUT" – GFS – X/O –3
GOODFLOW 4' TALL END SLAB SOLID "NO KNOCKOUT" – GFS – 4
GOODFLOW 4' TALL END SLAB "WITH PIPE KNOCKOUT" – GFS – X/O – 4
GOODFLOW 5' TALL END SLAB SOLID "NO KNOCKOUT" – GFS – 5
GOODFLOW 5' TALL END SLAB "WITH PIPE KNOCKOUT" – GFS – X/O–5
GOODFLOW 6' TALL END SLAB SOLID "NO KNOCKOUT" – GFS – 6
GOODFLOW 6' TALL END SLAB "WITH PIPE KNOCKOUT" – GFS – X/O – 6

GOODFLOW HARDWARE
GOODFLOW HARDWARE PACKAGE INCLUDING THREADED ROD AND STEEL SLAB ARM – GFH – 1

GOODFLOW MANHOLE – GFMH – 1 – SEE SPECIFICATIONS FOR MANHOLE COVER, RING AND COVER.

GENERAL NOTES

STORM ARC IS DESIGNED TO BE USED IN CONJUNCTION WITH CONCRETE STRUCTURES TO CREATE ONE OF THE MOST EFFECTIVE AND STRUCTURALLY SUPERIOR STORM WATER DETENTION SYSTEMS IN THE INDUSTRY.

ARC PARAMETERS:
1. ARC DIMENSIONS ARE:
MID SECTION TOTAL:
TOTAL OVERALL WIDTH– 11'– 3 11/16"
WIDTH FROM OUTSIDE EDGES OF VERTICAL LEGS– 9'–4"
TOTAL OVERALL LENGTH INCLUDING KEYWAYS– 4'–4"
ASSEMBLED LENGTH– 4'

RIGHT END SECTION:
TOTAL OVERALL WIDTH– 11'– 3 11/16"
WIDTH FROM OUTSIDE EDGES OF VERTICAL LEGS– 9'–4"
TOTAL OVERALL LENGTH INCLUDING KEYWAY– 4'–4"
ASSEMBLED LENGTH– 4'

LEFT END SECTION:
TOTAL OVERALL WIDTH– 11'– 3 11/16"
WIDTH FROM THE OUTSIDE EDGES OF VERTICAL LEGS– 9'–4"
TOTAL OVERALL LENGTH INCLUDING KEYWAY– 4'–4"
ASSEMBLED LENGTH– 4'

INSTALLATION DETAILS:
1. STORM ARC SECTIONS ARE DESIGNED TO UTILIZE ANY CONCRETE STRUCTURES THAT HAVE SIDES WHERE THE TIPS FORM RIGHT ANGLES AND WIDTH OF 2' OR WIDER SUCH AS CHAMBERS, VAULTS, CONCRETE BLOCKS ETC.

2. STEEL REINFORCED CONCRETE SLABS ARE USED TO SEAL THE END OF THE ARC ROWS. THE SLABS ARE 10' LONG THE HEIGHT OF THE SLAB WHEN INSTALLED WITH ONE OF THE LONG SIDES DOWN IS 12" LOWER THAN THE HEIGHT OF THE FOUNDATIONAL CONCRETE STRUCTURE AND THE THICKNESS OF THE SLAB IS 4"

3. . ANY STRUCTURES UTILIZING STORM ARC HAVE TO BE APPROVED AND CERTIFIED BY GOODFLOW SOLUTIONS.

4. ONCE THE FOUNDATIONAL CONCRETE STRUCTURES ARE INSTALLED LEVEL AND WITH THE PROPER SPACING SET THE END SLABS AT THE BEGINNING OF EACH ARC ROW. THE SLABS OVERLAP THE FOUNDATIONAL STRUCTURES BY 3" ON EACH SIDE. THE SLABS ARE SECURED IN PLACE BY HARDWARE PROVIDED WITH EACH SYSTEM

5. AFTER SLABS ARE PLACED AND SECURED START SETTING THE STORM ARCS. EACH ROW BEGINS BY SETTING A LEFT END SECTION. THE BOTTOM OF THE SOLID END WALL SITS ON THE TOP OF THE SLAB.

6. AFTER END SECTIONS ARE SET, PLACE THE MID–SECTION PIECES WITH THE OVER LAPPING TOP & BOTTOM KEYWAYS TIGHLY TOGETHER. TO CLOSE OFF THE END OF EACH ARC ROW USE THE SAME PROCESS DESCRIBED IN DETAIL #2. THEN LOWER A RIGHT END SECTION TO SEAL THE END OF EACH ROW.

7. . ARC MID–SECTIONS CAN BE PRODUCED IN LENGTHS LESS THAN 4'–4" TO ACCOMMODATE ROWS WITH LENGTHS WHERE STANDARD ARC DIMENSIONS DON'T MATCH FOUNDATIONAL STRUCTURE LENGTHS

FILTER FABRIC SPECIFICATIONS / PROCEDURES

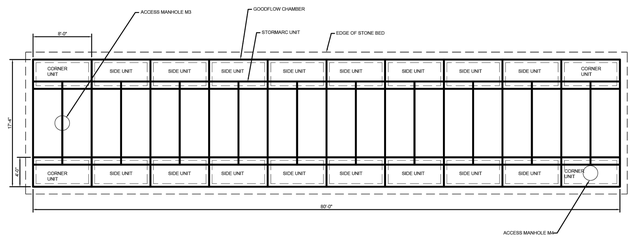
SUPER GEOTEXTILE SGT-160 (6 OZ)

DESCRIPTION	TEST METHOD	ENGLISH (MARV*)	METRIC (MARV*)
GRAB TENSILE STRENGTH	ASTM D 4632	160 lbs	0.711 kN
GRAB ELONGATION	ASTM D 4632	50%	50%
TRAPEZOID TEAR STRENGTH	ASTM D 4533	60 lbs	0.267 kN
CBR PUNCTURE RESISTANCE	ASTM D 6241	410 lbs	2.823 kN
PERMITTIVITY Ψ	ASTM D 4491	1.5 sec^{-1}	1.5 sec^{-1}
WATER FLOW ϒ	ASTM D 4491	110 gpm/ft^2	4480 l/min/m^2
APPARENT OPENING SIZE (AOS) 364	ASTM D 4751	70 (Std. U.S. Sieve	0.212 mm
UV RESISTANCE	ASTM D 4355	70%/500 hrs	70%/500 hrs

NOTE:

IF NOT UTILIZING A STORM ARC CONCRETE SCOURING PAD AT THE SYSTEM INLET(S), USE 12' WIDE SGT–160 (6 oz) WOVEN FABRIC OR APPROVED EQUAL. CUT A MINIMUM 18" LONG PIECE OF FABRIC PRIOR TO SETTING THE FIRST 2 ROWS OF CHAMBERS ON EITHER SIDE OF THE INLET AND THE END SLAB WITH THE INLET. LAY OUT THE FABRIC SECTION SO THAT A MINIMUM OF 12" OF FABRIC WILL BE UNDER THE CHAMBER WALLS AND END SLAB WHEN THEY ARE SET IN PLACE .

STORM ARC - GFC-5 NTS



STORM ARC - LAYOUT PLAN VIEW NTS

210 DIVERSION APARTMENTS	ROCHESTER, MI
PRELIMINARY NOT FOR CONSTRUCTION	

PRECAST SOLID STORM ARC-001

PROJECT NO: 101824-C	DATE: 03-10-2025
DESIGNED BY: JKB	CHECKED BY: FC
SCALE: AS NOTED	SHEET NO: 1 OF 4

THIS DRAWING WAS PREPARED TO SUPPORT THE PROJECT ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. SHOP DRAWINGS MUST BE PREPARED AND SUBMITTED FOR REVIEW OF THE SYSTEM IN COMPARISON TO THE DESIGN PLANS PRIOR TO MANUFACTURING.THE SUPPLIER IS RESPONSIBLE FOR MANUFACTURING, HANDLING, AND SHIPPING TO THE SITE IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR HANDLING AND INSTALLATION IN ACCORDANCE WITH THE PLANS AND MANUFACTURER REQUIREMENTS. ALL PIECES MUST BE INSPECTED ON SITE PRIOR TO INSTALLATION - REJECT ANY DAMAGED PIECES.

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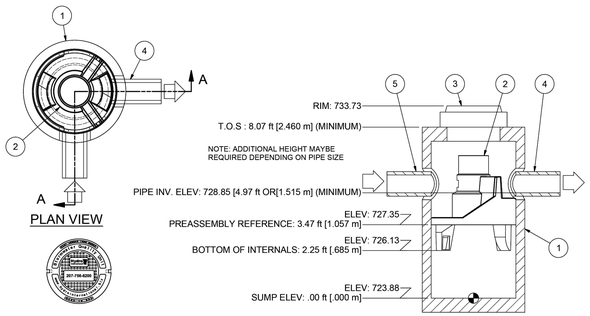
8265 WHITE LAKE ROAD WHITE LAKE, MI 48386
MARK HILTY 248-361-2238
MHILTY@MACKCONCRETE.COM



HYDRO FRAME AND COVER (INCLUDED)
GRADE RINGS BY OTHERS AS REQUIRED

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.

2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.

3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

PRODUCT SPECIFICATION:

1. Peak Hydraulic Flow: 18.0 cfs ; NJDEP Treatment Flow: 1.81 cfs
2. Min Sediment Storage Capacity: 0.7 cu. yd. (0.5 cu. m.)
3. Maximum Inlet/Outlet Pipe Diameters: 12 in. (90-Degrees)
4. The Treatment Device Shall Use An Induced Vortex To Separate Pollutants From Stormwater Runoff.
5. For More Product Information Including Regulatory Acceptances, Please Visit https://hydro-int.com/en/products/first-defense

GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 12".
3. Multiple inlet pipes possible (refer to project plan).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plans)
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

MACK INDUSTRIES, INC.
MARTY JORDAN 352-460-7219

PARTS LIST

ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	48	1200	I.D. PRECAST MANHOLE
2	1			INTERNAL COMPONENTS (PRE-INSTALLED)
3	1	30	750	FRAME AND COVER (ROUND)
4	1	12	300	OUTLET PIPE (BY OTHERS)
5	1	12	300	INLET PIPE (BY OTHERS)

M1 PRE-TREATMENT DEVICE
FINAL SHOP DRAWINGS REQUIRED FOR REVIEW PRIOR TO SHIPPING.

STORM ARC INSTALLATION SPECIFICATIONS

1. THE FILL PLACED AROUND THE STORM ARC MODULES MUST BE DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'–0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTERLOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL VOIDS WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT BRIDGING OF THE SOIL OVER VOIDS IN THE SUBGRADE SOILS.
SEE ZONE 2 BACKFILL CHART ON THIS PAGE FOR APPROVED BACKFILL OPTIONS. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH THE GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED (PROVIDED BY OTHERS).

2. DURING PLACEMENT OF MATERIAL OVERTOP THE SYSTEM, AT NO TIME SHALL MACHINERY BE USED OVERTOP THAT EXCEEDS THE DESIGN LIMITATIONS OF THE SYSTEM. WHEN PLACEMENT OF MATERIAL OVERTOP, MATERIAL SHALL BE PLACED SUCH THAT THE DIRECTION OF PLACEMENT IS PARALLEL WITH THE OVERALL LONGITUDINAL DIRECTION OF THE SYSTEM WHENEVER POSSIBLE.

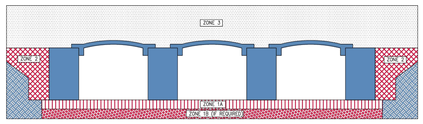
3. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED IN A MINIMUM OF 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN H5–20 LOADING CRITERIA TRAVEL OVERTOP THE SYSTEM WITHOUT THE MINIMUM DESIGN COVERAGE. IF TRAVEL IS NECESSARY OVERTOP THE SYSTEM PRIOR TO ACHIEVING THE MINIMUM DESIGN COVER, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OR THE SYSTEM IN SOME CASES, IN ORDER TO ACHIEVE REQUIRED COMPACTION, HAND COMPACTION MAY BE NECESSARY IN ORDER NOT TO EXCEED THE ALLOTTED DESIGN LOADING. SEE CHART FOR TRACKED VEHICLE WIDTH AND ALLOWABLE MAXIMUM PRESSURE PER TRACK.

4. FREE DRAINING AGGREGATE – MINIMUM 85% AGGREGATE RETAINED ON 3/4" SIEVE MAJORITY OF AGGREGATE SIZE BETWEEN 3/4" AND 1 1/2", MAXIMUM OF 5% OF MATERIAL PASSING #4/#8 SIEVE.

5. FREE DRAINING, NO FINES, 3" AGGREGATE – MAJORITY OF STONE SIZE IN BETWEEN 1 1/2"AND 3" – VERY SIMILAR TO AASHTO #3 @3 @3 & #4 STONE AGGREGATE GRADATION.

6. CRUSHED CONCRETE AGGREGATE IS KNOWN TO REACT WITH WATER AND CAN INCREASE THE PH VALUE OF THE GROUND WATER. PRIOR TO USING CRUSHED CONCRETE AGGREGATE IN ZONE 1&, IT IS IMPERATIVE THAT THE USE OF SUCH MATERIAL SHALL BE VERIFIED BY THE ENGINEER OF RECORD AND/OR THE PROJECT GEOTECHNICAL ENGINEER.

7. WHERE DIRECT INLETS ARE TO BE INSTALLED IN THE STORMARC SECTIONS OF A GFC CHAMBER, A 4" CONCRETE ANTI SCOUR PAD OR SIMILAR DEVICE SHALL BE EMPLOYED BELOW THE DIRECT INLET.



BACKFILL DETAIL

APPROVED ZONE 2 BACKFILL OPTIONS

OPTION	REMARKS
1–1/2" STONE AGGREGATE	THE STONE AGGREGATE SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR MATERIAL. THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 2" SIEVE WITH OR TO 15% PASSING THE 3/4" SIEVE (ASTM SIZE #67). THIS AGGREGATE MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL BY USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
SAND	IMPORTED PURE SAND IS PERMITTED TO BE USED AS BACKFILL IF IT IS CLEAN AND FREE DRAINING. THE SAND USED FOR BACKFILLING SHALL HAVE LESS THAN 40% PASSING #40 SIEVE AND LESS THAN 5% PASSING #200 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL BY USING GEOFABRIC AROUND THE PERIMETER OF THE SAND BACKFILL.
CRUSHED CONCRETE AGGREGATE	CLEAN, FREE DRAINING CRUSHED CONCRETE AGGREGATE MATERIAL CAN BE USED AS CRUSHED BACKFILL FOR THE STORM ARC MODULES THE SIZE OF THIS MATERIAL SHALL HAVE 100% CONCRETE PASSING THE 1" SIEVE, OR TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL BY USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL.
ROAD PACK	STONE AGGREGATE 100% PASSING THE: 1–1/2" SIEVE WITH LESS THAN 12% PASSING THE #200 SIEVE (ASTM SIZE: #467). GEOFABRIC AS PER GEOTECHNICAL ENGINEER RECOMMENDATION.

ZONE CHART

ZONES	ZONE DESCRIPTION	REMARKS
ZONE 1 A	FOUNDATION AGGREGATE	#4 (1 1/2") STONE AGGREGATE (SEE NOTE 4)
ZONE 1 B (IF REQUIRED)	FOUNDATION AGGREGATE (INFILTRATION ALLOWED)	1" STONE AGGREGATE (SEE NOTE 5)
	FOUNDATION AGGREGATE (INFILTRATION NOT ALLOWED)	3" RECYCLED CRUSHED CONCRETE (SEE NOTES 5 & 6)
ZONE 2	BACKFILL	UNIFIED SOIL CLASSIFICATION (GW, GP, SW, SP) OR SEE BELOW FOR APPROVED BACKFILL OPTIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

FILL DEPTH	TRACK WIDTH	MAX. VEHICLE WEIGHT (KIPS)	MAX. ORGANG PRESSURE
12"	12"	51.8	1690 PSF
12"	18"	56.1	1219 PSF
12"	24"	68.1	1111 PSF
12"	30"	76.7	1000 PSF
12"	36"	85.0	924 PSF

NOTES:
TRACK LENGTH NOT TO EXCEED 15'–4".
ONLY TWO TRACKS PER VEHICLE.

SYSTEM SIZING CALCULATIONS

TOTAL STORAGE VOLUME REQUIRED = 7,160 C.F.

PROPOSED SYSTEM DESIGN:
1 ROWS OF 5.25' TALL GFC CHAMBERS WITH 1 STORM ARC ROWS (SEE CROSS SECTION DETAIL)
OVERALL DIMENSIONS: 11.3 FT x 80 FT.
STORAGE AVAILABLE: 113 FT SECTION = 733.84 CF.
1" BASE OF CLEAN DOUBLE WASHED CRUSHED STONE NOT INCLUDED IN STORAGE VOLUME
7,160 CF / 733.84 CF = (9.75) 8 FT SECTIONS – USE 10 SECTIONS
10 SECTIONS X 8 FT = 80 FT
TOTAL STORAGE CAPACITY: 733.84 CF x 10 = 7,338.4 CF.

STONE BASE TO EXTEND 1 FT BEYOND CHAMBERS
TOTAL PERIMETER OF SYSTEM INCLUDING STONE BASE = 202.66 FT.
TOTAL AREA OF SYSTEM INCLUDING STONE BASE = 1,560.8 S.F.

GOODFLOW MATERIALS REQUIRED:
5.25' GFC CHAMBERS: 20 TOTAL
4 CORNER UNITS
0 END UNITS
16 SIDE UNITS
0 MIDDLE UNITS

STORM ARC SECTIONS: 20 TOTAL

ELEVATION STORAGE CHART

NOTE: STAGE–STORAGE CHART FOR THE SYSTEM IS AS FOLLOWS:

INCREMENT/VIEW	STAGE STORAGE	CUMULATIVE STORAGE
0.09 FT./729.3	0.00 C.F.	0.00 C.F.
1.00 FT./729.2	1276.24 C.F.	1276.24 C.F.
2.00 FT./729.2	1276.24 C.F.	2552.48 C.F.
2.88 FT./728.08	1123.09 C.F.	3675.57 C.F. EXTENDED VOLUME Vwq+Vwd=3664 CFT
3.00 FT./728.2	153.15 C.F.	3828.73 C.F.
4.00 FT./728.2	1276.24 C.F.	5104.97 C.F.
5.00 FT./728.2	1276.24 C.F.	6381.21 C.F.
5.33 FT./730.53	421.16 C.F.	6802.37 C.F. 100 YEAR STORAGE VOLUME=6792 CFT

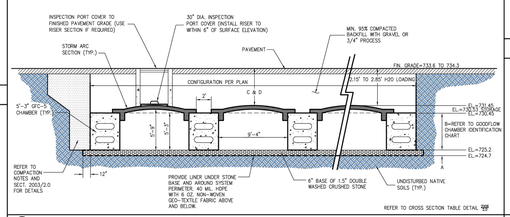
STORM ARC BACKFILL SPECIFICATIONS CHARTS

NTS

GOODFLOW CHAMBER IDENTIFICATION CHART
GFC–3 Ø1 X 3.25'
GFC–4 Ø1 X 4.25'
GFC–5 Ø1 X 5.25'
GFC–6 Ø1 X 6.25'
PROPOSED UNSTACKED

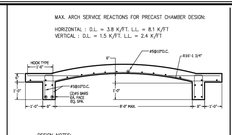
GFC CHAMBERS MAXIMUM BURIAL DEPTH

CHAMBER MODEL	TOP SECTION 8" SLAB TOP	RISER SECTION
GFC–3	14.41'	14.09'
GFC–4	13.41'	13.09'
GFC–5	12.41'	12.09'
GFC–6	11.41'	11.09'



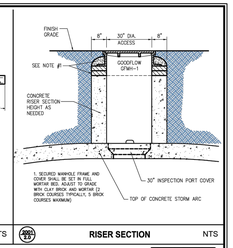
STORM ARC - END VIEW CROSS SECTION NTS

MAX. ARCH SERVICE REACTIONS FOR PRECAST CHAMBER DESIGN:
HORIZONTAL : D.L. = 3.8 K/FT, LL. = 8.1 K/FT
VERTICAL : D.L. = 1.5 K/FT, LL. = 2.4 K/FT

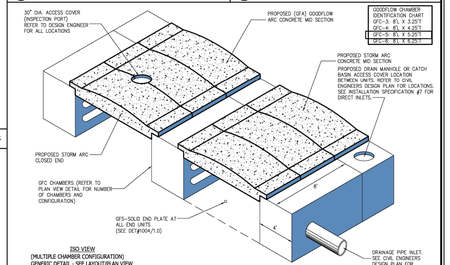


DESIGN NOTES:
1. DESIGN PER ACI 318–14 W/AASHTO HS–20 LL
2. F'C @ 28 DAYS = 5000 PSI
3. BAR COVER = 1" U.N.O.
4. UNIT WEIGHT OF SOIL = 120 PSF
5. FILL DEPTH = 0.5' MIN. TO 15.0' MAX.
6. REINFORCEMENT SHALL BE BAR PER ASTM A615, GRADE 60 AND WWR PER ASTM A185/A497, GRADE 65.
7. REINFORCEMENT SHOWN (SHAT) MAY BE REPLACED WITH WWR, MAINTAIN MIN. AREA OF STEEL = 0.37 IN2/FT AND MAXIMUM SPACING OF 12".

REINFORCING SECTION NTS



RISER SECTION NTS



ISO VIEW
(MULTIPLE CHAMBER CONFIGURATION)
GENERIC DETAIL - SEE LAYOUT/PLAN VIEW

STORM ARC - MULTI CHAMBER LAYOUT NTS

STORM ARC MODEL #GFC-5

	DESCRIPTION	STORMARC #GFC-5
A	MIN. DEPTH OF STONE BASE	6"
B	CHAMBER HEIGHT	5.25'
C	MIN. DEPTH REQUIRED OF 95% COMPACTED FILL FOR PAVED TRAFFIC	4'
D	MAX. DEPTH OF COVER ALLOWED ABOVE CROWN OF STORM ARC	15'
E	MAX. PIPE SIZE TO CHAMBER ENDWALL/ENDCAP	5'

NOTES
1. SEE SYSTEM LAYOUT FOR STONE REQUIREMENTS
2. CONSULT GOODFLOW SOLUTIONS FOR BURIAL DEPTHS OVER 8 FT.

CROSS SECTION TABLE REFERENCE

STORAGE CHART CROSS-SECTION

210 DIVERSION APARTMENTS	ROCHESTER, MI
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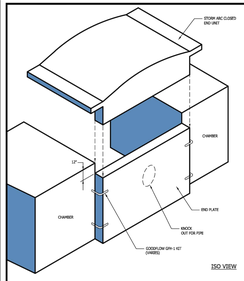
PRECAST SOLID STORM ARC-001

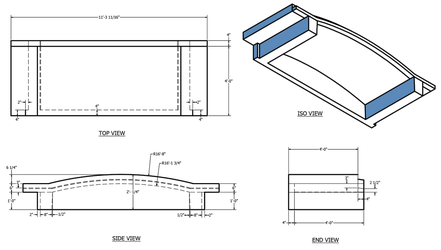
PROJECT NO: 101824-C	DATE: 03-10-2025
DESIGNED BY: JKB	CHECKED BY: FC
SCALE: AS NOTED	SHEET NO: 2 OF 4

THIS DRAWING

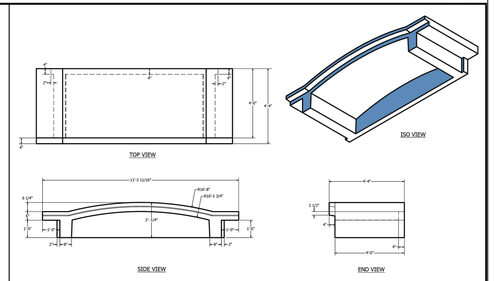


ISO VIEW

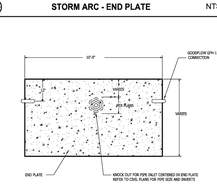
STORM ARC - END PLATE NTS



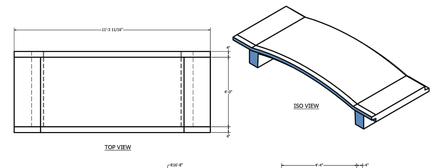
STORM ARC - END SECTION LEFT SIDE VIEW NTS



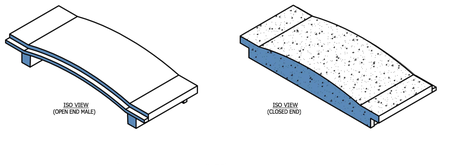
STORM ARC - END SECTION RIGHT SIDE VIEW NTS



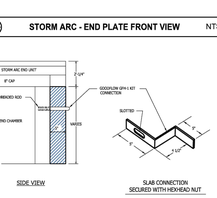
STORM ARC - END PLATE FRONT VIEW NTS



STORM ARC - MID SECTION SIDE VIEW NTS



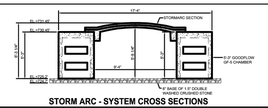
STORM ARC - END SECTIONS NTS



STORM ARC - END PLATE DETAILS NTS

1. CONCRETE MUST BE 5000 PSI AT 28 DAYS.
2. MAXIMUM SIZE AGGREGATE LESS THAN 5/8" W/C RATIO LESS THAN .45 PRIOR TO ADDITION OF ANY HRWR OR MRWR.
3. REBAR IS TO BE TIED @ 10" O.C.E.W. UNLESS NOTED OTHERWISE.
4. MINIMUM CONCRETE COVERAGE IS 1.50".

CONCRETE SPECIFICATIONS



STORM ARC - SYSTEM CROSS SECTIONS

GOODFLOW SOLUTIONS
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GOODFLOW

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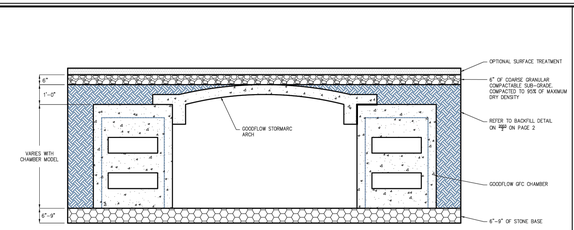
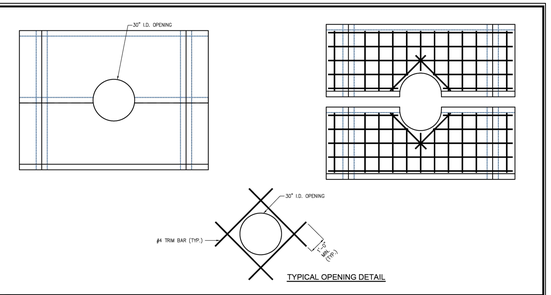
210 DIVERSION APARTMENTS
ROCHESTER, MI

PRELIMINARY NOT FOR CONSTRUCTION

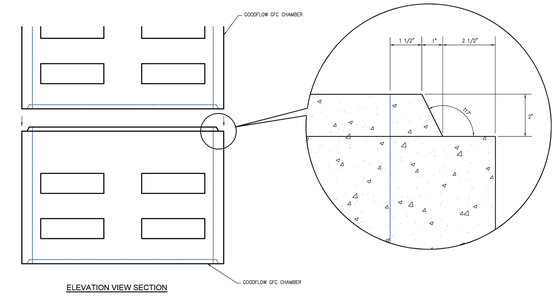
PRECAST SOLID STORM ARC-001	
PROJECT NO: 101824-C	DATE: 03-10-2025
DESIGNED BY: JKB	CHECKED BY: FC
SCALE: AS NOTED	SHEET NO: 3 OF 4



STORM ARC - TYPICAL HS20 MINIMAL BACKFILL NTS

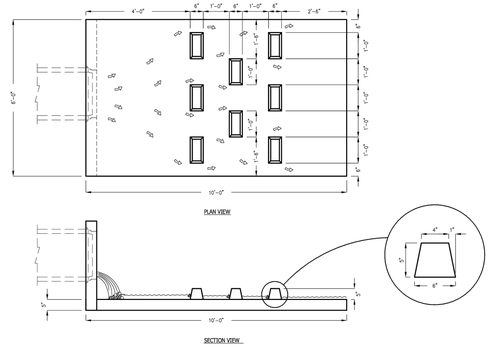


STORM ARC - 30" I.D. OPENING NTS



ELEVATION VIEW SECTION

STORM ARC - STACKABLE KEYWAY SECTION NTS



STORM ARC - SCOUR CONCRETE PAD NTS

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Cell (203) 223-2113
GOODFLOW

MACK INDUSTRIES, INC.
8265 WHITE LAKE ROAD WHITE LAKE, MI 48386
MARK HILTY 248-361-2238
MHILTY@MACKCONCRETE.COM

THIS DRAWING WAS PREPARED TO SUPPORT THE PROJECT ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. SHOP DRAWINGS MUST BE PREPARED AND SUBMITTED FOR REVIEW OF THE SYSTEM IN COMPARISON TO THE DESIGN PLANS PRIOR TO MANUFACTURING.THE SUPPLIER IS RESPONSIBLE FOR MANUFACTURING, HANDLING, AND SHIPPING TO THE SITE IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR HANDLING AND INSTALLATION IN ACCORDANCE WITH THE PLANS AND MANUFACTURER REQUIREMENTS. ALL PIECES MUST BE INSPECTED ON SITE PRIOR TO INSTALLATION - REJECT ANY DAMAGED PIECES.

210 DIVERSION APARTMENTS
ROCHESTER, MI

PRELIMINARY NOT FOR CONSTRUCTION

PRECAST SOLID STORM ARC-001	
PROJECT NO: 101824-C	DATE: 03-10-2025
DESIGNED BY: JKB	CHECKED BY: FC
SCALE: AS NOTED	SHEET NO: 4 OF 4

NF ENGINEERS
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NFE-ENGR.COM

SEAL

STATE OF MICHIGAN
BRETT J. BUCHHOLZ
ENGINEER
NO. 45506
LICENSED PROFESSIONAL ENGINEER

PROJECT
210 Diversion

CLIENT
LoChirco Custom Homes

PROJECT LOCATION
Part of the NE ¼
of Section 15
T.3N. , R.11E.
City of Rochester,
Oakland County, Michigan

SHEET
Detention Details 2 of 2

Know what's **below**
Call before you dig.

DATE	ISSUED/REVISED
01-18-23	ISSUED FOR OWNER REVIEW
03-03-23	PRE-SPA REVIEW
06-30-23	REV. PER OWNER
11-06-23	REV. PER CITY
12-20-23	UPDATE PER MCKENNA REVIEW
03-06-24	REVISED PER PC MEETING
09-03-24	REV. PER OWNER (TRASH COLLECTION)
10-18-24	ISSUE FOR PERMITS
12-12-24	REV. PER CITY ENG. REVIEW 1
03-10-25	REV. PER CITY ENG. REVIEW 2

DRAWN BY:
B. Buchholz

DESIGNED BY:
B. Buchholz

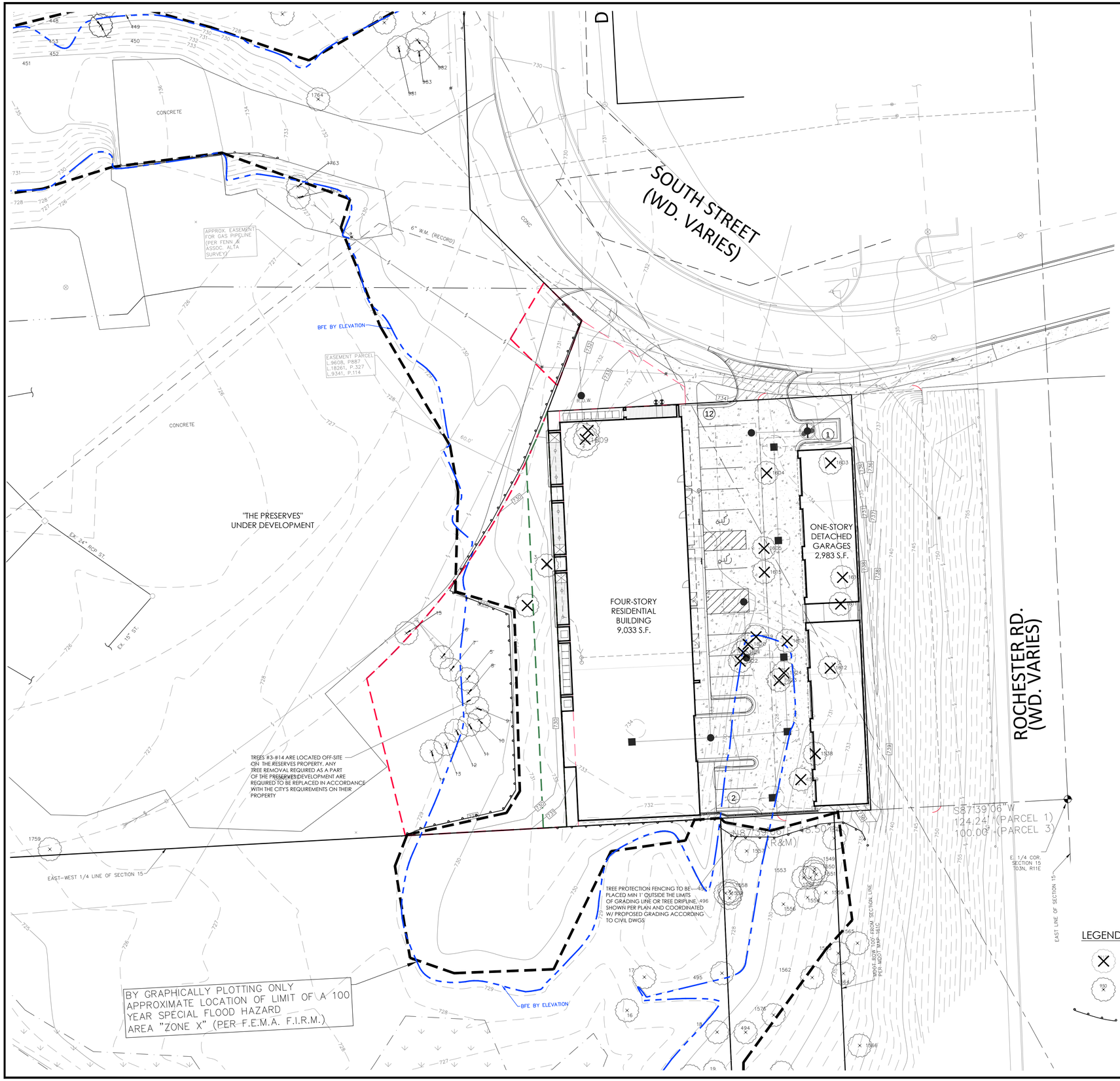
APPROVED BY:
B. Buchholz

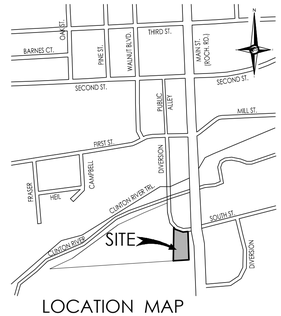
DATE:
January 18, 2023

SCALE: N.T.S.

NFE JOB NO.
I778-04

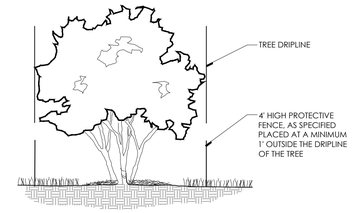
SHEET NO.
C12





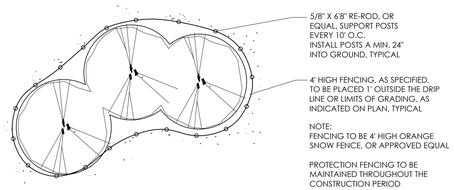
LOCATION MAP

N.T.S.



TREE PROTECTION DETAIL-SECTION

NTS



TREE PROTECTION DETAIL-PLAN

NTS

GENERAL TREE PROTECTION NOTES

1. APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL THE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
2. ALL UNDERSTORY VEGETATION WITHIN THE LIMITS OF PROTECTIVE FENCING SHALL BE PRESERVED.
3. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINE.
4. WHERE GROUPINGS OF TREES ARE TO REMAIN, TREE FENCING SHALL BE PLACED AT THE LIMITS OF GRADING LINE.
5. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY TREE, SCHEDULED TO REMAIN.
6. ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
7. SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
8. TREES LOCATED ON ADJACENT PROPERTIES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
9. ROOT ZONES OF PROTECTED TREES SHOULD BE SURROUNDED WITH RIGIDLY STAKED FENCING.
10. THE PARKING OF IDLE AND RUNNING EQUIPMENT SHALL BE PROHIBITED UNDER THE DRIP LINE OF PROTECTED TREES.
11. THE STRIPPING OF TOPSOIL FROM AROUND PROTECTED TREES SHALL BE PROHIBITED.
12. ALL TREES TO BE REMOVED SHALL BE CUT AWAY FROM TREES TO REMAIN.
13. THE GRUBBING OF UNDERSTORY VEGETATION WITHIN CONSTRUCTION AREAS SHOULD BE CLEARED BY CUTTING VEGETATION AT THE GROUND WITH A CHAIN SAW OR MINIMALLY WITH A HYDRO-AXE.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT PER ORDINANCE GUIDELINES, FOR THE DAMAGE OR REMOVAL OF ANY TREE DESIGNATED TO REMAIN.
15. TREES TO BE REMOVED SHALL BE FIELD VERIFIED, EVALUATED AND FLAGGED FOR REMOVAL, BY THE LANDSCAPE ARCHITECT OR FORESTER, ONLY AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.

LEGEND:

- TREES TO BE REMOVED
- TREES TO REMAIN
- TREE PROTECTION FENCING

TREE PRESERVATION SUMMARY:

TOTAL NUMBER OF TREES SURVEYED:	59
TOTAL REGULATED TREES ON-SITE:	8
TOTAL UNREGULATED TREES ON-SITE:	10
TOTAL REGULATED TREES OFF-SITE:	9
TOTAL UNREGULATED OFF-SITE TREES:	3
TOTAL REGULATED ON-SITE REMOVAL:	8 (86")
TOTAL UNREGULATED REMOVAL (ON AND OFF-SITE)	2
TREE REPLACEMENT ON-SITE REPLACEMENT TREES REQUIRED (86" x 50% / 2.5"):	17 TREES
TOTAL REPLACEMENT TREES PROVIDED: MONEY FOR 9 TREES TO BE PAID INTO THE CITY TREE FUND	8 TREES

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City of Rochester,
Oakland County, Michigan

SHEET
Tree Preservation Plan

811 Know what's below Call before you dig.

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03/06/2024 REVISED PER PC MTG
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03/10/2024 REVISED PER CITY REVIEW

DRAWN BY:
G. Ostrowski
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
01-23-2023
SCALE: 1" = 20'
20 10 0 10 20 30

NFE JOB NO. I778-04
SHEET NO. L1

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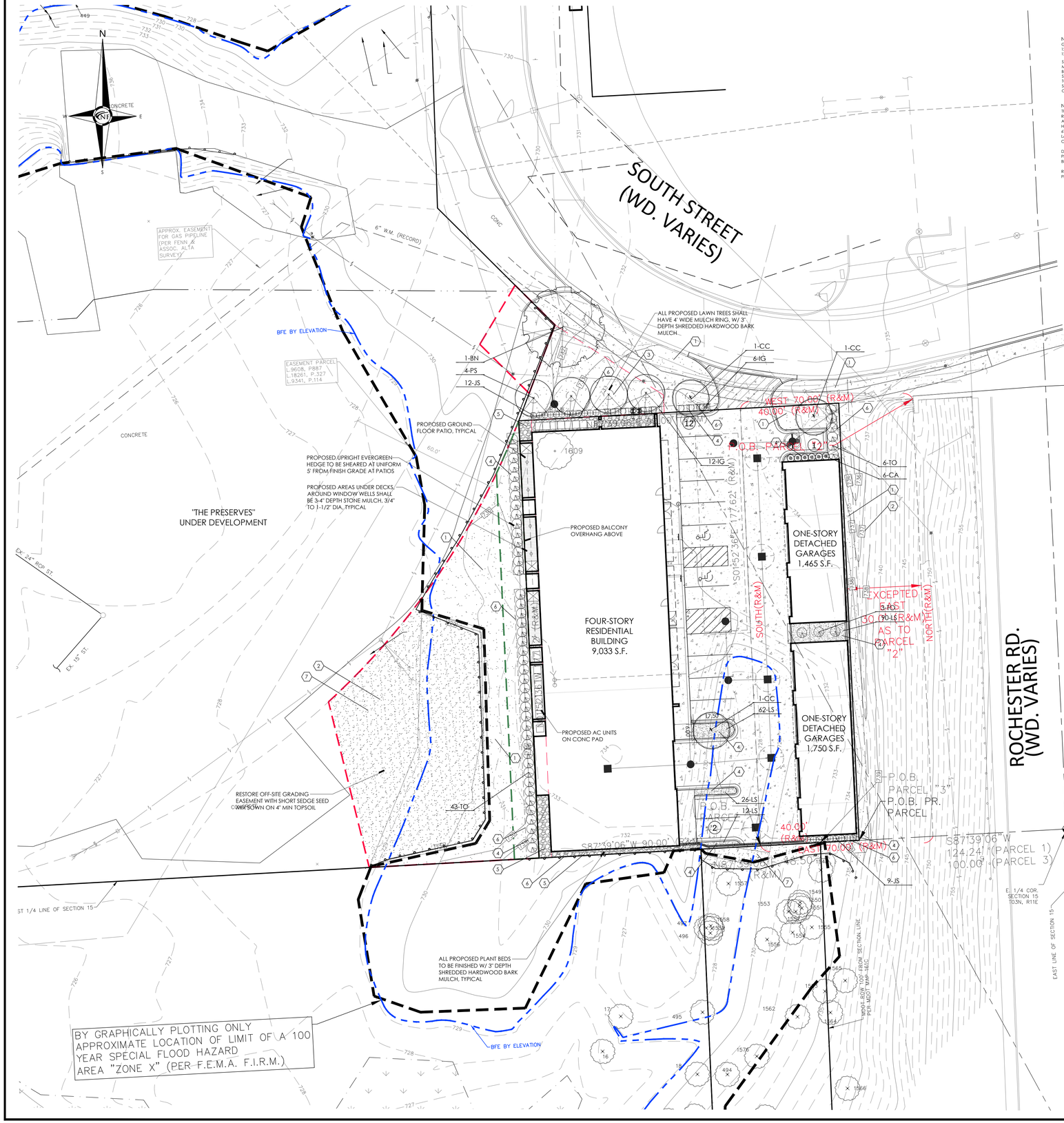


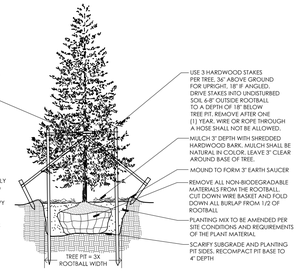
NOTE:
GUY EVERGREEN TREES ABOVE 12' IN HEIGHT, STAKE TREES BELOW 12' IN HEIGHT

STAKE TREES APPROXIMATELY MID-TRUNK USING 2-3" WIDE BELT-LIKE NYLON OR PLASTIC STRAPS. CONNECT FROM TREE TO STAKE OPPOSITE. ALLOW FOR SOME FLEXING. REMOVE AFTER ONE (1) YEAR.

NOTES:
TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOILS

DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.

REMOVE ALL TAGS, STRING, PLASTIC AND OTHER MATERIALS



EVERGREEN TREE PLANTING DETAIL

NTS

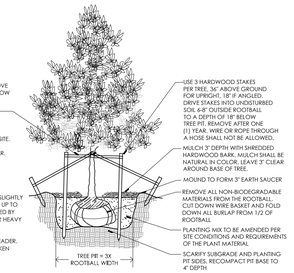
NOTE:
GUY DECIDUOUS TREES ABOVE 3" CALIPER, STAKE TREES BELOW 3" CALIPER

STAKE TREES JUST BELOW FIRST BRANCH USING 2-3" WIDE BELT-LIKE NYLON OR PLASTIC STRAPS. CONNECT FROM TREE TO STAKE OPPOSITE. ALLOW FOR SOME FLEXING. REMOVE AFTER ONE (1) YEAR.

NOTES:
TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOILS

DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.

REMOVE ALL TAGS, STRING, PLASTIC AND OTHER MATERIALS



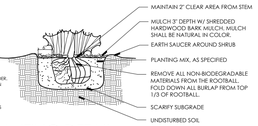
DECIDUOUS TREE PLANTING DETAIL

NTS

NOTES:
TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY

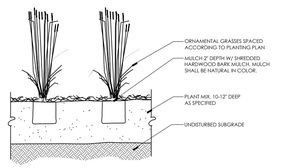
DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.

REMOVE ALL TAGS, STRING, PLASTIC AND OTHER MATERIALS



HEDGE PLANTING DETAIL

NTS

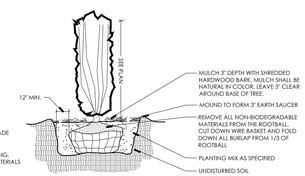


ORNAMENTAL GRASS PLANTING DETAIL

NTS

NOTES:
TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY.

REMOVE ALL TAGS, STRING, PLASTIC AND OTHER MATERIALS



UPRIGHT EVERGREEN SHRUB PLANTING DETAIL

NTS

LOCATION MAP

N.T.S.

GENERAL LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR SHALL VISIT SITE. INSPECT EXISTING CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, THE PLAN SHALL GOVERN QUANTITIES. CONTACT THE LANDSCAPE ARCHITECT WITH ANY CONCERNS.
2. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIS/HER PHASE OF WORK. ANY DAMAGE OR INTERUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES, AND SHALL REPORT ANY UNACCEPTABLE SITE CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT.
4. PLANTS SHALL BE FULL, WELL-BRANCHED, AND IN HEALTHY VIGOROUS GROWING CONDITION.
5. PLANTS SHALL BE WATERED BEFORE AND AFTER PLANTING IS COMPLETE.
6. ALL TREES MUST BE STAKED, FERTILIZED AND MULCHED AND SHALL BE GUARANTEED TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST ONE (1) YEAR FOLLOWING PLANTING.
7. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED IN THE MOST RECENT EDITION OF THE "AMERICAN STANDARDS FOR NURSERY STOCK."
8. CONTRACTOR WILL SUPPLY FINISHED GRADE AND EXCAVATE AS NECESSARY TO SUPPLY PLANT MIX DEPTH IN ALL PLANTING BEDS AS INDICATED IN PLANT DETAILS AND NOTES ON THE LANDSCAPE PLAN.
9. PROVIDE CLEAN BACKFILL SOIL, USING MATERIAL STOCKPILED ON-SITE. SOIL SHALL BE SCREENED AND FREE OF DEBRIS, FOREIGN MATERIAL, AND STONE.
10. SLOW-RELEASE FERTILIZER SHALL BE ADDED TO THE PLANT PITS BEFORE BEING BACKFILLED. APPLICATION SHALL BE AT THE MANUFACTURERS RECOMMENDED RATES.
11. AMENDED PLANT MIX (PREPARED TOPSOIL) SHALL CONSIST OF 1/3 SCREENED TOPSOIL, 1/3 SAND, AND 1/3 "DARBY DOG" COMPOST. MIXED WELL AND SPREAD TO A DEPTH AS INDICATED IN PLANTING DETAILS.
12. ALL PLANTINGS SHALL BE MULCHED WITH SHREDDED HARDWOOD BARK. SPREAD TO A DEPTH OF 3" FOR TREES AND SHRUBS, AND 2" ON ANNUALS, PERENNIALS, AND GROUNDCOVER PLANTINGS. MULCH SHALL BE FREE FROM DEBRIS AND FOREIGN MATERIAL, AND PIECES ON INCONSISTENT SIZE.
13. NO SUBSTITUTIONS OR CHANGES OF LOCATION, OR PLANT TYPE SHALL BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE.
14. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO INSTALLATION.
15. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL IN A VERTICAL CONDITION THROUGHOUT THE GUARANTEED PERIOD.
16. THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIAL THAT DOES NOT MEET THE REQUIREMENTS OF THE PLANS AND/OR SPECIFICATIONS.
17. THE LANDSCAPE CONTRACTOR SHALL SEED AND MULCH OR SOD (AS INDICATED ON PLANS) ALL AREAS DESIGNATED AS SUCH ON THE PLANS, THROUGHOUT THE CONTRACT LIMITS. FURTHER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING AREAS DISTURBED DURING CONSTRUCTION, NOT IN THE CONTRACT LIMITS, TO EQUAL OR GREATER CONDITION.
18. ALL LANDSCAPE AREAS SHALL HAVE PROPER DRAINAGE THAT PREVENTS EXCESSIVE WATER FROM PONDING ON LAWN AREAS OR AROUND TREES AND SHRUBS.
19. ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC UNDERGROUND SYSTEM.

GENERAL SEED NOTE:

ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDRO-SEEDED WITH SPECIFIED BLENDS, AND STABILIZED WITH WOOD CELLULOSE FIBER MULCH (2,000 LBS PER ACRE) . IN AREAS SUBJECT TO EROSION, SEEDED LAWN SHALL BE FURTHER STABILIZED WHERE NECESSARY WITH BIODEGRADABLE EROSION BLANKET AND STAKED UNTIL ESTABLISHED. ALL SEED SHALL BE APPLIED OVER A MINIMUM 3" PREPARED TOPSOIL, AND SHALL BE KEPT MOIST AND WATERED DAILY UNTIL ESTABLISHED.
SEEDING INSTALLATION SHALL OCCUR ONLY:
SPRING: APRIL 1 TO JUNE1
FALL: AUGUST 15 TO OCTOBER 15

TYPICAL SEEDED LAWN MIX:

ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDROSEEDED WITH TYPICAL DROUGHT TOLERANT, DURABLE BLENDED SEED MIX, AT A RATE OF 220 LBS PER ACRE
MIX IS COMPRISED OF
- 30% NITE HAWK PERENNIAL RYE
- 30% KENTUCKY BLUEGRASS
- 20% CREEPING RED FESCUE
- 10% MERIT KENTUCKY BLUEGRASS
- 10% NEWPORT KENTUCKY BLUEGRASS

SHORT SEDGE SEED MIX

*CONTAINS 10 NATIVE GRASSES AND 2 TEMPORARY GRASSES

30% NATIVE GRASSES	70% TEMPORARY GRASSES
COSMOS SEDGE	SEED OATS
FRINGED SEDGE	AMERICAN SLOUGH GRASS
LURID SEDGE	ANNUAL RYE
FOX SEDGE	
CREEPING SPIKE RUSH	
FOWL MANNA GRASS	
COMMON RUSH	
HARDSTEM BULRUSH	
GREEN BULRUSH	
WOOL GRASS	
SOFT-STEM BULRUSH	
GIANT BUR REED	

RECOMMENDED SEEDING RATE: 40 LBS/ACRE

SEED MIX AVAILABLE:
NATIVESCAPE, LLC
PO BOX 122
MANCHESTER, MI 48158
T.517.456.9696

GROUNDCOVER KEY

1. TYPICAL SEED LAWN AREAS, SOWN ON 3" TOPSOIL
2. RESTORE DISTURBED LAWN AREAS W/ HYDROSEED AND MULCH
3. 4' DIA SPADE CUT EDGE W/ 3" SHREDDED BARK MULCH
4. 3" DEPTH DOUBLE SHREDDED HARDWOOD BARK MULCH
5. 3/4" - 1 1/2" STONE MULCH, 3-4" DEPTH ON WEED BARRIER
6. 3/16" X 4" STEEL EDGING, STAKED
7. SHORT SEDGE SEED MIX, SOWN AT A RATE OF 40 LBS/AC

PLANT SCHEDULE

KEY	QTY	BOTANICAL/COMMON NAME	SIZE	SPACING	ROOT	COMMENT
TREES						
BN	1	Betula nigra River Birch	14' HT	SEE PLAN	B&B	FULLY BRANCHED HEADS
CC	3	Carpinus caroliniana 'Ubridge' Rising Fire American Hornbeam	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
PS	4	Prunus sargentii 'Pink Flair' Pink Flair Flowering Cherry	2.5" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
SHRUBS						
IG	18	Ilex glabra 'Nordic' Nordic Holly	30" HT	30" OC	B&B	MAINTAIN AS HEDGE
JS	21	Juniperus scopulorum 'Skyrocket' Skyrocket Juniper	6' HT	30" OC	B&B	
TO	52	Thuja occidentalis 'DeGroot's Spire' DeGroot's Spire Arborvitae	6' HT	30" OC	B&B	
GROUNDCOVERS/PERENNIALS						
CA	6	Calamagrostis a. 'Karl Foerster' Karl Foerster Feather Reed Grass	3 GAL	30" OC	CONT	
LS	190	Liriope spicata Creeping Lilyturf	1 GAL	15" OC	CONT	TRIANGULAR SPACING

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SHEET
Landscape Plan

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DRAWN BY:
G. Ostrowski

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
01-23-2023

SCALE: 1" = 20'
20 10 0 10 20 30

NFE JOB NO. I778-04
SHEET NO. L2

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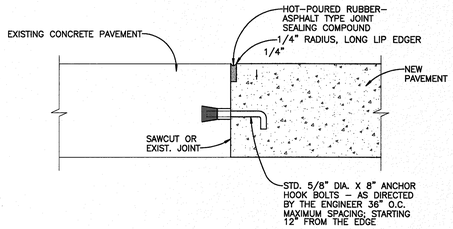
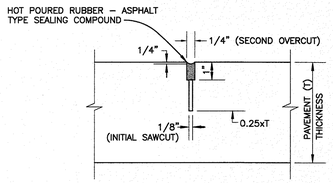
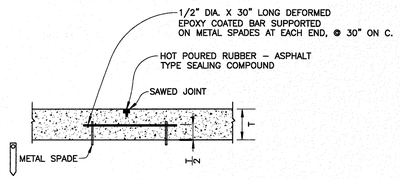


(A) CONSTRUCTION JOINTS

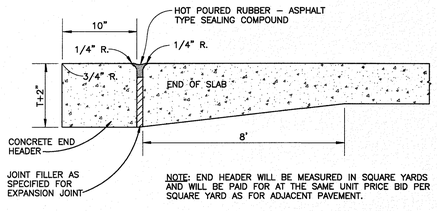


(B) TRANSVERSE/LONGITUDINAL PLANE OF WEAKNESS JOINT

(C) HOOK BOLT DETAIL

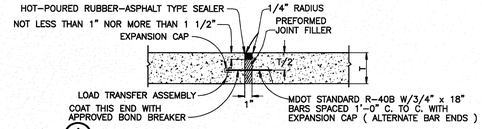


(D) TIEBAR DETAIL

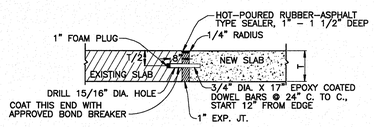


NOTE: END HEADER WILL BE MEASURED IN SQUARE YARDS AND WILL BE PAID FOR AT THE SAME UNIT PRICE BID PER SQUARE YARD AS FOR ADJACENT PAVEMENT.

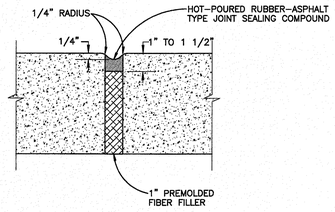
END HEADER



(1) LOAD TRANSFER ASSEMBLY WITH PREFORMED EXPANSION JOINT FILLER



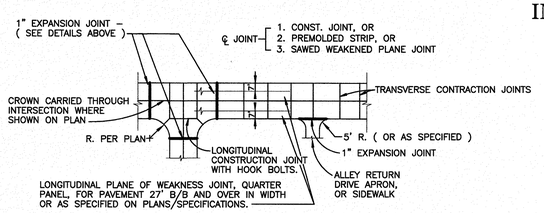
(2) EXPANSION JOINT WITH 3/4" DOWELS



(3) EXPANSION JOINT

DAYTIME TEMPERATURES 50°F AND ABOVE:
AT ALL INTERSECTIONS; MAXIMUM SPACING 700 FEET; AS SHOWN ON PLANS.

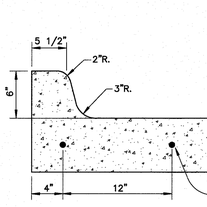
DAYTIME TEMPERATURES BELOW 50°F:
AT ALL INTERSECTIONS; MAXIMUM SPACING 450 FEET; AS SHOWN ON PLANS.



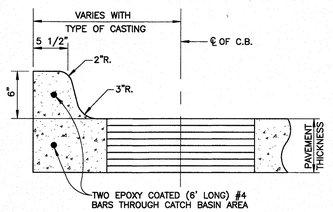
TRANSVERSE CONTRACTION JOINT SPACING	
PAVEMENT WIDTH	JOINT SPACING
28' B/B	10.5'
30' B/B	10.5'
32' B/B	12.5'

NOTE: EVERY 5TH TRANSVERSE JOINT SHALL BE FORMED WITH 1/4" x 2 1/4" PREMOLDED BITUMINOUS JOINT MATERIAL PLACED AT THE TIME CONCRETE IS POURED. INTERMEDIATE TRANSVERSE JOINTS SHALL BE SAWED.

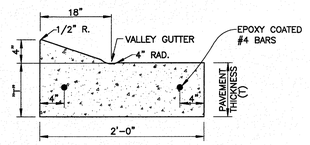
(5) JOINTING DETAILS



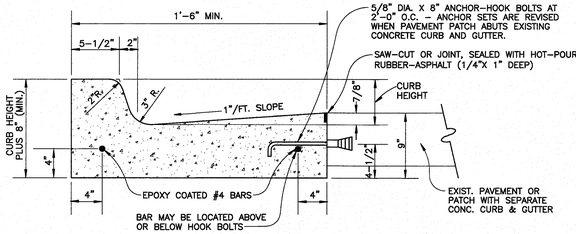
6" CURB DETAIL INTEGRAL WITH CONCRETE PAVEMENT (TYPICAL)



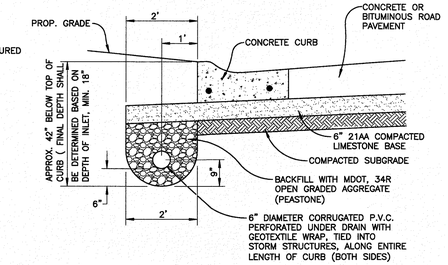
6" CURB DETAIL INTEGRAL WITH CONCRETE PAVEMENT (AT STRUCTURE)



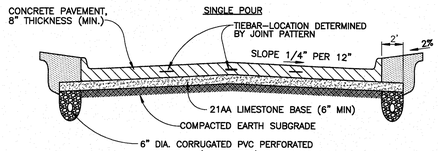
4" MOUNTABLE CURB AND GUTTER



TYPICAL CONCRETE CURB AND GUTTER DETAIL

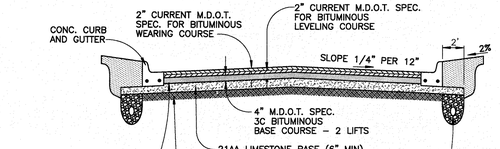


TYPICAL UNDERDRAIN ALONG ROADWAY



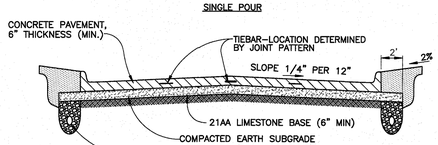
CONCRETE PAVEMENT

HEAVY INDUSTRIAL, LIGHT INDUSTRIAL & COMMERCIAL/OFFICE MANEUVERING LANE - TRUCK TRAFFIC



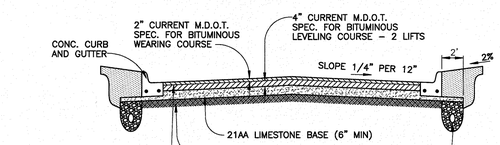
*BITUMINOUS PAVEMENT

HEAVY INDUSTRIAL, LIGHT INDUSTRIAL & COMMERCIAL/OFFICE MANEUVERING LANE - TRUCK TRAFFIC



CONCRETE PAVEMENT

COMMERCIAL AND OFFICE PARKING AREAS



*BITUMINOUS PAVEMENT

COMMERCIAL AND OFFICE PARKING AREAS

*COMMERCIAL ADT COULD WARRANT A DIFFERENT TYPE HMA MIX

TYPICAL PAVEMENT SECTIONS

PAVEMENT & SUBBASE SECTION REQUIREMENTS FOR PARKING AREAS AND DRIVES			
PAVEMENT CLASSIFICATION	MINIMUM CONCRETE PAVEMENT THICKNESS - (INCHES)	MINIMUM BITUMINOUS PAVEMENT THICKNESS - (INCHES)	MINIMUM SUBBASE FOR CONCRETE AND BITUMINOUS PAVEMENT THICKNESS - (INCHES)
HEAVY INDUSTRIAL	8	8	6
LIGHT INDUSTRIAL	8	8	6
COMMERCIAL AND OFFICE - MANEUVERING LANE - TRUCK TRAFFIC	8	8	6
- PARKING AREAS ONLY	6	6	6
MULTIPLE FAMILY RESIDENTIAL DRIVING LANE	8	**	**

** ALTERNATE PAVEMENT DESIGNS WILL BE CONSIDERED WHEN PROPOSED SECTION PROVIDES THE SAME STRUCTURAL NUMBER, LIFE EXPECTANCY AND IS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER AND IS ACCOMPANIED BY DESIGN CALCULATIONS AND SOIL BORINGS.

ANDERSON, ECKSTEIN AND WESTRICK, INC.
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Phone 586 726 1234
Fax 586 726 8780
www.aewinc.com
ENGINEERING STRONG COMMUNITIES

DATE	SUBMITTALS/REVISIONS

DRAWN BY:	CHECKED BY:	DATE:
MJS	AAP	JANUARY 2021

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STATE OF MICHIGAN
ASEEL A. PUTROS
ENGINEER
NO. 55083
LICENSED PROFESSIONAL ENGINEER

ASEEL A. PUTROS P.E. NO. 55083

DEPARTMENT OF PUBLIC WORKS

APPROVED BY: Jeremy Richard, Assistant DPW Director

DATE: 4/6/2021

CITY OF ROCHESTER

STANDARD PAVING DETAILS (1 OF 2)

SHEET NO.

PAV1

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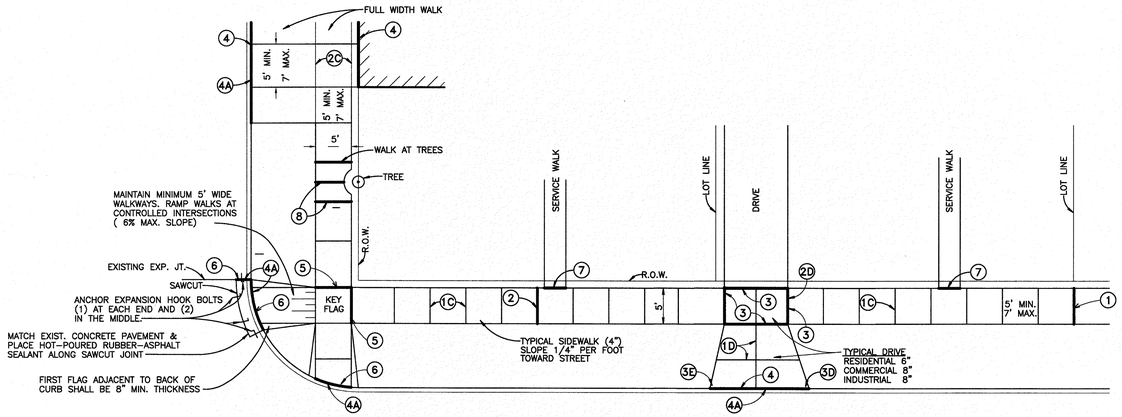


* EXPANSION JOINTS

(1) PLACE 1/2" FIBER EXP. JOINT FILLERS AT LOT LINES WHEN LOTS ARE 50' OR LESS.

(2) ADDITIONAL 1/2" FIBER EXP. JOINT FILLERS FOR LOTS GREATER THAN 50', NOT TO EXCEED 50' INTERVALS.

(3) PLACE 1/2" FIBER EXP. JOINT FILLERS EACH SIDE OF DRIVE.

(4) PLACE 1" FIBER EXP. JOINT FILLERS AT CURB AND BUILDING OR R.O.W. LINE.

(4A) AT CURB LINE, EXPANSION JOINTS SHALL BE SEALED WITH HOT-POURED RUBBER-ASPHALT SEALANT.

(5) PLACE 1/2" FIBER EXP. JOINT FILLERS AT KEY FLAG OF CROSS-WALKS.

(6) PLACE 1" FIBER EXP. JOINT FILLERS AT INTERSECTIONS OF CURB RADIUS AND IN LINE WITH EXISTING JOINTS.

(7) PLACE 1/2" FIBER EXP. JOINT FILLER AT INTERSECTION OF SERVICE WALK & CURB ALSO AT SERVICE WALK & WALK.

(8) PLACE 1/2" FIBER EXP. JOINT FILLERS AT EITHER SIDE OF SIDEWALK ABUTTING TREE AND AT CENTERLINE JOINT. ROOT BARRIERS MAY BE REQUIRED.

CONTRACTION JOINTS

(1C) PLACE CONTRACTION JOINTS AT INTERVALS NOT LESS THAN 5' OR GREATER THAN 7', FULL WIDTH OF WALK. JOINT DEPTH SHALL BE 1/4" THICKNESS OF CONCRETE.

(2C) PLACE CONTRACTION JOINTS AT WALK LINES FOR FULL WIDTH SIDEWALK.

DRIVEWAYS

(1D) PLACE CONTRACTION JOINTS SO THAT NO SECTION OF THE CONCRETE DRIVEWAY EXCEEDS A DIMENSION OF 10'x10'.

(2D) PLACE 1" FIBER EXPANSION FILLER AT ALL SIDES OF A COMMERCIAL DRIVE.

(3D) WIDTH OF APPROACH AT STREET SHOULD BE MIN. 3' WIDER THAN WIDTH AT SIDEWALK.

(3E) WIDTH OF APPROACH AT STREET SHOULD BE MIN. 1.5' WIDER THAN WIDTH AT SIDEWALK.

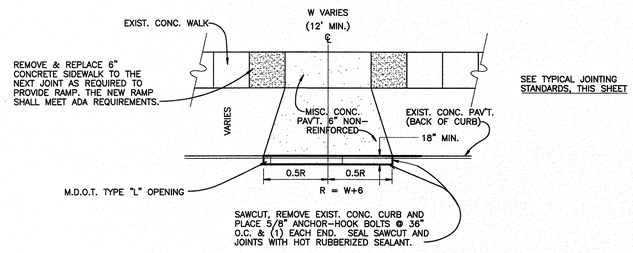
* FIBER EXPANSION JOINT FILLERS SHALL BE FULL DEPTH.

NOTES

1. CONCRETE WORK NOT CONSTRUCTED UNDER THE CITY'S CONTRACTOR MUST BE DONE UNDER A PERMIT, SECURED THROUGH THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.
2. NO CONCRETE SHALL BE PLACED UNTIL A PRE-CHECK HAS BEEN REQUESTED BY THE CONTRACTOR OR HOME-OWNER AND APPROVED BY THE CITY OF ROCHESTER D.P.W. (248) 651-5165 - AT LEAST FORTY EIGHT (48) HOURS IN ADVANCE, FINAL INSPECTION IS ALSO REQUIRED AT THE PLACEMENT OF CONCRETE.
3. ALL WORK SHALL CONFORM TO THE CITY OF ROCHESTER STANDARDS & SPECIFICATIONS AVAILABLE THROUGH THE CITY ENGINEER.
4. HANDICAP RAMPS SHALL MEET A.D.A. BARRIER FREE REQUIREMENTS.
5. TRUNCATED DOME DETECTABLE WARNING PLATES SHALL BE CAST IRON - BLACK IN COLOR

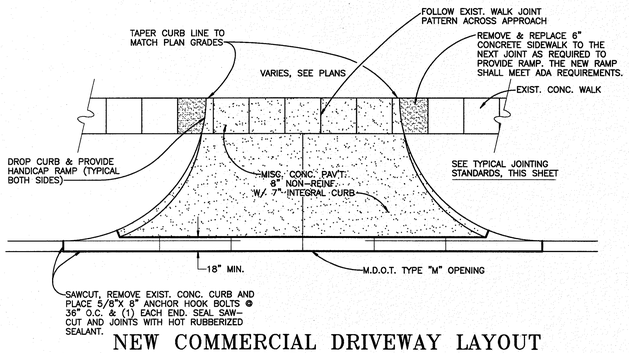
TYPICAL SIDEWALK & DRIVE APPROACH JOINTING STANDARDS

NO SCALE



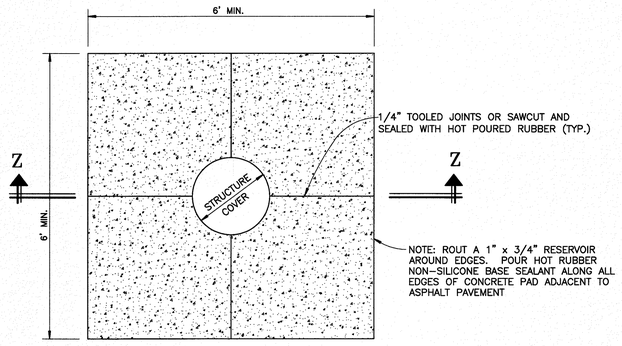
NEW RESIDENTIAL DRIVEWAY LAYOUT FOR EXISTING PAVEMENT CONDITION

NO SCALE

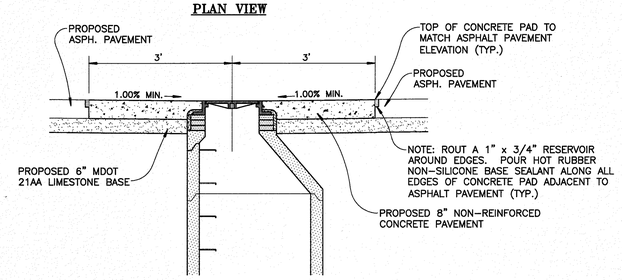


NEW COMMERCIAL DRIVEWAY LAYOUT FOR EXISTING PAVEMENT CONDITION

NO SCALE



PLAN VIEW



SECTION Z-Z

CONCRETE PAD DETAIL AT STRUCTURE IN ASPHALT PAVEMENT

NOT TO SCALE

REQUIREMENTS AND CONDITIONS FOR CONCRETE PAVEMENT

1. NO CONCRETE PAVING SHALL BE ALLOWED PRIOR TO MAY FIRST OR AFTER NOVEMBER FIRST. (UNLESS APPROVED BY THE DPW SUPERINTENDENT)
2. AIR TEMPERATURE AT POINT OF PLACEMENT, AWAY FROM ARTIFICIAL HEAT, SHALL BE AT LEAST 30° F AND RISING.
3. TEMPERATURE OF CONCRETE AT TIME OF PLACEMENT SHALL BE BETWEEN 45° F AND 90° F.
4. CONCRETE SHALL HAVE A SLUMP BETWEEN 2"-3".
5. CONCRETE SHALL HAVE AN AIR CONTENT OF 6% ±1%.
6. CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI (MIN.)
7. MAXIMUM TIME INTERVAL BETWEEN CHARGING OF MIXER AND PLACING OF CONCRETE, MINUTES:

TYPE OF UNIT	TEMPERATURE OF CONCRETE		
	BELOW 60° F	60° F TO 85° F	ABOVE 85° F
CLOSED TOP AGITATING UNITS & TRUCK MIXERS (A)	90	60	45
TRUCK MIXERS AND CLOSED TOP AGITATING UNITS WITH CONCRETE CONTAINING WATER-REDUCING RETARDING ADMIXTURE	120	90	70

(A) SUPERSTRUCTURE CONCRETE SHALL MEET THE TIME LIMITS FOR CLOSED TOP AGITATING UNITS AND TRUCK MIXERS.

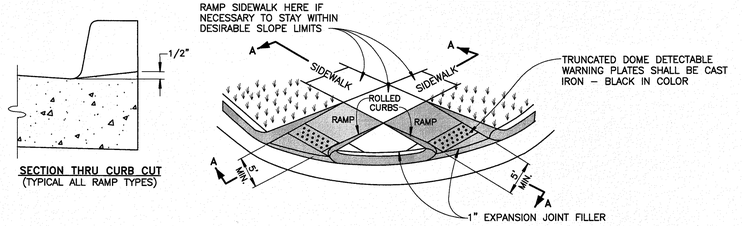
8. SPECIAL CONDITIONS SHALL REQUIRE REVIEW AND APPROVAL THE CITY ENGINEER.

GENERAL NOTES

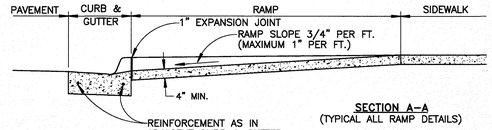
1. PRIOR TO PLACEMENT OF BASE MATERIAL OR PAVEMENTS THE CONTRACTOR SHALL PROOFROLL THE SUBGRADE AND REMOVE ANY UNSUITABLE MATERIAL OBSERVED.
2. ALL BASE MATERIAL SHALL BE COMPACTED TO 95% OF ITS MAXIMUM UNIT WEIGHT.
3. FOR RESIDENTIAL USES, THE OWNER SHALL RETAIN THE SERVICES OF A GEOTECHNICAL CONSULTING/TESTING FIRM, ALL FILL MATERIAL AND BASE MATERIAL SHALL BE TESTED AND ITS COMPACTION AND SUITABILITY FOR ACCEPTANCE OF THE BASE MATERIAL AND PAVEMENT SHALL BE CERTIFIED BY SAID TESTING FIRM. THE OWNER SHALL SUPPLY THREE COPIES OF THE GEOTECHNICAL REPORT AND CERTIFICATION TO THE CITY DEPARTMENT OF PUBLIC WORKS.
4. IF IN THE OPINION OF THE INSPECTOR/ENGINEER, FIELD CONDITIONS WARRANT ADDITIONAL TESTING, THE DEVELOPER SHALL ARRANGE FOR AND PAY FOR ALL REQUIRED TESTING.

BITUMINOUS PAVEMENT NOTES

1. ALL MATERIALS AND METHODS OF HMA PLACEMENT SHALL FOLLOW CURRENT MDOT STANDARD SPECIFICATION.
2. TEMPERATURE AND SEASONAL REQUIREMENTS FOR PLACING HMA WILL BE ACCORDING TO CURRENT MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
3. PLACEMENT OF HMA OR APPLICATION OF BOND COAT IS PROHIBITED WHEN PRECIPITATION IS IMMINENT OR WHEN MOISTURE ON THE EXISTING SURFACE WILL PREVENT SATISFACTORY CURING.
4. ALL BITUMINOUS MATERIAL SHALL BE COMPACTED TO A DENSITY OF 97% OF THE FIELD CONTROL DENSITY AS DETERMINED BY THE MARSHALL METHOD WITH TEST RESULTS BEING PROVIDED TO THE DPW AND/OR GOVERNING AGENCY.
5. RECYCLED HOT MIX ASPHALT MIXTURE: LIMITS RECYCLED ASPHALT MATERIAL (RAP) TO A MAXIMUM OF 15% BINDER BY WEIGHT OF THE TOTAL BINDER IN THE MIXTURE. ASPHALT SHINGLES AND TIRES ARE NOT ALLOWED.



SECTION THRU CURB CUT (TYPICAL ALL RAMP TYPES)

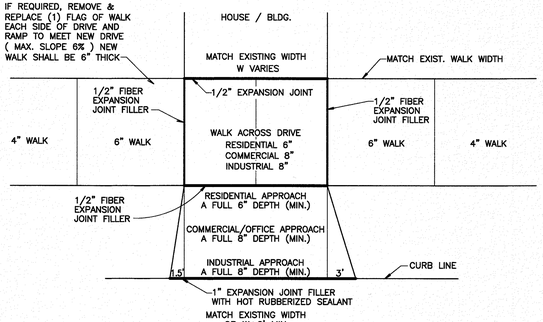


SECTION A-A (TYPICAL ALL RAMP DETAILS)

TYPICAL RAMP INSTALLATION

NOT TO SCALE

(M.D.O.T. TYPE 4)



REMOVAL AND REPLACEMENT OF EXISTING DRIVE APPROACH FOR EXISTING OR NEW PAVEMENT CONDITION

NO SCALE

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ENGINEERING STRONG COMMUNITIES

ROCHESTER MICHIGAN SETTLED 1817

DATE	SUBMITTALS/REVISIONS

DRAWN BY:	CHECKED BY:	DATE:
MJS	AAP	JANUARY 2021

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STATE OF MICHIGAN ASEEL A. PUTROS ENGINEER NO. 55083 LICENSED PROFESSIONAL ENGINEER

ASEEL A. PUTROS P.E. NO. 55083

DEPARTMENT OF PUBLIC WORKS

APPROVED BY: Jeremy Rishert Assistant DPW Director

DATE: 4/6/2021

CITY OF ROCHESTER

STANDARD PAVING DETAILS (2 OF 2)

SHEET NO.

PAV2

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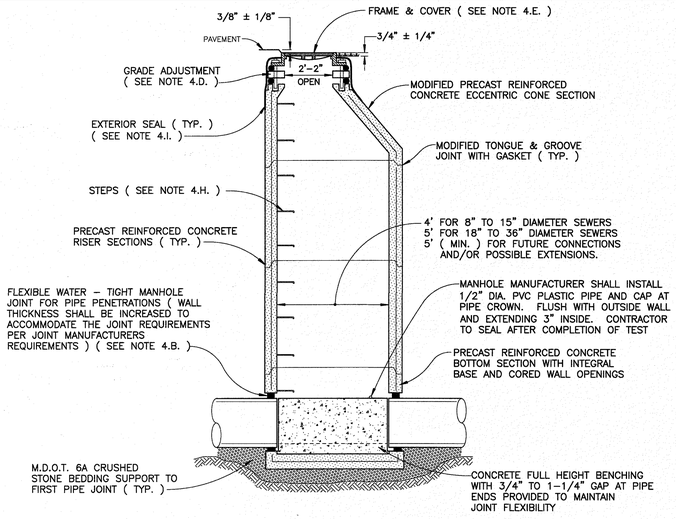
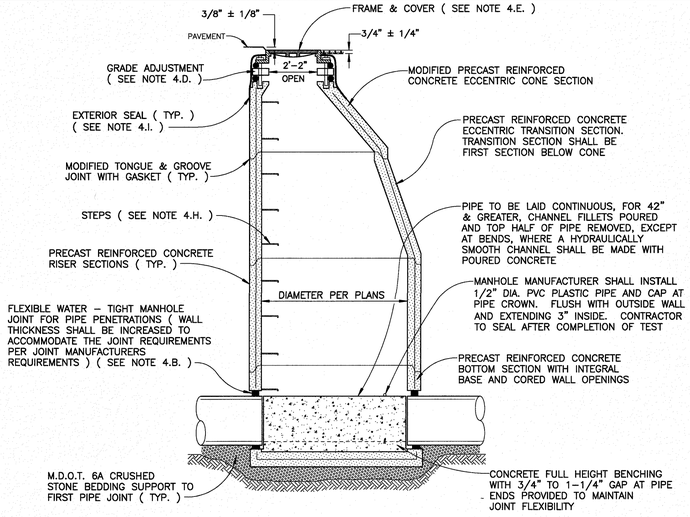


SANITARY SEWER MANHOLE

NOT TO SCALE

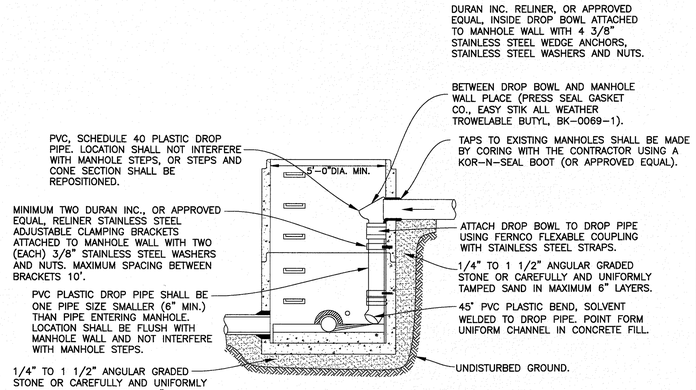
(4' AND 5' DIAMETER)



SANITARY SEWER MANHOLE

NOT TO SCALE

(6' DIAMETER AND LARGER)

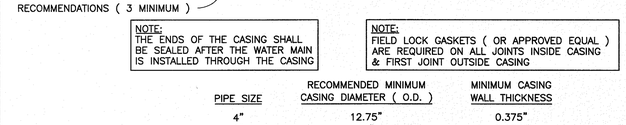


INTERIOR DROP CONNECTION

NOT TO SCALE

(FOR ALL DROP CONNECTIONS)

EXTERIOR DROP CONNECTIONS MUST RECEIVE CITY APPROVAL



NOTE: THE ENDS OF THE CASING SHALL BE SEALED AFTER THE WATER MAIN IS INSTALLED THROUGH THE CASING

NOTE: FIELD LOCK GASKETS (OR APPROVED EQUAL) ARE REQUIRED ON ALL JOINTS INSIDE CASING & FIRST JOINT OUTSIDE CASING

PIPE SIZE	RECOMMENDED MINIMUM CASING DIAMETER (O.D.)	MINIMUM CASING WALL THICKNESS
4"	12.75"	0.375"
6"	14"	0.375"
8"	16"	0.375"
12"	20"	0.375"
16"	24"	0.406"
24"	36"	0.532"

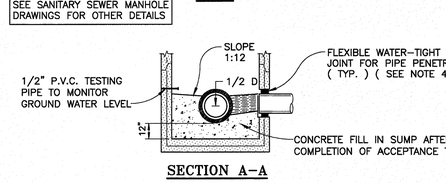
STEEL CASING REQUIREMENTS

NOT TO SCALE

CONCRETE CRADLE

NOT TO SCALE

(ONLY WITH COMMUNITY APPROVAL)



PLAN

NOTE: SEE SANITARY SEWER MANHOLE DRAWINGS FOR OTHER DETAILS

SECTION A–A

SUMP MANHOLE

NOT TO SCALE

FOR TESTING, CLEANING & DEWATERING

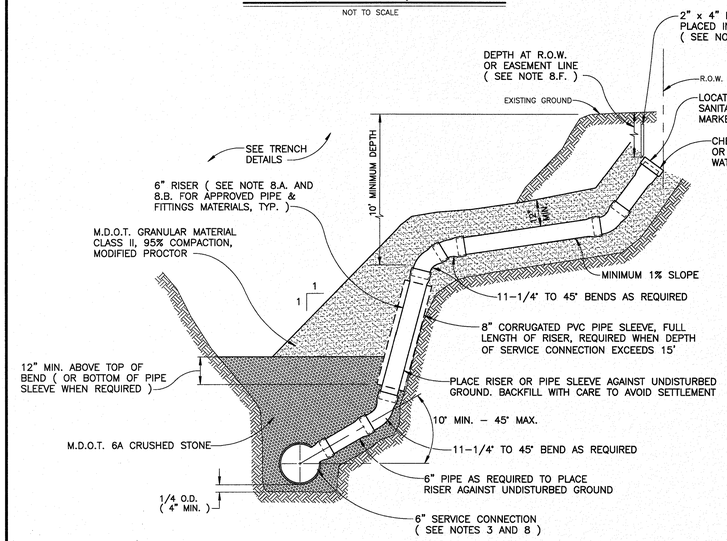
INTERCEPTOR/GREASE TRAP SECTIONS TO BE MANUFACTURED PER AASHTO 17TH EDITION AND ASTM SPECIFICATIONS WITH HS–25 LOADING AND 0.0' TO 3.0' OF EARTH COVER.

CONCRETE: 5000 psi @ 28 DAYS

REINFORCEMENT PER ASTM A–615 & A–496.

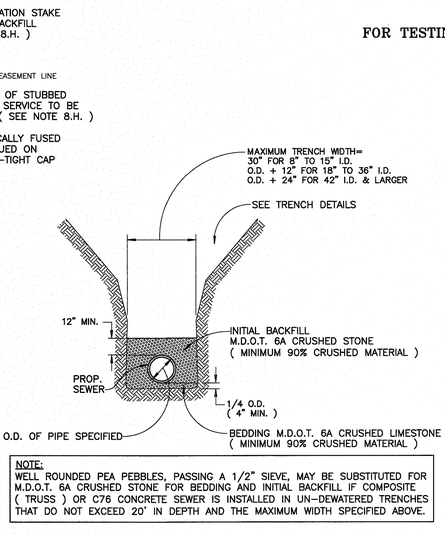
COVER TO BE SEALED WITH 1 1/2" EZ–STIK OR EQUAL

LINK SEAL ON INLET & OUTLET PIPES & BAFFLE WALL



BUILDING LEAD DETAIL

NOT TO SCALE

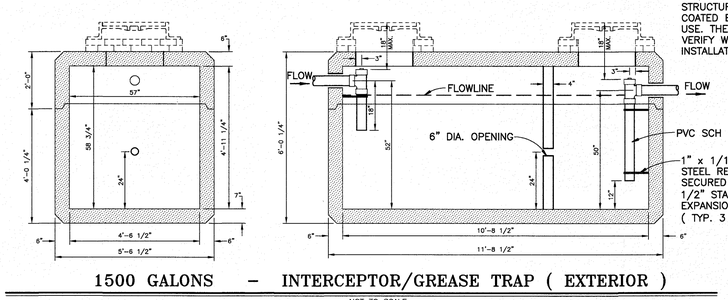


NOTE: WELL ROUNDED PEA PEBBLES, PASSING A 1/2" SIEVE, MAY BE SUBSTITUTED FOR M.D.O.T. 6A CRUSHED STONE FOR BEDDING AND INITIAL BACKFILL IF COMPOSITE (TRUSS) OR C76 CONCRETE SEWER IS INSTALLED IN UN–DEWATERED TRENCHES THAT DO NOT EXCEED 20' IN DEPTH AND THE MAXIMUM WIDTH SPECIFIED ABOVE.

BEDDING DETAIL

NOT TO SCALE

IF A DIFFERENT SIZE IS TO BE USED, SUPPORTING DOCUMENTS SHALL BE PROVIDED TO THE DEPARTMENT OF PUBLIC WORKS AND CITY ENGINEER FOR REVIEW AND APPROVAL



CITY OF ROCHESTER MAY REQUIRE THE INTERIOR OF THE STRUCTURE TO BE EPOXY COATED BASED ON TYPE OF USE. THE CONTRACTOR SHALL VERIFY WITH CITY PRIOR TO INSTALLATION.

1500 GALONS – INTERCEPTOR/GREASE TRAP (EXTERIOR)

NOT TO SCALE

ANDERSON, ECKSTEIN AND WESTRICK, INC.
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STATE OF MICHIGAN ASEEL A. PUTROS ENGINEER NO. 55083 LICENSED PROFESSIONAL ENGINEER

ASEEL A. PUTROS P.E. NO. 55083

DEPARTMENT OF PUBLIC WORKS

APPROVED BY: Jeremy Pichnot, Assistant DPW Director

DATE: 4/6/2021

CITY OF ROCHESTER

STANDARD SANITARY SEWER DETAILS (1 OF 2)

SHEET NO.

SAN1

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SANITARY SEWER CONSTRUCTION NOTES

1. STANDARDS AND SPECIFICATIONS

A. ALL SANITARY SEWER AND SANITARY SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AND THE CURRENT EDITION OF THE RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES (COMMONLY REFERRED TO AS THE TEN STATES STANDARDS). CONSTRUCTION AND MATERIALS SHALL ALSO CONFORM TO THE APPLICABLE CURRENT ASTM STANDARD SPECIFICATION OR PRACTICE, WHEN REFERENCED. DETAILED WRITTEN SPECIFICATIONS ARE AVAILABLE UPON REQUEST.

B. ANY MATERIALS OTHER THAN THOSE LISTED ON THE STANDARD DETAIL SHEETS MUST BE APPROVED IN WRITING BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. CONTRACTOR MUST SUBMIT THREE (3) COPIES OF SHOP DRAWINGS AND SPECIFICATIONS FOR PROPOSED ALTERNATE MATERIAL TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS FOR REVIEW AS AN APPROVED EQUAL. DETERMINATION OF ACCEPTANCE BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS SHALL BE CONSIDERED FINAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REVIEW OF THE PROPOSED ALTERNATE MATERIAL AS AN APPROVED EQUAL.

2. PRECONSTRUCTION REQUIREMENTS

A. THE DEVELOPER SHALL PROVIDE A BREAKDOWN OF CONSTRUCTION COST TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AND PAY ALL REQUIRED FEES PRIOR TO SCHEDULING A PRECONSTRUCTION MEETING.

B. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION MEETING AT A TIME AND PLACE AS ARRANGED BY THE CITY ENGINEER. THE CITY ENGINEER SHALL NOTIFY AFFECTED UTILITY COMPANIES AND GOVERNMENTAL AGENCIES, AS IDENTIFIED BY THE OWNER'S ENGINEER, A MINIMUM OF TEN (10) DAYS PRIOR TO THE PRECONSTRUCTION MEETING. THE OWNER'S ENGINEER SHALL SUBMIT APPROVED PLANS TO ALL UTILITY COMPANIES AND GOVERNMENTAL AGENCIES A MINIMUM OF TEN (10) DAYS PRIOR TO PRECONSTRUCTION MEETING. CONSTRUCTION SHALL START WITHIN TWO (2) WEEKS OF MEETING UNLESS WAIVED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

C. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION, OR INSURE THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION.

D. THE CONTRACTOR SHALL NOTIFY MISS DIG AT (800) 482–7171 OR 811, THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AT (248) 651–5165, THE INSPECTION SECTION OF DETROIT WATER AND SEWERAGE DEPARTMENT AT (313) 833–8649 AND ANDERSON, ECKSTEIN AND WESTRICK, INC. AT (586) 726–1234 SEVENTY TWO (72) HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY REPRESENTATIVES OF ANY OTHER FACILITIES, LOCATED IN THE VICINITY OF THE WORK, WHICH ARE NOT PARTICIPANTS OF THE MISS DIG SYSTEM. THE CONTRACTOR SHALL NOTIFY THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER'S OFFICE AT (248) 858–0958 TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. ALL COSTS FOR LOCATING, REMOVING AND REPLACING OR RELOCATING THESE UTILITIES SHALL BE INCLUDED IN THE COST OF CONSTRUCTING THE SANITARY SEWER. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH LIKE MATERIAL. THE CONTRACTOR SHALL VERIFY THE DEPTH AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES BEFORE ANY WORK IS STARTED. THE EXACT LOCATION OF EXISTING UTILITIES SHALL BE DETERMINED BY HAND DIGGING.

E. AT ALL CONNECTIONS TO CITY OF ROCHESTER SANITARY SEWERS OR TO EXTENSIONS THERETO, AND BEFORE START OF CONSTRUCTION, THE CONTRACTOR MUST REQUEST AND HAVE IN HIS POSSESSION AN APPROVED CONNECTIONS PERMIT ISSUED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

F. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SANITARY SEWER, WATER OR STORM SEWER SERVICE CONNECTIONS DURING CONSTRUCTION. ANY ADJUSTMENTS OR REPAIRS TO THESE SERVICES SHALL BE MADE BY THE CONTRACTOR AND THE COST SHALL BE INCLUDED IN THE COST FOR CONSTRUCTING THE SANITARY SEWER, UNLESS OTHERWISE PROVIDED IN THE CONTRACT.

G. THE ENTIRE PROJECT AREA OF PUBLICLY FUNDED PROJECTS, AND ALL AREAS NOT UNDER THE OWNERSHIP OF ANY PRIVATE DEVELOPER FOR PRIVATELY FUNDED PROJECTS, SHALL BE DIGITALLY RECORDED IN COLOR PRIOR TO THE START OF CONSTRUCTION. THE VIDEO SHALL BE UTILIZED BY THE CITY TO DETERMINE CONSTRUCTION RELATED DAMAGE AND TO ASSURE ADEQUATE RESTORATION. THE VIDEO SHALL BE ON NEW, PREMIUM QUALITY, SINGLE–SIDED DVD(S).

3. PIPE MATERIAL

A. EIGHT INCH (8") THROUGH FIFTEEN INCH (15") PIPE SHALL BE POLYVINYL CHLORIDE (PVC) COMPOSITE (TRUSS) SEWER PIPE (ASTM D2680) WITH GASKETED JOINTS (ASTM D3212). SANITARY SERVICE CONNECTIONS FOR NEW PVC COMPOSITE SEWER PIPE SHALL BE MADE BY INSTALLING FACTORY FABRICATED (NOT EXTRUDED), SIX INCH (6") WYES OF THE SAME MATERIAL AS THE MAIN LINE SANITARY SEWER.

NOTE: THE MINIMUM ALLOWABLE SIZE OF A SANITARY SEWER IS TEN INCHES (10") IN DIAMETER. AN EIGHT INCH (8") DIAMETER SEWER MAY BE UTILIZED ONLY WITH WRITTEN APPROVAL OF THE DIRECTOR OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

B. EIGHTEEN INCH (18") AND LARGER PIPE SHALL BE REINFORCED CONCRETE CIRCULAR SEWER PIPE, MANUFACTURED WITH TYPE II CEMENT, IN COMBINATION WITH THIRTY PERCENT (30%) REPLACEMENT OF THE TOTAL CEMENTITIOUS WEIGHT WITH GROUND GRANULATED BLAST–FURNACE SLAG WITH MINIMUM GRADE OF ONE HUNDRED (100) AND THREE PERCENT (3%) XYPEX ADMIXTURE BY WEIGHT OF CEMENTITIOUS WEIGHT MATERIAL AND WALL THICKNESS C (ASTM C76). SIZE AND CLASS OF PIPE SHALL BE AS INDICATED ON THE PLANS. ALL REINFORCED CONCRETE SEWER PIPE SHALL BE CAST WITH REINFORCING STEEL EXTENDING INTO THE BELL. ALL JOINTS SHALL BE MODIFIED TONGUE AND GROOVE WITH GASKET (ASTM C361). GASKETS SHALL BE SYNTHETIC RUBBER. NATURAL RUBBER GASKETS ARE NOT ACCEPTABLE. SANITARY SERVICE CONNECTIONS FOR NEW REINFORCED CONCRETE SEWER PIPE SHALL BE MADE BY CORE DRILLING A PORT IN THE SEWER WALL AND INSTALLING A LATERAL CONNECTOR FOR CONCRETE PIPE. LATERAL CONNECTOR SHALL BE NPC KOR–N–TEE. ALL CONCRETE SANITARY SEWER THIRTY–SIX INCH (36") OR LARGER SHALL HAVE POINTED JOINTS WITH A NON–SHRINK TYPE MORTAR COMPOSED OF TYPE IIA CEMENT. NON–SHRINK TYPE MORTAR SHALL BE PRECO OR SEKA SET. NO LIME SHALL BE USED IN THE MORTAR

C. DUCTILE IRON PIPE WITH EXTERIOR ASPHALTIC MATERIAL COATING SHALL MEET THE REQUIREMENTS OF ANSI A21.51 CURRENT SPECIFICATIONS. DUCTILE IRON PIPE SHALL BE SPECIAL THICKNESS CLASS 54 FOR PUSH–ON–JOINT DUCTILE–IRON PIPE. DUCTILE IRON PIPE SHALL BE DOUBLE CEMENT LINED WITH ASPHALTIC MATERIAL SEAL COATING MEETING THE REQUIREMENTS OF ANSI A21.4 CURRENT SPECIFICATIONS. PUSH–ON JOINTS SHALL MEET THE REQUIREMENTS OF ANSI A21.11 CURRENT SPECIFICATIONS. PUSH ON JOINTS SHALL BE TYTON OR SUPER BELLTITE. SANITARY SERVICE CONNECTIONS FOR NEW DUCTILE IRON SEWER PIPE SHALL ONLY BE MADE WITH THE WRITTEN AUTHORIZATION OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

NOTE: DUCTILE IRON PIPE SHALL BE USED FOR THE SANITARY SEWER AT ALL WATER MAIN AND SANITARY SEWER CROSSINGS WITH LESS THAN TWENTY–FOUR INCHES (24") OF VERTICAL CLEARANCE AND WHERE THE WATER MAIN CROSSES BELOW THE SEWER, REGARDLESS OF VERTICAL CLEARANCE DISTANCE, UNLESS OTHERWISE APPROVED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS OR THE CITY ENGINEER. THE DUCTILE IRON PIPE INSIDE DIAMETER SHALL BE OF EQUAL SIZE (OR LARGER) AS THE PROPOSED SEWER AND SHALL EXTEND FROM MANHOLE TO MANHOLE.

4. MANHOLES

A. ALL NEW MANHOLES SHALL BE PRECAST REINFORCED CONCRETE (MANUFACTURED WITH TYPE II CEMENT IN COMBINATION WITH 30 PERCENT REPLACEMENT OF THE TOTAL CEMENTITIOUS WEIGHT WITH GROUND GRANULATED BLAST–FURNACE SLAG WITH MINIMUM GRADE OF 100 AND 3 PERCENT XYPEX ADMIXTURE BY WEIGHT OF CEMENTITIOUS WEIGHT MATERIAL), FLEXIBLE–JOINT TYPE (ASTM C478). THE TOP SECTION SHALL BE A MODIFIED ECCENTRIC CONE SECTION WITH STUD INSERTS CAST IN PLACE AND A SMOOTH TROWEL–FINISHED TOP SURFACE. THE BASE SECTION SHALL BE A PRECAST RISER SECTION WITH AN INTEGRAL BASE. JOINTS AND GASKETS SHALL BE MODIFIED TONGUE AND GROOVE (ASTM C443). ALL LIFTING HOLES SHALL BE FILLED WITH A NON–SHRINK TYPE MORTAR COMPOSED OF TYPE IIA CEMENT. NON–SHRINK TYPE MORTAR SHALL BE PRECO OR SEKA SET. NO LIME SHALL BE USED IN THE MORTAR.

B. PIPE PENETRATION JOINTS FOR NEW PRECAST REINFORCED MANHOLES SHALL BE A FLEXIBLE WATER–TIGHT JOINT, "KOR–N–SEAL" FOR SEWERS SIX INCH (6") THROUGH THIRTY INCH (30") IN DIAMETER AND "A–LOK" FOR SEWERS THIRTY–SIX INCH (36") IN DIAMETER AND LARGER. HOLES FOR PIPES SHALL BE CAST IN THE RISER SECTION SO AS TO PROVIDE A MINIMUM CLEARANCE OF TWO INCHES (2") BETWEEN THE INSIDE BOTTOM OF THE BASE SECTION AND THE OUTSIDE WALL OF THE PIPE. PIPE SHALL NOT EXTEND INTO A MANHOLE BEYOND THE INTERIOR FACE OF THE MANHOLE WALL.

C. EXISTING PRECAST MANHOLES SHALL BE TAPPED WITH THE "KOR–N–SEAL" METHOD, WITH A WATER–TIGHT RUBBER BOOT FOR SEWERS SIX INCH (6") THROUGH FIFTEEN INCH (15") IN DIAMETER. EXISTING BRICK MANHOLES, AND TAPS FOR SEWERS EIGHTEEN INCH (18") IN DIAMETER AND LARGER, SHALL HAVE HOLES DRILLED AT FOUR INCHES (4") CENTER TO CENTER AROUND THE PERIPHERY OF THE OPENING TO CREATE A PLANE OF WEAKNESS BEFORE BREAKING OUT THE SECTION. NON–SHRINK GROUT, PRECO OR SEKA SET, SHALL BE USED TO SEAL THE OPENING. A CONCRETE COLLAR SHALL BE POURED TWELVE INCHES (12") AROUND THE PIPE AND EXTEND TWELVE INCHES (12") EXTERIOR TO THE MANHOLE.

D. FOR NEW STRUCTURES THE MINIMUM ADJUSTMENT SHALL BE SIX INCHES (6") AND MAXIMUM ADJUSTMENT SHALL BE TWELVE INCHES (12") UNLESS APPROVED IN WRITING BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. PRECAST ADJUSTMENT RINGS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. NO BRICK OR BLOCK SHALL BE ALLOWED FOR ADJUSTMENT COURSES UNLESS APPROVED IN WRITING BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. ADJUSTMENT RINGS SHALL NOT OVERHANG BEYOND THE TOP OF THE RISER OR BASE OF THE COVER. ALL PRECAST ADJUSTMENT SHALL HAVE AN EXTERNAL SEAL APPLIED. SEE NOTE 4.I. FOR EXTERNAL SEAL REQUIREMENTS.

NEW (TAPPING) MANHOLES BUILT OVER ANY EXISTING SANITARY SEWERS SHALL HAVE MONOLITHIC POURED BOTTOMS WITH A DIAMETER SUITABLE FOR THE INSTALLATION.

FOR EXISTING STRUCTURES GRADE ADJUSTMENTS SHALL BE MADE USING MDOT GRADE S–II CONCRETE BRICKS (ASTM C55) IN FULL MORTAR BED. MORTAR COAT ALL OPEN SPACES AND IRREGULARITIES ON THE INSIDE OF BRICKWORK TO FORM STRUCTURE INTERIOR. MORTAR COAT ALL OPEN SPACES AND IRREGULARITIES ON THE OUTSIDE OF BRICKWORK. TAPER OUTSIDE MORTAR COAT A MINIMUM OF ONE PERCENT (1%) FROM THE FRAME FLANGE TO THE DRAINAGE STRUCTURE OUTSIDE DIAMETER. BRICKWORK AND MORTAR SHALL NOT OVERHANG BEYOND THE OUTSIDE DIAMETER OF THE STRUCTURE. MORTAR SHALL BE MDOT TYPE R–2. MINIMUM ADJUSTMENT SHALL BE SIX INCHES (6") AND MAXIMUM SHALL BE TWELVE INCHES (12") UNLESS APPROVED IN WRITING BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

E. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATER–TIGHT COVERS. MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN 1040ZPT WITH PRESSURE TIGHT COVER WITH FOUR (4) ONE INCH (1") ANCHOR BASE FLANGE HOLES. COVERS SHALL BE SUPPLIED WITH "CITY OF ROCHESTER SANITARY SEWER" IN RAISED LETTERS.

F. ALL CONCRETE FOR CHANNELIZATION, BENCHES, COLLARS, AND BULKHEADS SHALL BE MADE WITH TYPE II CEMENT IN COMBINATION WITH 30 PERCENT REPLACEMENT OF THE TOTAL CEMENTITIOUS WEIGHT WITH GROUND GRANULATED BLAST–FURNACE SLAG WITH MINIMUM GRADE OF 100 AND 3 PERCENT XYPEX ADMIXTURE BY WEIGHT OF CEMENTITIOUS WEIGHT MATERIAL. CONCRETE PLACED INSIDE NEW MANHOLES TO FORM THE CHANNEL SHALL NOT BE PLACED BETWEEN THE PIPE AND THE OPENING IN THE MANHOLE BASE SECTION SO AS TO INTERFERE IN ANY WAY WITH THE FLEXIBILITY OF THE JOINT. PRECAST MANHOLE CHANNELS MAY BE USED WITH THE WRITTEN APPROVAL OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

G. AT ALL CONNECTIONS TO MANHOLES, SEWERS OR EXTENSIONS THERETO, DROP CONNECTIONS SHALL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS EIGHTEEN INCHES (18"). ALL DROP CONNECTIONS SHALL BE INTERIOR DROP CONNECTION ASSEMBLIES.

H. STEPS SHALL BE M.A. INDUSTRIES P.S.I. POLYPROPYLENE OR MSU #360 ALU POLY MANHOLE STEPS AND INSTALLED BY THE MANHOLE MANUFACTURER AT SIXTEEN INCHES (16") CENTER TO CENTER SPACING. STEPS SHALL HAVE FOOT RECESS AND BE SUITABLY SCORED TO PROVIDE A NONSLIP SURFACE. BOTTOM STEP SHALL BE EIGHTEEN INCHES (18") MAXIMUM ABOVE FLOOR. TOP STEP SHALL BE TWENTY FOUR INCHES (24") MAXIMUM BELOW RIM. STEPS SHALL NORMALLY BE PROVIDED ON A BACK WALL OF THE MANHOLE FURTHEST FROM TRAFFIC. IF A MANHOLE IS INSTALLED AT A LOCATION WITHIN EXISTING TRAFFIC FLOW, STEPS SHALL BE PROVIDED SUCH THAT PERSONNEL WILL FACE ON–COMING TRAFFIC.

I. ALL MANHOLES SHALL BE REQUIRED TO HAVE EXTERIOR SEAL. EXTERIOR SEAL SHALL BE CANUSA WRAPID SEAL ENCAPSULATION SYSTEM INSTALLED PER MANUFACTURERS SPECIFICATIONS. WRAPID SEAL SHALL BE SIZED TO EXTEND A MINIMUM OF SIX INCHES (6") ONTO THE CONE SECTION. ALL PRECAST STRUCTURES SHALL HAVE CONSEAL CS102 BUTYL RUBBER SEALANT INSTALLED BETWEEN EACH SECTION.

J. ALL TERMINAL MANHOLES AND ANY INTERMEDIATE MANHOLES WHERE FUTURE DROP CONNECTIONS ARE A POTENTIAL SHALL BE ONE FOOT (1') LARGER IN DIAMETER THAN WOULD OTHERWISE BE REQUIRED. THE MINIMUM DIAMETER SHALL BE FIVE FEET (5').

K. IN INDUSTRIAL AND COMMERCIAL AREAS, OR ANY OTHER AREAS WHERE DEEMED NECESSARY BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS, PRIVATE SANITARY SERVICES MUST HAVE AN ACCESSIBLE SAMPLING AND MONITORING MANHOLE INSTALLED PRIOR TO THE CONNECTION AT THE SEWER MAIN. THE MANHOLE SHALL BE LOCATED ON PRIVATE PROPERTY AT A LOCATION APPROVED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

L. FOR SANITARY MANHOLES CONSTRUCTED WITHIN REGULATED FLOOD PLAINS OR AREAS SUBJECT TO FLOODING AND WETLANDS, ALL MANHOLE JOINTS SHALL REQUIRE EXTERIOR WRAPID SEAL AND FRAMES SHALL BE SET ABOVE THE FLOOD PLAIN ELEVATION.

5. CONSTRUCTION

A. NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWNSPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.

B. A HORIZONTAL SEPARATION OF TEN FEET (10') (MINIMUM) MUST BE MAINTAINED BETWEEN THE SANITARY SEWER AND THE WATER MAIN.

C. A MINIMUM VERTICAL CLEARANCE OF ONE AND ONE–HALF FEET (1–½') MUST BE MAINTAINED BETWEEN THE SANITARY SEWER AND ANY UTILITIES. A VERTICAL CLEARANCE OF FIVE FEET (5') (MINIMUM) MUST BE MAINTAINED BELOW THE MASTER PLAN DEPTH OF DITCHES, DRAINS AND OPEN WATER COURSES.

D. VERTICAL TOLERANCES FOR MANHOLE RIM GRADES SHALL BE:
MANHOLE NOT IN R.O.W.: [–0.00] TO + [0.25] FEET
MANHOLE IN R.O.W.: [–0.00] TO + [0.25] FEET

E. ALL SEWER PIPE SHALL BE LAID USING A LASER TO MAINTAIN GRADE AND ALIGNMENT.

F. ALL SEWER PIPE AND APPURTENANCES SHALL BE STAKED FOR LINE AND GRADE EVERY FIFTY FEET (50'). CUT SHEETS SHALL BE PROVIDED TO THE CITY ENGINEER AND THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. NO SEWER SHALL BE LAID WITHOUT STAKES.

G. THE CONTRACTOR SHALL ABIDE BY ALL THE REQUIREMENTS OF THE ROAD RIGHT–OF–WAY OWNER REGARDING CONSTRUCTION OF WATER AND SEWER MAINS, MAINTAINING TRAFFIC, BARRICADING, BORING, BACKFILL AND RESTORATION. THERE WILL BE NO ADDITIONAL COMPENSATION DUE THE CONTRACTOR FOR COMPLYING WITH THESE REQUIREMENTS.

H. NO WASTE EXCAVATION MATERIAL SHALL BE DISPOSED OF BY PLACING IT IN ANY FLOODPLAIN OR WETLAND OF THE STATE UNLESS APPROPRIATE PERMITS HAVE BEEN ISSUED. THE CONTRACTOR OR PROPERTY OWNER MUST OBTAIN LOCAL FILL PERMITS FOR ANY MATERIALS DEPOSITED UPON LANDS WITHIN ANY CITY, VILLAGE OR TOWNSHIP.

I. COMPACTED SAND BACKFILL IS TO BE USED EXCLUSIVELY AT ALL ROAD CROSSINGS, DRIVEWAYS AND SIDEWALKS THROUGHOUT THE COURSE OF THE PROJECT. IN ROADWAYS AND DRIVEWAYS, THE TOP 12 INCHES OF THE EXCAVATION SHALL BE FILLED WITH 21AA LIMESTONE. EXCEPT AS PROVIDED IN THE SPECIFICATIONS, THERE WILL BE NO ADDITIONAL COMPENSATION FOR COMPLYING WITH THIS REQUIREMENT.

J. THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE ALL WORK IN AN EXPEDITIOUS MANNER AND SHALL NOT STOP CONSTRUCTION EXCEPT FOR REASONS BEYOND HIS CONTROL SUCH AS, BUT NOT LIMITED TO, STRIKES, WEATHER AND UNAVAILABILITY OF MATERIALS.

K. THE CONTRACTOR SHALL REPLACE THE DISTURBED GRAVEL ROAD SECTION WITH 21AA LIMESTONE. THE MINIMUM DEPTH OF LIMESTONE SHALL BE TWELVE INCHES (12") OR SHALL MATCH THE EXISTING ROAD SECTION, WHICHEVER IS GREATER.

6. TESTING AND ACCEPTANCE

A. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS, EQUIPMENT AND PERSONNEL TO CONDUCT REQUIRED TESTING. THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS SHALL WITNESS ALL TESTS. ALL SEWER INSTALLATIONS SHALL BE COMPLETE, INCLUDING SANITARY SERVICE LEADS WITH CHEMICALLY WELDED OR GLUED WATER–TIGHT CAPS, PRIOR TO PERFORMING REQUIRED TESTS.

B. ALL SEWERS TWENTY–FOUR INCHES (24") IN DIAMETER AND SMALLER SHALL BE TESTED USING LOW PRESSURE AIR (ASTM C924 OR ASTM F1417 BASED UPON PIPE MATERIAL) IN ACCORDANCE WITH THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS SANITARY SEWER SPECIFICATIONS. TABLES FOR MINIMUM HOLDING TIME ARE AVAILABLE AT THE SANITARY SEWER DEPARTMENT UPON REQUEST. INFILTRATION TESTING WILL BE PERFORMED IF GROUND WATER PROHIBITS LOW PRESSURE AIR TESTING AS DETERMINED BY THE CITY OF ROCHESTER ENGINEER.

C. ALL SEWERS TWENTY–SEVEN INCHES (27") IN DIAMETER AND LARGER, AND SEWERS TWENTY–FOUR INCHES (24") AND SMALLER WHERE GROUND WATER PROHIBITS LOW PRESSURE AIR TESTING, SHALL BE INFILTRATION TESTED IN ACCORDANCE WITH THE CITY OF ROCHESTER SANITARY SEWER SPECIFICATIONS. INFILTRATION SHALL BE TESTED BY THE OWNER UTILIZING CALIBRATED WEIRS OR FLUMES INSERTED IN THE PIPE FLOWLINE AT A MANHOLE. TEST SECTIONS SHALL GENERALLY BE LIMITED TO A MAXIMUM LENGTH OF ONE HALF MILE. THE OWNER RESERVES THE RIGHT TO TEST SHORTER PIPE LENGTH SEGMENTS IF HE DEEMS IT NECESSARY TO ASSURE THAT NO SEGMENT EXCEEDS THE INFILTRATION LIMITS. INFILTRATION TESTING SHALL BE CONDUCTED WITH THE DEWATERING SYSTEM TURNED OFF AND AFTER THE GROUND WATER HAS RETURNED TO ITS NORMAL LEVEL. NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION EXCEEDING FIFTY (50) GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER TWENTY–FOUR (24) HOUR PERIOD. IF THERE IS NOT SUFFICIENT GROUND WATER FOR INFILTRATION TESTING, AS DETERMINED BY THE CITY OF ROCHESTER ENGINEER, INFILTRATION TESTING SHALL BE WAIVED.

D. THE CONTRACTOR SHALL PROVIDE FOR CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION OF ALL SANITARY SEWER INSTALLED. ALL SANITARY SEWER INSTALLED SHALL BE CLEANED, BY AND AT THE CONTRACTOR'S EXPENSE, IMMEDIATELY PRIOR TO CCTV INSPECTION TO ENSURE THE SEWERS ARE FREE OF DEBRIS. THE INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT GUIDELINES OF THE NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES (NASSCO). ALL CCTV INSPECTION SHALL BE WITNESSED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS REPRESENTATIVE AND THE CONTRACTOR. ANY CCTV INSPECTION PERFORMED IN THE ABSENCE OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS REPRESENTATIVE WILL BE REJECTED.

E. THE COLOR CCTV CAMERA USED FOR THE INSPECTION SHALL BE ONE SPECIFICALLY DESIGNED AND CONSTRUCTED FOR SUCH INSPECTION. THE CAMERA, PAN AND TILT, SHALL BE OPERATIVE IN 100% HUMIDITY CONDITIONS, AND HAVE A HIGH RESOLUTION LENS CAPABLE OF SCANNING 360–DEGREES CIRCUMFERENCE AND 270–DEGREES ON A HORIZONTAL AXIS TO TELEVISE SEWERS AND SERVICE CONNECTIONS. LIGHTING FOR THE CAMERA SHALL BE SUITABLE TO ALLOW A CLEAR PICTURE OF THE ENTIRE PERIPHERY OF THE PIPE. THE CAMERA, TELEVISION MONITOR, AND OTHER COMPONENTS OF THE VIDEO SYSTEM SHALL BE CAPABLE OF PRODUCING PICTURE QUALITY TO THE SATISFACTION OF THE OWNER.

F. ALL CCTV REPORTS, LOGS, AND VIDOES SHALL BE CAPABLE OF BEING INTEGRATED IN ARCGIS AND SHALL BE SAVED ELECTRONICALLY ON FLASH DRIVES OR PORTABLE HARD DRIVES. EACH MANHOLE TO MANHOLE SECTION SHALL BE ON A SEPARATE VIDEO FILE. THE FILES SHALL NOT CONTAIN ANY COPY PROTECTION. THE OWNER SHALL BE ABLE TO MAKE COPIES OF THE FOOTAGE.

G. THE PROJECT NAME, DATE, TIME, FOOTAGE COUNTER AND STRUCTURE TO STRUCTURE SECTION SHALL BE DISPLAYED CONTINUOUSLY. THE CAMERA SHALL BE MOVED THROUGH THE SEWER AT A RATE OF SPEED NOT TO EXCEED THIRTY FEET (30') PER MINUTE, STOPPING WHEN NECESSARY TO PERMIT PROPER AUDIO AND VIDEO DOCUMENTATION OF THE SEWER'S CONDITION. THE CAMERA SHALL BE STOPPED IMMEDIATELY ADJACENT TO ALL JOINTS, POINTS OF INFILTRATION, CRACKED OR BROKEN PIPE, MISALIGNMENT IN LINE OR GRADE AND LOCATION OF SERVICE CONNECTIONS. THE CAMERA SHALL BE ROTATED TO ALLOW VIEWING OF THE PROBLEM AREA OR INTO THE SERVICE CONNECTION. A REPORT DETAILING ALL NOTES, WYE LOCATIONS, AND OTHER PERTINENT INFORMATION SHALL BE MADE AS A PART OF THE CCTV INSPECTION IN ACCORDANCE WITH NASSCO'S PACP. THE REPORT SHALL BE PRODUCED USING CCTV INSPECTION SOFTWARE PROVIDED BY A NASSCO PACP CERTIFIED VENDOR. ALL CCTV REPORTS SHALL BE DOWNLOADED OR RECORDED ON BOARD THE CCTV VEHICLE. FORMATTING AND LAYOUT, I.E. OBSERVATIONS AND DEFECT CODES SHALL BE NASSCO PACP STANDARD.

H. THE CONTRACTOR SHALL SUBMIT TWO (2) FLASH DRIVES OR PORTABLE HARD DRIVES CONTAINING A DIGITAL COPY OF INSPECTION REPORTS TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS UPON COMPLETION OF THE CCTV INSPECTION. ALL DIGITAL COPIES OF THE REPORTS AND LOGS SHALL BE IN PDF FORMAT.

I. ANY DEFECTS NOTED DURING TESTING AND/OR CCTV INSPECTION SHALL BE SATISFACTORILY REPAIRED OR REPLACED, BY AND AT THE CONTRACTORS EXPENSE, AND WITNESSED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. DEFECTS SHALL INCLUDE, BUT NOT BE LIMITED TO FAILING LOW PRESSURE AIR TESTING, EXCEEDING INFILTRATION LIMITS, CRACKED OR BROKEN PIPE, DEFECTIVE JOINTS, MISALIGNMENT IN LINE OR GRADE, AND VISIBLE LEAKS OR INFILTRATION. ADDITIONAL TESTING AND CCTV INSPECTION SHALL BE PERFORMED AT EACH AFFECTED SEGMENT, FROM MANHOLE TO MANHOLE, SUBSEQUENT TO REPAIR AND/OR REPLACEMENT.

J. BEFORE ACCEPTANCE A FINAL REVIEW MUST BE MADE BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AND/OR CITY ENGINEER.

7. PROJECT BONDS, INSURANCE, AND REGISTRATION

A. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL BE REGISTERED AT THE SEWER DEPARTMENT FOR THE YEAR THAT THE WORK IS BEING PERFORMED.

B. PRIOR TO THE PRE–CONSTRUCTION MEETING, THE CONTRACTOR SHALL PROVIDE CONTRACTUAL LIABILITY INSURANCE TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. THE INSURANCE SHALL BE MAINTAINED THROUGHOUT THE TERM OF THE PROJECT.

C. A PERFORMANCE BOND MUST BE PROVIDED TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS PRIOR TO THE PRE–CONSTRUCTION MEETING. THE BOND AMOUNT SHALL BE ONE HUNDRED PERCENT (100%) OF THE PROPOSED IMPROVEMENTS THAT THE TOWNSHIP INSPECTS.

D. THE CONTRACTOR SHALL PROVIDE A TWO (2) YEAR MAINTENANCE AND GUARANTEE PERFORMANCE AND PAYMENT BOND TO THE CITY OF ROCHESTER FROM A SURETY LICENSED IN THE STATE OF MICHIGAN, DATED FROM THE TIME OF ACCEPTANCE BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS, FOR 100% OF THE CONSTRUCTION COSTS.

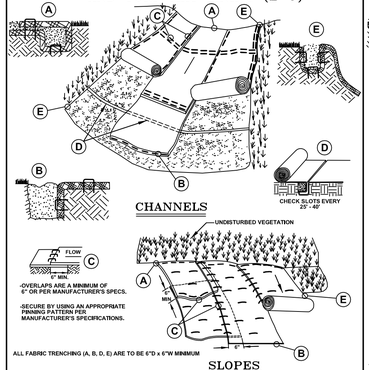
8. SANITARY SERVICES

A. ALL PIPE AND FITTINGS FOR SANITARY SERVICES SHALL BE PVC SOLID PLASTIC PIPE AND FITTINGS, SCHEDULE 40 (ASTM D1785 AND ASTM D2466), SIX INCH (6") DIAMETER, WITH SLEEVE COUPLING TYPE "SC" WELDED JOINTS (ASTM D2672). ALL SANITARY SERVICE PIPE AND FITTINGS FOR CONNECTION TO PVC SANITARY SEWER MAINS SHALL BE OF THE SAME MATERIAL AS THE MAIN LINE SEWER. CONNECTION TO EXISTING SEWERS WITH DISSIMILAR PIPE MATERIAL SHALL BE MADE WITH ROMAC (NON–PROTRUDING) SERVICE SADDLE WITH STAINLESS STEEL FERNCO AND FLEXIBLE COUPLINGS OR APPROVED EQUAL.

B. SIX INCH (6") DIAMETER SANITARY SERVICE RISERS SHALL BE INSTALLED WITH AN EIGHT INCH (8") DIAMETER PIPE SLEEVE, FULL LENGTH OF THE RISER, WHEN THE SERVICE CONNECTION DEPTH EXCEEDS FIFTEEN FEET (15') FROM FINISH GRADE. EIGHT INCH (8") DIAMETER PIPE SLEEVES, WHEN REQUIRED, SHALL BE CORRUGATED PVC SEWER PIPE WITH A SMOOTH INTERIOR SURFACE (ASTM F949).

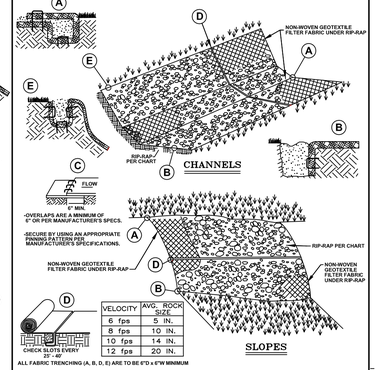
C. SANITARY SERVICE CONNECTIONS TO EXISTING SEWER PIPE SHALL BE MADE B

EROSION CONTROL BLANKETS AND TURF MAT LINING (E-9)



DEPENDING ON THE VELOCITY, SLOPE, SOILS, USE PROPER BLANKET OR TURF MAT LINING PER MANUFACTURER'S SPECIFICATIONS TO HANDLE THE SHEER STRESSES OF THE SLOPE/CHANNEL.

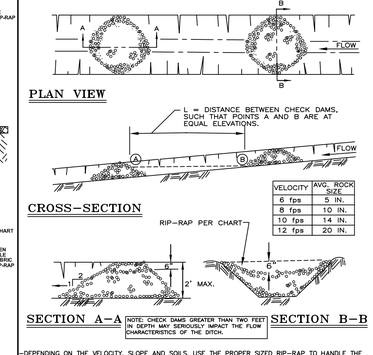
RIP-RAP: CHANNELS AND SLOPES (E-10)



VELOCITY	AVG. ROCK SIZE
6 fps	5 IN.
8 fps	10 IN.
10 fps	14 IN.
12 fps	20 IN.

DEPENDING ON THE VELOCITY, SLOPE AND SOILS, USE THE PROPER SIZED RIP-RAP AND NON-WOVEN GEOTEXTILE FABRIC TO HANDLE THE SHEER STRESS OF THE SLOPE/CHANNEL.

CHECK DAMS (E-3)



VELOCITY	AVG. ROCK SIZE
6 fps	5 IN.
8 fps	10 IN.
10 fps	14 IN.
12 fps	20 IN.

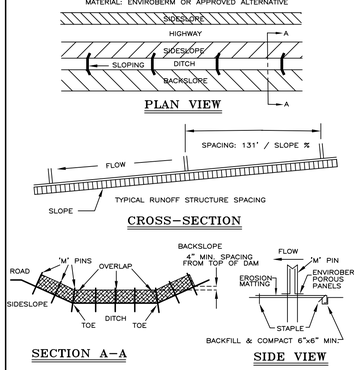
NOTE: CHECK DAMS GREATER THAN TWO FEET IN DEPTH MAY SERIOUSLY IMPACT THE FLOW CHARACTERISTICS OF THE DITCH.

-DEPENDING ON THE VELOCITY, SLOPE AND SOILS, USE THE PROPER SIZED RIP-RAP TO HANDLE THE SHEER STRESS OF THE SLOPE/CHANNEL.

-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

CHECK DAMS ALTERNATIVE "A" (E-3A)

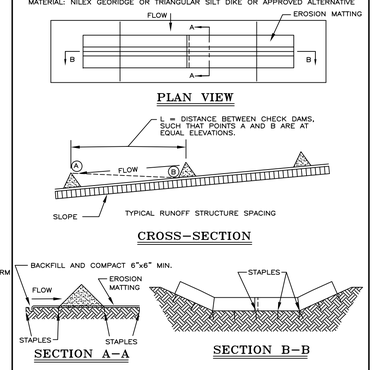
MATERIAL: ENVIROBERM OR APPROVED ALTERNATIVE



-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

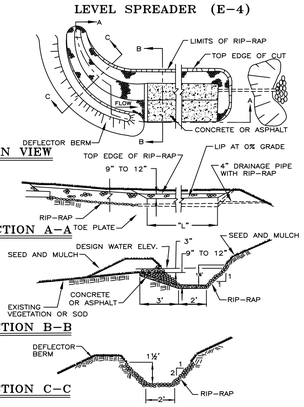
CHECK DAMS ALTERNATIVE "B" (E-3B)

MATERIAL: NILEX GEORIDGE OR TRIANGULAR SILT DIKE OR APPROVED ALTERNATIVE

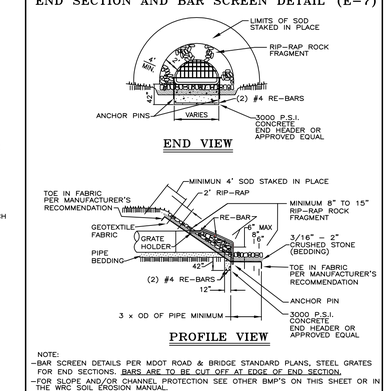


-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

LEVEL SPREADER (E-4)



RIP-RAP, END SECTION AND BAR SCREEN DETAIL (E-7)

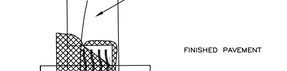


NOTE:
-BAR SCREEN DETAILS PER MDOT ROAD & BRIDGE STANDARD PLANS, STEEL GRATES FOR END SECTIONS; BARS ARE TO BE CUT OFF AT EDGE OF END SECTION.
-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

VEGETATIVE BUFFER ZONE (SP-1)

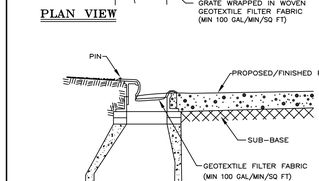
THE GRAPH SHOWN BELOW IS USED TO DETERMINE THE ADEQUACY OF AN EXISTING VEGETATIVE BUFFER ZONE FOR USE AS A SEDIMENT FILTER. THIS GRAPH IS ONLY APPLICABLE IF THE VEGETATION IS 90% DENSE AND AT LEAST 1" IN LENGTH OVER EVERY SQUARE FOOT OF DISTURBED SOIL. AN AREA COVERED WITH WEEDS, OR BUSHES AND TREES WITHOUT A GOOD GROUND COVER IS NOT ACCEPTABLE.

EXAMPLE



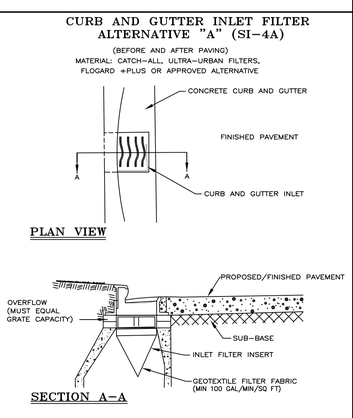
LENGTH OF BUFFER ZONE ?
% OF SLOPE OF BUFFER ZONE = 5%
WHAT IS THE ACCEPTABLE LENGTH OF THE BUFFER ZONE?

PLOT IN GRAPH BELOW
BUFFER ZONE IS ACCEPTABLE AT 65'



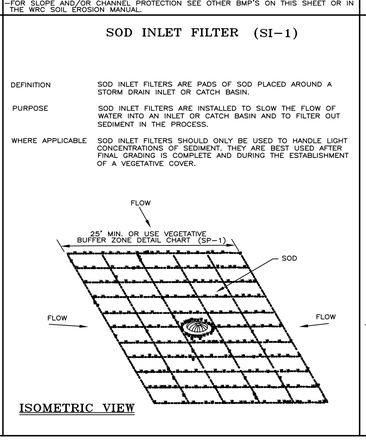
SILT FENCE (SP-2)

(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)



SILT FENCE ALTERNATIVE "A" (SP-2A)

(MATERIAL: SILT SHIELD OR APPROVED EQUIVALENT)



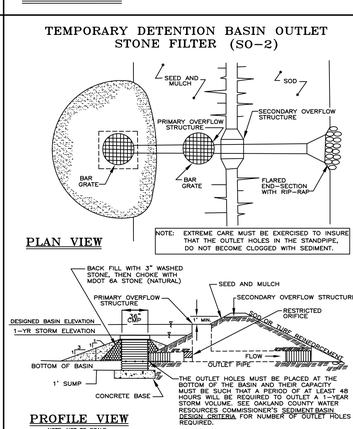
2% GRADE MAXIMUM SLOPE

Splicing Procedure:
Splicing EXTRUDED SEDIMENT FILTER FENCE is achieved beginning with an overlap of a min. of 6" of the EXTRUDED SEDIMENT FILTER FENCE ends being spliced. Fold over plastic retainer rod push-in fasteners to locate these ends with one another vertically, at least 3" from each edge of the splice.

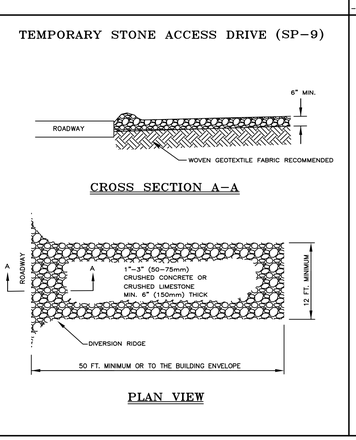
Optional Heat Splicing:
Overlap a minimum of 6" and, holding the upper of EXTRUDED SEDIMENT FILTER FENCE with torch from top to bottom, immediately press both layers together for a minimum of 5 second. Check for total lamination from top to bottom of material. (Do not apply heat to filter)

WINTER/FROZEN GROUND SILT FENCE (SP-2W)

(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)

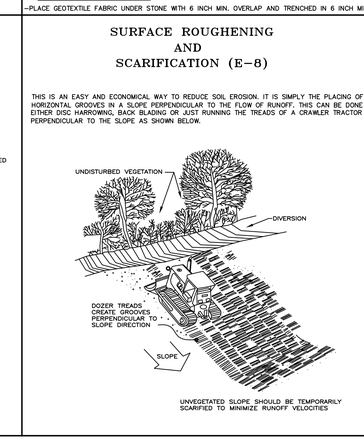


RYCB INLET FILTER (SI-3)



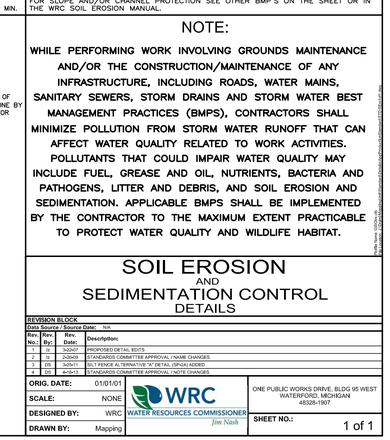
NOTE: MATERIAL IS NOT SILT FENCE MATERIAL

RYCB INLET FILTER ALTERNATIVE "A" (SI-3A)



RYCB INLET FILTER ALTERNATIVE "B" (SI-3B)

MATERIAL: SILT SAVER OR APPROVED ALTERNATIVE



(NOTE: NO PIT REQUIRED WHEN FRAME AND COVER OR GRATE AND COVER ARE IN PLACE.)

EARTH DIVERSION BERM WITH STONE OUTLET FILTER (SP-4)

EARTH DIVERSION BERM (E-2)

GRAVEL INTERCEPTOR DIKE (SP-6)

-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN. -FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

LOW POINT INLET FILTER (SI-2)

ALTERNATIVE INLET FILTER MUST BE USED IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING.

LOW POINT INLET FILTER ALT. "A" (SI-2A)

MATERIAL: CATCH-ALL, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE

SILT FENCE GRAVEL FILTER (SP-3)

-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.

DITCH SEDIMENT TRAP (SO-4)

NOTE:
-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THE SHEET OR IN THE WRC SOIL EROSION MANUAL.

CURB AND GUTTER INLET FILTER (SI-4)

(BEFORE AND AFTER PAVING)

ALTERNATIVE INLET FILTER MUST BE USED IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING.

CURB AND GUTTER INLET FILTER ALTERNATIVE "A" (SI-4A)

(BEFORE AND AFTER PAVING)

MATERIAL: CATCH-ALL, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE

SOD INLET FILTER (SI-1)

DEFINITION	SOD INLET FILTERS ARE PADS OF SOD PLACED AROUND A STORM DRAIN INLET OR CATCH BASIN.
PURPOSE	SOD INLET FILTERS ARE INSTALLED TO SLOW THE FLOW OF WATER INTO AN INLET OR CATCH BASIN AND TO FILTER OUT SEDIMENT IN THE PROCESS.
WHERE APPLICABLE	SOD INLET FILTERS SHOULD ONLY BE USED TO HANDLE LIGHT CONCENTRATIONS OF SEDIMENT. THEY ARE BEST USED AFTER FINAL GRADING IS COMPLETE AND DURING THE ESTABLISHMENT OF A VEGETATIVE COVER.

TEMPORARY DETENTION BASIN OUTLET STONE FILTER (SO-2)

TEMPORARY STONE ACCESS DRIVE (SP-9)

SURFACE ROUGHENING AND SCARIFICATION (E-8)

THIS IS AN EASY AND ECONOMICAL WAY TO REDUCE SOIL EROSION. IT IS SIMPLY THE PLACING OF HORIZONTAL GROOVES IN A SLOPE PERPENDICULAR TO THE FLOW OF RUNOFF. THIS CAN BE DONE BY EITHER DISC HARROWING, BACK BLADING OR JUST RUNNING THE TREADS OF A CRAWLER TRACTOR PERPENDICULAR TO THE SLOPE AS SHOWN BELOW.

UNVEGETATED SLOPE SHOULD BE TEMPORARILY SCARIFIED TO MINIMIZE RUNOFF VELOCITIES

NOTE:

WHILE PERFORMING WORK INVOLVING GROUNDS MAINTENANCE AND/OR THE CONSTRUCTION/MAINTENANCE OF ANY INFRASTRUCTURE, INCLUDING ROADS, WATER MAINS, SANITARY SEWERS, STORM DRAINS AND STORM WATER BEST MANAGEMENT PRACTICES (BMPS), CONTRACTORS SHALL MINIMIZE POLLUTION FROM STORM WATER RUNOFF THAT CAN AFFECT WATER QUALITY RELATED TO WORK ACTIVITIES. POLLUTANTS THAT COULD IMPAIR WATER QUALITY MAY INCLUDE FUEL, GREASE AND OIL, NUTRIENTS, BACTERIA AND PATHOGENS, LITTER AND DEBRIS, AND SOIL EROSION AND SEDIMENTATION. APPLICABLE BMPS SHALL BE IMPLEMENTED BY THE CONTRACTOR TO THE MAXIMUM EXTENT PRACTICABLE TO PROTECT WATER QUALITY AND WILDLIFE HABITAT.

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

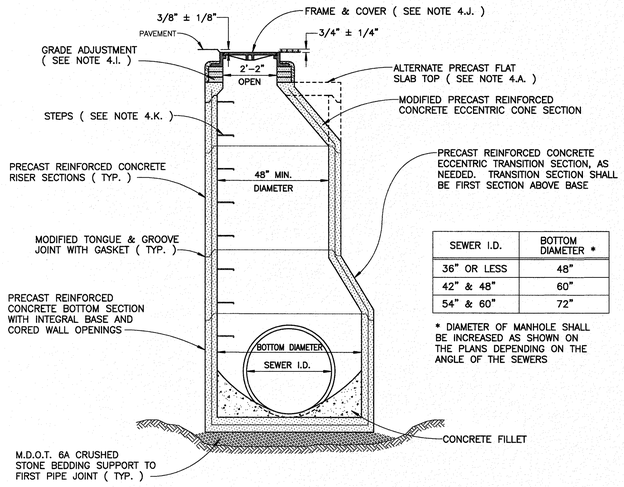
REVISION BLOCK			
Date Source / Source Date:		N/A	
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	W	3-23-07	PROPOSED DETAIL EDITS
2	W	3-29-07	STANDARDS COMMITTEE APPROVAL / NAME CHANGES
3	SS	3-29-11	SILT FENCE ALTERNATIVE "A" DETAIL (SP-2A) ADDED
4	DS	4-16-13	STANDARDS COMMITTEE APPROVAL / NOTE CHANGES

ORIG. DATE:	01/01/01
SCALE:	NONE
DESIGNED BY:	WRC
DRAWN BY:	Mapping

WRC WATER RESOURCES COMMISSIONER
Jim Nash

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

SHEET NO.: 1 of 1

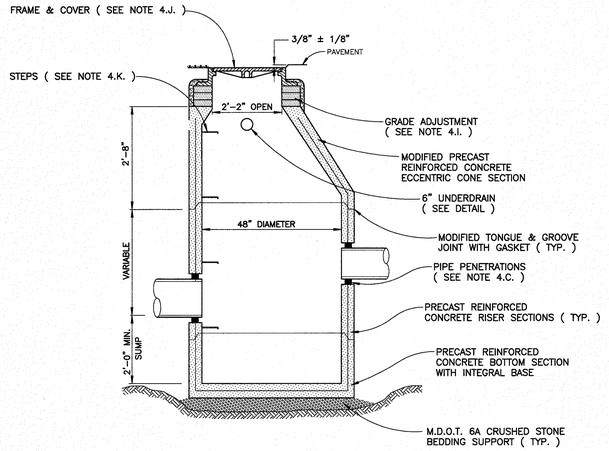


SEWER I.D.	BOTTOM DIAMETER *
36" OR LESS	48"
42" & 48"	60"
54" & 60"	72"

* DIAMETER OF MANHOLE SHALL BE INCREASED AS SHOWN ON THE PLANS DEPENDING ON THE ANGLE OF THE SEWERS

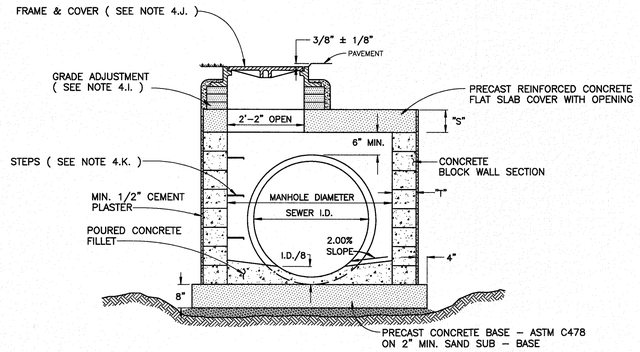
STORM SEWER MANHOLE

NOT TO SCALE



CATCH BASIN

NOT TO SCALE



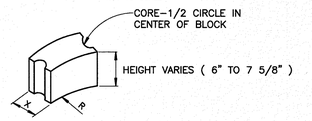
SEWER I.D.	MANHOLE DIAMETER *	TOP SLAB "S"	WALL "T"
36" OR LESS	48"	9"	12"
42"	60"	10"	12"
48" – 54"	72"	11"	12"
60" OR MORE	84" & 96"	12"	12"

* DIAMETER OF MANHOLE SHALL BE INCREASED AS SHOWN ON THE PLANS DEPENDING ON THE ANGLE OF THE SEWERS

CONCRETE BLOCK MANHOLE

ONLY TO BE USED WITH WRITTEN APPROVAL FROM THE COMMUNITY

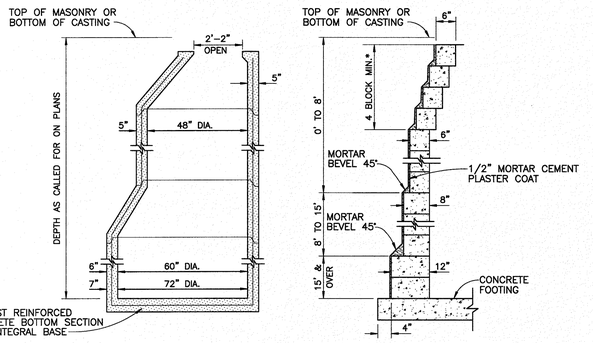
NOT TO SCALE



STRUCTURE DIAMETER	R	X
2'–0"	1'–0"	6"
3'–0"	1'–6"	6" OR 8"
4'–0"	2'–0"	6", 8" OR 12"

CONCRETE BLOCKS FOR DRAINAGE STRUCTURES

NOT TO SCALE



TYPICAL PRECAST CONCRETE SECTION

TYPICAL CONCRETE BLOCK SECTION

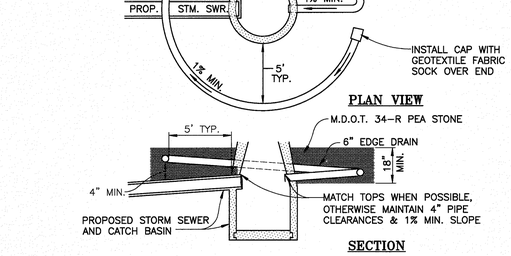
* 6 BLOCK MIN. FOR 5'–0" DIA. STRUCTURE ONLY TO BE USED WITH WRITTEN APPROVAL FROM THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS

TYPICAL WALL SECTIONS FOR ALL DRAINAGE STRUCTURES

NOT TO SCALE

STORM SEWER MANHOLE TEE

NOT TO SCALE

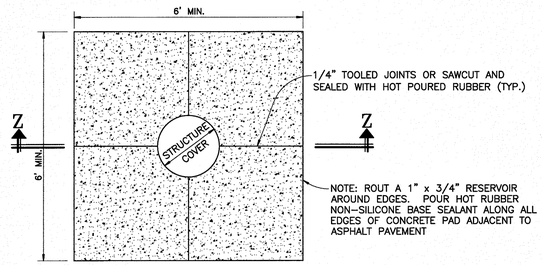


SECTION

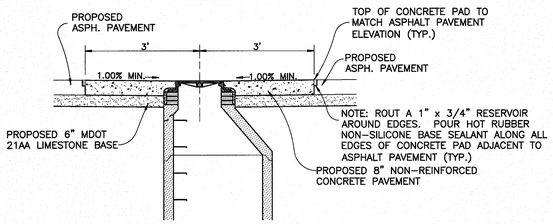
UNDERDRAIN DETAIL IN GRASS AREAS

NOT TO SCALE

PLAN VIEW



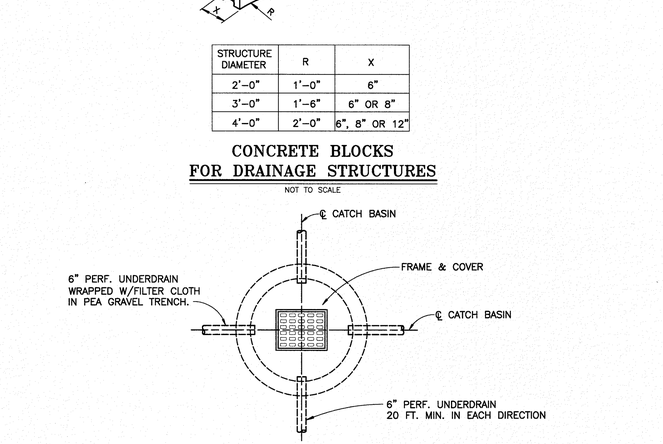
PLAN VIEW



SECTION Z–Z

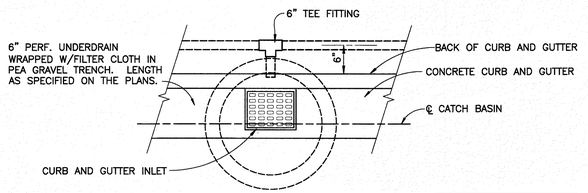
CONCRETE PAD DETAIL AT STRUCTURE IN ASPHALT PAVEMENT

NOT TO SCALE



CATCH BASIN UNDERDRAIN IN PARKING LOT

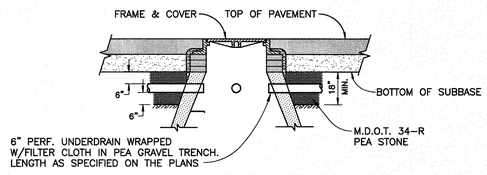
NOT TO SCALE



CATCH BASIN UNDERDRAIN ALONG CURB

MIN. 42" UNDER ROADS, OTHERWISE CITY APPROVAL IS REQUIRED

NOT TO SCALE



UNDERDRAIN DETAIL

NOT TO SCALE

ANDERSON, ECKSTEIN AND WESTRICK, INC.
CIVIL ENGINEERS SURVEYORS ARCHITECTS
51301 Schoenherr Road
Shelby Township
Michigan 48315
Phone 586 726 1234
Fax 586 726 8780
www.aewinc.com
ENGINEERING STRONG COMMUNITIES

DATE	SUBMITTALS/REVISIONS

DRAWN BY:	CHECKED BY:	DATE:
MJS	AAP	JANUARY 2021

M:\COMMUNITIES\ROCHESTER\PLANS\STDDETAILS\2020\STORM_1.DWG
Model—2/1/2021 12:28:14 PM

STATE OF MICHIGAN
ASEEL A. PUTROS
ENGINEER
NO. 55083
LICENSED PROFESSIONAL ENGINEER

ASEEL A. PUTROS P.E. NO. 55083

DEPARTMENT OF PUBLIC WORKS

APPROVED BY: Jeremy Richert, Assistant DPW Director

DATE: 4/6/2021

CITY OF ROCHESTER

STANDARD STORM SEWER DETAILS (1 OF 2)

SHEET NO.

STM1

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GENERAL NOTES

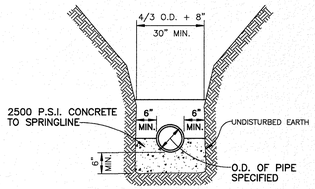
1. STANDARDS AND SPECIFICATIONS

A. ALL STORM SEWER AND STORM DRAINAGE SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS, THE OAKLAND COUNTY WATER RESOURCES COMMISSION, THE ROAD COMMISSION OF OAKLAND COUNTY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AS APPLICABLE. CONSTRUCTION AND MATERIALS SHALL ALSO CONFORM TO THE APPLICABLE CURRENT ASTM STANDARD SPECIFICATION OR PRACTICE, WHEN REFERENCED.

B. ANY MATERIALS OTHER THAN THOSE LISTED ON THE STANDARD DETAIL SHEETS MUST BE APPROVED IN WRITING BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. CONTRACTOR MUST SUBMIT THREE (3) COPIES OF SHOP DRAWINGS AND SPECIFICATIONS FOR PROPOSED ALTERNATE MATERIAL TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS FOR REVIEW AS AN APPROVED EQUAL. DETERMINATION OF ACCEPTANCE BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS SHALL BE CONSIDERED FINAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REVIEW OF THE PROPOSED ALTERNATE MATERIAL AS AN APPROVED EQUAL.

C. ALL STORM SEWER AND STORM DRAINAGE SYSTEM CONSTRUCTION SHALL HAVE COMPETENT CONSTRUCTION OBSERVATION PROVIDED BY, OR CAUSED TO BE PROVIDED BY, THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH LIKE MATERIAL. ALL COSTS FOR LOCATING, SUPPORTING, REMOVING AND REPLACING, RELOCATING OR REPAIRING THESE UTILITIES SHALL BE BORNE BY THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE DEPTH AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES BEFORE ANY WORK IS STARTED. THE EXACT LOCATION OF EXISTING UTILITIES SHALL BE DETERMINED BY HAND DIGGING.



CONCRETE CRADLE

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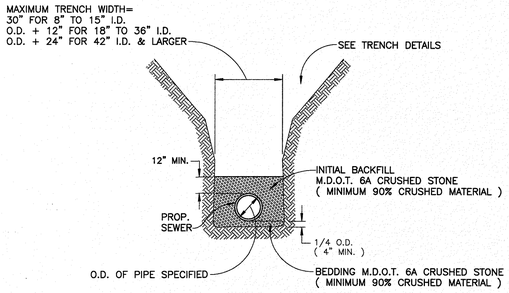

PLASTIC PIPE BEDDING DETAIL

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2. PRECONSTRUCTION REQUIREMENTS

A. THE DEVELOPER SHALL PROVIDE A BREAKDOWN OF CONSTRUCTION COST TO THE CITY OF ROCHESTER PUBLIC WORKS DEPARTMENT AND PAY ALL REQUIRED FEES PRIOR TO SCHEDULING A PRECONSTRUCTION MEETING.

B. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION MEETING AT A TIME AND PLACE AS ARRANGED BY THE CITY ENGINEER. THE CITY ENGINEER SHALL NOTIFY AFFECTED UTILITY COMPANIES AND GOVERNMENTAL AGENCIES A MINIMUM OF TEN (10) DAYS PRIOR TO THE PRECONSTRUCTION MEETING. THE OWNER'S ENGINEER SHALL SUBMIT APPROVED PLANS TO ALL UTILITY COMPANIES AND GOVERNMENTAL AGENCIES A MINIMUM OF TEN (10) DAYS PRIOR TO PRECONSTRUCTION MEETING.

C. THE CONTRACTOR SHALL NOTIFY MISS DIG AT (800) 482–7171 OR 811, THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AT (586) 949–0400 EXT. 3, AND ANDERSON, ECKSTEIN AND WESTRICK, INC. AT (586) 726–1234 THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY REPRESENTATIVES OF ANY OTHER FACILITIES, LOCATED IN THE VICINITY OF THE WORK, WHICH ARE NOT PARTICIPANTS OF THE MISS DIG SYSTEM. THE CONTRACTOR SHALL NOTIFY THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER'S OFFICE AT (248) 858–0958, AND THE ROAD COMMISSION OF OAKLAND COUNTY AT (586) 463–8671 TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

D. A OAKLAND COUNTY WATER RESOURCES COMMISSION, ROAD COMMISSION OF OAKLAND COUNTY, AND/OR MICHIGAN DEPARTMENT OF TRANSPORTATION PERMIT IS REQUIRED FOR ALL CONSTRUCTION WITHIN THEIR ROAD AND/OR DRAIN RIGHT–OF–WAYS AND/OR EASEMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL PERMITS AND BONDS PRIOR TO CONSTRUCTION, OR ENSURE THAT ALL REQUIRED PERMITS AND BONDS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION.

3. PIPE MATERIAL

A. ONLY NEW UNDAMAGED STORM SEWER PIPE SHALL BE USED. THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS SHALL HAVE THE RIGHT TO REJECT ANY OR ALL PIPE.

B. TWELVE INCH (12") AND LARGER PIPE SHALL BE REINFORCED CONCRETE CIRCULAR SEWER PIPE WITH MINIMUM WALL THICKNESS C (ASTM C76, CLASS IV). SIZE AND CLASS OF PIPE SHALL BE AS INDICATED ON THE PLANS. ALL REINFORCED CONCRETE SEWER PIPE SHALL BE CAST WITH REINFORCING STEEL EXTENDING INTO THE BELL. ALL JOINTS SHALL BE MODIFIED TONGUE AND GROOVE WITH GASKET (ASTM C361). GASKETS SHALL BE SYNTHETIC RUBBER. NATURAL RUBBER GASKETS ARE NOT ACCEPTABLE. ALL CONCRETE STORM SEWER THIRTY–SIX INCH (36") OR LARGER SHALL HAVE POINTED JOINTS.

C. THE FOLLOWING PLASTIC PIPE MAY ONLY BE USED WITH THE WRITTEN AUTHORIZATION OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AND WHEN THE PIPE WILL NOT BE SUBJECT TO CRUSHING LOADS FROM CONSTRUCTION EQUIPMENT AND PROPERTY MAINTENANCE AND A MINIMUM THREE FEET (3') OF COVER CAN BE MAINTAINED:

COMPOSITE (PVC TRUSS) PIPE:	POLYVINYL CHLORIDE (PVC) COMPOSITE (TRUSS) SEWER PIPE (ASTM D2680) WITH GASKETED JOINTS (ASTM D3212).
PVC SOLID WALL PIPE:	PVC TYPE PS–115 PLASTIC GRAVITY FLOW SEWER PIPE (ASTM F789), PVC SOLID PLASTIC PIPE, SCHEDULE 40 (ASTM D1785), OR PVC SOLID PLASTIC PIPE, SDR 26 (ASTM D3034) WITH GASKETED JOINTS (ASTM D3212).
CORRUGATED PVC:	CORRUGATED PVC SEWER PIPE WITH A SMOOTH INTERIOR SURFACE (ASTM F949) WITH GASKETED PUSH–ON JOINTS (ASTM D3212). GASKET SHALL BE A DOUBLE SEALING GASKET THAT INDEXES TWO (2) CORRUGATIONS. CORRUGATED PVC SEWER PIPE SHALL BE INSTALLED WITH CRUSHED STONE ENCASEMENT BEDDING.
PVC CLOSED PROFILE:	PVC CLOSED PROFILE GRAVITY SEWER PIPE (ASTM F1803) WITH BELL AND SPIGOT TYPE JOINTS WITH ELASTOMERIC SEALS (ASTM D3212). PVC CLOSED PROFILE GRAVITY PIPE SHALL BE INSTALLED WITH CRUSHED STONE ENCASEMENT BEDDING.
CORRUGATED POLYETHYLENE:	CORRUGATED POLYETHYLENE (PE) PIPE WITH A SMOOTH INTERIOR (ASTM F2306). WATERTIGHT PIPE JOINTS SHALL MEET A 10.8 PSI LABORATORY TEST PER ASTM D3212 AND UTILIZE A BELL AND SPIGOT DESIGN WITH A GASKET MEETING ASTM F477. BELL SHALL SPAN OVER THREE (3) SPIGOT CORRUGATIONS. ONLY TWELVE INCH (12") THROUGH TWENTY–FOUR INCH (24") PIPE WILL BE CONSIDERED.

4. DRAINAGE STRUCTURES

A. ALL NEW MANHOLES SHALL BE PRECAST REINFORCED CONCRETE, FLEXIBLE–JOINT TYPE (ASTM C478). THE TOP SECTION SHALL BE A MODIFIED ECCENTRIC CONE SECTION. ALTERNATELY, THE MANHOLE MAY BE CONSTRUCTED WITH A REINFORCED CONCRETE FLAT SLAB COVER (ASTM C478). THE BASE SECTION FOR EIGHT INCH (8") TO SIXTY INCH (60") DIAMETER SEWERS SHALL BE A PRECAST RISER SECTION WITH AN INTEGRAL BASE. JOINTS AND GASKETS SHALL BE MODIFIED TONGUE AND GROOVE (ASTM C443). ALL LIFTING HOLES SHALL BE FILLED WITH A NON–SHRINK TYPE MORTAR COMPOSED OF TYPE IIA CEMENT. NON–SHRINK TYPE MORTAR SHALL BE PRECO OR SEKA SET. NO LIME SHALL BE USED IN THE MORTAR. ALTERNATELY, THE BASE SECTION FOR SEWERS FORTY EIGHT INCHES (48") IN DIAMETER AND LARGER MAY BE A MANHOLE TEE (ASTM C76, CLASS IV MINIMUM).

NOTE: NEW MANHOLES MAY ALSO BE CONSTRUCTED WITH CONCRETE BLOCK AND MDOT TYPE R–2 MORTAR WITH A PRECAST CONCRETE BASE (ASTM C478) OR A POURED CONCRETE BASE (2500 PSI AT 28 DAYS). IF A PRECAST BASE IS USED, PLACE A MINIMUM TWO INCH (2") SAND SUB–BASE. THE EXTERIOR OF THE CONCRETE BLOCK DRAINAGE STRUCTURE SHALL HAVE A ONE–HALF INCH (½") MORTAR CEMENT PLASTER COAT. MANMADE STRUCTURES MAY ONLY BE USED WITH THE WRITTEN PERMISSION FROM THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

B. ALL NEW CATCH BASINS SHALL BE FORTY EIGHT INCH (48") DIAMETER (MINIMUM) PRECAST REINFORCED CONCRETE, FLEXIBLE–JOINT TYPE (ASTM C478). THE TOP SECTION SHALL BE A MODIFIED ECCENTRIC CONE SECTION. THE BASE SECTION SHALL BE A PRECAST RISER SECTION WITH AN INTEGRAL BASE. JOINTS AND GASKETS SHALL BE MODIFIED TONGUE AND GROOVE (ASTM C443). ALL LIFTING HOLES SHALL BE FILLED WITH A NON–SHRINK TYPE MORTAR COMPOSED OF TYPE IIA CEMENT. NON–SHRINK TYPE MORTAR SHALL BE PRECO OR SEKA SET. NO LIME SHALL BE USED IN THE MORTAR. ALL CATCH BASINS SHALL BE CONSTRUCTED WITH A TWO FOOT (2') SUMP (MINIMUM).

NOTE: NEW CATCH BASINS MAY ALSO BE CONSTRUCTED WITH CONCRETE BLOCK AND MDOT TYPE R–2 MORTAR WITH A PRECAST CONCRETE BASE (ASTM C478) OR A POURED CONCRETE BASE (2500 PSI AT 28 DAYS). IF A PRECAST BASE IS USED, PLACE A MINIMUM TWO INCH (2") SAND SUB–BASE. THE EXTERIOR OF THE DRAINAGE STRUCTURE SHALL HAVE A ONE–HALF INCH (½") MORTAR CEMENT PLASTER COAT. MANMADE STRUCTURES MAY ONLY BE USED WITH THE WRITTEN PERMISSION FROM THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

C. PIPE PENETRATION JOINTS FOR NEW PRECAST REINFORCED DRAINAGE STRUCTURES SHALL BE A FLEXIBLE WATER–TIGHT JOINT, "KOR–N–SEAL" FOR SEWERS SIX INCH (6") THROUGH THIRTY INCH (30") IN DIAMETER AND "A–LOK" FOR SEWERS THIRTY–SIX INCH (36") IN DIAMETER AND LARGER. HOLES FOR PIPES SHALL BE CAST IN THE RISER SECTION SO AS TO PROVIDE A MINIMUM CLEARANCE OF TWO INCHES (2") BETWEEN THE INSIDE BOTTOM OF THE BASE SECTION AND THE OUTSIDE WALL OF THE PIPE. PIPE SHALL NOT EXTEND INTO A MANHOLE BEYOND THE INTERIOR FACE OF THE MANHOLE WALL.

D. EXISTING PRECAST DRAINAGE STRUCTURES SHALL BE TAPPED WITH THE "KOR–N–SEAL" METHOD, WITH A WATER–TIGHT RUBBER BOOT FOR SEWERS SIX INCH (6") THROUGH FIFTEEN INCH (15") IN DIAMETER. EXISTING BRICK DRAINAGE STRUCTURES, AND TAPS FOR SEWERS EIGHTEEN INCH (18") IN DIAMETER AND LARGER, SHALL HAVE HOLES DRILLED AT FOUR INCHES (4") CENTER TO CENTER AROUND THE PERIPHERY OF THE OPENING TO CREATE A PLANE OF WEAKNESS BEFORE BREAKING OUT THE SECTION. NON–SHRINK GROUT, PRECO OR SEKA SET, SHALL BE USED TO SEAL THE OPENING. A CONCRETE COLLAR SHALL BE POURED TWELVE INCHES (12") AROUND THE PIPE AND EXTEND TWELVE INCHES (12") EXTERIOR TO THE DRAINAGE STRUCTURE.

E. THE CONTRACTOR SHALL BE REQUIRED TO RECONSTRUCT ANY DRAINAGE STRUCTURE THAT IS DAMAGED WHILE BEING TAPPED.

F. FIELD TAPS SHALL NOT BE ALLOWED TO THE PIPE SECTION OF MANHOLE TEES. TAPPING OF RISER SECTIONS IS PERMITTED WITH THE WRITTEN AUTHORIZATION OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

G. ALL CONNECTIONS TO THE STORM SEWER SHALL BE MADE AT A MANHOLE OR CATCH BASIN. NO BLIND TAPS TO STORM SEWERS WILL BE ALLOWED FOR STORM SEWER OR SUMP LEAD CONNECTIONS.

H. ALL DRAINAGE STRUCTURES SHALL HAVE UNDERDRAIN, CONSTRUCTED IN ACCORDANCE WITH THE DETAILS ON SHEET STM 1.

I. FOR EXISTING DRAINAGE STRUCTURES GRADE ADJUSTMENTS SHALL BE MADE USING MDOT GRADE S–II CONCRETE BRICKS (ASTM C55) IN FULL MORTAR BED. MORTAR COAT ALL OPEN SPACES AND IRREGULARITIES ON THE INSIDE OF BRICKWORK TO FORM DRAINAGE STRUCTURE INTERIOR. MORTAR COAT ALL OPEN SPACES AND IRREGULARITIES ON THE OUTSIDE OF BRICKWORK. TAPER OUTSIDE MORTAR COAT A MINIMUM OF ONE PERCENT (1%) FROM THE FRAME FLANGE TO THE DRAINAGE STRUCTURE OUTSIDE DIAMETER. BRICKWORK AND MORTAR SHALL NOT OVERHANG BEYOND THE OUTSIDE DIAMETER OF THE DRAINAGE STRUCTURE. MORTAR SHALL BE MDOT TYPE R–2. MINIMUM ADJUSTMENT SHALL BE SIX INCHES (6") AND MAXIMUM SHALL BE TWELVE INCHES (12") UNLESS APPROVED IN WRITING BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

FOR NEW DRAINAGE STRUCTURES THE MINIMUM ADJUSTMENT SHALL BE SIX INCHES (6") AND MAXIMUM ADJUSTMENT SHALL BE TWELVE INCHES (12") UNLESS APPROVED IN WRITING BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. PRECAST ADJUSTMENT RINGS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. NO BRICK OR BLOCK SHALL BE ALLOWED FOR ADJUSTMENT COURSES UNLESS APPROVED IN WRITING BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. ADJUSTMENT RINGS SHALL NOT OVERHANGE BEYOND THE TOP OF THE RISER OR BASE OF THE COVER.

J. DRAINAGE STRUCTURE FRAMES AND COVERS SHALL BE AS FOLLOWS:

MANHOLE:	EJIW 1040Z WITH TYPE B COVER OR APPROVED EQUAL
CATCH BASIN (PAVEMENT TYPE): (CURB & GUTTER)	EJIW 5000Z4 DI / 5000M4 DI HINGED ASSEMBLY OR APPROVED EQUAL
CATCH BASIN (PAVEMENT TYPE): (PARKING AREAS)	EJIW 5100Z WITH 5105 TYPE M1 GRATE OR APPROVED EQUAL.
CATCH BASIN (YARD TYPE):	EJIW 1040Z WITH TYPE N GRATE OR APPROVED EQUAL
CATCH BASIN (SPECIAL):	EXISTING CURB AND GUTTER CONDITIONS EJIW 5000M4 DI / 5000Z4 DI (3) FLANGE HINGED ASSEMBLY OR APPROVED EQUAL FOR A.D.A. AREAS EJIW 5000M5 DI / 5000Z4 DI HINGED ASSEMBLY OR APPROVED EQUAL
SITE WITH DRAINAGE CONCERNS	EJIW 5375Z DOUBLE GRATE FRAME WITH 2 TYPE 5380 GRATES OR APPROVED EQUAL

K. STEPS SHALL BE M.A. INDUSTRIES P.S.I. POLYPROPYLENE OR MSU #360 ALU POLY MANHOLE STEPS AND INSTALLED AT SIXTEEN INCHES (16") CENTER TO CENTER SPACING. STEPS SHALL HAVE FOOT RECESS AND BE SUITABLY SCORED TO PROVIDE A NONSLIP SURFACE. BOTTOM STEP SHALL BE TWENTY–FOUR INCHES (24") MAXIMUM ABOVE FLOOR. TOP STEP SHALL BE TWENTY INCHES (24") MAXIMUM BELOW RIM. STEPS SHALL NORMALLY BE PROVIDED ON A BACK WALL OF THE DRAINAGE STRUCTURE FURTHEST FROM TRAFFIC. IF A DRAINAGE STRUCTURE IS INSTALLED AT A LOCATION WITHIN EXISTING TRAFFIC FLOW, STEPS SHALL BE PROVIDED SUCH THAT PERSONNEL WILL FACE ON–COMING TRAFFIC.

L. ALL STRUCTURES RECEIVING STORM RUN–OFF SHALL HAVE AT LEAST A TWO FOOT (2') SUMP.

5. CONSTRUCTION

A. NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWNSPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.

B. A MINIMUM VERTICAL CLEARANCE OF ONE AND ONE–HALF FEET (1–½') MUST BE MAINTAINED BETWEEN THE STORM SEWER AND ANY UTILITIES.

C. VERTICAL TOLERANCES FOR STRUCTURE RIM GRADES SHALL BE:

MANHOLE IN PAVEMENT	– 0.00 TO + 0.00 FEET
CATCH BASIN IN PAVEMENT	– 0.25 TO + 0.00 FEET
STRUCTURES IN R.O.W. AND/OR FRONT YARD	– 0.00 TO + 0.30 FEET
STRUCTURES IN REAR YARD	– 0.30 TO + 0.00 FEET

D. ALL SEWER PIPE SHALL BE LAID USING A LASER TO MAINTAIN GRADE AND ALIGNMENT.

E. ALL SEWER PIPE AND APPURTENANCES SHALL BE STAKED FOR LINE AND GRADE UNDER THE SUPERVISION OF A LICENSED LAND SURVEYOR OR A LICENSED ENGINEER. CUT SHEETS SHALL BE PROVIDED TO THE CITY ENGINEER AND THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. NO SEWER SHALL BE LAID WITHOUT STAKES.

F. ALL SEWER PIPE AND APPURTENANCES SHALL BE STAKED UNDER THE SUPERVISION OF A LICENSED LAND SURVEYOR OR A LICENSED ENGINEER. ALL SIGNIFICANT POINTS OF EACH ELEMENT SHALL BE LOCATED. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ALIGNMENT STAKES, OFFSET STAKES, CENTERLINE STAKES AND BENCHMARK REFERENCES. STAKES SHALL BE MARKED WITH ALIGNMENT AND ELEVATION / GRADE CONTROL. CUT SHEETS SHALL BE PROVIDED TO THE CITY ENGINEER AND THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. NO SEWER SHALL BE LAID WITHOUT STAKES.

G. ANY BUILDING CONNECTION OR SUMP PUMP LEAD SHALL CONNECT TO A CATCH BASIN OR MANHOLE, ALL SUMP PUMP LEAD CONNECTIONS TO PRECAST STRUCTURES SHALL BE CORED. SUMP LEADS SHALL BE A MINIMUM OF THREE INCH (3") PVC SCHEDULE 40 PIPE WITH FUSED JOINTS. NO BLIND TAPS WILL BE ALLOWED.

6. TESTING AND ACCEPTANCE

A. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS, EQUIPMENT AND PERSONNEL TO CONDUCT REQUIRED TESTING. THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS REPRESENTATIVE SHALL WITNESS ALL TESTS. ALL SEWER INSTALLATIONS SHALL BE COMPLETE PRIOR TO PERFORMING REQUIRED TESTS.

B. ALL CORRUGATED PVC SEWER PIPE (ASTM F949), PVC CLOSED PROFILE GRAVITY SEWER PIPE (ASTM F1803) AND CORRUGATED PE SEWER PIPE (ASTM 2306) FOR PUBLIC STORM SEWER INSTALLATIONS SHALL BE SUBJECT TO DEFLECTION TESTING, NO EARLIER THAN THIRTY (30) DAYS AFTER CONSTRUCTION, WITH A NINE (9) SIDED MANDREL. A PROVING RING, PROVIDED BY THE CONTRACTOR, SHALL BE AVAILABLE FOR ALL DEFLECTION TESTS. THE HORIZONTAL AND VERTICAL DEFLECTION AT THE TIME OF INITIAL TESTING SHALL NOT EXCEED FIVE PERCENT (5%). ANY SEWER FOUND EXCEEDING THESE LIMITS SHALL BE REPLACED BY AND AT THE CONTRACTOR'S EXPENSE.

C. THE CONTRACTOR SHALL PROVIDE FOR CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION OF ALL PUBLIC STORM SEWER INSTALLED. ALL PUBLIC STORM SEWER AND STRUCTURES INSTALLED SHALL BE CLEANED, BY AND AT THE CONTRACTOR'S EXPENSE, IMMEDIATELY PRIOR TO CCTV INSPECTION TO ENSURE THE SEWERS ARE FREE OF DEBRIS. THE INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT GUIDELINES OF THE NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES (NASSCO). ALL CCTV INSPECTION SHALL BE WITNESSED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS REPRESENTATIVE AND THE CONTRACTOR. ANY CCTV INSPECTION PERFORMED IN THE ABSENCE OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS REPRESENTATIVE WILL BE REJECTED.

D. THE COLOR CCTV CAMERA USED FOR THE INSPECTION SHALL BE ONE SPECIFICALLY DESIGNED AND CONSTRUCTED FOR SUCH INSPECTION. THE CAMERA, PAN AND TILT, SHALL BE OPERATIVE IN 100% HUMIDITY CONDITIONS, AND HAVE A HIGH RESOLUTION LENS CAPABLE OF SCANNING 360–DEGREES CIRCUMFERENCE AND 270–DEGREES ON A HORIZONTAL AXIS TO TELEVISE SEWERS. LIGHTING FOR THE CAMERA SHALL BE SUITABLE TO ALLOW A CLEAR PICTURE OF THE ENTIRE PERIPHERY OF THE PIPE. THE CAMERA, TELEVISION MONITOR, AND OTHER COMPONENTS OF THE VIDEO SYSTEM SHALL BE CAPABLE OF PRODUCING PICTURE QUALITY TO THE SATISFACTION OF THE OWNER.

E. ALL CCTV REPORTS, LOGS, AND VIDEOS SHALL BE CAPABLE OF BEING INTEGRATED IN ARCGIS AND SHALL BE SAVED ELECTRONICALLY ON FLASH DRIVES OR PORTABLE HARD DRIVES. EACH MANHOLE TO MANHOLE SECTION SHALL BE ON A SEPARATE VIDEO FILE. THE FILES SHALL NOT CONTAIN ANY COPY PROTECTION. THE OWNER SHALL BE ABLE TO MAKE COPIES OF THE FOOTAGE.

F. THE PROJECT NAME, DATE, TIME, FOOTAGE COUNTER AND STRUCTURE TO STRUCTURE SECTION SHALL BE DISPLAYED CONTINUOUSLY. THE CAMERA SHALL BE MOVED THROUGH THE SEWER AT A RATE OF SPEED NOT TO EXCEED THIRTY FEET (30') PER MINUTE, STOPPING WHEN NECESSARY TO PERMIT PROPER AUDIO AND VIDEO DOCUMENTATION OF THE SEWER'S CONDITION. THE CAMERA SHALL BE STOPPED IMMEDIATELY ADJACENT TO ALL POINTS OF INFILTRATION, CRACKED OR BROKEN PIPE, DEFECTIVE JOINTS, MISALIGNMENT IN LINE OR GRADE AND LOCATION OF SERVICE CONNECTIONS. THE CAMERA SHALL BE ROTATED TO ALLOW VIEWING OF THE PROBLEM AREA OR INTO THE SERVICE CONNECTION. A REPORT DETAILING ALL NOTES, WYE LOCATIONS, AND OTHER PERTINENT INFORMATION SHALL BE MADE AS A PART OF THE CCTV INSPECTION IN ACCORDANCE WITH NASSCO'S PACP. THE REPORT SHALL BE PRODUCED USING CCTV INSPECTION SOFTWARE PROVIDED BY A NASSCO PACP CERTIFIED VENDOR. ALL CCTV REPORTS SHALL BE DOWNLOADED OR RECORDED ON BOARD THE CCTV VEHICLE. FORMATTING AND LAYOUT, I.E. OBSERVATIONS AND DEFECT CODES SHALL BE NASSCO PACP STANDARD.

G. THE CONTRACTOR SHALL SUBMIT TWO (2) FLASH DRIVES OR PORTABLE HARD DRIVES CONTAINING A DIGITAL COPY OF INSPECTION REPORTS TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS UPON COMPLETION OF THE CCTV INSPECTION. ALL DIGITAL COPIES OF THE REPORTS AND LOGS SHALL BE IN PDF FORMAT.

H. ANY DEFECTS NOTED DURING TESTING AND/OR CCTV INSPECTION SHALL BE SATISFACTORILY REPAIRED OR REPLACED, BY AND AT THE CONTRACTORS EXPENSE, AND WITNESSED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. DEFECTS SHALL INCLUDE, BUT NOT BE LIMITED TO CRACKED OR BROKEN PIPE, DEFECTIVE JOINTS, MISALIGNMENT IN LINE OR GRADE, AND VISIBLE LEAKS OR INFILTRATION. ADDITIONAL TESTING AND CCTV INSPECTION SHALL BE PERFORMED AT EACH AFFECTED SEGMENT, FROM MANHOLE TO MANHOLE, SUBSEQUENT TO REPAIR AND/OR REPLACEMENT.

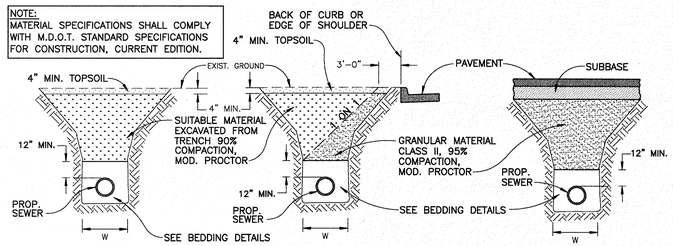
I. BEFORE ACCEPTANCE A FINAL REVIEW MUST BE MADE BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AND/OR CITY ENGINEER.

7. PROJECT BONDS, INSURANCE AND REGISTRATION

A. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL BE REGISTERED AT THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS FOR THE YEAR THAT THE WORK IS BEING PERFORMED.

B. PRIOR TO THE PRE–CONSTRUCTION MEETING, THE CONTRACTOR SHALL PROVIDE CONTRACTUAL LIABILITY INSURANCE TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. THE INSURANCE SHALL BE MAINTAINED THROUGHOUT THE TERM OF THE PROJECT.

C. THE CONTRACTOR SHALL PROVIDE A TWO (2) YEAR MAINTENANCE AND GUARANTEE PERFORMANCE AND PAYMENT BOND TO THE CITY OF ROCHESTER FROM A SURETY LICENSED IN THE STATE OF MICHIGAN, DATED FROM THE TIME OF ACCEPTANCE BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS, FOR 100% OF THE CONSTRUCTION COSTS.



W = TRENCH WIDTH FROM BEDDING DETAIL.

PROP. STORM SEWER NOT UNDER ROADBED

TRENCH DETAIL "A"

PROP. STORM SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED

TRENCH DETAIL "B"

TRENCH DETAILS

NOT TO SCALE

ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS

51301 Schoenherr Road
Shelby Township
Michigan 48315

Phone 586 726 1234
Fax 586 726 8780

www.aewinc.com

ENGINEERING STRONG COMMUNITIES

DATE	SUBMITTALS/REVISIONS

DRAWN BY:	CHECKED BY:	DATE:
MJS	AAP	JANUARY 2021

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STATE OF MICHIGAN
ASEEL A. PUTROS
ENGINEER
NO. 55083
LICENSED PROFESSIONAL ENGINEER

ASEEL A. PUTROS P.E. NO. 55083

DEPARTMENT OF PUBLIC WORKS

APPROVED BY: Jeremy Pickert, Assistant DPW Director

DATE: 4/6/2021

CITY OF ROCHESTER

STANDARD STORM SEWER DETAILS (2 OF 2)

SHEET NO.

STM2

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GENERAL NOTES

1. STANDARDS AND SPECIFICATIONS

A. ALL WATER MAIN AND WATER SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AND THE GREAT LAKES WATER AUTHORITY (GLWA). DETAILED WRITTEN SPECIFICATIONS ARE AVAILABLE UPON REQUEST.

B. ANY MATERIALS OTHER THAN THOSE LISTED ON THE STANDARD DETAIL SHEETS MUST BE APPROVED IN WRITING BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. CONTRACTOR MUST SUBMIT THREE (3) COPIES OF SHOP DRAWINGS AND SPECIFICATIONS FOR PROPOSED ALTERNATE MATERIAL TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS FOR REVIEW AS AN APPROVED EQUAL. DETERMINATION OF ACCEPTANCE BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS SHALL BE CONSIDERED FINAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REVIEW OF SHOP DRAWINGS AND THE PROPOSED ALTERNATE MATERIAL AS AN APPROVED EQUAL, PAYMENT SHALL BE PRIOR TO THE FIRST REVIEW.

2. PRECONSTRUCTION REQUIREMENTS

A. THE DEVELOPER SHALL PROVIDE A BREAKDOWN OF CONSTRUCTION COSTS TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AND PAY ALL REQUIRED FEES PRIOR TO SCHEDULING A PRECONSTRUCTION MEETING.

B. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION MEETING AT A TIME AND PLACE AS ARRANGED BY THE CITY ENGINEER. THE CITY ENGINEER SHALL NOTIFY AFFECTED UTILITY COMPANIES AND GOVERNMENTAL AGENCIES A MINIMUM OF TEN (10) DAYS PRIOR TO THE PRECONSTRUCTION MEETING. THE OWNER'S ENGINEER SHALL SUBMIT APPROVED PLANS TO ALL UTILITY COMPANIES AND GOVERNMENTAL AGENCIES A MINIMUM OF TEN (10) DAYS PRIOR TO THE PRECONSTRUCTION MEETING. CONSTRUCTION SHALL START WITHIN TWO (2) WEEKS OF THE MEETING UNLESS WAIVED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

C. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION, OR INSURE THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION.

D. THE CONTRACTOR SHALL NOTIFY MISS DIG AT (800) 482-7171, THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AT (248) 651-5165 AND ANDERSON, ECKSTEIN AND WESTRICK, INC. AT (586) 726-1234 THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY REPRESENTATIVES OF ANY OTHER FACILITIES, LOCATED IN THE VICINITY OF THE WORK, WHICH ARE NOT PARTICIPANTS OF THE MISS DIG SYSTEM.

3. PIPE MATERIAL

A. DUCTILE IRON PIPE WITH EXTERIOR ASPHALTIC MATERIAL COATING SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C151/A21.51 CURRENT SPECIFICATIONS FOR DUCTILE-IRON PIPE, CENTRIFUGALLY CAST, FOR WATER. DUCTILE IRON PIPE SHALL BE SPECIAL THICKNESS CLASS 54 FOR PUSH-ON-JOINT DUCTILE-IRON PIPE. DUCTILE IRON PIPE SHALL BE DOUBLE CEMENT LINED WITH ASPHALTIC MATERIAL SEAL COATING, MEETING THE REQUIREMENTS OF ANSI/AWWA C104/A21.4 CURRENT SPECIFICATIONS FOR CEMENT-MORTAR LINING FOR DUCTILE-IRON PIPE AND FITTINGS FOR WATER. PUSH-ON JOINTS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C111/A21.11 CURRENT SPECIFICATIONS FOR RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS. PUSH ON JOINTS SHALL BE TYTON OR SUPER BELLTITE WITH SERRATED BRASS WEDGES. 6" THROUGH 12" PIPE REQUIRES TWO (2) WEDGES PER JOINT, 16" AND LARGER REQUIRES FOUR (4) WEDGES PER JOINT.

4. HYDRANTS

A. HYDRANTS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C502 CURRENT SPECIFICATIONS FOR DRY-BARREL FIRE HYDRANTS. HYDRANTS SHALL BE CITY OF ROCHESTER STANDARD EAST JORDAN IRON WORKS MODEL 58R-250 WATERMASTER WITH PENTAGON OPERATING NUT MEASURING 1-1/2" POINT TO FLAT AND BREAKAWAY FLANGE. THE CONTRACTOR SHALL PLUG ANY HYDRANT DRAIN HOLES. ALL BOLTS, FROM HYDRANT TEE TO BREAKAWAY FLANGE, INCLUSIVE, SHALL BE STAINLESS STEEL.

B. HYDRANTS SHALL OPEN COUNTER CLOCKWISE AND BE SUPPLIED WITH TWO (2) – HARRINGTON FOUR INCH (4") STORZ PORT GRAY PUMPER NOZZLES HAVING DETROIT FIRE DEPARTMENT (DFD) STANDARD THREAD.

C. HYDRANTS SHALL HAVE A MINIMUM BURY OF FIVE FEET SIX INCHES (5.5') FROM FINISH GRADE TO BOTTOM INLET INVERT WITH A MINIMUM GROUND CLEARANCE FROM CENTER OF PUMPER NOZZLE TO FINISH GRADE OF EIGHTEEN INCHES (18") AND FROM CENTER OF BASE FLANGE TO FINISH GRADE OF SIX INCHES (6") MINIMUM, 12 INCHES (12") MAXIMUM.

D. PRIOR TO FINAL ACCEPTANCE BY THE CITY, ALL HYDRANTS MUST BE DEWATERED AND PAINTED. HYDRANT DEWATERING MUST BE OBSERVED BY A FIRE DEPARTMENT OR WATER DEPARTMENT REPRESENTATIVE. THE HYDRANT BODY AND BONNET SHALL BE PAINTED WITH MARINE ENAMEL, COLOR RED. THE "STORZ" CAPS ARE TO REMAIN UNPAINTED. THE BONNET FLANGE SHALL BE PAINTED WITH MARINE ENAMEL IN THE COLOR SPECIFIED BY THE CITY. THE BONNET FLANGE PAINT SHALL BE FINISHED WITH GLASS, REFLECTIVE BEADS. BEADS SHALL BE IN ACCORDANCE WITH M.D.O.T. SPECIFICATIONS.

E. HYDRANTS SHALL BE OF THE "T" TYPE CONNECTION UNLESS OTHERWISE SPECIFIED ON THE PLANS OR DIRECTED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. HYDRANT PUMPER NOZZLE(S) SHALL FACE THE ROAD CENTERLINE IN PUBLIC RIGHT-OF-WAYS OR FACE THE DIRECTION OF FIRE EQUIPMENT ACCESS ON PRIVATE DEVELOPMENTS. HYDRANTS SHALL BE SET TO THE PROPOSED PLAN GRADE ELEVATION UNLESS OTHERWISE AUTHORIZED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. ALL VERTICAL EXTENSIONS REQUIRED TO OBTAIN THE DESIRED GRADE SHALL BE INCLUDED IN THE COST OF THE HYDRANT.

F. WHEN THE EXISTING GROUND IS HIGHER THAN THE ROAD CENTERLINE, THE HYDRANT SHALL BE EXTENDED UPWARD (FROM ROAD CENTERLINE) BY INSERTING BARREL EXTENSIONS BETWEEN THE HEAD AND THE TOP BARREL FLANGE. (THE PURPOSE OF THIS REQUIREMENT IS TO PROVIDE FOR FUTURE LOWERING OF THE HYDRANT TO THE ELEVATION OF THE ROAD CENTERLINE). HYDRANT EXTENSIONS SHALL BE INCIDENTAL TO HYDRANT ASSEMBLY.

G. HYDRANTS SHALL BE SET ON THE PROPERTY LINE SIDE OF THE DITCH SO THEY ARE NOT IN THE DITCH LINE OR BACK SLOPE OF DITCH.

H. WHEN HYDRANTS AND VALVES ARE INSTALLED IN OPEN DITCH AREAS, CULVERTS WITH END SECTIONS SHALL ALSO BE INSTALLED TO ALLOW ACCESS. SIZING SHALL BE SUBJECT TO ROAD COMMISSION OF OAKLAND COUNTY AND/OR CITY ENGINEER'S APPROVAL.

5. GATE VALVES

A. GATE VALVES SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C509 CURRENT SPECIFICATIONS FOR RESILIENT-SEATED GATE VALVES FOR WATER SUPPLY SERVICE. THE VALVE SHALL BE CAST WITH AN EPOXY COATED DUCTILE IRON BODY AND BRONZE MOUNTED WITH A BRONZE NON-RISING STEM, TRIPLE "O"-RING REPLACEABLE SEALS AND MECHANICAL JOINTS. IT SHALL BE FURNISHED WITH A TWO INCH (2") SQUARE OPERATING NUT AND SHALL TURN COUNTER CLOCKWISE TO OPEN. GATE VALVE OPERATING NUT EXTENSIONS SHALL BE PROVIDED WITH STAINLESS BRACING, AS REQUIRED TO ASSURE THAT THE TOP OF THE OPERATING NUT IS NO GREATER THAN FIVE FEET (5') BELOW THE COVER. GATE VALVES SHALL BE EAST JORDAN IRON WORKS FLOWMASTER RESILIENT SEATED GATE VALVES OR MUELLER 2360 SERIES RESILIENT WEDGE GATE VALVES. ALL BOLTS SHALL BE STAINLESS STEEL COR-BLUE.

B. ALL GATE VALVES GREATER THAN TWENTY INCHES (20") SHALL BE SUPPLIED WITH A BYPASS IN ACCORDANCE WITH ANSI/AWWA C515 UNLESS OTHERWISE SPECIFIED BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. THE BYPASS VALVE SHALL BE A GATE VALVE CONFORMING TO THE REQUIREMENTS OF THESE STANDARDS. THE BYPASS VALVE SHALL BE INDEPENDENTLY SUPPORTED WITHIN THE VALVE CHAMBER AND THE OPERATING NUT MUST BE OPERABLE FROM ABOVE GRADE WITH STANDARD GATE KEY.

C. TAPPING VALVES SHALL CONFORM TO THE REQUIREMENTS OF GATE VALVES AS SPECIFIED IN THESE STANDARDS. THE VALVE SHALL BE CONSTRUCTED TO ALLOW A TAPPING MACHINE TO TAP DIRECTLY THROUGH THE OPEN VALVE. THE VALVE SHALL BE SUPPLIED WITH A FLANGED JOINT FOR CONNECTION TO THE TAPPING SLEEVE AND A MECHANICAL JOINT FOR CONNECTION TO THE BRANCH WATER MAIN. THE TAPPING SLEEVES SHALL BE DUCTILE IRON, SPLIT SLEEVES WITH MECHANICAL JOINTS AND A FLANGED OUTLET, OR STAINLESS STEEL TAPPING SLEEVE, SOLID BACK.

D. GATE VALVES AND TAPPING VALVES SHALL BE HOUSED WITHIN A PRECAST CONCRETE GATEWELL. PRECAST BOTTOM SECTIONS, RISER SECTIONS, CONCENTRIC TRANSITION SECTIONS SHALL CONFORM TO ASTM SPECIFICATION C478. HYDRANT VALVES SHALL BE HOUSED IN A CAST IRON VALVE BOX. VALVE BOX SHALL BE A THREE (3) PIECE SCREW TYPE BOX (5-1/4" SHAFT) WITH AN ENLARGED BASE.

E. GATEWELL FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS 1040Z FRAME TYPE "C" COVER WITH "CITY OF ROCHESTER WATER" IN RAISED LETTERS.

F. ALL END-OF-THE-LINE GATEWELLS SHALL HAVE A CAPPED STUB EXTENDING ONE FULL LENGTH OF PIPE BEYOND THE GATEWELL. THE VALVE, PIPE AND CAP SHALL BE INSTALLED WITH RETAINER GLANDS AND A CONCRETE THRUST BLOCK AT THE CAP. OAK MARKING IS REQUIRED FOR ALL END OF THE LINE GATE VALVES.

6. FITTINGS

A. ALL FITTINGS SHALL BE DUCTILE IRON AND MEET THE REQUIREMENTS OF ANSI/AWWA C153/A21.53 CURRENT SPECIFICATIONS FOR DUCTILE-IRON COMPACT FITTINGS FOR WATER SERVICE. FITTINGS SHALL BE CEMENT LINED WITH ASPHALTIC MATERIAL SEAL COATING MEETING THE REQUIREMENTS OF ANSI/AWWA C104/A21.4 CURRENT SPECIFICATIONS FOR CEMENT-MORTAR LINING FOR DUCTILE-IRON PIPE AND FITTINGS FOR WATER OR EPOXY COATED MEETING THE REQUIREMENTS OF ANSI/AWWA C116/A21.16 FOR PROTECTIVE FUSION-BONDED EPOXY COATINGS FOR THE INTERIOR AND EXTERIOR SURFACES OF DUCTILE-IRON AND GRAY-IRON FITTINGS FOR WATER SUPPLY SERVICE. FITTINGS SHALL BE 350 PSI PRESSURE RATED WITH MECHANICAL JOINTS AND RETAINING GLANDS. SPLIT RETAINERS ARE NOT ALLOWED.

B. CONCRETE THRUST BLOCKS ARE REQUIRED AT ALL BENDS, TEES, CAPS OR PLUGS. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 2500 PSI (MINIMUM) AT 28 DAYS.

C. MECHANICAL JOINTS FOR ALL FITTINGS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C111/A21.11 CURRENT SPECIFICATIONS FOR RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS.

D. ALL MECHANICAL JOINTS, FITTINGS, GLANDS AND BOLTS SHALL BE COATED WITH RUBBERIZED UNDERCOATING AND ENCASED WITH LOW DENSITY POLYETHYLENE FILM WITH A MINIMUM THICKNESS OF 8 MIL AND SECURED WITH TAPE. POLYETHYLENE WRAP SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C105/A21.5 CURRENT SPECIFICATIONS FOR POLYETHYLENE ENCASEMENT FOR DUCTILE-IRON PIPE SYSTEMS. ALL BOLTS SHALL BE STAINLESS STEEL. ALL MECHANICAL JOINTS SHALL HAVE "MEGALUG" MECHANICAL JOINT RESTRAINTS.

E. ALL INSTALLATION OF SERVICE FITTINGS (IE. 'T's OR VALVES) ARE TO BE INSTALLED WITH CLASS 54 DUCTILE IRON PIPE EXTENDING FIVE FEET (5') EITHER SIDE OF FITTING OR GATE WELL CONNECTED BY SOLID SLEEVES TO EXISTING WATER MAIN.

7. CONSTRUCTION

A. THE WATER MAIN SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF FIVE FEET (5.0'), MEASURED FROM THE PAVEMENT CENTERLINE ELEVATION OR THE EXISTING / PROPOSED GROUND, WHICHEVER IS LOWER, TO THE TOP OF PIPE. GENERALLY, THE MAXIMUM DEPTH OF COVER SHALL NOT EXCEED SEVEN FEET (7') FROM FINAL FINISH GRADE. A HORIZONTAL SEPARATION OF TEN FEET (10'), MINIMUM MUST BE MAINTAINED BETWEEN THE WATER MAIN, SANITARY SEWER, AND STORM SEWER.

B. A MINIMUM VERTICAL CLEARANCE OF ONE AND ONE-HALF FEET (1-½') MUST BE MAINTAINED BETWEEN THE WATER MAIN AND ANY UTILITIES. ADJUSTMENTS TO THE WATER MAIN DEPTH IN ORDER TO OBTAIN THE DESIRED CLEARANCES MUST BE ACCOMPLISHED WITH VERTICAL BENDS, THRUST BLOCKS AND ANCHORAGES. A VERTICAL CLEARANCE OF FIVE FEET (5.0') (MINIMUM) MUST BE MAINTAINED BELOW THE MASTER PLAN DEPTH OF DITCHES, DRAINS AND OPEN WATER COURSES. A GATE VALVE AND WELL SHALL BE CONSTRUCTED ON EACH SIDE OF A DRAIN OR OPEN WATER COURSE CROSSING.

C. DEFLECTION OF PIPE JOINTS TO OBTAIN THE DESIRED CLEARANCES OR ALIGNMENT SHALL ONLY BE ACCOMPLISHED WITH THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS APPROVAL. THE MAXIMUM ALLOWABLE DEFLECTION (FOR 1 FULL LENGTH OF PIPE) IS FOURTEEN INCHES (14") FOR 4" THROUGH 12" PIPE AND EIGHT INCHES (8") FOR 16" AND 24" PIPE.

D. THE CONTRACTOR SHALL SUPPLY AND PLACE A PLUG OR CAP OVER THE END OF THE PIPE AT THE END OF EACH WORK DAY.

E. VERTICAL TOLERANCES FOR HYDRANTS AND VALVES SHALL BE:

HYDRANTS (ANY LOCATION):	[-0.00] TO + [0.25] FEET
GATE WELL NOT IN R.O.W.:	[-0.25] TO + [0.25] FEET
GATE WELL IN R.O.W.:	[-0.00] TO + [0.30] FEET

F. IN NEW DEVELOPMENTS, WATER MAIN SHALL NOT BE INSTALLED UNTIL ROUGH GRADING IS COMPLETED TO WITHIN TWELVE INCHES (12") OF PROPOSED FINISH GRADE.

8. CONNECTION TO EXISTING SYSTEM

A. A ONE INCH (1") CORPORATION SHALL BE INSTALLED, FOR TESTING PURPOSES, IN ALL STUBS AND POINTS OF CONNECTION TO EXISTING MAINS.

B. THE MAXIMUM PERMISSIBLE LEAKAGE, DURING HYDROSTATIC TESTING IN ACCORDANCE WITH THE APPROPRIATE AWWA STANDARDS, SHALL NOT EXCEED 0.16 GALLONS PER INCH DIAMETER OF MAIN PER 1000 FEET OF PIPE IN 2 HOURS AT A TEST PRESSURE OF 150 PSI. THE MAXIMUM TEST LENGTH IS 3000 FEET. THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS RESERVES THE RIGHT TO TEST SHORTER LENGTHS. THE CONTRACTOR IS TO SUPPLY ALL TESTING EQUIPMENT AND PERFORM THE TEST. THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS WILL PROVIDE THE MEASURING DEVICE. THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS WILL WITNESS THE TEST.

C. A DOUBLE CHECK VALVE ASSEMBLY, FOR BACKFLOW PREVENTION, SHALL BE UTILIZED ON ALL TEMPORARY LINES USED TO FILL AND FLUSH THE NEWLY INSTALLED MAIN. THE DOUBLE CHECK VALVE ASSEMBLY SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C510 CURRENT SPECIFICATIONS FOR DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY.

D. ALL WATER MAINS SHALL BE DISINFECTED ACCORDING TO THE REQUIREMENTS OF ANSI/AWWA C651 CURRENT SPECIFICATIONS FOR DISINFECTING WATER MAINS.

E. ALL WATER USED FOR FLUSHING NEW WATER MAINS SHALL BE METERED AND PAID FOR BY THE CONTRACTOR. ALL WATER USED FOR FLUSHING NEW WATER MAINS MAY BE OBTAINED FROM THE LOCAL WATER SUPPLY. THE CONTRACTOR SHALL SECURE WRITTEN PERMISSION AND/OR PERMIT FROM THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS FOR WATER USED. FLUSHING OPERATIONS MUST BE ADMINISTERED UNDER THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS SUPERVISION. STANDARD HYDRANT WRENCHES SHALL BE USED FOR OPENING AND CLOSING THE HYDRANT. PIPE WRENCHES SHALL NOT BE USED TO OPEN OR CLOSE HYDRANTS. USE OF ANY HYDRANT SHALL INCLUDE THE REQUIREMENT THAT EACH HYDRANT SO USED BE COMPLETELY PUMPED DRY AFTER EACH USE.

F. CONNECTIONS TO THE EXISTING WATER SYSTEM SHALL NOT BE MADE UNTIL THE NEW MAIN HAS BEEN SUCCESSFULLY PRESSURE TESTED AND HAS PASSED BACTERIOLOGICAL TESTING IN ACCORDANCE WITH CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS STANDARDS AND A COPY OF BOTH RESULTS ARE SUBMITTED TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. FINAL CONNECTIONS SHALL BE COORDINATED WITH THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS.

G. AFTER CONNECTION IS MADE, THE CONTRACTOR WILL FLUSH THE WATER LINES AT THE END POINT OF THE NEW INSTALLATION TO THE MINIMUM FLOW RATE EQUAL TO THE TOTAL WATER REQUIRED (WITH HOSE DEMAND) OR THE RATE SPECIFIED BY SYSTEM DESIGN, WHICH EVER IS GREATER. THE CONTRACTOR IS RESPONSIBLE FOR THE COST AND DRAINAGE REQUIRED TO FULLFILL THE FLUSHING PROCESS. THE CONTRACTOR SHALL NOT FLUSH THE WATER MAIN WITHOUT CITY SUPERVISION.

H. BEFORE ACCEPTANCE A FINAL REVIEW MUST BE MADE BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS AND CITY ENGINEER.

9. PROJECT BONDS, INSURANCE, AND REGISTRATION

A. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL BE REGISTERED AT THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS FOR THE YEAR THAT THE WORK IS BEING PERFORMED.

B. PRIOR TO THE PRE-CONSTRUCTION MEETING, THE CONTRACTOR SHALL PROVIDE CONTRACTUAL LIABILITY INSURANCE TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. THE INSURANCE SHALL BE MAINTAINED THROUGHOUT THE TERM OF THE PROJECT. THE CITY OF ROCHESTER SHALL BE NAMED AS ADDITIONAL INSURED.

C. A PERFORMANCE BOND MUST BE PROVIDED TO THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS PRIOR TO THE PRE-CONSTRUCTION MEETING. THE BOND AMOUNT SHALL BE ONE HUNDRED PERCENT (100%) OF THE PROPOSED IMPROVEMENTS THAT THE CITY INSPECTS.

D. THE CONTRACTOR SHALL PROVIDE A TWO (2) YEAR MAINTENANCE AND GUARANTEE PERFORMANCE, AND PAYMENT BOND TO THE CITY OF ROCHESTER FROM A SURETY LICENSED IN THE STATE OF MICHIGAN, DATED FROM THE TIME OF ACCEPTANCE BY THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS, FOR 100% OF THE CONSTRUCTION COSTS.

10. WATER SERVICES

A. ALL WATER SERVICE TRANSFERS SHALL INCLUDE NEW CTS PE TUBING, CORPORATION STOPS, CURB STOP VALVES, SERVICE BOXES, AND UNIONS AS REQUIRED.

B. ALL WATER SERVICE REPLACEMENTS SHALL INCLUDE NEW CTS PE TUBING, CORPORATION STOPS, CURB STOP VALVES, SERVICE BOXES AND UNIONS AS REQUIRED. SERVICE REPLACEMENTS SHALL BE FROM THE WATER MAIN TO A CONNECTION POINT ONE FOOT (1') BEYOND THE EXISTING CURB STOP VALVE.

C. UNIONS FOR WATER SERVICE TRANSFERS SHALL BE A.Y. McDONALD #74758Q, OR FORD METER BOX COMPANY #C44-XX-Q-NL (OR APPROVED EQUAL), STRAIGHT THREE PART UNION WITH COMPRESSION CONNECTION (BOTH ENDS). UNIONS SHALL NOT BE INSTALLED UNDER EXISTING OR PROPOSED ROADWAY PAVEMENT.

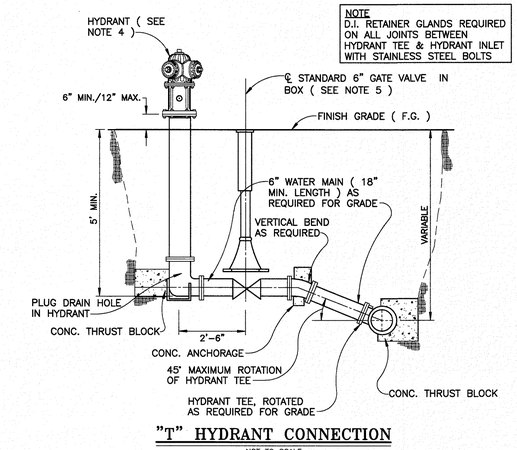
D. WATER SERVICES SHALL BE CTS PE TUBING, SDR-9 WITH A BLUE STRIPE, PER AWWA C901, FOR SERVICES UP TO 2". TRACER WIRES SHALL BE INSTALLED WITH ALL PE TUBING WITH POSITIVE CONTACTS AT THE WATER MAIN AND THE CURB STOP. COPPER TRACER WIRES ARE TO BE 12 GAUGE WITH "VF" OR "USE" INSULATION. FOR SERVICES LARGER THAN 2", DUCTILE IRON CLASS 54 SHALL BE USED IN EVEN INCREMENTS. CONTRACTOR SHALL MATCH EXISTING WATER SERVICE SIZE UNLESS OTHERWISE SPECIFIED ON THE PLANS.

E. CORPORATION STOPS SHALL BE A.Y. McDONALD #74701Q, OR FORD METER BOX COMPANY #FB 1000-XX-Q-NL (OR APPROVED EQUAL), GROUND KEY CORPORATION VALVE WITH AWWA TAPER THREAD AND COMPRESSION CONNECTION OUTLET. A BRONZE DOUBLE STRAP SADDLE IS REQUIRED FOR ONE AND ONE HALF INCH (1-1/2") AND TWO INCH (2") WATER SERVICES. WHEN TAPPING DUCTILE IRON PIPE BRONZE DOUBLE STRAP SADDLES SHALL BE A.Y. McDONALD #3825 (OR APPROVED EQUAL) WITH AWWA TAPER THREAD. FOR PVC PIPE A STAINLESS SERVICE SADDLE IS REQUIRED. FOR ALL HDPE PIPE AN ISCO FRIATEC VA SERVICE SADDLE IS REQUIRED.

F. CURB STOP VALVES SHALL BE A.Y. McDONALD #76104Q, OR FORD METER BOX COMPANY #B44-XXX-Q-NL (OR APPROVED EQUAL), WITH COMPRESSION CONNECTION (BOTH ENDS), QUARTER TURN CHECK AND MINNEAPOLIS THREAD TOP. CURB BOX SHALL BE A.Y. McDONALD #5615 WB (OR APPROVED EQUAL) EXTENSION TYPE CURB BOX WITH MINNEAPOLIS PATTERN BASE AND LID WITH PLUG FOR THREE QUARTER INCH (3/4") THROUGH TWO INCH (2") CURB STOP VALVES.

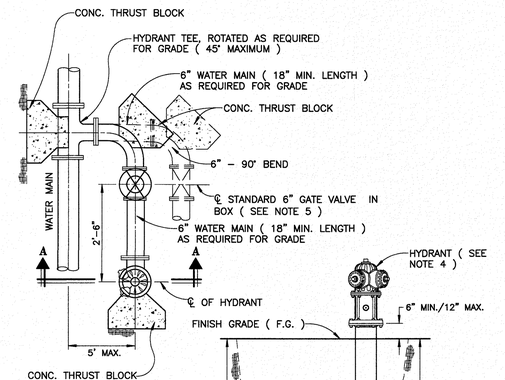
G. CURB STOPS SHALL ONLY BE INSTALLED IN SIDEWALKS, DRIVES, OR PAVEMENT WITH THE WRITTEN AUTHORIZATION OF THE CITY OF ROCHESTER DEPARTMENT OF PUBLIC WORKS. ADDITIONAL TUBING AND FITTINGS SHALL BE USED AS REQUIRED TO INSTALL CURB STOPS IN GREEN BELT AREA.

H. ALL ABANDONED SERVICES MUST BE CAPPED AT THE MAIN.



NOTE
D.I. RETAINER GLANDS REQUIRED ON ALL JOINTS BETWEEN HYDRANT TEE & HYDRANT INLET WITH STAINLESS STEEL BOLTS

"T" HYDRANT CONNECTION
NOT TO SCALE



NOTE
D.I. RETAINER GLANDS REQUIRED ON ALL JOINTS BETWEEN HYDRANT TEE & HYDRANT INLET WITH STAINLESS STEEL BOLTS

"L" HYDRANT CONNECTION
(TO BE INSTALLED ONLY WITH WRITTEN APPROVAL OF THE CITY)
NOT TO SCALE

ANDERSON, ECKSTEIN AND WESTRICK, INC.
CIVIL ENGINEERS SURVEYORS ARCHITECTS
51301 Schoenherr Road
Shelby Township
Michigan 48315
Phone 586 726 1234
Fax 586 726 8780
www.aewinc.com
ENGINEERING STRONG COMMUNITIES

DATE	SUBMITTALS/REVISIONS

DRAWN BY:	CHECKED BY:	DATE:
MJS	AAP	JANUARY 2021

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STATE OF MICHIGAN
ASEEL A. PUTROS
ENGINEER
NO. 55083
LICENSED PROFESSIONAL ENGINEER

GORDON B. WILSON P.E. NO. 34055

DEPARTMENT OF PUBLIC WORKS

APPROVED BY: Jeremy Pilkert, Assistant DPW Director

DATE: 4/6/2021

CITY OF ROCHESTER

STANDARD WATER MAIN DETAILS (1 OF 2)

SHEET NO.

W1

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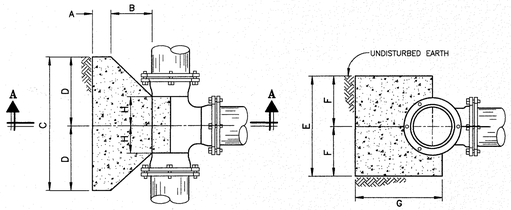


PLAN

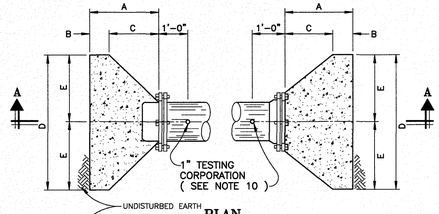
SECTION A–A

TEE SIZE	A	B	C	D	E	F	G	H
8" X 8"	0'–9"	0'–9"	2'–8"	1'–4"	2'–0"	1'–0"	2'–2"	0'–7"
12" X 8"	0'–9"	0'–9"	2'–8"	1'–4"	2'–0"	1'–0"	2'–6"	0'–8"
16" X 8"	0'–9"	0'–9"	2'–8"	1'–4"	2'–0"	1'–0"	2'–10"	0'–8"
12" X 12"	0'–9"	1'–3"	4'–0"	2'–0"	3'–0"	1'–6"	2'–10"	0'–10"
16" X 12"	0'–9"	1'–3"	4'–0"	2'–0"	3'–0"	1'–6"	3'–4"	0'–10"
16" X 16"	1'–0"	1'–4"	4'–8"	2'–4"	4'–8"	2'–4"	3'–6"	1'–0"

NOTE: THRUST BLOCKS FOR 6" TEES SHALL MATCH THE REQUIREMENTS FOR 8" TEES

CONCRETE THRUST BLOCKS FOR TEES

NOT TO SCALE



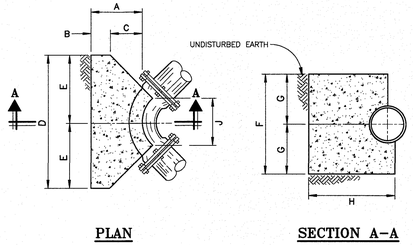
PLAN

SECTION A–A

SIZE	A MIN.	B MIN.	C	D	E	F	G
8"	1'–11"	0'–9"	1'–2"	3'–0"	1'–6"	2'–0"	1'–0"
12"	2'–1"	0'–9"	1'–4"	4'–0"	2'–0"	3'–0"	1'–6"
16"	2'–8"	1'–0"	1'–8"	5'–0"	2'–6"	4'–0"	2'–0"
24"	4'–2"	1'–6"	2'–8"	6'–0"	3'–0"	4'–0"	2'–0"

CONCRETE THRUST BLOCKS FOR CAPS

NOT TO SCALE



PLAN

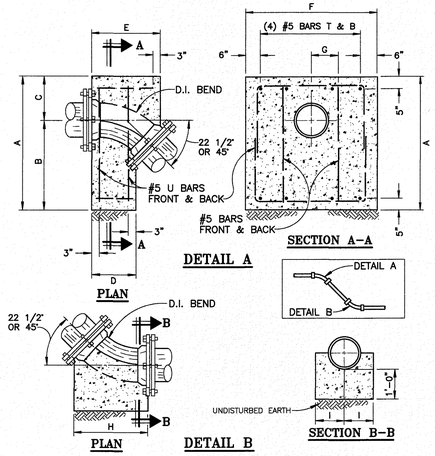
SECTION A–A

SIZE	ANGLE	A (MIN.)	B (MIN.)	C	D	E	F	G	H (MIN.)	J
6"	45°	1'–6"	0'–9"	0'–9"	1'–6"	0'–9"	1'–6"	0'–9"	1'–8"	0'–10"
6"	90° *	1'–6"	0'–9"	0'–9"	2'–0"	1'–0"	2'–0"	1'–0"	1'–8"	0'–10"
8"	45°	1'–9"	0'–9"	1'–0"	2'–4"	1'–2"	2'–0"	1'–0"	1'–11"	1'–4"
8"	90° *	1'–9"	0'–9"	1'–0"	3'–4"	1'–8"	2'–6"	1'–3"	1'–11"	1'–2"
12"	22 1/2°	1'–9"	0'–9"	1'–0"	2'–6"	1'–3"	2'–0"	1'–0"	2'–0"	1'–4"
12"	45°	2'–1"	0'–9"	1'–4"	3'–6"	1'–9"	2'–6"	1'–3"	2'–4"	1'–4"
12"	90° *	2'–1"	0'–9"	1'–4"	5'–6"	2'–9"	3'–0"	1'–6"	2'–4"	1'–8"
16"	22 1/2°	2'–8"	1'–0"	1'–8"	3'–4"	1'–8"	2'–6"	1'–3"	3'–0"	1'–2"
16"	45°	2'–8"	1'–0"	1'–8"	5'–4"	2'–8"	3'–0"	1'–6"	3'–0"	2'–6"
16"	90° *	2'–8"	1'–0"	1'–8"	6'–0"	3'–0"	5'–0"	2'–6"	3'–0"	2'–8"
24"	90° *	4'–7"	1'–0"	3'–7"	10'–0"	5'–0"	7'–0"	3'–6"	5'–4"	2'–4"

* 90° BENDS TO BE INSTALLED ONLY WITH WRITTEN APPROVAL OF THE COMMUNITY

CONCRETE THRUST BLOCKS FOR HORIZONTAL BENDS

NOT TO SCALE



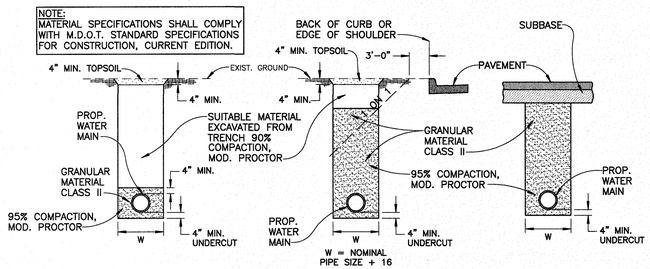
DETAIL A

DETAIL B

SIZE	ANGLE	A	B	C	D	E	F	G	H	I
8"	22 1/2°	3'–0"	1'–8"	1'–4"	1'–4"	1'–7"	2'–8"	0'–8"	1'–9"	1'–0"
8"	45°	4'–0"	2'–6"	1'–6"	1'–6"	1'–8"	3'–2"	0'–10"	2'–0"	1'–0"
12"	22 1/2°	4'–0"	2'–6"	1'–6"	1'–7"	2'–0"	4'–0"	0'–10"	2'–6"	1'–0"
12"	45°	4'–6"	3'–0"	1'–6"	1'–6"	2'–4"	5'–0"	0'–11"	2'–6"	1'–0"
16"	22 1/2°	4'–6"	2'–10"	1'–8"	1'–7"	2'–2"	5'–0"	0'–11"	2'–4"	1'–6"

ANCHORAGE FOR VERTICAL BENDS

NOT TO SCALE

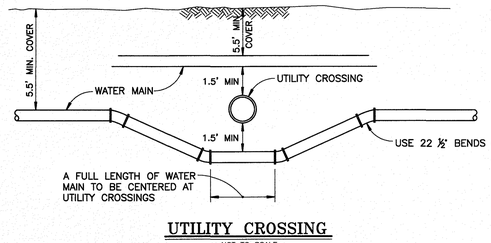


PROP. WATER MAINS NOT UNDER ROADBED

PROP. WATER MAINS UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED

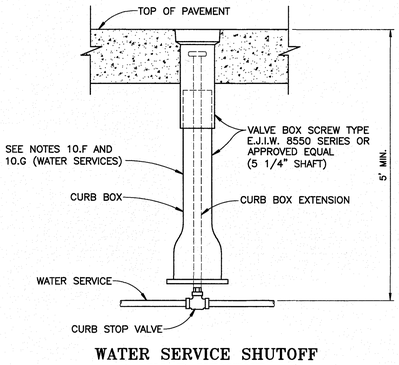
BEDDING & TRENCH DETAILS

NOT TO SCALE



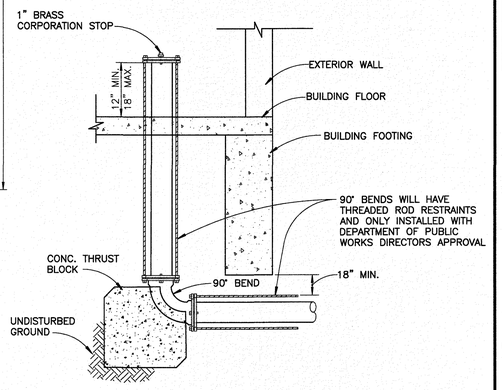
UTILITY CROSSING

NOT TO SCALE



WATER SERVICE SHUTOFF IN PAVEMENT

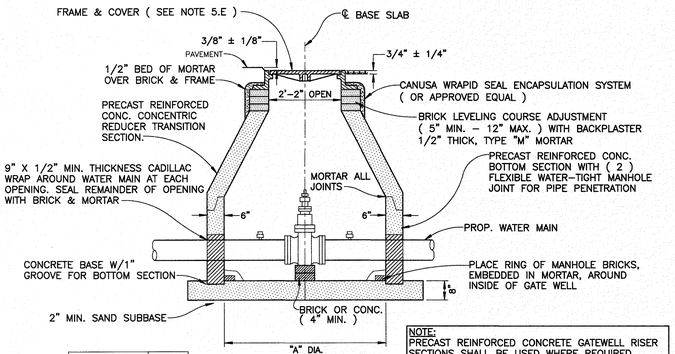
NOT TO SCALE



BUILDING RISER DETAIL

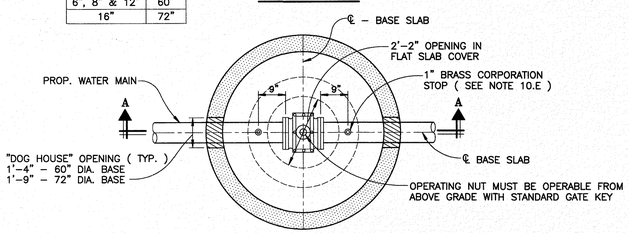
NOT TO SCALE

NOTE: PRECAST REINFORCED CONCRETE GATEWELL RISER SECTIONS SHALL BE USED WHERE REQUIRED FOR ADDITIONAL DEPTH OF GATE WELL



VALVE SIZE	"A" DIA.
6", 8" & 12"	60"
16"	72"

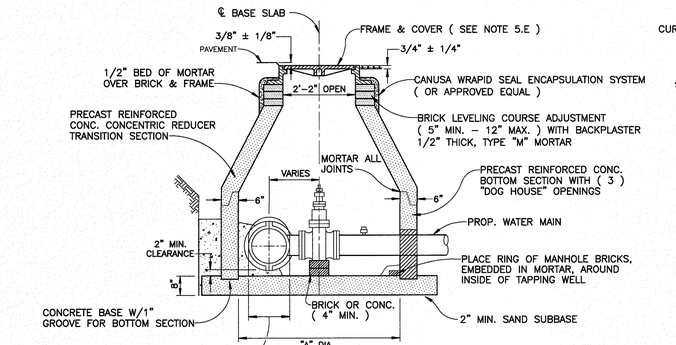
SECTION A–A



GATE VALVE IN WELL

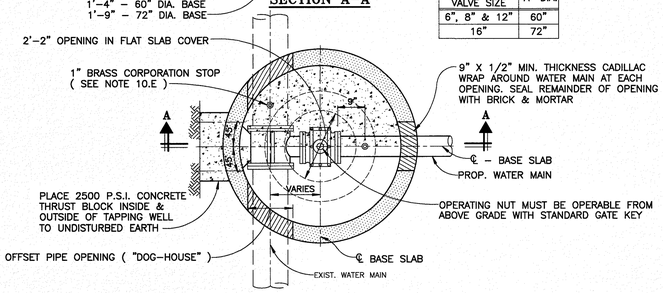
NOT TO SCALE

NOTE: PRECAST REINFORCED CONCRETE GATEWELL RISER SECTIONS SHALL BE USED WHERE REQUIRED FOR ADDITIONAL DEPTH OF GATE WELL



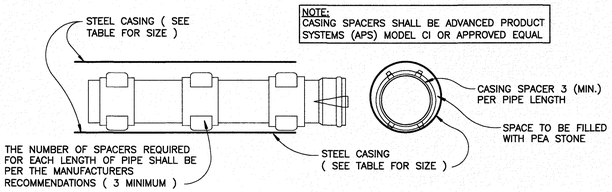
SECTION A–A

TAPPING VALVE SIZE	"A" DIA.
6", 8" & 12"	60"
16"	72"



TAPPING SLEEVE & VALVE IN WELL

NOT TO SCALE



NOTE: CASING SPACERS SHALL BE ADVANCED PRODUCT SYSTEMS (APS) MODEL CI OR APPROVED EQUAL

NOTE: THE ENDS OF THE CASING SHALL BE SEALED AFTER THE WATER MAIN IS INSTALLED THROUGH THE CASING

NOTE: FIELD LOCK GASKETS (OR APPROVED EQUAL) ARE REQUIRED ON ALL JOINTS INSIDE CASING & FIRST JOINT OUTSIDE CASING

PIPE SIZE	RECOMMENDED MINIMUM CASING DIAMETER (O.D.)	MINIMUM CASING WALL THICKNESS
4"	12.75"	0.375"
6"	14"	0.375"
8"	16"	0.375"
12"	20"	0.375"
16"	24"	0.406"
24"	36"	0.532"

STEEL CASING REQUIREMENTS

NOT TO SCALE

ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS

51301 Schoenherr Road
Shelby Township
Michigan 48315

Phone 586 726 1234
Fax 586 726 8780

www.aewinc.com

ENGINEERING STRONG COMMUNITIES

ROCHESTER MICHIGAN SETTLED 1817

DATE	SUBMITTALS/REVISIONS
DRAWN BY: MJS	CHECKED BY: AAP
	DATE: JANUARY 2021

M:\COMMUNITIES\ROCHESTER\PLANS\STDDETAILS\2020\WATER_2.DWG
Model—2/1/2021 11:49:23 AM

STATE OF MICHIGAN – ASEEL A. PUTROS – ENGINEER NO. 55083 – LICENSED PROFESSIONAL ENGINEER

GORDON B. WILSON P.E. NO. 34055

DEPARTMENT OF PUBLIC WORKS

APPROVED BY: Jeremy Ritherd, Assistant DPW Director

DATE: 4/6/2021

CITY OF ROCHESTER

STANDARD WATER MAIN DETAILS (2 OF 2)

SHEET NO.

W2

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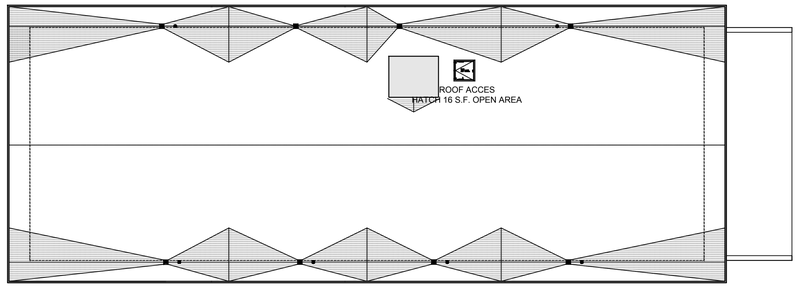
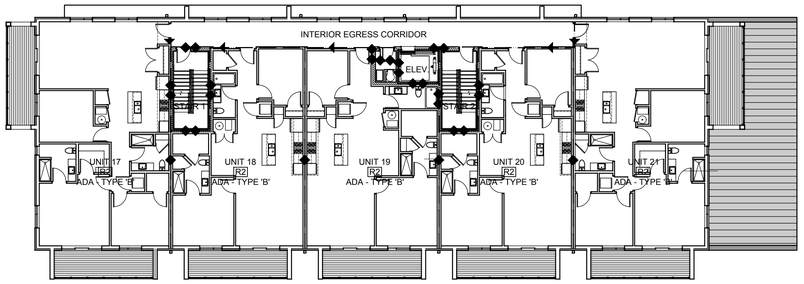
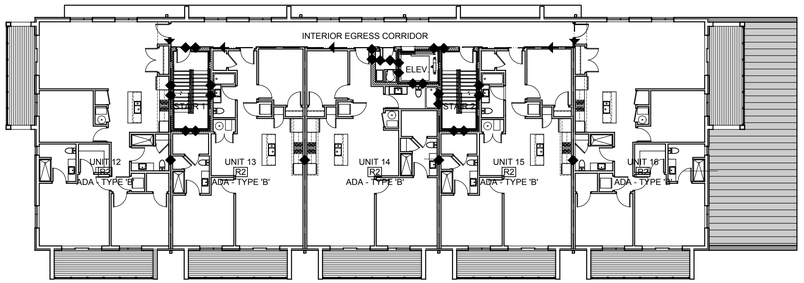


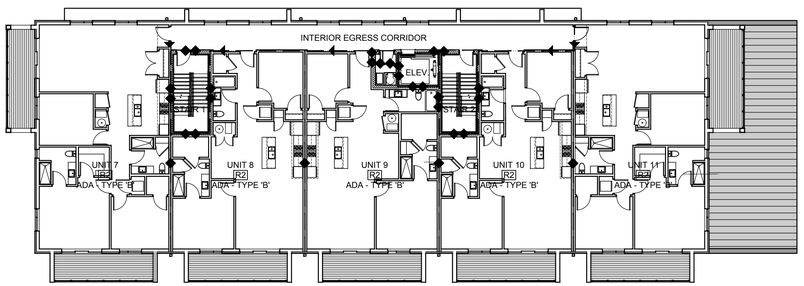
7 ROOF PLAN
SCALE: 1/16" = 1'-0"



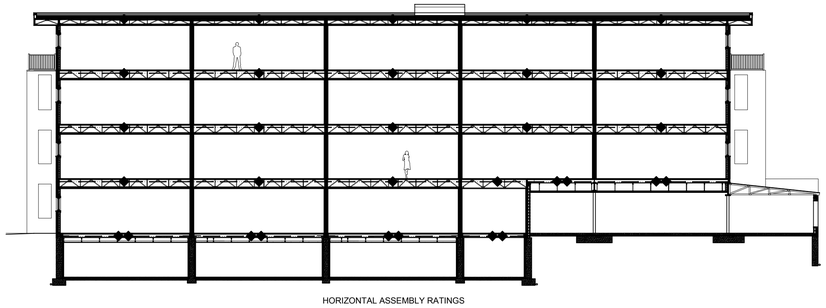
6 FOURTH FLOOR KEY PLAN
SCALE: 1/16" = 1'-0"



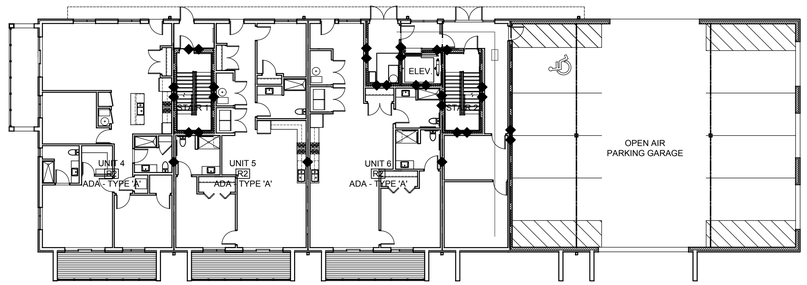
5 THIRD FLOOR KEY PLAN
SCALE: 1/16" = 1'-0"



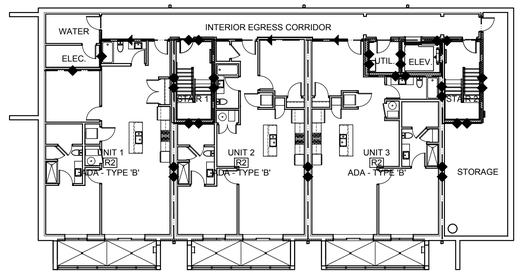
4 SECOND FLOOR KEY PLAN
SCALE: 1/16" = 1'-0"



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



2 FIRST FLOOR KEY PLAN
SCALE: 1/16" = 1'-0"



1 BASEMENT KEY PLAN
SCALE: 1/16" = 1'-0"

FIRE RESISTANCE RATINGS

LOCATION	ORIENTATION	FIRE-RESISTANCE RATING	CODE REFERENCE	ASSEMBLY DETAILS
BETWEEN UNITS (WOOD-FRAMED)	HORIZONTAL	1-HOUR (½-HOUR WITH SPRINKLERS)	IBC TABLE 707.3.10, 903.3.2	24" TRUSSES W/ 2 LAYERS 5/8" TYPE X GYPSUM (UL L528)
BETWEEN UNITS (WOOD-FRAMED)	VERTICAL	1-HOUR (½-HOUR WITH SPRINKLERS)	IBC TABLE 707.3.10, 903.3.2	2X6 STUD WALLS W/ 5/8" TYPE X GYPSUM BOTH SIDES (UL U305)
BETWEEN UNITS (CONCRETE)	VERTICAL	1-HOUR (½-HOUR WITH SPRINKLERS)	IBC TABLE 707.3.10, 903.3.2	12"/16" CONCRETE WALLS (IBC TABLE 721.1(2))
BETWEEN UNITS (BASEMENT)	HORIZONTAL	1-HOUR (½-HOUR WITH SPRINKLERS)	IBC TABLE 707.3.10, 903.3.2	10" HOLLOW CORE PLANK W/ 2" TOPPING (UL K909)
STAIRWELLS/ ELEVATOR TO UNITS	VERTICAL	2-HOUR (NO REDUCTION)	IBC 713.4, 1023.2	8" CMU WALLS (UL 618), ELEVATOR ROOF/CEILING W/ 2 LAYERS 5/8" TYPE X GYPSUM (UL U356)
OPEN-AIR GARAGE TO UNITS	HORIZONTAL	2-HOUR (NO REDUCTION, GARAGE UNSUPPRESSED)	IBC TABLE 508.4	10" HOLLOW CORE PLANK W/ 2" TOPPING (UL K909), 1-HOUR SOFFIT (2 LAYERS 5/8" TYPE X GYPSUM)
OPEN-AIR GARAGE TO UNITS	VERTICAL	2-HOUR (NO REDUCTION, GARAGE UNSUPPRESSED)	IBC TABLE 508.4	12"/16" CONCRETE WALLS (IBC TABLE 721.1(2)), NO RATING ON OPEN PERIMETER (IBC 406.5.2)
SOUND TRANSMISSION (ALL SEPARATIONS)	HORIZONTAL & VERTICAL	STC/IIC 50 (LAB) OR 45 (FIELD)	IBC SECTION 1207	TRUSSES W/ ACOUSTIMAT & INSULATION, PLANK W/ INHERENT STC 55+, UL U305 W/ STC 50+

PROJECT DATA

CITY OF ROCHESTER	
GOVERNING CODES	2015 MICHIGAN BUILDING CODE NFPA 101, LIFE SAFETY STANDARDS ACCESSIBILE AND USABLE ICC A117.1
BUILDING	(21) APARTMENT UNITS
ZONING	APPROVED SPECIAL PROJECT - O-2 RESTRICTED OFFICE I-2 INDUSTRIAL
ACTUAL HEIGHT	4 STORIES / 51'-2"

BUILDING GROSS AREA

BASEMENT	5,510 S.F.		
FIRST FLOOR	5,510 S.F.	OPEN GARAGE	3,347 S.F.
SECOND FLOOR	7,835 S.F.		
THIRD FLOOR	7,835 S.F.		
FOURTH FLOOR	7,835 S.F.		
TOTAL	34,525 G.S.F.		

	BASEMENT	FIRST FLOOR	SECOND FLOOR	THIRD FLOOR	FOURTH FLOOR
UNIT 1	1,135 S.F.				
UNIT 2	1,075 S.F.				
UNIT 3	1,105 S.F.				
UNIT 4		1,450 S.F.			
UNIT 5		1,230 S.F.			
UNIT 6		1,205 S.F.			
UNIT 7			1,450 S.F.		
UNIT 8			1,110 S.F.		
UNIT 9			1,185 S.F.		
UNIT 10			1,110 S.F.		
UNIT 11			1,450 S.F.		
UNIT 12				1,450 S.F.	
UNIT 13				1,110 S.F.	
UNIT 14				1,185 S.F.	
UNIT 15				1,110 S.F.	
UNIT 16				1,450 S.F.	
UNIT 17					1,450 S.F.
UNIT 18					1,110 S.F.
UNIT 19					1,185 S.F.
UNIT 20					1,110 S.F.
UNIT 21					1,450 S.F.

CONSTRUCTION TYPE: BUILDING CLASSIFIED AS TYPE V-B (WOOD-FRAMED) ABOVE A TYPE I-B (NONCOMBUSTIBLE) BASEMENT/GARAGE PLATFORM, PER IBC SECTION 602, WITH NFPA 13R SPRINKLERS IN R-2 AREAS REDUCING FIRE-RESISTANCE REQUIREMENTS (IBC 903.3.2), EXCEPT IN UNSUPPRESSED S-2 GARAGE.

HEIGHT AND AREA: 4 STORIES ABOVE GRADE (BASEMENT BELOW GRADE), MAXIMUM 60 FT HEIGHT AND 12,000 SQ.FT. PER FLOOR ALLOWED FOR TYPE V-B WITH SPRINKLERS (IBC TABLE 504.4, 506.2), INCREASED BY 200% AREA AND 20 FT HEIGHT FOR R-2 (IBC 506.3), VERIFIED BY STRUCTURAL DESIGN.

FIRE SEPARATION DISTANCE: MINIMUM 10 FT SEPARATION FROM PROPERTY LINES OR ASSUMED LOT LINES, REDUCED TO 5 FT WITH SPRINKLERS AND 1-HOUR EXTERIOR WALLS (IBC TABLE 602), EXCEPT OPEN-AIR GARAGE PERIMETER (NO RATING IF OPEN PER IBC 406.5.2).

PLATFORM CONSTRUCTION: EACH FLOOR LEVEL FRAMED INDEPENDENTLY WITH 24" WOOD TRUSSES BEARING ON 2X6 STUD WALLS OR 12"/16" CONCRETE WALLS, SUPPORTED BY 10" HOLLOW CORE PLANK PLATFORM AT BASEMENT, PER IBC SECTION 2304.3.3, WITH CONTINUOUS LOAD PATH TO FOUNDATION.

MIXED USE SEPARATION: R-2 (RESIDENTIAL) AND S-2 (OPEN PARKING GARAGE) OCCUPANCIES SEPARATED BY 2-HOUR RATED ASSEMBLIES (IBC TABLE 508.4), NO REDUCTION IN GARAGE DUE TO LACK OF SPRINKLERS, ACHIEVED WITH HOLLOW CORE PLANK AND MASONRY WALLS.

FLOOR PENETRATIONS: ALL PENETRATIONS THROUGH ½-HOUR OR HIGHER RATED FLOOR/CEILING ASSEMBLIES (TRUSSES, HOLLOW CORE PLANK) SEALED WITH APPROVED FIRESTOP SYSTEMS (E.G., 3M FIRE BARRIER), PER IBC SECTION 714.4, MAINTAINING STC/IIC 50 (IBC 1207).

SHAFT PENETRATIONS: ELEVATOR AND STAIR SHAFT PENETRATIONS THROUGH 2-HOUR CMU WALLS AND CEILINGS SEALED WITH 2-HOUR RATED FIRESTOP SYSTEMS, PER IBC SECTION 714.3, ENSURING CONTINUOUS ENCLOSURE INTEGRITY (IBC 713.8).

GARAGE VENTILATION: OPEN-AIR GARAGE TO PROVIDE NATURAL VENTILATION WITH OPENINGS ≥40% OF PERIMETER WALL AREA (IBC 406.5.2), ELIMINATING MECHANICAL VENTILATION AND SPRINKLER REQUIREMENTS, MAINTAINING 2-HOUR SEPARATION TO UNITS (IBC 508.4).

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
6435 Apple Orchard Lane, Rochester Hills, MI 48306
248.800.6505
roger@rogerberent.com

Owner:
LOCHIRCO CUSTOM HOMES
202 Walnut Blvd. Suite B Rochester, MI

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Drawing Issue:

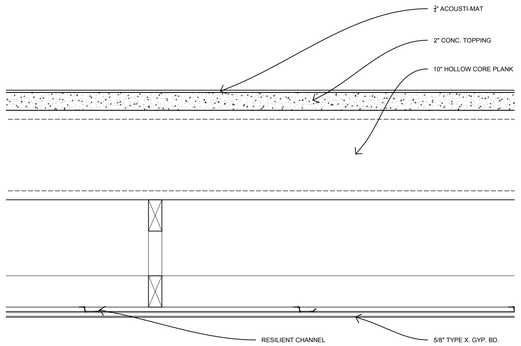
No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE:
PROJECT DATA, KEY PLAN
FIRE SEPARATIONS

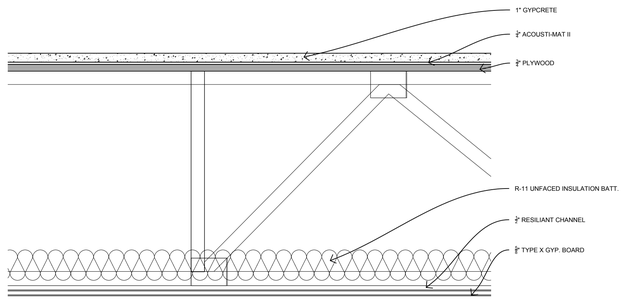
Drawing Number:
A-010
ARCHITECTURAL-010

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52391 · LICENSED ARCHITECT



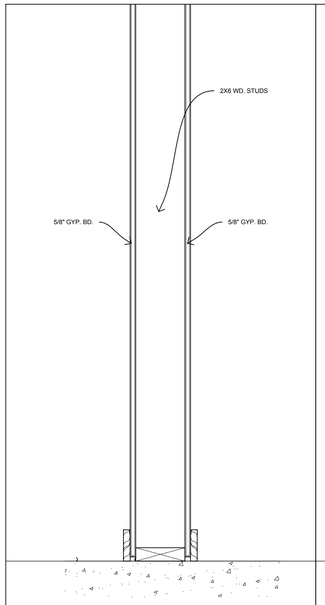
2-HOUR FLOOR ASSEMBLY

HOLLOW CORE PLANK HORIZONTAL ASSEMBLY:
2-HOUR FIRE-RESISTANCE RATED ASSEMBLY FOR BASEMENT AND GARAGE-TO-UNIT SEPARATIONS, CONSISTING OF 10" HOLLOW CORE PRECAST CONCRETE PLANK (UL K909) WITH 2" CONCRETE TOPPING OVER 1/4" ACOUSTIMAT 2, AND CEILING OF ONE LAYER 5/8" TYPE X GYPSUM BOARD ON 25-GAUGE RESILIENT CHANNELS AT 16" O.C., PROVIDING STC 55+ AND IIC 50+ (IBC 1207), REDUCED TO ½-HOUR BETWEEN UNITS WITH NFPA 13R SPRINKLERS (IBC 903.3.2), MAINTAINING 2-HOUR RATING TO GARAGE (IBC 508.4).

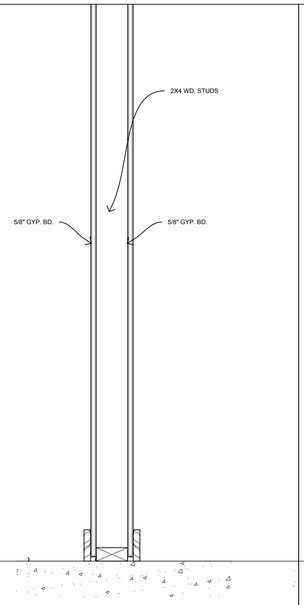


1-HOUR FLOOR ASSEMBLY

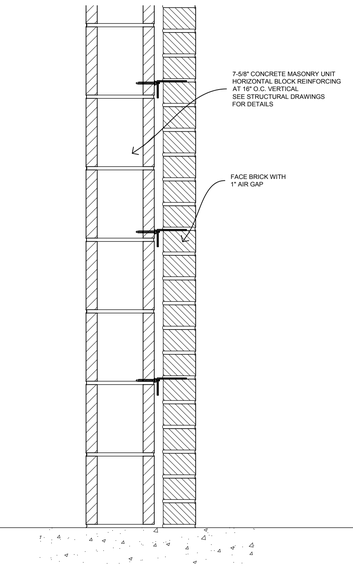
UL L528 FLOOR/CEILING ASSEMBLY:
1-HOUR FIRE-RESISTANCE RATED ASSEMBLY FOR WOOD-FRAMED FLOOR/CEILING SEPARATIONS BETWEEN UNITS, CONSISTING OF 24" OPEN WEB WOOD TRUSSES AT 16" O.C., 3/4" PLYWOOD SUBFLOOR, 1" GYPCRETE TOPPING W/ 1/4" ACOUSTIMAT 2, AND CEILING OF ONE LAYER 5/8" TYPE X GYPSUM BOARD ON 25-GAUGE RESILIENT CHANNELS AT 24" O.C., WITH MINERAL WOOL INSULATION IN CAVITY, REDUCED TO ½-HOUR WITH NFPA 13R SPRINKLERS (IBC 903.3.2), PROVIDING STC/IIC 50+ (IBC 1207).



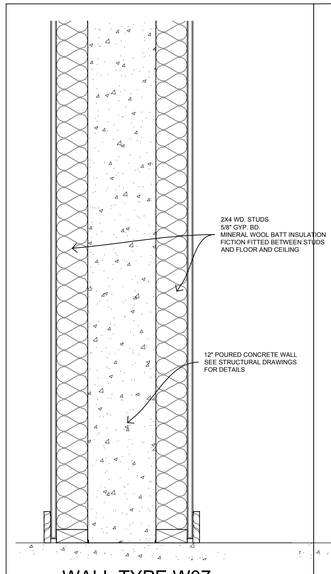
PARTITION TYPE P02



PARTITION TYPE P01

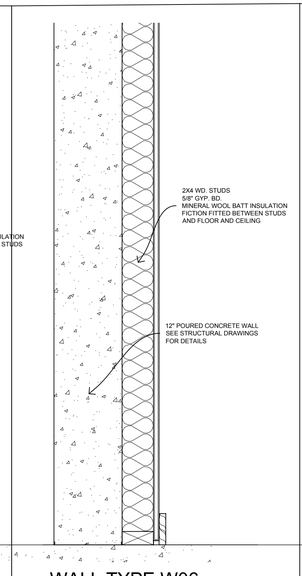


WALL TYPE W08



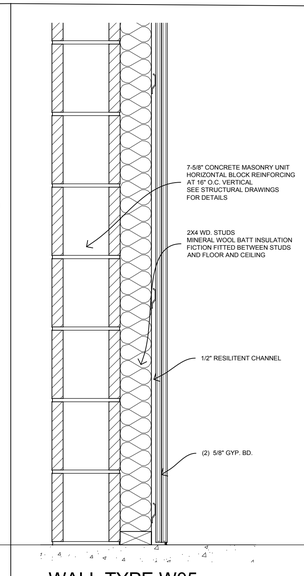
WALL TYPE W07

UL U904 WALL ASSEMBLY:
2-HOUR FIRE-RESISTANCE RATED ASSEMBLY FOR 12" THICK SOLID CONCRETE WALLS (CAST-IN-PLACE OR PRECAST), USED FOR VERTICAL SEPARATIONS (E.G., STAIRWELLS, ELEVATOR SHAFT, GARAGE-TO-UNIT) OR UNIT SEPARATIONS (REDUCED TO ½-HOUR WITH NFPA 13R SPRINKLERS, IBC 903.3.2), PROVIDING STC 55+ (IBC 1207), NO ADDITIONAL FINISHES REQUIRED (UL U904).



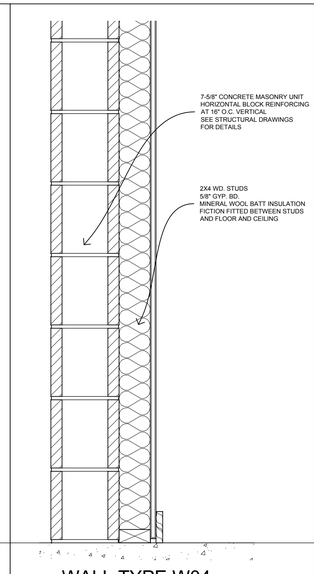
WALL TYPE W06

UL U904 WALL ASSEMBLY:
2-HOUR FIRE-RESISTANCE RATED ASSEMBLY FOR 12" THICK SOLID CONCRETE WALLS (CAST-IN-PLACE OR PRECAST), USED FOR VERTICAL SEPARATIONS (E.G., STAIRWELLS, ELEVATOR SHAFT, GARAGE-TO-UNIT) OR UNIT SEPARATIONS (REDUCED TO ½-HOUR WITH NFPA 13R SPRINKLERS, IBC 903.3.2), PROVIDING STC 55+ (IBC 1207), NO ADDITIONAL FINISHES REQUIRED (UL U904).



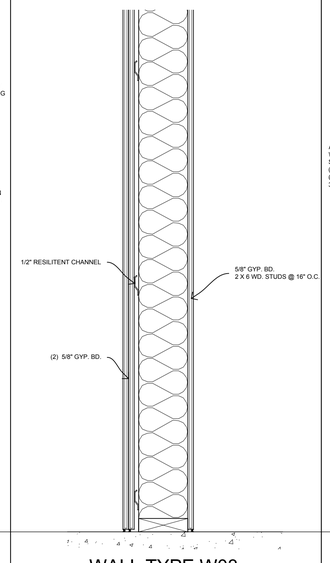
WALL TYPE W05

UL U905 WALL ASSEMBLY:
2-HOUR FIRE-RESISTANCE RATED ASSEMBLY FOR VERTICAL SEPARATIONS REQUIRING 2-HOUR PROTECTION (E.G., STAIRWELLS, ELEVATOR SHAFT, GARAGE-TO-UNIT), CONSISTING OF 8" CMU WALLS WITH CORES FILLED WITH LOOSE VERMICULITE INSULATION (UL U905), PROVIDING STC 50+ (IBC 1207), NO RATING REDUCTION APPLIED REGARDLESS OF NFPA 13R SPRINKLERS (IBC 713.4, 508.4).



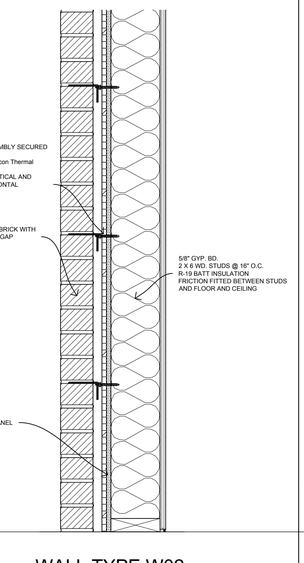
WALL TYPE W04

UL U905 WALL ASSEMBLY:
2-HOUR FIRE-RESISTANCE RATED ASSEMBLY FOR VERTICAL SEPARATIONS REQUIRING 2-HOUR PROTECTION (E.G., STAIRWELLS, ELEVATOR SHAFT, GARAGE-TO-UNIT), CONSISTING OF 8" CMU WALLS WITH CORES FILLED WITH LOOSE VERMICULITE INSULATION (UL U905), PROVIDING STC 50+ (IBC 1207), NO RATING REDUCTION APPLIED REGARDLESS OF NFPA 13R SPRINKLERS (IBC 713.4, 508.4).



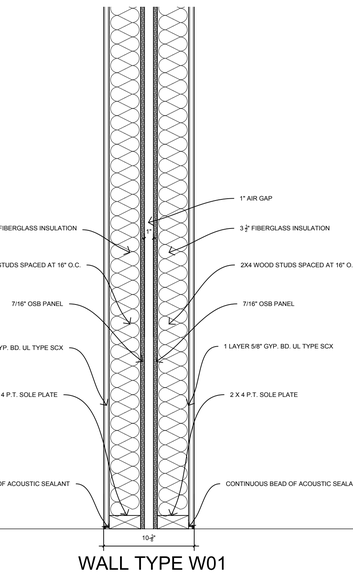
WALL TYPE W03

UL U309 CORRIDOR WALL ASSEMBLY:
1-HOUR FIRE-RESISTANCE RATED ASSEMBLY FOR WOOD-FRAMED CORRIDOR WALLS, CONSISTING OF 2X6 STUDS AT 16" O.C., ONE LAYER 5/8" TYPE X GYPSUM BOARD ON UNIT SIDE, TWO LAYERS 5/8" TYPE X GYPSUM BOARD ON CORRIDOR SIDE OVER 1/2" RESILIENT CHANNELS AT 24" O.C., WITH R-19 FIBERGLASS INSULATION IN CAVITY, REDUCED TO ½-HOUR WITH NFPA 13R SPRINKLERS (IBC 903.3.2), PROVIDING STC 55-60 (IBC 1207).



WALL TYPE W02

SEE DETAIL SECTIONS
FOR COMPLETE WALL DETAILING



WALL TYPE W01

UL U305 WALL ASSEMBLY:
1-HOUR FIRE-RESISTANCE RATED ASSEMBLY FOR WOOD-FRAMED VERTICAL SEPARATIONS BETWEEN UNITS AND EXTERIOR WALLS, CONSISTING OF 2X6 WOOD STUDS AT 16" O.C., ONE LAYER 5/8" TYPE X GYPSUM BOARD ON EACH SIDE, AND R-19 FIBERGLASS BATT INSULATION IN CAVITY, REDUCED TO ½-HOUR WITH NFPA 13R SPRINKLERS (IBC 903.3.2), PROVIDING STC 50+ (IBC 1207), EXTERIOR W/ 4" BRICK VENEER WHERE APPLICABLE (IBC TABLE 602).

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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE:
WALL TYPES
FLOOR TRANSITIONS

Drawing Number:
A-020
ARCHITECTURAL-020

Seal:
STATE OF MICHIGAN
ROGER JASON BERENT
ARCHITECT
No. 52981
LICENSED ARCHITECT

ROOM FINISH SCHEDULE

UNIT 1

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
011	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
012	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
013	CLOSET	FC-2	B-2	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
014	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
015	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
016	NOOK	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
017	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
018	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	

BASEMENT LEVEL SHEET NO.: A100

UNIT 2

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
021	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
022	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
023	CLOSET	FC-2	B-2	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
024	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
025	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
026	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
027	LIVING	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	

BASEMENT LEVEL SHEET NO.: A100

UNIT 3

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
031	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	CMU-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
032	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
033	CLOSET	FC-2	B-2	GWB-1	P-1	GWB-1	P-1	CMU-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
034	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	CMU-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
035	NOOK	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	CMU-1	P-1	CMU-1	P-1	-	-	C-1	P-1	
036	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	CMU-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
037	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	

BASEMENT LEVEL SHEET NO.: A100

UNIT 4

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
141	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
142	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	S-1	P-1	C-1	P-1	
143	CLOSET	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
144	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
145	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
146	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
147	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
148	CLOSET	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
149	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

GRADE LEVEL SHEET NO.: A110

UNIT 5

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
151	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
152	CLOSET	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
153	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
154	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
155	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
156	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
157	LIVING	FC-3	B-2	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

GRADE LEVEL SHEET NO.: A110

UNIT 6

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
161	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
162	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
163	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
164	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
165	CLOSET	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
166	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

GRADE LEVEL SHEET NO.: A110

UNIT 7, 12,

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
271	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
272	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	S-1	P-1	C-1	P-1	
273	CLOSET	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
274	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
275	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
276	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
277	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
278	CLOSET	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
279	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

SECOND/THIRD FLOOR SHEET NO.: A120

UNIT 8, 13,

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
281	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
282	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
283	CLOSET	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
284	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
285	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
286	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
287	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

SECOND/THIRD FLOOR SHEET NO.: A120

UNIT 9, 14

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
291	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
292	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
293	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
294	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
295	CLOSET	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
296	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
297	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

SECOND/THIRD FLOOR SHEET NO.: A120

UNIT 10, 15

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
2101	LIVING	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
2102	BATHROOM	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
2103	CLOSET	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
2104	BATHROOM	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
2105	OFFICE	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
2106	KITCHEN	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
2107	LIVING	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

SECOND/THIRD FLOOR SHEET NO.: A120

UNIT 11, 16

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
2111	BEDROOM	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
2112	CLOSET	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
2113	BATHROOM	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
2114	KITCHEN	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
2115	LIVING	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
2116	OFFICE	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	-	C-1	P-1	
2117	CLOSET	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
2118	BATHROOM	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
2119	BEDROOM	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	

SECOND/THIRD FLOOR SHEET NO.: A120

UNIT 17

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
4171	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
4172	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	S-1	P-1	C-1	P-1	
4173	CLOSET	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4174	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4175	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
4176	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4177	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4178	CLOSET	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4179	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

FOURTH FLOOR SHEET NO.: A130

UNIT 18

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
4181	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4182	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4183	CLOSET	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4184	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4185	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4186	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4187	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

FOURTH FLOOR SHEET NO.: A130

UNIT 19

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
4191	LIVING	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4192	KITCHEN	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4193	OFFICE	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4194	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4195	CLOSET	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4196	BATHROOM	FC-2	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4197	BEDROOM	FC-3	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

FOURTH FLOOR SHEET NO.: A130

UNIT 20

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
4201	LIVING	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4202	BATHROOM	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4203	CLOSET	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4204	BATHROOM	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4205	OFFICE	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4206	KITCHEN	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4207	LIVING	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

FOURTH FLOOR SHEET NO.: A130

UNIT 21

LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
4211	BEDROOM	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4212	CLOSET	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4213	BATHROOM	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4214	KITCHEN	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4215	LIVING	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	
4216	OFFICE	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	-	C-1	P-1	
4217	CLOSET	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
4218	BATHROOM	FC-3	B-2	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	GWB-2	P-1	-	-	C-1	P-1	
4219	BEDROOM	FC-2	B-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	S-1	P-1	C-1	P-1	

FOURTH FLOOR SHEET NO.: A130

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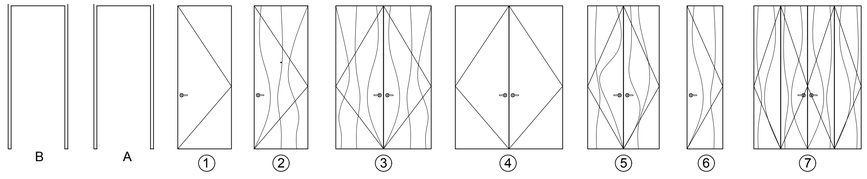
LOCATION		FLOOR	BASE	WALL								SILL		CEILING		NOTES
				NORTH WALL		SOUTH WALL		EAST WALL		WEST WALL		WINDOW SILL		CEILING		
ROOM NO.	ROOM NAME	MATERIAL		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	
001	STAIR 1	FC-1	-	CMU-2	-	CMU-2	-	CMU-2	-	CMU-1	-	-	-	-	-	
002	STAIR 2	FC-1	-	CMU-2	-	CMU-2	-	CMU-2	-	CMU-1	-	-	-	-	-	
003	ELEVATOR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
004	WATER	FC-1	-	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
005	STORAGE	FC-1	-	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
006	ELECT.	FC-1	-	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
007	FIRE	FC-1	-	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
008	ELEV. LOBBY	FC-1	-	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	
009	CORRIDOR	FC-1	-	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	GWB-1	P-1	-	-	C-1	P-1	

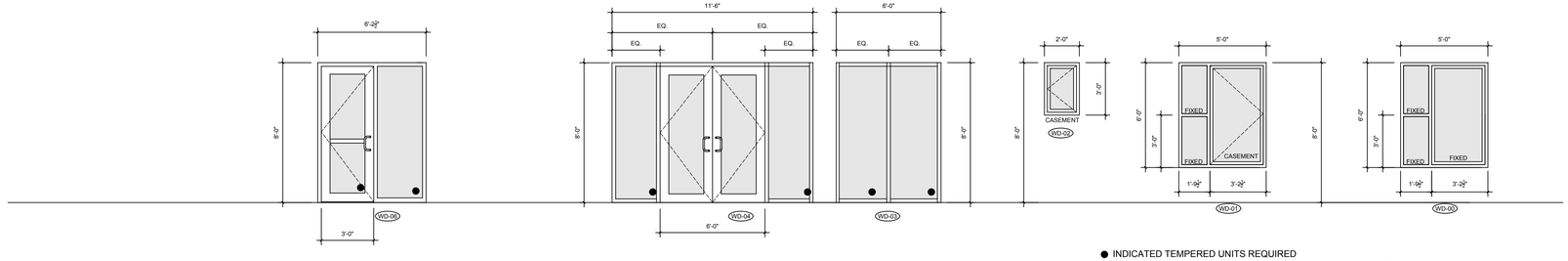
BASEMENT LEVEL SHEET NO



HDWE SET NO.	DESCRIPTION / REMARKS
1	1-1/2" PR. HINGES 1 EA. MORTISE PASSAGE SET 1 EA. CLOSER 1 SET SILENCERS
2	1-1/2" PR. HINGES 1 EA. MORTISE ENTRANCE LOCKSET 1 EA. CLOSER 1 SET SILENCERS
3	1-1/2" PR. HINGES 1 EA. MORTISE ENTRANCE LOCKSET 1 EA. ELECTRIC STRIKE (FAIL SAFE) 1 EA. CLOSER 1 EA. ALUMINUM THRESHOLD 1 EA. WEATHERSTRIP 1 SET SILENCERS
4	1-1/2" PR. HINGES 1 EA. PASSAGE LATCH SET 1 SET SILENCERS
5	1-1/2" PR. HINGES 1 EA. PRIVACY LOCKSET 1 SET SILENCERS
6	1-1/2" PR. HINGES 1 EA. STOREROOM MORTISE LOCKSET 1 EA. CLOSER 1 SET SILENCERS
7	1-1/2" PR. HINGES 1 EA. MORTISE ENTRANCE LOCKSET 1 EA. CLOSER 1 EA. ALUMINUM THRESHOLD 1 EA. WEATHERSTRIP 1 SET SILENCERS

DOOR SCHEDULE

MARK	DOOR SIZE	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	DOOR RATING	FRAME MATERIAL	FRAME FINISH	FRAME ELEV.	HARDWARE SET NO.	DESCRIPTION / REMARKS
A	3'-0" X 8'-0"	2	WD.	CLEAR FINISH		WOOD	PAINT			
B	2'-8" X 8'-0"	2	WD.	CLEAR FINISH		WOOD	PAINT			
C	3'-0" X 6'-8"	2	WD.	CLEAR FINISH	20 MIN.	HOLLOW METAL	PAINT			SELF CLOSING DOOR WITH DOOR VIEWER
D	3'-0" X 8'-0"	1	HM	PAINT	90 MIN.	HOLLOW METAL	PAINT	B		
E	3'-0" X 8'-0"	1	HM	PAINT		HOLLOW METAL	PAINT	A		
F	(2) 2'-8" X 8'-0"	3	WD.	CLEAR FINISH		WD.	PAINT			
G	(2) 2'-0" X 8'-0"	5	WD.	CLEAR FINISH		WD.	PAINT			
H	2'-0" X 8'-0"	6	WD.	CLEAR FINISH		WD.	PAINT			
J	3'-0" X 8'-0"	2	WD.	CLEAR FINISH		HOLLOW METAL	PAINT			EXTERIOR GRADE DOOR WITH DOOR VIEWER
K	(2) 3'-0" X 8'-0"	7	WD.	CLEAR FINISH		WD.	PAINT			DOUBLE BI-FOLD
L	SLIDER 9'-0" X 8'-0"	8	CLAD/ GLASS	UNFINISHED		WOOD	PAINT			EXTERIOR GRADE DOOR
M	(2) 3'-0" X 8'-0"	4	HM	PAINT		HOLLOW METAL	PAINT	B		EXTERIOR GRADE DOOR



● INDICATED TEMPERED UNITS REQUIRED
SHOWN AS TEMPERED TO BE VERIFIED BY WINDOW SUPPLIER

ALL ROUGH OPENINGS, UNIT NUMBERS & QUANTITIES ARE TO BE VERIFIED BY THE WINDOW & DOOR SUPPLIER.

ALL EXTERIOR WINDOW AND DOOR HEADER MATERIAL IS TO BE 3 1/2" x 9 1/2" TIMBERSTRAND, LAID ON EDGE, TYP. U.N.O.

ALL EXTERIOR DOORS TO HAVE "3/4" SHIM INSTALLED" BELOW THEM

SWINGING DOORS IN EXTERIOR WALLS ARE TO HAVE 3/4" P.T. PLATE INSTALLED BELOW SILL TO ACCOMMODATE INTERIOR RUGS.

G.C. IS TO COORDINATE WINDOW & DOOR HEADER HEIGHT WITH INTERIOR FINISH SCHEDULE TO VERIFY THAT THE 3/4" SHIM WILL ACCOMMODATE FINISH THICKNESS SELECTED BY CLIENT.

SEE FLOOR PLANS AND BUILDING SECTIONS TO VERIFY HEADER HEIGHTS FOR ALL WINDOWS & DOORS.

ALL WINDOW TEMPERING T.B.D. BY WINDOW SUPPLIER. UNITS SHOWN AS TEMPERED TO BE VERIFIED BY WINDOW SUPPLIER PER LOCAL CODES AND CONDITIONS.

REFER TO PLANS FOR WINDOW AND DOOR OPERATION.
ALL UNITS SHOWN WITHOUT OPERATION ARE FIXED UNITS.

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
6435 Apple Orchard Lane, Rochester Hills, MI 48306
248.800.6505
roger@rogerberent.com

Owner:
LOCHIRCO
CUSTOM HOMES
202 Walnut Blvd. Suite B Rochester, MI

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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE:
DOOR SCHEDULE AND DETAILS

Drawing Number:
A-040
ARCHITECTURAL-040

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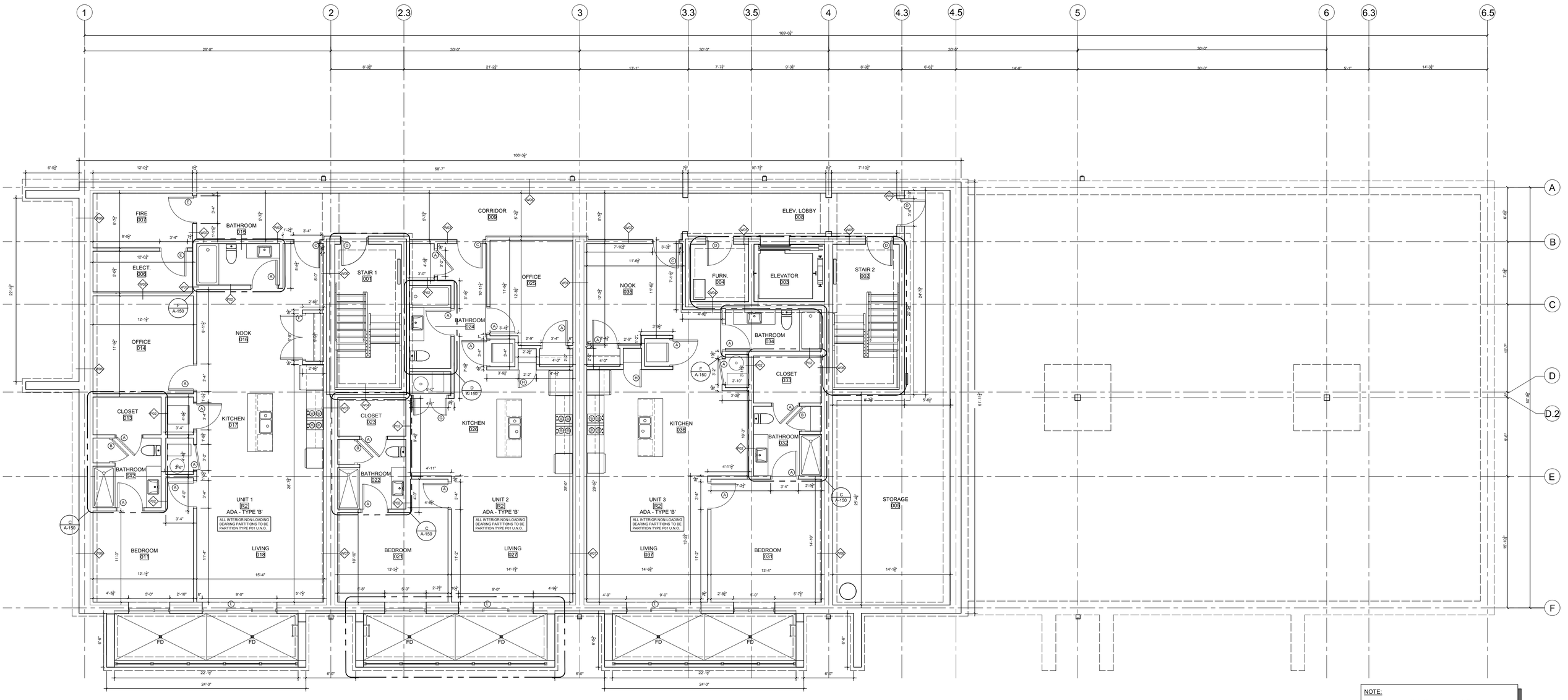

NOTE:
- SEE SHEET A-020 FOR WALL TYPES
- SEE SHEET A-040 FOR DOOR AND WINDOW TYPES

WALL MATERIAL LEGEND

- FACE BRICK
- CONCRETE MASONRY UNIT
- POURED CONCRETE

1 GARDEN/BASEMENT LEVEL PLAN
SCALE: 3/16" = 1'-0"

Structural Engineer:

Architect:
RBA
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6435 Apple Orchard Lane, Rochester Hills, MI 48306
248.800.6505
roger@rogerberent.com

Owner:
LOCHIRCO CUSTOM HOMES
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Project:
210 DIVERSION
Rochester, Michigan

Date:
Scale:
Drawn By:
Checked By:
DRAWING TITLE:

Drawing Number:
A-100
ARCHITECTURAL-100

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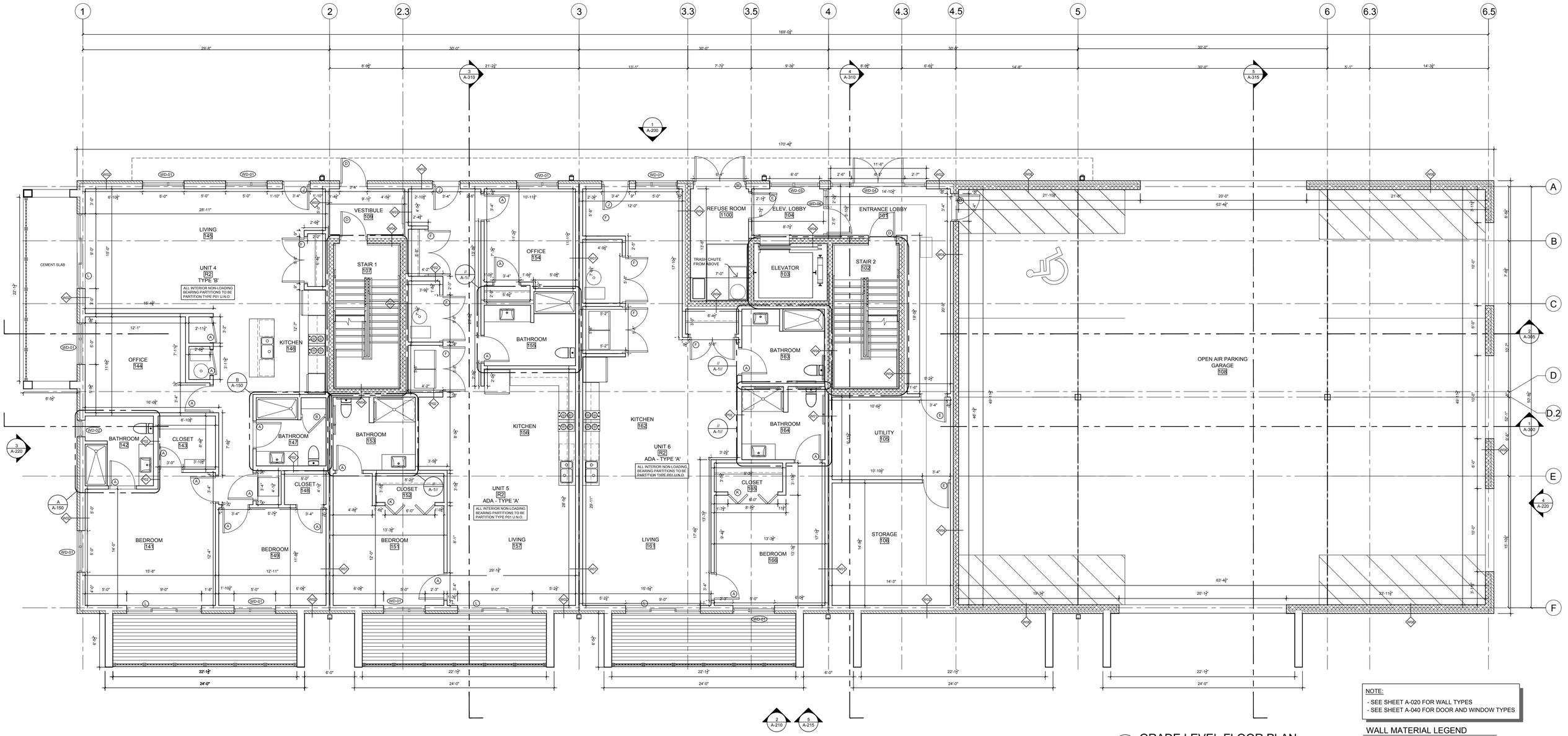
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F
169'-0"
170'-4"
3 A-310
4 A-310
5 A-315
1 A-200
2 A-220
A A-150
B A-150
2 A-210
5 A-215
2 A-365
1 A-360
4 A-220
LIVING 145
UNIT 4 R2 TYPE 'B'
ALL INTERIOR NON-LOADING BEARING PARTITIONS TO BE PARTITION TYPE P01 U.N.O.
CEMENT SLAB
OFFICE 144
KITCHEN 146
VESTIBULE 109
STAIR 1 107
OFFICE 154
BATHROOM 155
KITCHEN 156
BATHROOM 142
CLOSET 143
BATHROOM 147
BATHROOM 153
CLOSET 148
CLOSET 152
UNIT 5 R2 ADA - TYPE 'A'
ALL INTERIOR NON-LOADING BEARING PARTITIONS TO BE PARTITION TYPE P01 U.N.O.
BEDROOM 141
BEDROOM 149
BEDROOM 151
LIVING 157
KITCHEN 162
UNIT 6 R2 ADA - TYPE 'A'
ALL INTERIOR NON-LOADING BEARING PARTITIONS TO BE PARTITION TYPE P01 U.N.O.
LIVING 161
REFUSE ROOM 1100
ELEV. LOBBY 104
ENTRANCE LOBBY 101
TRASH CHUTE FROM ABOVE
ELEVATOR 103
STAIR 2 102
BATHROOM 163
BATHROOM 164
CLOSET 165
BEDROOM 166
UTILITY 105
STORAGE 106
OPEN AIR PARKING GARAGE 108
WD-01
WD-02
WD-03
WD-04
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WW2
WW3
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WW5
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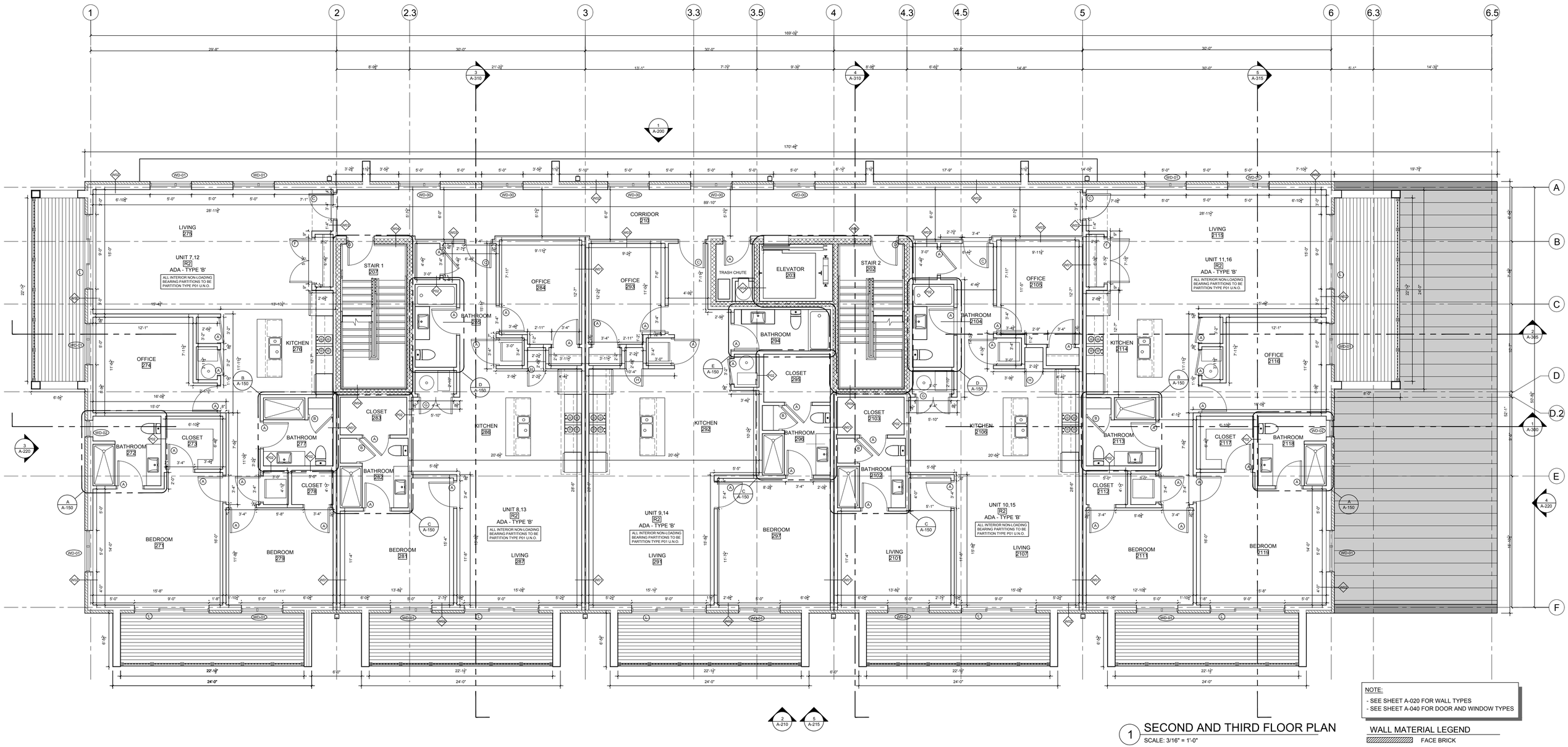


NOTE:
- SEE SHEET A-020 FOR WALL TYPES
- SEE SHEET A-040 FOR DOOR AND WINDOW TYPES

WALL MATERIAL LEGEND

- FACE BRICK
- CONCRETE MASONRY UNIT
- POURED CONCRETE

1 SECOND AND THIRD FLOOR PLAN

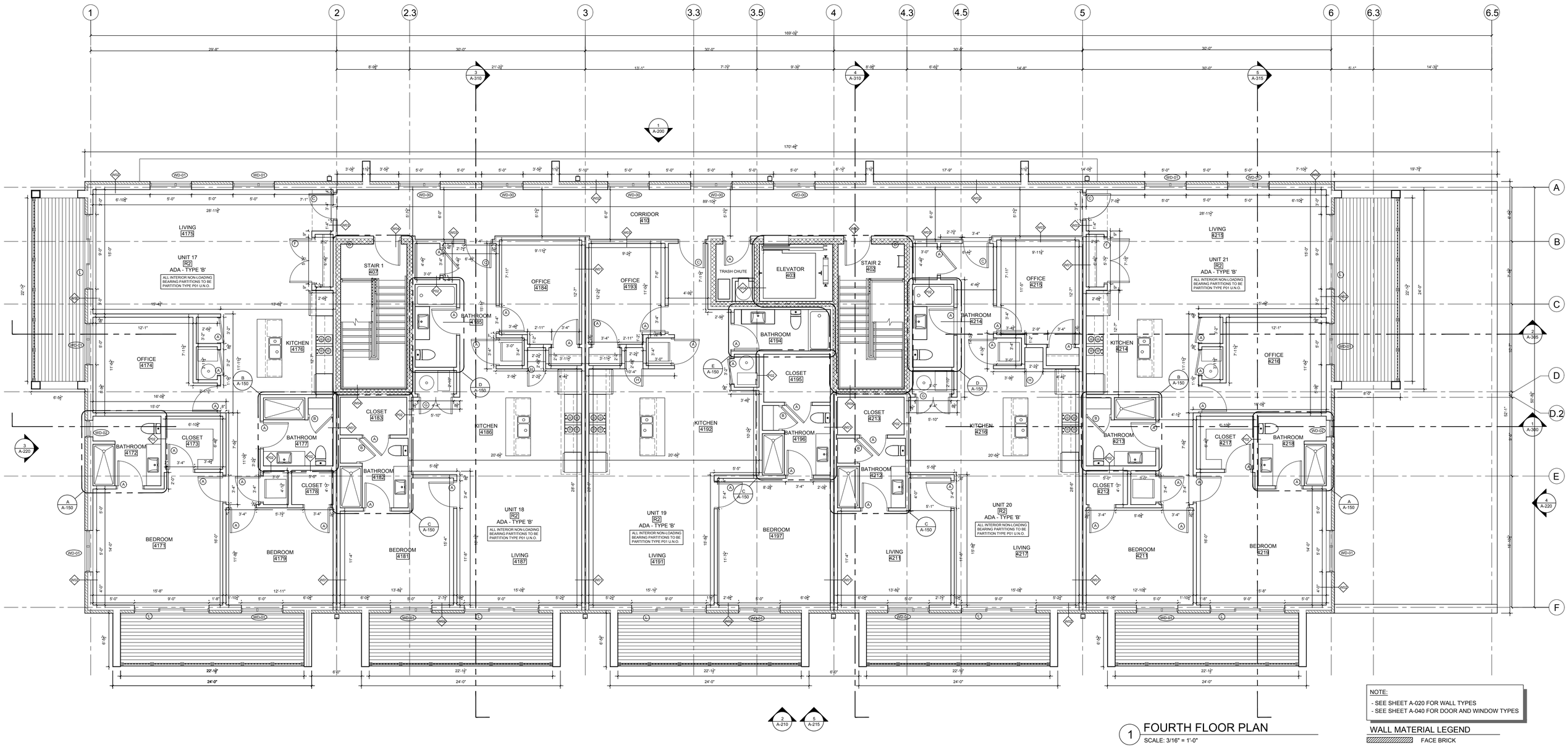
SCALE: 3/16" = 1'-0"

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan

Date:	Drawn By:
Scale:	Checked By:
DRAWING TITLE:	

Drawing Number: A-120
ARCHITECTURAL-120

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT



1 FOURTH FLOOR PLAN
SCALE: 3/16" = 1'-0"

NOTE:
- SEE SHEET A-020 FOR WALL TYPES
- SEE SHEET A-040 FOR DOOR AND WINDOW TYPES

WALL MATERIAL LEGEND
- FACE BRICK
- CONCRETE MASONRY UNIT
- POURED CONCRETE

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE:

Drawing Number: A-130
ARCHITECTUAL-130

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

ROOF DRAINS AND SUMP PANS ASSEMBLY:

1. ROOF DRAINS: 4" DIAMETER PRIMARY ROOF DRAINS, CAST IRON OR PVC, WITH DOME STRAINERS, DESIGNED TO HANDLE 4.5 INCHES/HOUR RAINFALL (PER IBC SECTION 1101.7 AND MICHIGAN PLUMBING CODE), TOTAL OF 8 DRAINS EVENLY DISTRIBUTED ACROSS 9,850 SQ.FT. ROOF AREA.
2. OVERFLOW DRAINS: 4" DIAMETER OVERFLOW ROOF DRAINS, CAST IRON OR PVC, WITH 2" HIGH WATER DAMS, POSITIONED ADJACENT TO EACH PRIMARY DRAIN (8 TOTAL), DISCHARGING TO EXTERIOR AT 2" ABOVE GRADE, PER IBC SECTION 1107.1.
3. ROOF SUMP PANS: 8 ROOF SUMP PANS, GALVANIZED STEEL OR PVC, INTEGRATED WITH DUROLAST 60 MIL EPDM MEMBRANE, SIZED TO ACCOMMODATE 4" DRAINS (APPROX. 24" X 24" X 4" DEEP), SLOPED TO DRAIN CENTER, PROVIDING LOW POINT COLLECTION FOR ROOF AREA.
4. DOWNSPOUTS: 6" SQUARE BLACK METAL DOWNSPOUTS, PRE-FINISHED ALUMINUM OR STEEL, CONNECTED TO EACH PRIMARY DRAIN VIA INTERNAL PIPING, DIRECTING RUNOFF AWAY FROM BUILDING FOUNDATION, PER IBC SECTION 1101.6.
5. PIPING: 4" PVC OR CAST IRON INTERNAL DRAIN PIPING, SLOPED 1/8" PER FOOT MINIMUM, CONNECTING ROOF DRAINS TO DOWNSPOUTS, SIZED FOR 1,231 SQ.FT. PER DRAIN (9,850 SQ.FT. / 8), MEETING MICHIGAN PLUMBING CODE SECTION 1106.
6. FLASHING: DUROLAST 60 MIL EPDM MEMBRANE FLASHED AND SEALED AROUND EACH DRAIN AND SUMP PAN, EXTENDING 6" UP DRAIN COLLARS AND SECURED WITH CLAMPS, ENSURING WATERTIGHT INTEGRATION, PER IBC SECTION 1503.2.
7. STRAINERS: HEAVY-DUTY DOME STRAINERS ON PRIMARY DRAINS, FLAT GRATES ON OVERFLOW DRAINS, CORROSION-RESISTANT, PREVENTING DEBRIS ENTRY WHILE ALLOWING FULL FLOW CAPACITY, PER IBC SECTION 1105.1.

PRIMARY ROOF ASSEMBLY (BUILDING):

(33) ROOF FINISH: DUROLAST 60 MIL SINGLE-PLY MEMBRANE, DARK GRAY COLOR, WITH FULLY ADHERED SYSTEM FOR WATERPROOFING.

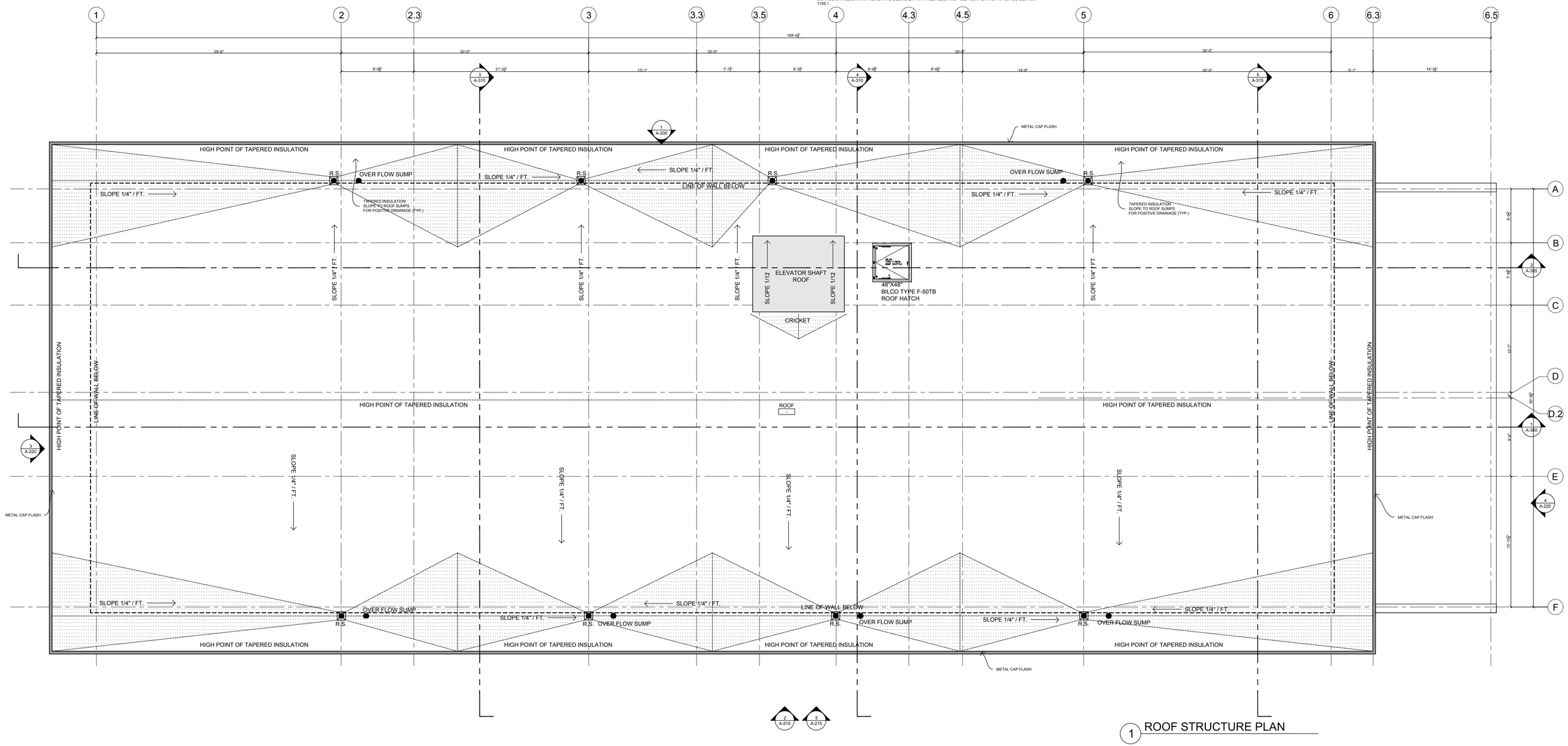
(34) TAPERED INSULATION: EXPANDED POLYSTYRENE (EPS), TAPERED FROM 0" TO 11" MAXIMUM THICKNESS (R-44 AT HIGH POINT, R-4/INCH), SLOPED AT 1/4" PER FOOT FOR DRAINAGE.

(35) PRIMARY INSULATION: 4" POLYISOCYANURATE (POLYISO) RIGID INSULATION, R-22.8 (R-5.7/INCH LTTR), ON TOP OF ROOF DECK AS CONTINUOUS INSULATION.

(36) SECONDARY INSULATION: 1.2" CLOSED-CELL SPRAY FOAM, R-7.8 (R-6.5/INCH), APPLIED UNDERNEATH ROOF DECK, COMBINING WITH POLYISO FOR TOTAL R-30.6, MEETING ASHRAE 90.1-2019 R-30 CI REQUIREMENT FOR ZONE 5A.

(37) ROOF DECK: 3/4" PLYWOOD, SECURED TO JOISTS WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.

(38) STRUCTURE: 16" OPEN WEB WOOD JOISTS, SPACED AT 24" O.C. (VERIFY WITH STRUCTURAL ENGINEER), DESIGNED PER 2015 IBC CHAPTER 23.



1 ROOF STRUCTURE PLAN

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

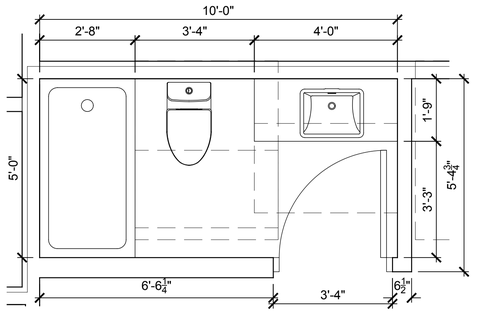
No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

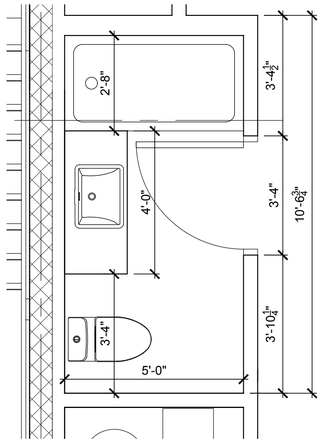
Date: | Drawn By: | Scale: | Checked By: | DRAWING TITLE:

Drawing Number: A-140 ARCHITECTURAL-140

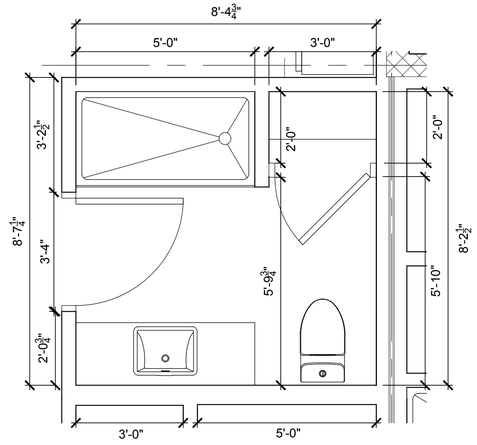
Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT



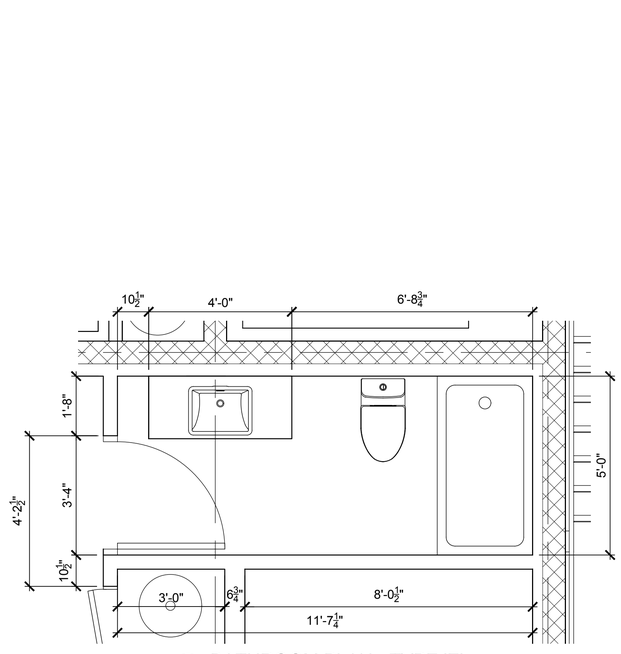
F BATHROOM PLAN - TYPE 'F'
SCALE: 1/2" = 1'-0"



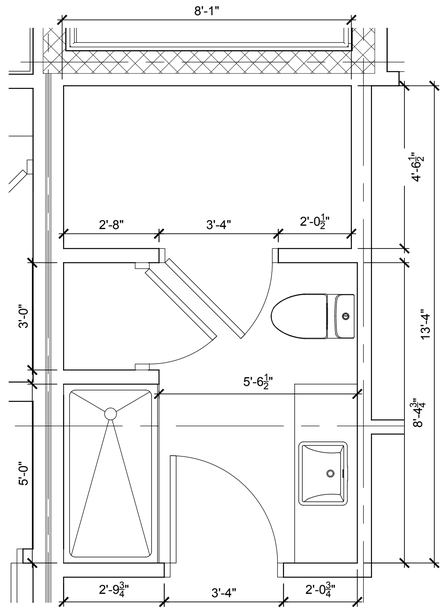
D BATHROOM PLAN - TYPE 'D'
SCALE: 1/2" = 1'-0"



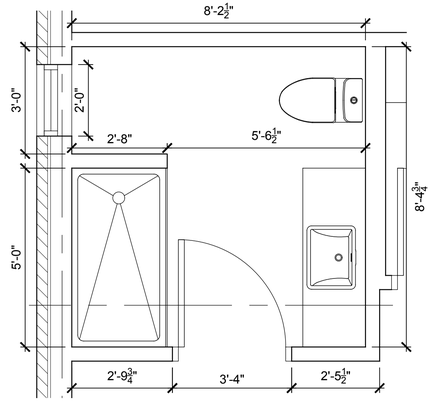
B BATHROOM PLAN - TYPE 'B'
SCALE: 1/2" = 1'-0"



E BATHROOM PLAN - TYPE 'E'
SCALE: 1/2" = 1'-0"



C BATHROOM PLAN - TYPE 'C'
SCALE: 1/2" = 1'-0"



A BATHROOM PLAN - TYPE 'A'
SCALE: 1/2" = 1'-0"

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

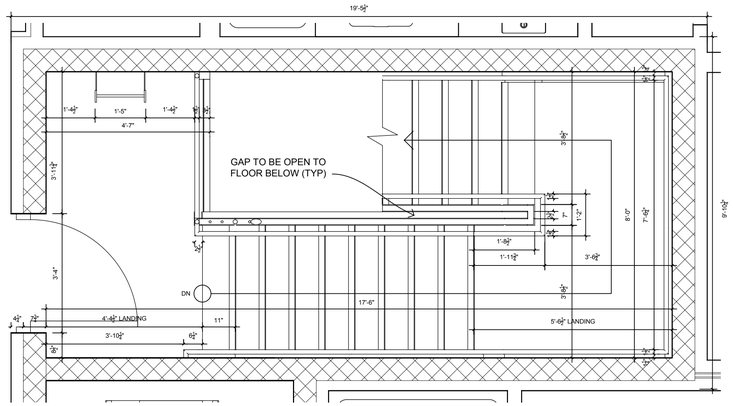
No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE:

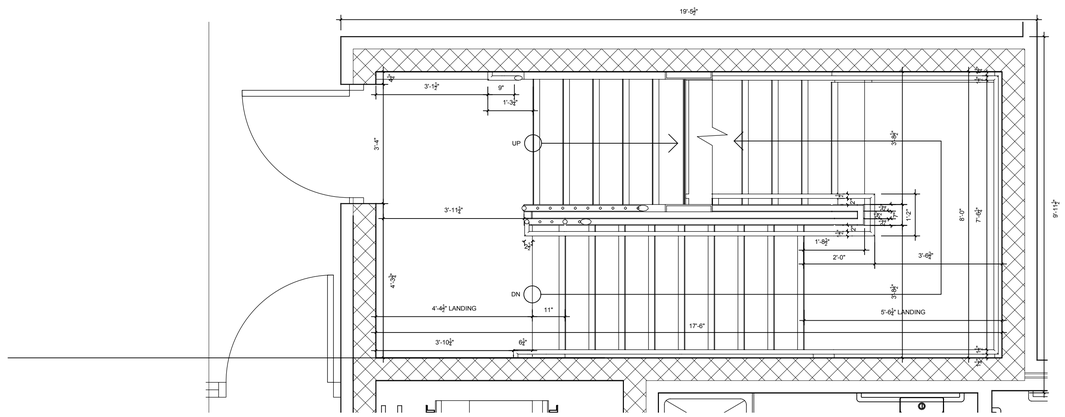
Drawing Number: A-150 ARCHITECTURAL-120

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 53981 · LICENSED ARCHITECT



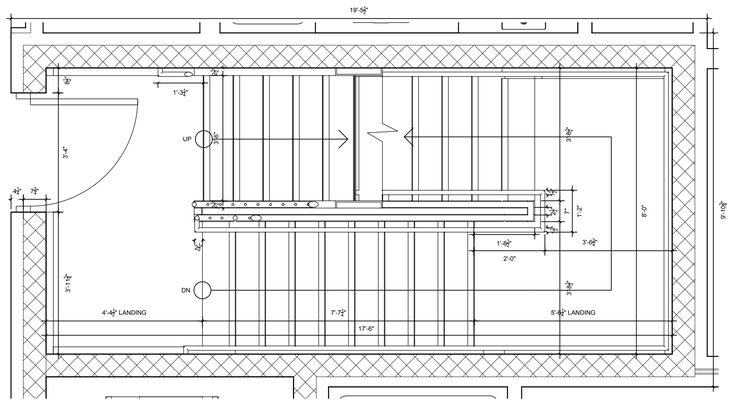
D STAIR 1- FOURTH FLOOR PLAN

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



B STAIR 1- GROUND FLOOR PLAN

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



C STAIR 1- SECOND AND THIRD FLOOR PLAN

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

STAIR ASSEMBLY (BASEMENT TO FOURTH FLOOR):

STRUCTURE: PREFABRICATED METAL STAIR, STEEL CONSTRUCTION, WITH DIAMOND PLATE TREADS AND LANDINGS, DESIGNED PER 2015 IBC SECTION 1011 AND CHAPTER 16 FOR STRUCTURAL INTEGRITY.

RISERS AND TREADS: UNIFORM RISER HEIGHT 7" MAXIMUM AND TREAD DEPTH 11" MINIMUM, WITH DIAMOND PLATE STEEL, 1/4" THICK, PROVIDING SLIP-RESISTANT SURFACE PER IBC SECTION 1011.7.

LANDINGS: FOUR INTERMEDIATE LANDINGS, MINIMUM WIDTH EQUAL TO STAIR WIDTH (44" MINIMUM PER IBC SECTION 1011.6), CONSTRUCTED OF DIAMOND PLATE STEEL, LEVEL WITHIN 1/4" TOLERANCE.

WIDTH: 44" MINIMUM CLEAR WIDTH BETWEEN HANDRAILS, MEETING IBC SECTION 1011.2 FOR TYPE I STAIRS SERVING MULTIFAMILY OCCUPANCY (R-2).

GUARDRAILS: 42" MINIMUM HEIGHT ABOVE TREAD NOSING AND LANDING SURFACES, STEEL CONSTRUCTION WITH VERTICAL OR HORIZONTAL MEMBERS SPACED TO PREVENT PASSAGE OF A 4" SPHERE, PER IBC SECTION 1015.3 AND 1015.4.

HANDRAILS: CONTINUOUS STEEL HANDRAILS ON BOTH SIDES, 34" TO 38" ABOVE TREAD NOSING, 1-1/4" TO 2" DIAMETER, WITH 1-1/2" CLEARANCE FROM WALLS OR GUARDS, EXTENDING 12" BEYOND TOP AND BOTTOM RISERS, PER IBC SECTION 1014.

STAIR SHAFT: CMU WALLS, 8" THICK, PROVIDING 2-HOUR FIRE RESISTANCE RATING PER IBC SECTION 713.4 FOR ENCLOSED STAIR ENCLOSURES, WITH DOORS AND OPENINGS AS REQUIRED BY IBC SECTION 1023.

LOAD CAPACITY: DESIGNED FOR 100 PSF LIVE LOAD AND 300 LB CONCENTRATED LOAD AT ANY POINT, PER IBC SECTION 1607.1 AND TABLE 1607.1 FOR STAIRS.

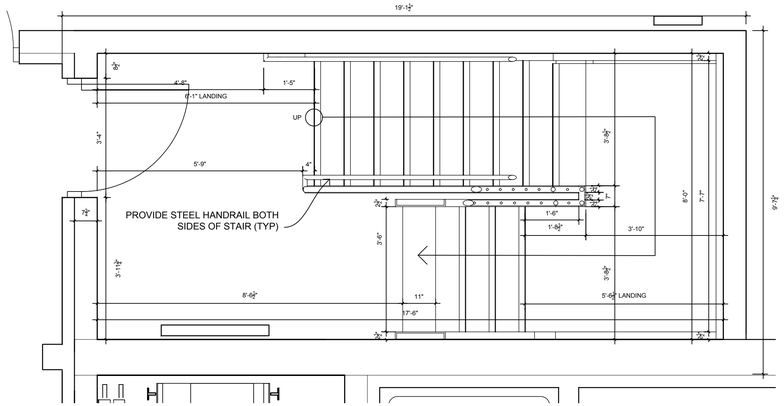
ROOF ACCESS LADDER AND SCUTTLE:

LADDER: STEEL WALL-ATTACHED LADDER, FIXED TO CMU STAIR SHAFT WALL AT TOP OF ONE STAIR, WITH 3/4" DIAMETER RUNGS SPACED 12" O.C., 18" MINIMUM WIDTH, AND 7" MINIMUM TOE CLEARANCE, EXTENDING 42" ABOVE ROOF LANDING, PER IBC SECTION 1011.16.

GUARDRAILS: 42" HIGH STEEL GUARDRAILS AROUND LADDER ROOF OPENING, WITH MEMBERS SPACED TO PREVENT PASSAGE OF A 4" SPHERE, PER IBC SECTION 1015.6 FOR ROOF ACCESS PROTECTION.

ROOF SCUTTLE: BILCO TYPE F-50TB ROOF SCUTTLE, 36" X 54" SIZE, STEEL CONSTRUCTION WITH THERMAL BREAK, DARK GRAY FINISH, EQUIPPED WITH SPRING-ASSISTED COVER, CURB-MOUNTED ON ROOF DECK, PROVIDING WEATHER-TIGHT SEAL AND ACCESS TO ROOF.

CURB: 12" HIGH STEEL CURB, INTEGRAL TO SCUTTLE, FLASHED AND SEALED TO DUROLAST 60 MIL ROOF MEMBRANE FOR WATERPROOFING, PER IBC SECTION 1503.2.



A STAIR 1- BASEMENT FLOOR PLAN

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

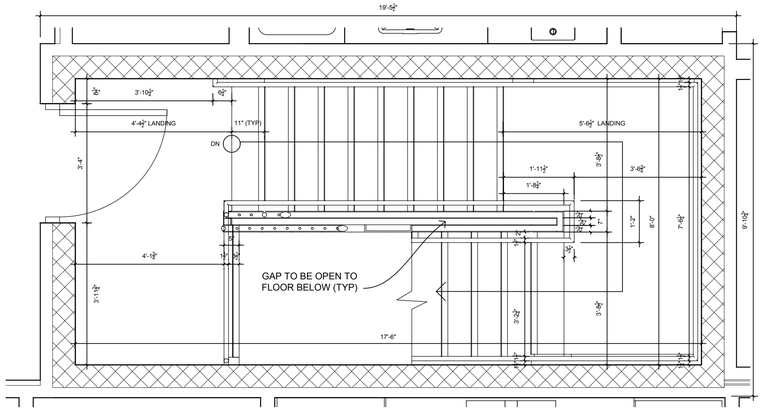
Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

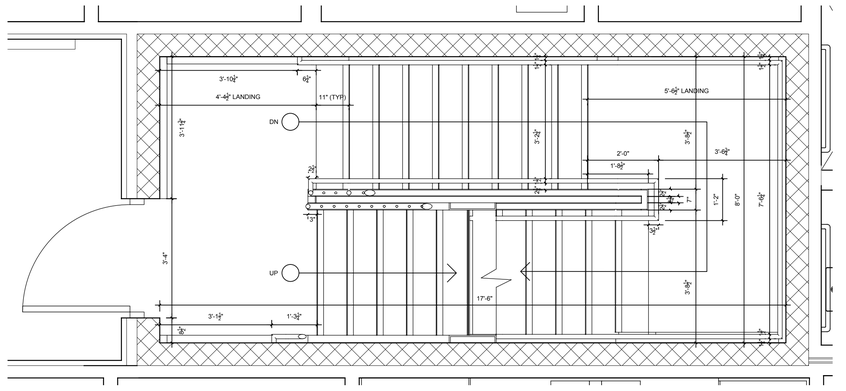
Project:	210 DIVERSION Rochester, Michigan
Date:	Drawn By:
Scale:	Checked By:
DRAWING TITLE:	
Drawing Number:	A-155 ARCHITECTURAL-120

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52391 · LICENSED ARCHITECT



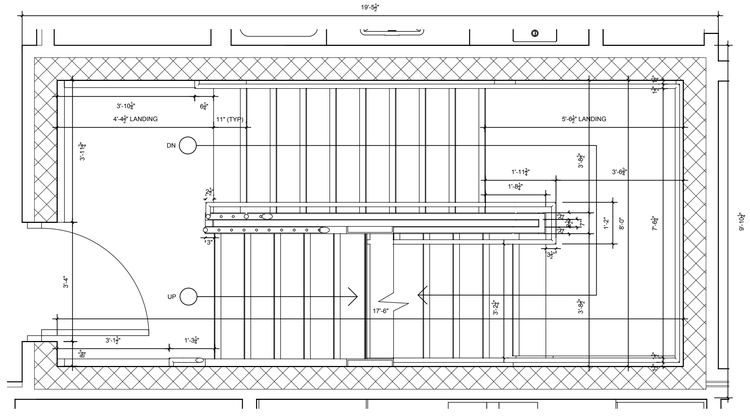
D STAIR 2- FOURTH FLOOR PLAN

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



B STAIR 2- FIRST FLOOR PLAN

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



C STAIR 2- SECOND AND THIRD FLOOR PLAN

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

STAIR ASSEMBLY (BASEMENT TO FOURTH FLOOR):

STRUCTURE: PREFABRICATED METAL STAIR, STEEL CONSTRUCTION, WITH DIAMOND PLATE TREADS AND LANDINGS, DESIGNED PER 2015 IBC SECTION 1011 AND CHAPTER 16 FOR STRUCTURAL INTEGRITY.

RISERS AND TREADS: UNIFORM RISER HEIGHT 7" MAXIMUM AND TREAD DEPTH 11" MINIMUM, WITH DIAMOND PLATE STEEL, 1/4" THICK, PROVIDING SLIP-RESISTANT SURFACE PER IBC SECTION 1011.7.

LANDINGS: FOUR INTERMEDIATE LANDINGS, MINIMUM WIDTH EQUAL TO STAIR WIDTH (44" MINIMUM PER IBC SECTION 1011.6), CONSTRUCTED OF DIAMOND PLATE STEEL, LEVEL WITHIN 1/4" TOLERANCE.

WIDTH: 44" MINIMUM CLEAR WIDTH BETWEEN HANDRAILS, MEETING IBC SECTION 1011.2 FOR TYPE I STAIRS SERVING MULTIFAMILY OCCUPANCY (R-2).

GUARDRAILS: 42" MINIMUM HEIGHT ABOVE TREAD NOSING AND LANDING SURFACES, STEEL CONSTRUCTION WITH VERTICAL OR HORIZONTAL MEMBERS SPACED TO PREVENT PASSAGE OF A 4" SPHERE, PER IBC SECTION 1015.3 AND 1015.4.

HANDRAILS: CONTINUOUS STEEL HANDRAILS ON BOTH SIDES, 34" TO 38" ABOVE TREAD NOSING, 1-1/4" TO 2" DIAMETER, WITH 1-1/2" CLEARANCE FROM WALLS OR GUARDS, EXTENDING 12" BEYOND TOP AND BOTTOM RISERS, PER IBC SECTION 1014.

STAIR SHAFT: CMU WALLS, 8" THICK, PROVIDING 2-HOUR FIRE RESISTANCE RATING PER IBC SECTION 713.4 FOR ENCLOSED STAIR ENCLOSURES, WITH DOORS AND OPENINGS AS REQUIRED BY IBC SECTION 1023.

LOAD CAPACITY: DESIGNED FOR 100 PSF LIVE LOAD AND 300 LB CONCENTRATED LOAD AT ANY POINT, PER IBC SECTION 1607.1 AND TABLE 1607.1 FOR STAIRS.

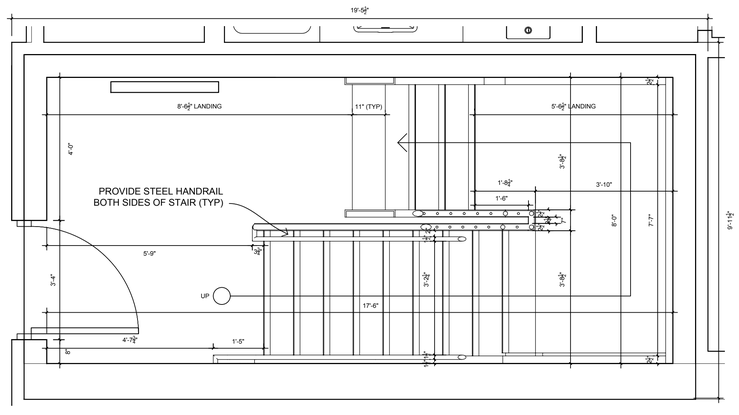
ROOF ACCESS LADDER AND SCUTTLE:

LADDER: STEEL WALL-ATTACHED LADDER, FIXED TO CMU STAIR SHAFT WALL AT TOP OF ONE STAIR, WITH 3/4" DIAMETER RUNGS SPACED 12" O.C., 18" MINIMUM WIDTH, AND 7" MINIMUM TOE CLEARANCE, EXTENDING 42" ABOVE ROOF LANDING, PER IBC SECTION 1011.16.

GUARDRAILS: 42" HIGH STEEL GUARDRAILS AROUND LADDER ROOF OPENING, WITH MEMBERS SPACED TO PREVENT PASSAGE OF A 4" SPHERE, PER IBC SECTION 1015.6 FOR ROOF ACCESS PROTECTION.

ROOF SCUTTLE: BILCO TYPE F-50TB ROOF SCUTTLE, 36" X 54" SIZE, STEEL CONSTRUCTION WITH THERMAL BREAK, DARK GRAY FINISH, EQUIPPED WITH SPRING-ASSISTED COVER, CURB-MOUNTED ON ROOF DECK, PROVIDING WEATHER-TIGHT SEAL AND ACCESS TO ROOF.

CURB: 12" HIGH STEEL CURB, INTEGRAL TO SCUTTLE, FLASHED AND SEALED TO DUROLAST 60 MIL ROOF MEMBRANE FOR WATERPROOFING, PER IBC SECTION 1503.2.



A STAIR 2- BASEMENT FLOOR PLAN

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

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:

Scale: | Checked By:

DRAWING TITLE:

Drawing Number: A-156 ARCHITECTURAL-120

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

STAIR ASSEMBLY (BASEMENT TO FOURTH FLOOR):

STRUCTURE: PREFABRICATED METAL STAIR, STEEL CONSTRUCTION, WITH DIAMOND PLATE TREADS AND LANDINGS, DESIGNED PER 2015 IBC SECTION 1011 AND CHAPTER 16 FOR STRUCTURAL INTEGRITY.

RISERS AND TREADS: UNIFORM RISER HEIGHT 7" MAXIMUM AND TREAD DEPTH 11" MINIMUM, WITH DIAMOND PLATE STEEL, 1/4" THICK, PROVIDING SLIP-RESISTANT SURFACE PER IBC SECTION 1011.7.

LANDINGS: FOUR INTERMEDIATE LANDINGS, MINIMUM WIDTH EQUAL TO STAIR WIDTH (44" MINIMUM PER IBC SECTION 1011.6), CONSTRUCTED OF DIAMOND PLATE STEEL, LEVEL WITHIN 1/4" TOLERANCE.

WIDTH: 44" MINIMUM CLEAR WIDTH BETWEEN HANDRAILS, MEETING IBC SECTION 1011.2 FOR TYPE I STAIRS SERVING MULTIFAMILY OCCUPANCY (R-2).

GUARDRAILS: 42" MINIMUM HEIGHT ABOVE TREAD NOSING AND LANDING SURFACES, STEEL CONSTRUCTION WITH VERTICAL OR HORIZONTAL MEMBERS SPACED TO PREVENT PASSAGE OF A 4" SPHERE, PER IBC SECTION 1015.3 AND 1015.4.

HANDRAILS: CONTINUOUS STEEL HANDRAILS ON BOTH SIDES, 34" TO 38" ABOVE TREAD NOSING, 1-1/4" TO 2" DIAMETER, WITH 1-1/2" CLEARANCE FROM WALLS OR GUARDS, EXTENDING 12" BEYOND TOP AND BOTTOM RISERS, PER IBC SECTION 1014.

STAIR SHAFT: CMU WALLS, 8" THICK, PROVIDING 2-HOUR FIRE RESISTANCE RATING PER IBC SECTION 713.4 FOR ENCLOSED STAIR ENCLOSURES, WITH DOORS AND OPENINGS AS REQUIRED BY IBC SECTION 1023.

LOAD CAPACITY: DESIGNED FOR 100 PSF LIVE LOAD AND 300 LB CONCENTRATED LOAD AT ANY POINT, PER IBC SECTION 1607.1 AND TABLE 1607.1 FOR STAIRS.

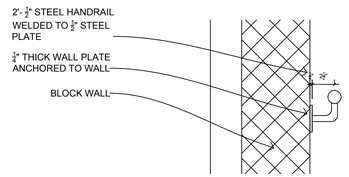
ROOF ACCESS LADDER AND SCUTTLE:

LADDER: STEEL WALL-ATTACHED LADDER, FIXED TO CMU STAIR SHAFT WALL AT TOP OF ONE STAIR, WITH 3/4" DIAMETER RUNGS SPACED 12" O.C., 18" MINIMUM WIDTH, AND 7" MINIMUM TOE CLEARANCE, EXTENDING 42" ABOVE ROOF LANDING, PER IBC SECTION 1011.16.

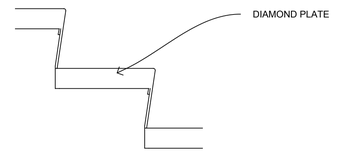
GUARDRAILS: 42" HIGH STEEL GUARDRAILS AROUND LADDER ROOF OPENING, WITH MEMBERS SPACED TO PREVENT PASSAGE OF A 4" SPHERE, PER IBC SECTION 1015.6 FOR ROOF ACCESS PROTECTION.

ROOF SCUTTLE: BILCO TYPE F-50TB ROOF SCUTTLE, 36" X 54" SIZE, STEEL CONSTRUCTION WITH THERMAL BREAK, DARK GRAY FINISH, EQUIPPED WITH SPRING-ASSISTED COVER, CURB-MOUNTED ON ROOF DECK, PROVIDING WEATHER-TIGHT SEAL AND ACCESS TO ROOF.

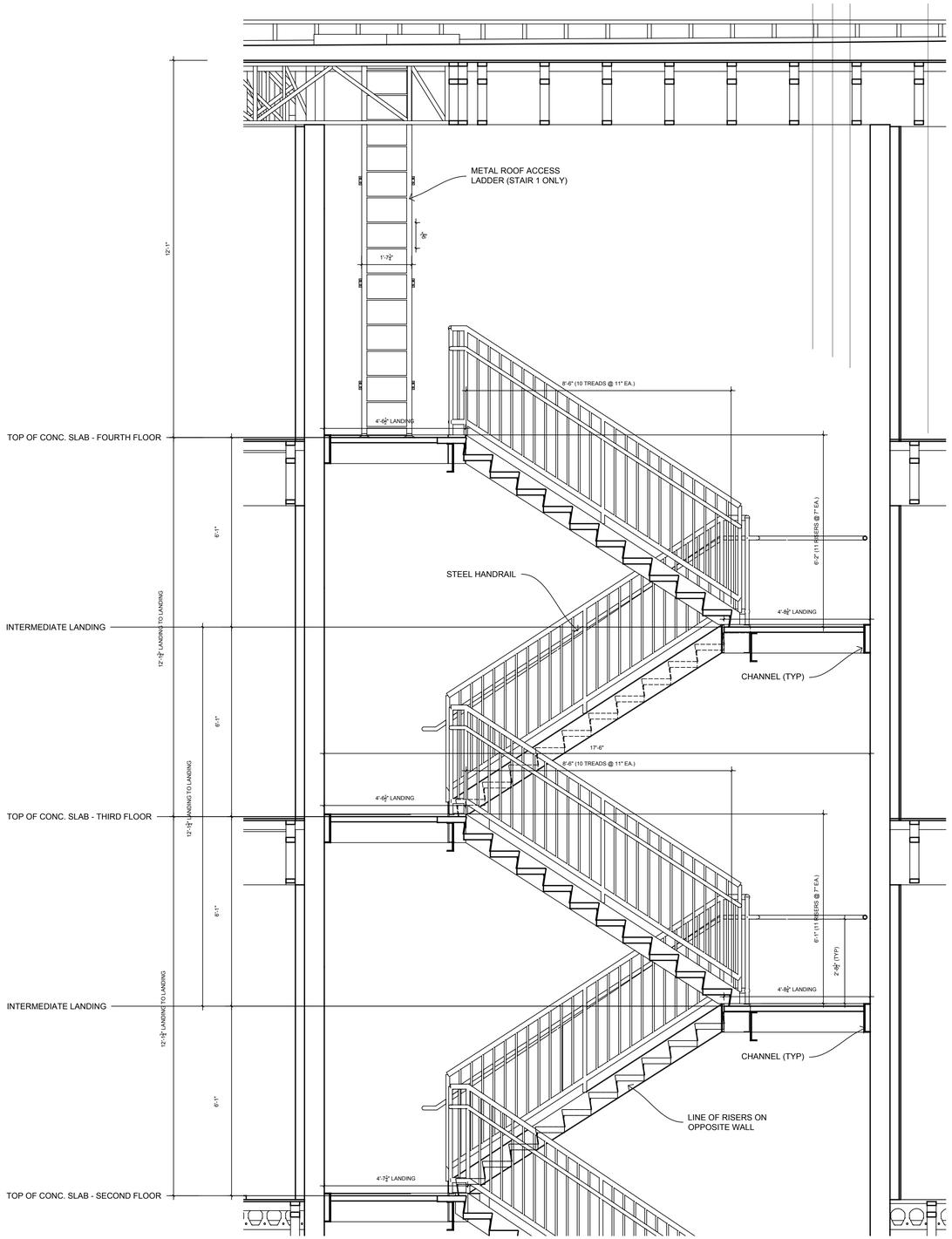
CURB: 12" HIGH STEEL CURB, INTEGRAL TO SCUTTLE, FLASHED AND SEALED TO DUROLAST 60 MIL ROOF MEMBRANE FOR WATERPROOFING, PER IBC SECTION 1503.2.



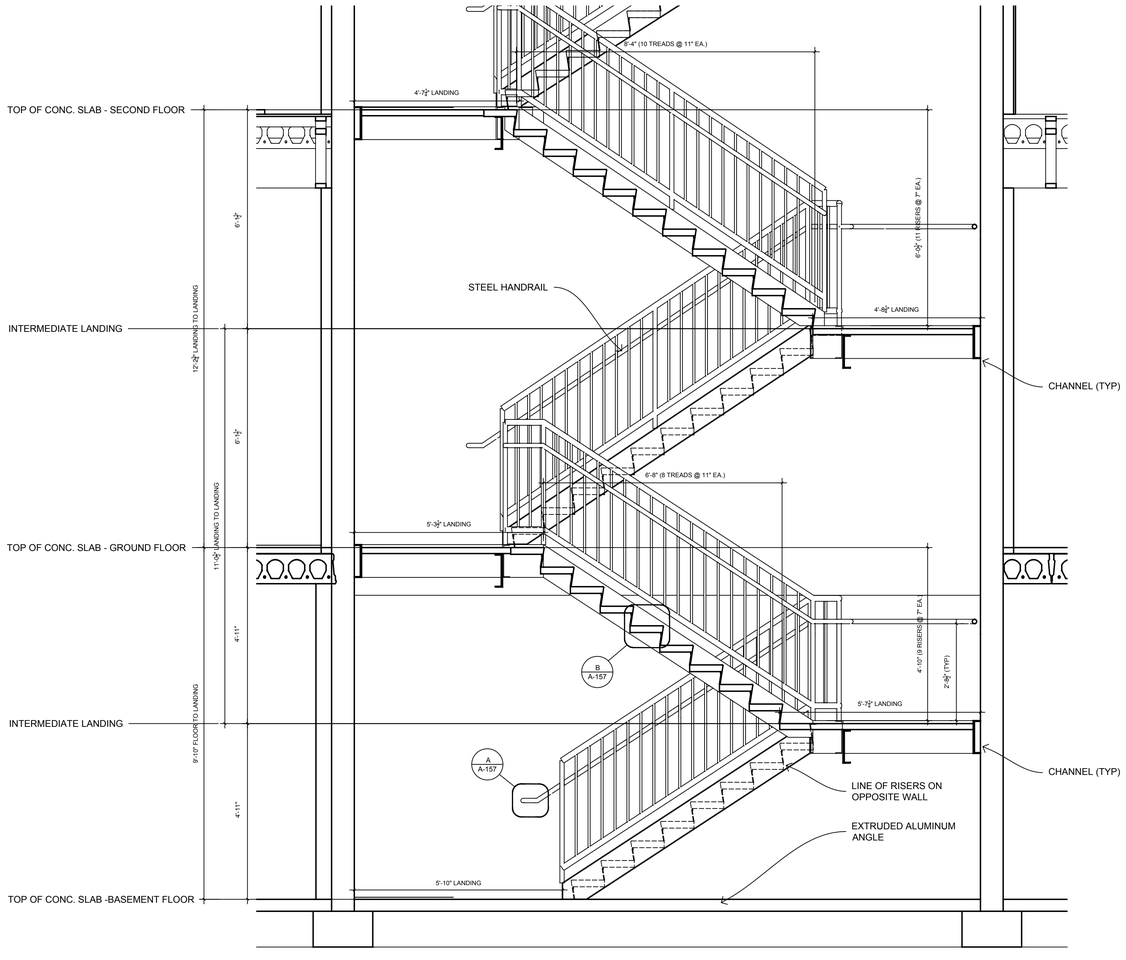
A HANDRAIL SUPPORT DETAIL @ BLOCK WALL
SCALE: 1 1/2" = 1'-0"



B HANDRAIL SUPPORT STAIR TREAD DETAIL
SCALE: 1 1/2" = 1'-0"



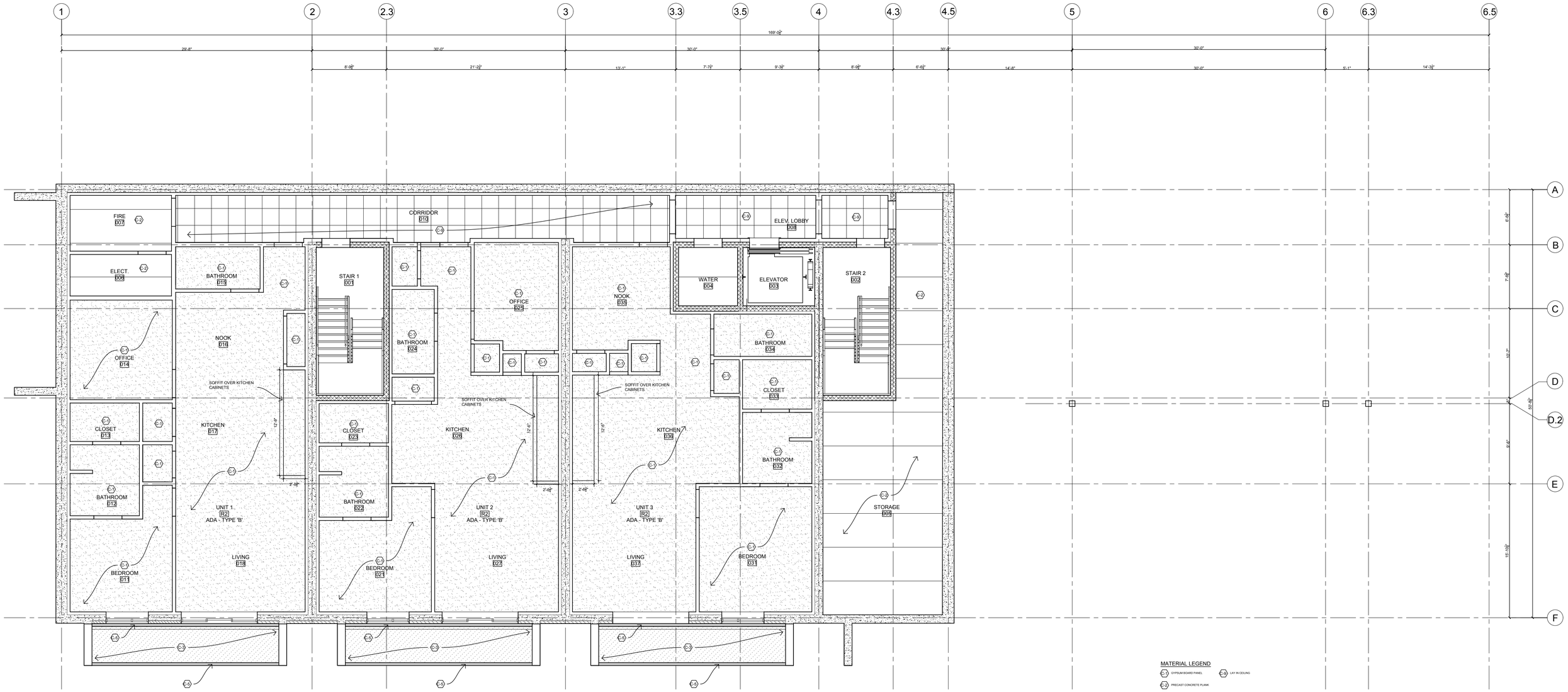
2 STAIR 1 (STAIR 2 MIRRORED)
SCALE: 1/2" = 1'-0"



1 STAIR 1 (STAIR 2 MIRRORED)
SCALE: 1/2" = 1'-0"

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan	Date: / Drawn By: / Scale: / Checked By: / DRAWING TITLE:	Drawing Number: A-157 ARCHITECTURAL-120

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 REGISTERED ARCHITECT



SOFFIT ASSEMBLY:
LOCATION: SOFFITS LOCATED PRIMARILY UNDER 10" HOLLOW CORE PRECAST CONCRETE PLANK IN BASEMENT LEVEL AND IN GARAGE AREAS BENEATH UPPER UNITS, AS REQUIRED FOR UTILITY ROUTING.

CLEARANCE: MINIMUM 14" CLEAR INSIDE HEIGHT FROM SOFFIT BOTTOM TO UNDERSIDE OF HOLLOW CORE PLANK OR SUPPORTING STRUCTURE, PROVIDING SPACE FOR HVAC DUCTS, PLUMBING PIPES, AND OTHER UTILITIES, PER 2015 IBC SECTION 1209 AND MICHIGAN MECHANICAL CODE.

FRAMING: 2X WOOD FRAMING (E.G., 2X10 OR 2X12, DOUGLAS FIR-LARCH #2), SPACED AT 16" O.C., ATTACHED TO HOLLOW CORE PLANK WITH CONCRETE ANCHORS (E.G., 1/2" WEDGE BOLTS) AT 24" O.C., DESIGNED PER 2015 IBC CHAPTER 23

FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO FRAMING WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10), PAINTED TO MATCH INTERIOR AESTHETIC.

INSULATION: R-13 FIBERGLASS BATT INSULATION (3-1/2" THICK) OR EQUIVALENT BETWEEN 2X FRAMING MEMBERS IN ALL SOFFIT AREAS, WITH SPECIAL ATTENTION TO OPEN-AIR GARAGE SOFFITS TO PREVENT HEAT LOSS AND PROTECT UTILITIES FROM FREEZING, MEETING 2015 IECC ZONE 5A REQUIREMENTS FOR EXPOSED CEILINGS.

UTILITY ACCESS: REMOVABLE OR HINGED PANELS IN SOFFIT FINISH, MINIMUM 24" X 24" SIZE, LOCATED AS REQUIRED FOR MAINTENANCE ACCESS TO HVAC, PLUMBING, AND OTHER UTILITIES, PER IBC SECTION 1209.2.

MATERIAL LEGEND

- C-1 GYPSUM BOARD PANEL
- C-2 PRECAST CONCRETE PLANK
- C-3 GALVANIZED STEEL - PAINT
- C-4 STEEL - PAINT
- C-5 EXPOSED MICROLAM BEAM
- C-6 METAL PANEL SOFFIT - BLACK
- C-7 PRE-ENGINEERED WOOD TRUSS
- C-8 WOOD LOOK ALUMINUM SOFFIT PANEL
- C-9 LAY IN CEILING

WALL MATERIAL LEGEND

- FACE BRICK
- CONCRETE MASONRY UNIT
- POURED CONCRETE

1 GARDEN/BASEMENT REFLECTED CEILING PLAN

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

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

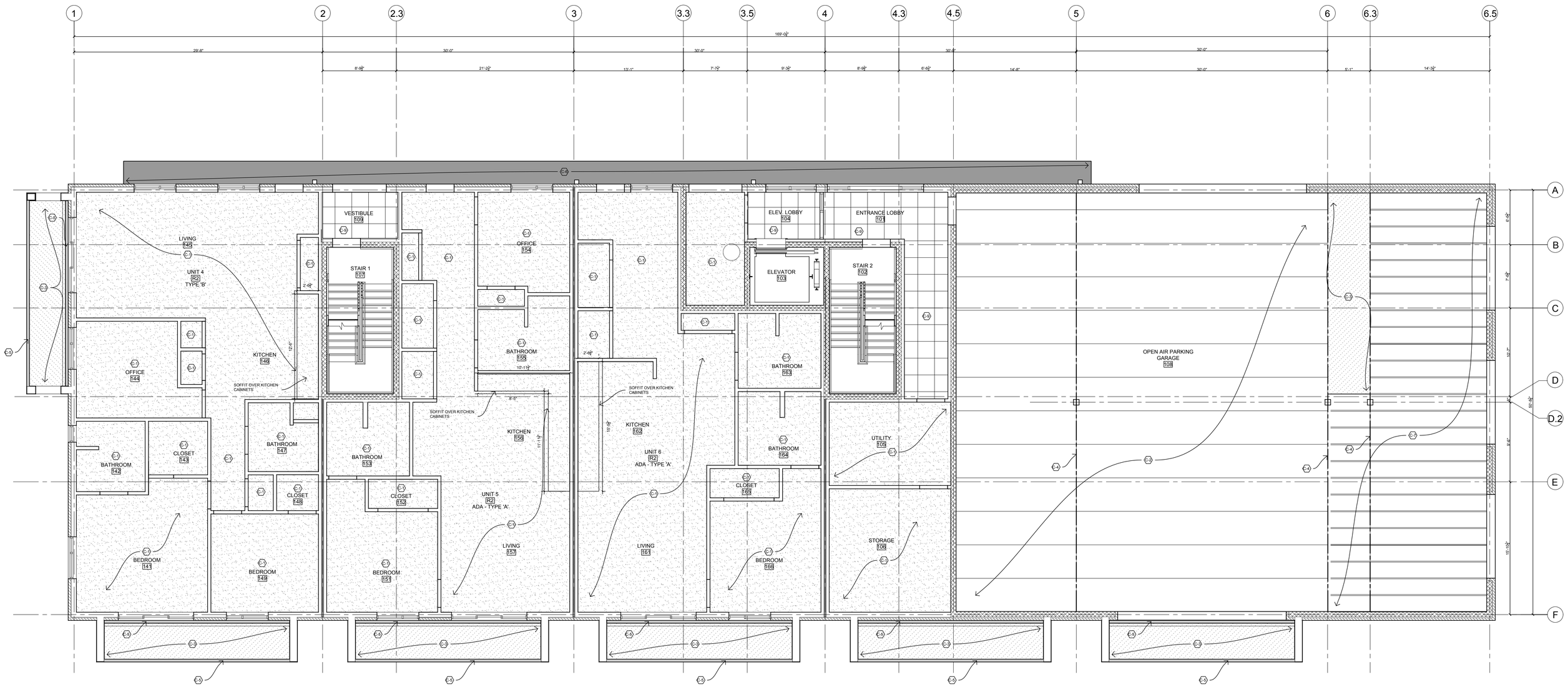
No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By: | Scale: | Checked By: | DRAWING TITLE:

Drawing Number: A-160 ARCHITECTURAL-160

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT



SOFFIT ASSEMBLY:
LOCATION: SOFFITS LOCATED PRIMARILY UNDER 10" HOLLOW CORE PRECAST CONCRETE PLANK IN BASEMENT LEVEL AND IN GARAGE AREAS BENEATH UPPER UNITS, AS REQUIRED FOR UTILITY ROUTING.

CLEARANCE: MINIMUM 14" CLEAR INSIDE HEIGHT FROM SOFFIT BOTTOM TO UNDERSIDE OF HOLLOW CORE PLANK OR SUPPORTING STRUCTURE, PROVIDING SPACE FOR HVAC DUCTS, PLUMBING PIPES, AND OTHER UTILITIES, PER 2015 IBC SECTION 1209 AND MICHIGAN MECHANICAL CODE.

FRAMING: 2X WOOD FRAMING (E.G., 2X10 OR 2X12, DOUGLAS FIR-LARCH #2), SPACED AT 16" O.C., ATTACHED TO HOLLOW CORE PLANK WITH CONCRETE ANCHORS (E.G., 1/2" WEDGE BOLTS) AT 24" O.C., DESIGNED PER 2015 IBC CHAPTER 23

FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO FRAMING WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10), PAINTED TO MATCH INTERIOR AESTHETIC.

INSULATION: R-13 FIBERGLASS BATT INSULATION (3-1/2" THICK) OR EQUIVALENT BETWEEN 2X FRAMING MEMBERS IN ALL SOFFIT AREAS, WITH SPECIAL ATTENTION TO OPEN-AIR GARAGE SOFFITS TO PREVENT HEAT LOSS AND PROTECT UTILITIES FROM FREEZING, MEETING 2015 IECC ZONE 5A REQUIREMENTS FOR EXPOSED CEILINGS.

UTILITY ACCESS: REMOVABLE OR HINGED PANELS IN SOFFIT FINISH, MINIMUM 24" X 24" SIZE, LOCATED AS REQUIRED FOR MAINTENANCE ACCESS TO HVAC, PLUMBING, AND OTHER UTILITIES, PER IBC SECTION 1209.2.

MATERIAL LEGEND

- GYPSUM BOARD PANEL
- PRECAST CONCRETE PLANK
- GALVANIZED STEEL - PAINT
- STEEL - PAINT
- EXPOSED MICROLAM BEAM
- METAL PANEL SOFFIT - BLACK
- PRE-ENGINEERED WOOD TRUSS
- WOOD LOOK ALUMINUM SOFFIT PANEL
- LAY IN CEILING

1 GRADE LEVEL REFLECTED CEILING PLAN
SCALE: 3/16" = 1'-0"

WALL MATERIAL LEGEND

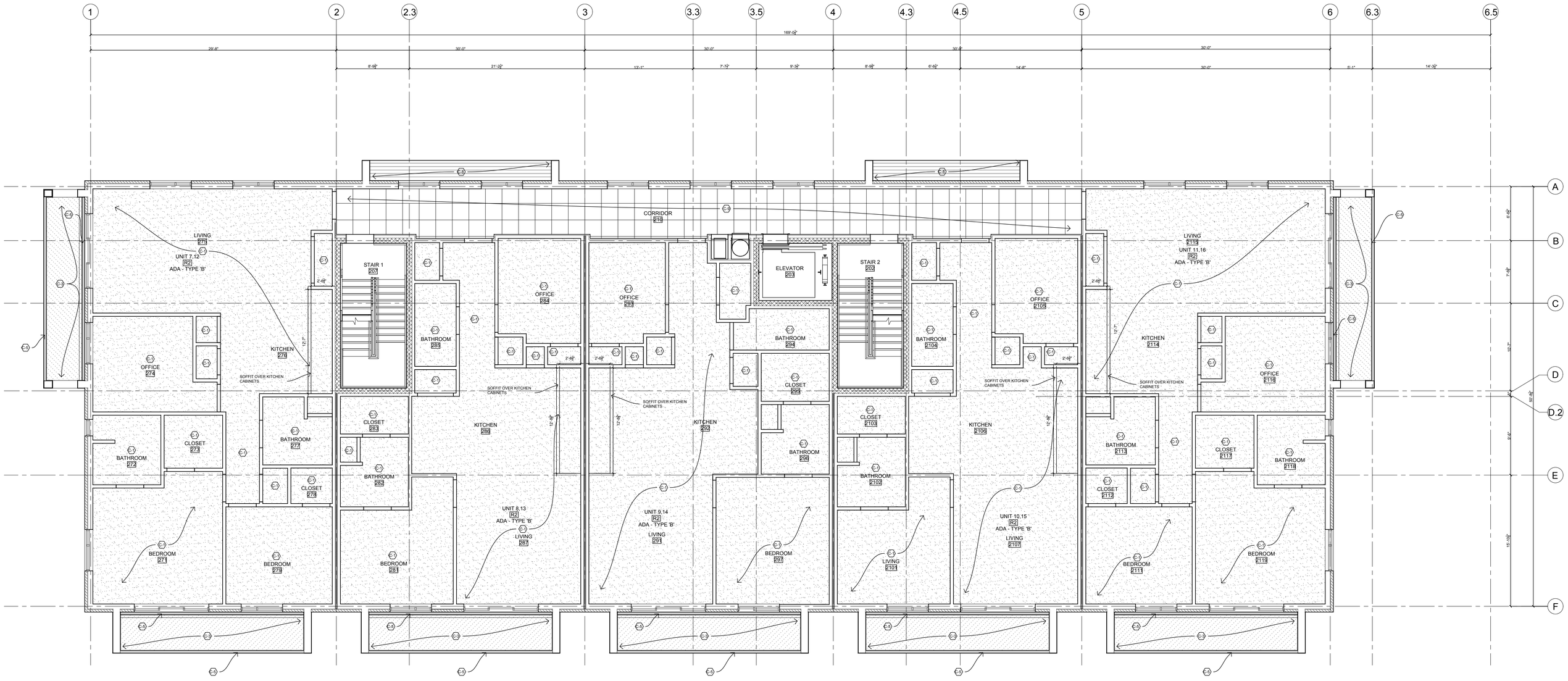
- FACE BRICK
- CONCRETE MASONRY UNIT
- POURED CONCRETE

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan

Date:	Drawn By:
Scale:	Checked By:
DRAWING TITLE:	

Drawing Number: A-170
ARCHITECTURAL-170

Seal: STATE OF MICHIGAN · ROGER JASON BERENT ARCHITECT No. 52391 · LICENSED ARCHITECT



SOFFIT ASSEMBLY:
LOCATION: SOFFITS LOCATED PRIMARILY UNDER 10" HOLLOW CORE PRECAST CONCRETE PLANK IN BASEMENT LEVEL AND IN GARAGE AREAS BENEATH UPPER UNITS, AS REQUIRED FOR UTILITY ROUTING.

CLEARANCE: MINIMUM 14" CLEAR INSIDE HEIGHT FROM SOFFIT BOTTOM TO UNDERSIDE OF HOLLOW CORE PLANK OR SUPPORTING STRUCTURE, PROVIDING SPACE FOR HVAC DUCTS, PLUMBING PIPES, AND OTHER UTILITIES, PER 2015 IBC SECTION 1209 AND MICHIGAN MECHANICAL CODE.

FRAMING: 2X WOOD FRAMING (E.G., 2X10 OR 2X12, DOUGLAS FIR-LARCH #2), SPACED AT 16" O.C., ATTACHED TO HOLLOW CORE PLANK WITH CONCRETE ANCHORS (E.G., 1/2" WEDGE BOLTS) AT 24" O.C., DESIGNED PER 2015 IBC CHAPTER 23

FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO FRAMING WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10), PAINTED TO MATCH INTERIOR AESTHETIC.

INSULATION: R-13 FIBERGLASS BATT INSULATION (3-1/2" THICK) OR EQUIVALENT BETWEEN 2X FRAMING MEMBERS IN ALL SOFFIT AREAS, WITH SPECIAL ATTENTION TO OPEN-AIR GARAGE SOFFITS TO PREVENT HEAT LOSS AND PROTECT UTILITIES FROM FREEZING, MEETING 2015 IECC ZONE 5A REQUIREMENTS FOR EXPOSED CEILINGS.

UTILITY ACCESS: REMOVABLE OR HINGED PANELS IN SOFFIT FINISH, MINIMUM 24" X 24" SIZE, LOCATED AS REQUIRED FOR MAINTENANCE ACCESS TO HVAC, PLUMBING, AND OTHER UTILITIES, PER IBC SECTION 1209.2.

MATERIAL LEGEND

- GYPSUM BOARD PANEL
- PRECAST CONCRETE PLANK
- GALVANIZED STEEL - PAINT
- STEEL - PAINT
- EXPOSED MICROLAM BEAM
- METAL PANEL SOFFIT - BLACK
- PRE-ENGINEERED WOOD TRUSS
- WOOD LOOK ALUMINUM SOFFIT PANEL
- LAY IN CEILING

1 SECOND AND THIRD FLOOR REFLECT CELING PLAN
SCALE: 3/16" = 1'-0"

WALL MATERIAL LEGEND

- FACE BRICK
- CONCRETE MASONRY UNIT
- POURED CONCRETE

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue:			Project: 210 DIVERSION Rochester, Michigan
				No.	Date	Description	
					04.01.2025	ISSUED FOR BID	

Date:	Drawn By:
Scale:	Checked By:
DRAWING TITLE:	

Drawing Number: A-180
ARCHITECTURAL-180

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

SOFFIT ASSEMBLY:
LOCATION: SOFFITS LOCATED PRIMARILY UNDER 10" HOLLOW CORE PRECAST CONCRETE PLANK IN BASEMENT LEVEL AND IN GARAGE AREAS BENEATH UPPER UNITS, AS REQUIRED FOR UTILITY ROUTING.

CLEARANCE: MINIMUM 14" CLEAR INSIDE HEIGHT FROM SOFFIT BOTTOM TO UNDERSIDE OF HOLLOW CORE PLANK OR SUPPORTING STRUCTURE, PROVIDING SPACE FOR HVAC DUCTS, PLUMBING PIPES, AND OTHER UTILITIES, PER 2015 IBC SECTION 1209 AND MICHIGAN MECHANICAL CODE.

FRAMING: 2X WOOD FRAMING (E.G., 2X10 OR 2X12, DOUGLAS FIR-LARCH #2), SPACED AT 16" O.C., ATTACHED TO HOLLOW CORE PLANK WITH CONCRETE ANCHORS (E.G., 1/2" WEDGE BOLTS) AT 24" O.C., DESIGNED PER 2015 IBC CHAPTER 23

FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO FRAMING WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10), PAINTED TO MATCH INTERIOR AESTHETIC.

INSULATION: R-13 FIBERGLASS BATT INSULATION (3-1/2" THICK) OR EQUIVALENT BETWEEN 2X FRAMING MEMBERS IN ALL SOFFIT AREAS, WITH SPECIAL ATTENTION TO OPEN-AIR GARAGE SOFFITS TO PREVENT HEAT LOSS AND PROTECT UTILITIES FROM FREEZING, MEETING 2015 IECC ZONE 5A REQUIREMENTS FOR EXPOSED CEILINGS.

UTILITY ACCESS: REMOVABLE OR HINGED PANELS IN SOFFIT FINISH, MINIMUM 24" X 24" SIZE, LOCATED AS REQUIRED FOR MAINTENANCE ACCESS TO HVAC, PLUMBING, AND OTHER UTILITIES, PER IBC SECTION 1209.2.

MATERIAL LEGEND

- E-1 GYPSUM BOARD PANEL
- E-2 PRECAST CONCRETE PLANK
- E-3 GALVANIZED STEEL - PAINT
- E-4 STEEL - PAINT
- E-5 EXPOSED MICROLAM BEAM
- E-6 METAL PANEL SOFFIT - BLACK
- E-7 PRE-ENGINEERED WOOD TRUSS
- E-8 WOOD LOOK ALUMINUM SOFFIT PANEL
- E-9 LAY IN CEILING

1 FOURTH FLOOR REFLECTED CEILING PLAN

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

WALL MATERIAL LEGEND

- FACE BRICK
- CONCRETE MASONRY UNIT
- POURED CONCRETE

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
6435 Apple Orchard Lane, Rochester Hills, MI 48306
248.800.6505
roger@rogerberent.com

Owner:
LOCHIRCO CUSTOM HOMES
202 Walnut Blvd. Suite B Rochester, MI

These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date:
Scale:
Drawn By:
Checked By:
DRAWING TITLE:

Drawing Number:
A-190
ARCHITECTURAL-190

Seal:
STATE OF MICHIGAN
ROGER JASON BERENT
ARCHITECT
No. 52391
LICENSED ARCHITECT

MATERIAL LEGEND

1. MODULAR BRICK VENEER (BRICK 1) - MODULAR FACE BRICK VENEER, BELDEN BELCREST 760, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
2. MODULAR BRICK VENEER (BRICK 2) - MODULAR FACE BRICK VENEER, BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
3. KNOTWOOD SIDING - KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, ALUMINUM SIDING WITH WOODGRAIN FINISH AND FLASHING DETAILS.
4. METAL FASCIA AND SOFFIT - BLACK METAL CLADDING PANELS, PRE-FINISHED ALUMINUM OR STEEL, FOR MOISTURE PROTECTION.
5. METAL PARAPET CAP - BLACK METAL PARAPET CAP, PRE-FINISHED ALUMINUM OR STEEL, WEATHER-RESISTANT AND SECURELY ANCHORED.
6. ALUMINUM RAILING - 42" HIGH ALUMINUM RAILING, BLACK FINISH, DESIGNED FOR DURABILITY AND SAFETY.
7. PELLA IMPERVIA WINDOW - PELLA IMPERVIA FIBERGLASS WINDOWS, BLACK EXTERIOR AND INTERIOR COLOR, WITH CLEAR GLASS AND ENERGY-EFFICIENT GLAZING.
8. STOREFRONT ALUMINUM FRAMING - ALUMINUM STOREFRONT FRAMING SYSTEM, BLACK FINISH, WITH CLEAR GLASS FOR WEATHER RESISTANCE AND NATURAL LIGHT.
9. HOLLOW METAL DOOR - BLACK HOLLOW METAL DOORS WITH BLACK FRAMES, WITH WEATHERSTRIPPING AND THRESHOLD FOR DURABILITY.
10. METAL DOWNSPOUTS - 6" SQUARE BLACK METAL DOWNSPOUTS, PRE-FINISHED ALUMINUM OR STEEL, FOR ROOF RUNOFF DIRECTION.
11. STANDING SEAM METAL ROOF - STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
12. STONE CAP - STONE CAP SPANNING BETWEEN CMU AND BRICK, WEATHER-RESISTANT AND SECURELY ANCHORED.

1 EAST ELEVATION

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

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: EXTERIOR ELEVATIONS

Drawing Number: A-200

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

MATERIAL LEGEND

1. MODULAR BRICK VENEER (BRICK 1) - MODULAR FACE BRICK VENEER, BELDEN BELCREST 760, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
2. MODULAR BRICK VENEER (BRICK 2) - MODULAR FACE BRICK VENEER, BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
3. KNOTWOOD SIDING - KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, ALUMINUM SIDING WITH WOODGRAIN FINISH AND FLASHING DETAILS.
4. METAL FASCIA AND SOFFIT - BLACK METAL CLADDING PANELS, PRE-FINISHED ALUMINUM OR STEEL, FOR MOISTURE PROTECTION.
5. METAL PARAPET CAP - BLACK METAL PARAPET CAP, PRE-FINISHED ALUMINUM OR STEEL, WEATHER-RESISTANT AND SECURELY ANCHORED.
6. ALUMINUM RAILING - 42" HIGH ALUMINUM RAILING, BLACK FINISH, DESIGNED FOR DURABILITY AND SAFETY.
7. PELLA IMPERVIA WINDOW - PELLA IMPERVIA FIBERGLASS WINDOWS, BLACK EXTERIOR AND INTERIOR COLOR, WITH CLEAR GLASS AND ENERGY-EFFICIENT GLAZING.
8. STOREFRONT ALUMINUM FRAMING - ALUMINUM STOREFRONT FRAMING SYSTEM, BLACK FINISH, WITH CLEAR GLASS FOR WEATHER RESISTANCE AND NATURAL LIGHT.
9. HOLLOW METAL DOOR - BLACK HOLLOW METAL DOORS WITH BLACK FRAMES, WITH WEATHERSTRIPPING AND THRESHOLD FOR DURABILITY.
10. METAL DOWNSPOUTS - 6" SQUARE BLACK METAL DOWNSPOUTS, PRE-FINISHED ALUMINUM OR STEEL, FOR ROOF RUNOFF DIRECTION.
11. STANDING SEAM METAL ROOF - STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
12. STONE CAP - STONE CAP SPANNING BETWEEN CMU AND BRICK, WEATHER-RESISTANT AND SECURELY ANCHORED.

30" GLASS GUARDRAIL ON CONCRETE WALL SPEC:
30" HIGH GLASS GUARDRAIL INSTALLED ON TOP OF 12" THICK CONCRETE BASEMENT WALL FORMING WALKOUT WELL FOR BASEMENT UNITS, DESIGNED PER 2015 IBC SECTION 1015 (GUARDS) AND 1607 (LOADS). GUARDRAIL CONSISTS OF 3/8" TEMPERED GLASS PANELS (FULL HEIGHT, 30" X PANEL WIDTH), SUPPORTED BY ALUMINUM SHOE BASE (E.G., CRL TAPER-LOC SYSTEM), ANCHORED TO CONCRETE WALL TOP WITH 1/2" DIA. STAINLESS STEEL ANCHOR BOLTS AT 12" O.C., EMBEDDED 3" INTO 4000 PSI CONCRETE (ACI 318 SECTION 17.5). GLASS PANELS PROVIDE 200 LBF CONCENTRATED LOAD RESISTANCE AT TOP EDGE AND 50 PSF UNIFORM LOAD OVER ENTIRE SURFACE (IBC 1607.8.1), WITH NO OPENINGS EXCEEDING 4" SPHERE (IBC 1015.4). ALUMINUM SHOE FINISHED IN BLACK POWDER-COAT TO MATCH BUILDING AESTHETIC, INSTALLED WITH LEVEL BASE (±1/4" TOLERANCE) ON GROUTED WALL TOP. GUARDRAIL HEIGHT (30") ADDS TO CONCRETE WALL HEIGHT, ENSURING TOTAL HEIGHT FROM WALKOUT WELL FLOOR ≥42" (IBC 1015.3), VERIFIED BY STRUCTURAL ENGINEER. INSTALLATION TO BE WEATHERPROOFED WITH SILICONE SEALANT AT BASE (IBC 1403.2). AFFORDABLE AND EASY-TO-INSTALL SYSTEM WITH PRE-FABRICATED COMPONENTS.

2 WEST ELEVATION (WITH BALCONIES)

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

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: EXTERIOR ELEVATIONS

Drawing Number: A-210

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52381 · LICENSED ARCHITECT

MATERIAL LEGEND

1. MODULAR BRICK VENEER (BRICK 1) - MODULAR FACE BRICK VENEER, BELDEN BELCREST 760, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
2. MODULAR BRICK VENEER (BRICK 2) - MODULAR FACE BRICK VENEER, BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
3. KNOTWOOD SIDING - KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, ALUMINUM SIDING WITH WOODGRAIN FINISH AND FLASHING DETAILS.
4. METAL FASCIA AND SOFFIT - BLACK METAL CLADDING PANELS, PRE-FINISHED ALUMINUM OR STEEL, FOR MOISTURE PROTECTION.
5. METAL PARAPET CAP - BLACK METAL PARAPET CAP, PRE-FINISHED ALUMINUM OR STEEL, WEATHER-RESISTANT AND SECURELY ANCHORED.
6. ALUMINUM RAILING - 42" HIGH ALUMINUM RAILING, BLACK FINISH, DESIGNED FOR DURABILITY AND SAFETY.
7. PELLA IMPERVIA WINDOW - PELLA IMPERVIA FIBERGLASS WINDOWS, BLACK EXTERIOR AND INTERIOR COLOR, WITH CLEAR GLASS AND ENERGY-EFFICIENT GLAZING.
8. STOREFRONT ALUMINUM FRAMING - ALUMINUM STOREFRONT FRAMING SYSTEM, BLACK FINISH, WITH CLEAR GLASS FOR WEATHER RESISTANCE AND NATURAL LIGHT.
9. HOLLOW METAL DOOR - BLACK HOLLOW METAL DOORS WITH BLACK FRAMES, WITH WEATHERSTRIPPING AND THRESHOLD FOR DURABILITY.
10. METAL DOWNSPOUTS - 6" SQUARE BLACK METAL DOWNSPOUTS, PRE-FINISHED ALUMINUM OR STEEL, FOR ROOF RUNOFF DIRECTION.
11. STANDING SEAM METAL ROOF - STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
12. STONE CAP - STONE CAP SPANNING BETWEEN CMU AND BRICK, WEATHER-RESISTANT AND SECURELY ANCHORED.

5 WEST ELEVATION (WITHOUT BALCONIES)

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

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

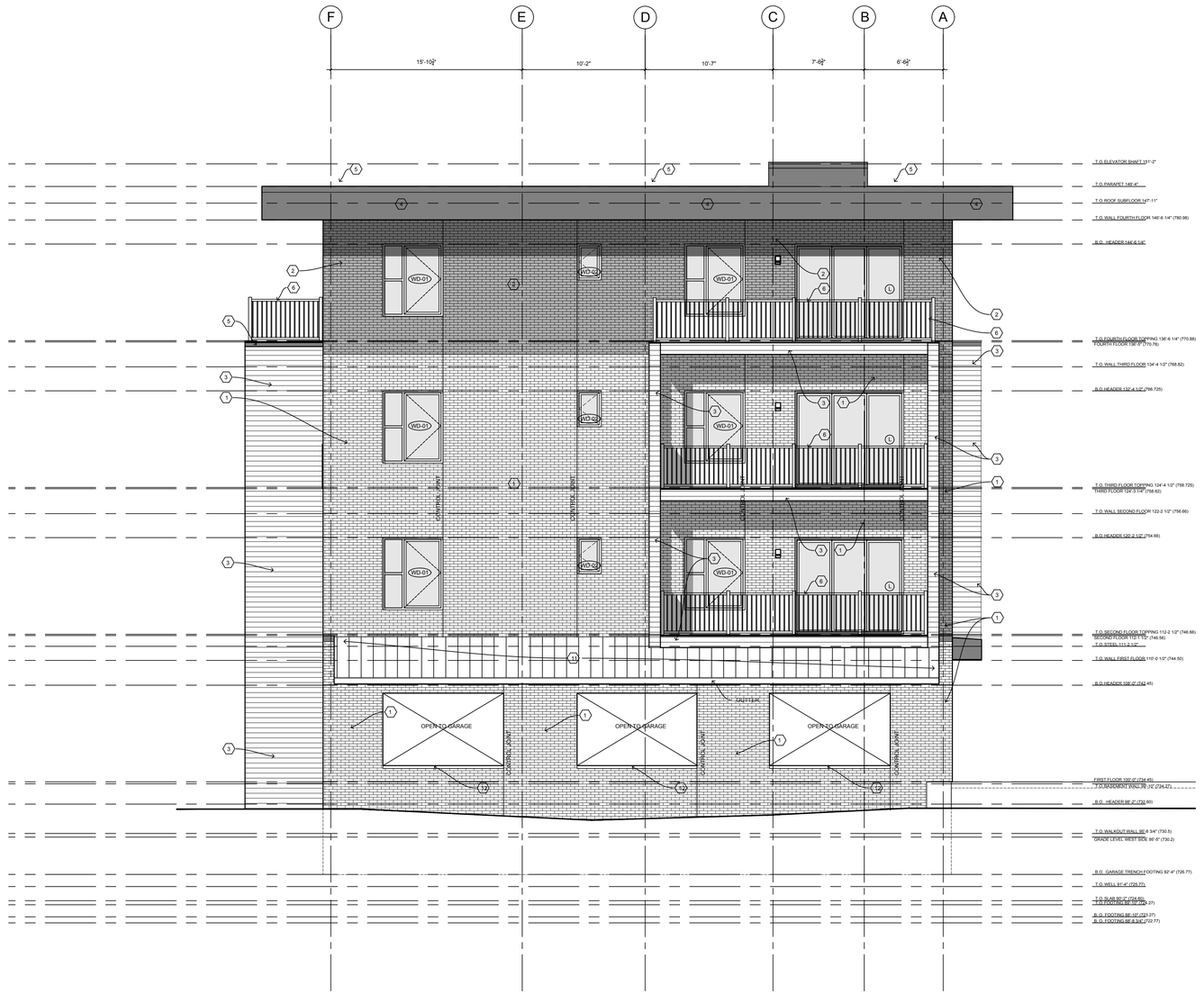
No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:	210 DIVERSION Rochester, Michigan
Date:	Drawn By:
Scale:	Checked By:
DRAWING TITLE:	EXTERIOR ELEVATIONS
Drawing Number:	A-215

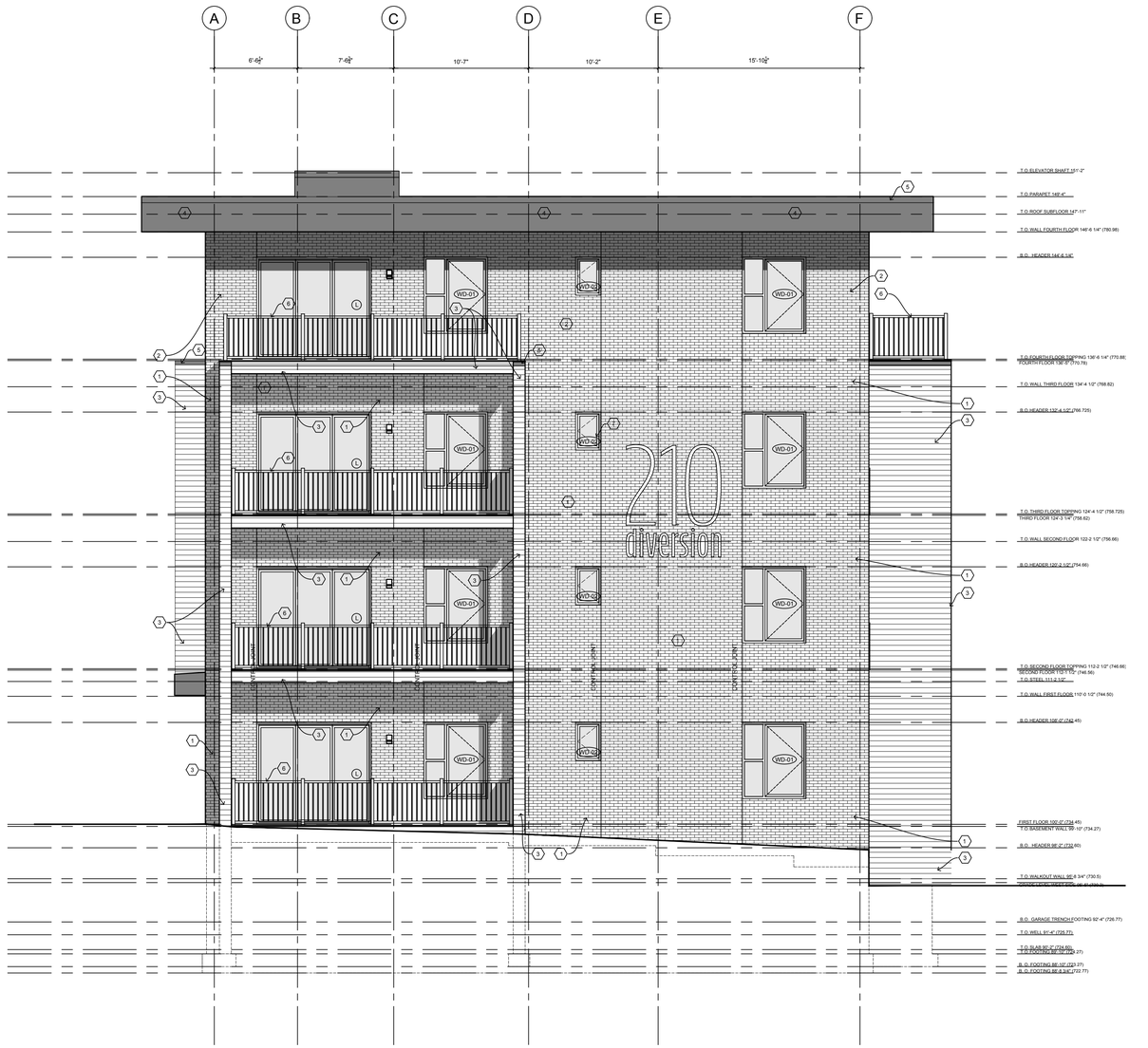
Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

MATERIAL LEGEND

1. MODULAR BRICK VENEER (BRICK 1) - MODULAR FACE BRICK VENEER, BELDEN BELCREST 760, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
2. MODULAR BRICK VENEER (BRICK 2) - MODULAR FACE BRICK VENEER, BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES FOR MOISTURE MANAGEMENT.
3. KNOTWOOD SIDING - KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, ALUMINUM SIDING WITH WOODGRAIN FINISH AND FLASHING DETAILS.
4. METAL FASCIA AND SOFFIT - BLACK METAL CLADDING PANELS, PRE-FINISHED ALUMINUM OR STEEL, FOR MOISTURE PROTECTION.
5. METAL PARAPET CAP - BLACK METAL PARAPET CAP, PRE-FINISHED ALUMINUM OR STEEL, WEATHER-RESISTANT AND SECURELY ANCHORED.
6. ALUMINUM RAILING - 42" HIGH ALUMINUM RAILING, BLACK FINISH, DESIGNED FOR DURABILITY AND SAFETY.
7. PELLA IMPERVIA WINDOW - PELLA IMPERVIA FIBERGLASS WINDOWS, BLACK EXTERIOR AND INTERIOR COLOR, WITH CLEAR GLASS AND ENERGY-EFFICIENT GLAZING.
8. STOREFRONT ALUMINUM FRAMING - ALUMINUM STOREFRONT FRAMING SYSTEM, BLACK FINISH, WITH CLEAR GLASS FOR WEATHER RESISTANCE AND NATURAL LIGHT.
9. HOLLOW METAL DOOR - BLACK HOLLOW METAL DOORS WITH BLACK FRAMES, WITH WEATHERSTRIPPING AND THRESHOLD FOR DURABILITY.
10. METAL DOWNSPOUTS - 6" SQUARE BLACK METAL DOWNSPOUTS, PRE-FINISHED ALUMINUM OR STEEL, FOR ROOF RUNOFF DIRECTION.
11. STANDING SEAM METAL ROOF - STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
12. STONE CAP - STONE CAP SPANNING BETWEEN CMU AND BRICK, WEATHER-RESISTANT AND SECURELY ANCHORED.



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



3 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan

Date:	Drawn By:	Drawing Number: A-220
Scale:	Checked By:	
DRAWING TITLE: EXTERIOR ELEVATIONS		

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

TYPICAL EXTERIOR WALL ASSEMBLY:

1. EXTERIOR FINISH: MODULAR FACE BRICK VENEER, BELDEN BELCREST 760 OR BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES AT 24" O.C. FOR MOISTURE MANAGEMENT.
2. BRICK TIES: WIRE-BOND SURETIE WS TAPCON THERMAL, CORROSION-RESISTANT, SPACED AT 16" O.C. VERTICALLY AND HORIZONTALLY, EMBEDDED MINIMUM 1-1/2" INTO MORTAR JOINTS AND SECURED TO WOOD STUDS.
3. AIR SPACE: 1" MINIMUM CLEAR AIR CAVITY BETWEEN BRICK VENEER AND SHEATHING FOR DRAINAGE AND VENTILATION.
4. SHEATHING: ZIP SYSTEM WALL SHEATHING, HUBER ENGINEERED WOODS, WITH INTEGRATED WATER-RESISTIVE BARRIER (WRB), TAPED AT SEAMS FOR CONTINUOUS AIR AND MOISTURE PROTECTION
5. FRAMING: 2X6 WOOD STUDS, #2 GRADE OR BETTER (E.G., SOUTHERN PINE), SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
6. INSULATION: R-19 FIBERGLASS BATT INSULATION, FULLY FILLING 5-1/2" STUD CAVITY, MEETING 2015 IECC ZONE 5A R-VALUE REQUIREMENTS FOR WOOD-FRAMED WALLS.
7. VAPOR RETARDER: 6-MIL POLYETHYLENE SHEET, CLASS I, WITH JOINTS SEALED, ON WARM SIDE OF INSULATION PER 2015 IECC SECTION R702.7.
8. INTERIOR FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10).

TYPICAL FLOOR/CEILING ASSEMBLY (UPPER UNITS):

9. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
10. TOPPING: 1" GYPCRETE (GYPSUM CONCRETE), 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
11. SUBFLOOR: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
12. STRUCTURE: 24" OPEN WEB WOOD TRUSSES, SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
13. INSULATION: TWO LAYERS OF 12" MINERAL WOOL BATT INSULATION (R-38 EACH), FILLING TRUSS CAVITY FOR STC/IIC 50 PER IBC SECTION 1207.
14. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 24" O.C., PERPENDICULAR TO TRUSSES, ATTACHED WITH 1-1/4" TYPE S SCREWS.
15. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (UL L528).

TYPICAL FLOOR/CEILING ASSEMBLY (BASEMENT UNITS):

16. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
17. TOPPING: 2" CONCRETE, 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
18. STRUCTURE: 10" HOLLOW CORE PRECAST CONCRETE PLANK, DESIGNED PER 2015 IBC CHAPTER 16, PROVIDING 2-HOUR FIRE RESISTANCE (UL K909).
19. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 16" O.C., ATTACHED TO PLANK WITH 1-1/2" CONCRETE SCREWS.
20. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS.

FACE BRICK FLASHING (WINDOWS, DOORS, AND OPENINGS):

21. THROUGH-WALL FLASHING: STAINLESS STEEL OR COPPER-LAMINATED FLASHING, EXTENDING FULL WIDTH OF BRICK VENEER AT WINDOWS, DOORS, AND OPENINGS, WITH DRIP EDGE PROJECTING 1/4" BEYOND FACE OF BRICK.
22. END DAMS: FORMED FLASHING END DAMS AT TERMINATIONS, EXTENDING 1" UP BEHIND WRB TO PREVENT LATERAL WATER MIGRATION.
23. WEEP HOLES: OPEN HEAD JOINTS OR WICK MATERIAL AT 24" O.C. ABOVE FLASHING TO FACILITATE DRAINAGE, PER IBC SECTION 1405.4.

FLASHING AND WEATHERPROOFING (WINDOWS AND LOOSE LINTELS):

24. SILL FLASHING: SELF-ADHERED FLEXIBLE FLASHING TAPE (E.G., GRACE VYCOR), EXTENDING 6" UP JAMBS AND 4" ONTO SHEATHING BELOW PELLA IMPERVIA WINDOWS, INTEGRATED WITH ZIP SYSTEM WRB.
25. SILL PAN: ENDURA VERSAPAN SLOPED SILL PAN, 4-9/16" OR 6-9/16" DEPTH MATCHING WINDOW JAMB, WITH 1-1/2" BACK DAM AND 1/4" PER FOOT SLOPE, SEALED WITH SILICONE AT CORNERS AND JOINTS.
26. LINTEL FLASHING: STAINLESS STEEL LOOSE LINTEL FLASHING, FULL WIDTH OF OPENING, WITH DRIP EDGE AND END DAMS, EXTENDING 2" BEYOND OPENING EDGES AND TURNED UP 1" BEHIND WRB.
27. HEAD AND JAMB FLASHING: SELF-ADHERED FLASHING TAPE, 9" WIDE, OVER LINTEL AND DOWN JAMBS, LAPPING OVER SILL FLASHING AND INTEGRATED WITH WRB FOR CONTINUOUS WATER PROTECTION.

BALCONY ASSEMBLY:

28. DECK SURFACE: COMPOSITE DECKING (E.G., TREX), WITH 1/4" GAPS FOR DRAINAGE, SUPPORTED ON PRESSURE-TREATED 2X FRAMING JOISTS.
29. JOISTS AND BEAMS: PRESSURE-TREATED 2X FRAMING JOISTS AND LVL BEAMS (REFER TO STRUCTURAL DRAWINGS FOR SIZING), SPACED PER DESIGN TO SUPPORT 40 PSF LIVE LOAD PER IBC TABLE 1607.1.
30. WATER MANAGEMENT: GALVANIZED METAL PAN, 24-GAUGE, SLOPED 1/4" PER FOOT, BELOW DECK JOISTS TO COLLECT AND DIRECT WATER TO GUTTER SYSTEM AT SIDES, CONNECTED TO 6" SQUARE BLACK METAL DOWNSPOUTS.
31. VERTICAL ELEMENTS: PRESSURE-TREATED 2X FRAMING WITH 3/4" PLYWOOD SHEATHING, WRAPPED IN KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, WITH FLASHING DETAILS AT BASE AND TOP.
32. RAILING: 42" HIGH ALUMINUM RAILING, BLACK FINISH, ATTACHED TO DECK FRAMING, DESIGNED FOR DURABILITY AND SAFETY.

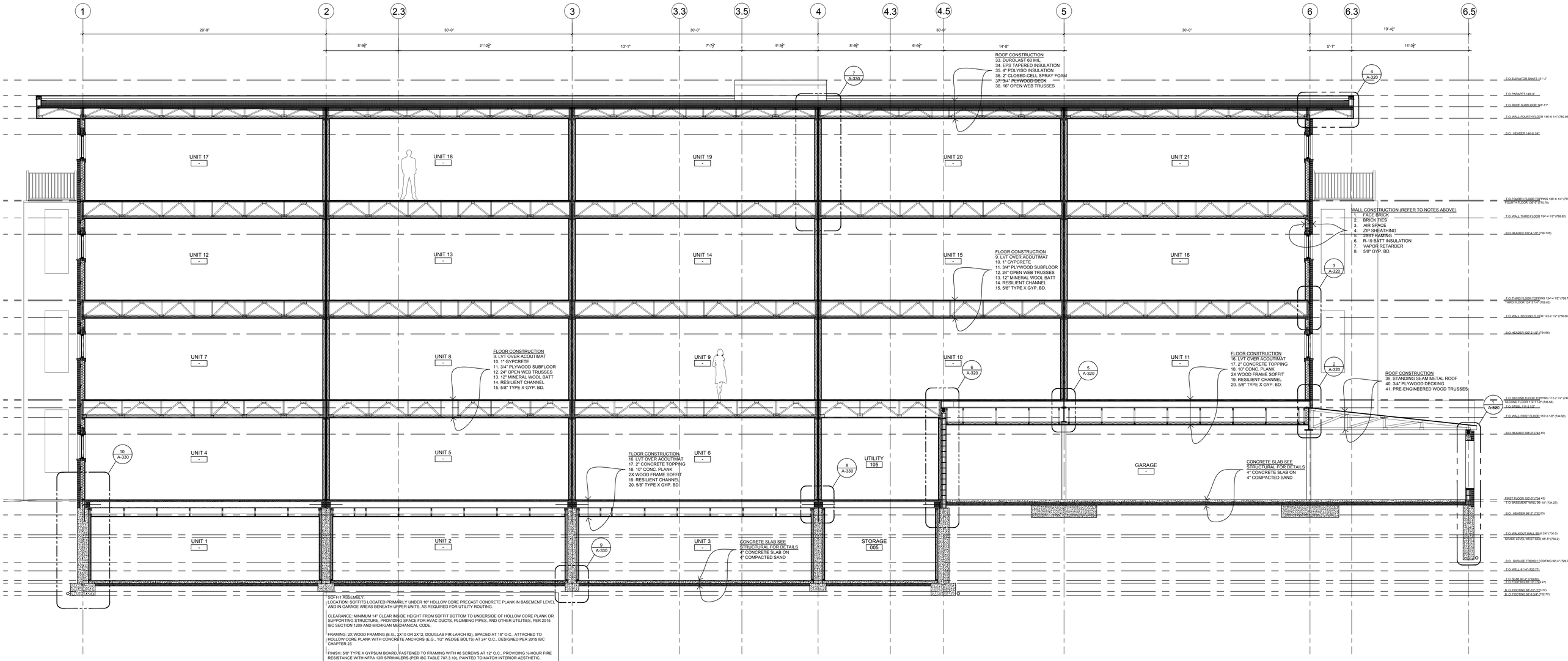
PRIMARY ROOF ASSEMBLY (BUILDING):

33. ROOF FINISH: DUROLAST 60 MIL SINGLE-PLY MEMBRANE, DARK GRAY COLOR, WITH FULLY ADHERED SYSTEM FOR WATERPROOFING.
34. TAPERED INSULATION: EXPANDED POLYSTYRENE (EPS), TAPERED FROM 0" TO 11" MAXIMUM THICKNESS (R-44 AT HIGH POINT, R-4/INCH), SLOPED AT 1/4" PER FOOT FOR DRAINAGE.
35. PRIMARY INSULATION: 4" POLYISOCYANURATE (POLYISO) RIGID INSULATION, R-22.8 (R-5.7/INCH LTTR), ON TOP OF ROOF DECK AS CONTINUOUS INSULATION.
36. SECONDARY INSULATION: 1.2" CLOSED-CELL SPRAY FOAM, R-7.8 (R-6.5/INCH), APPLIED UNDERNEATH ROOF DECK, COMBINING WITH POLYISO FOR TOTAL R-30.6, MEETING ASHRAE 90.1-2019 R-30 CI REQUIREMENT FOR ZONE 5A.
37. ROOF DECK: 3/4" PLYWOOD, SECURED TO JOISTS WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
38. STRUCTURE: 16" OPEN WEB WOOD JOISTS, SPACED AT 24" O.C. (VERIFY WITH STRUCTURAL ENGINEER), DESIGNED PER 2015 IBC CHAPTER 23.

SECONDARY ROOF ASSEMBLY (OPEN-AIR GARAGE):

39. ROOF FINISH: STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
40. ROOF DECK: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
41. STRUCTURE: PRE-ENGINEERED WOOD TRUSSES, SPACED PER DESIGN (REFER TO STRUCTURAL DRAWINGS FOR SIZING AND SPACING), DESIGNED PER 2015 IBC CHAPTER 23, NO INSULATION REQUIRED FOR OPEN-AIR CONDITION.

GENERAL NOTE (CAULKING AND SEALING):
ALL EXTERIOR JOINTS, SEAMS, AND PENETRATIONS THROUGHOUT THE BUILDING, INCLUDING WINDOWS, DOORS, FLASHING, BALCONIES, HOLLOW CORE PLANK JOINTS, MASONRY, AND EXTERIOR JOINTS BETWEEN DISSIMILAR MATERIALS, SHALL BE SEALED WITH HIGH-PERFORMANCE, EXTERIOR-GRADE SILICONE CAULK (E.G., DOW 795 OR EQUIVALENT), MEETING ASTM C920, CLASS 35, FOR WEATHER RESISTANCE AND FLEXIBILITY IN ROCHESTER, MICHIGAN'S CLIMATE (ZONE 5A). CAULKING SHALL BE APPLIED OVER BACKER ROD WHERE JOINTS EXCEED 1/4" WIDTH, ENSURING A CONTINUOUS, WATERTIGHT SEAL PER 2015 IBC SECTION 1403.2 AND MANUFACTURER RECOMMENDATIONS FOR SOUND AND MOISTURE CONTROL.



SOFFIT ASSEMBLY:
LOCATION: SOFFITS LOCATED PRIMARILY UNDER 10" HOLLOW CORE PRECAST CONCRETE PLANK IN BASEMENT LEVEL AND IN GARAGE AREAS BENEATH UPPER UNITS, AS REQUIRED FOR UTILITY ROUTING.

CLEARANCE: MINIMUM 14" CLEAR INSIDE HEIGHT FROM SOFFIT BOTTOM TO UNDERSIDE OF HOLLOW CORE PLANK OR SUPPORTING STRUCTURE, PROVIDING SPACE FOR HVAC DUCTS, PLUMBING PIPES, AND OTHER UTILITIES, PER 2015 IBC SECTION 1209 AND MICHIGAN MECHANICAL CODE.

FRAMING: 2X WOOD FRAMING (E.G., 2X10 OR 2X12, DOUGLAS FIR-LARCH #2), SPACED AT 16" O.C., ATTACHED TO HOLLOW CORE PLANK WITH CONCRETE ANCHORS (E.G., 1/2" WEDGE BOLTS) AT 24" O.C., DESIGNED PER 2015 IBC CHAPTER 23.

FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO FRAMING WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10), PAINTED TO MATCH INTERIOR AESTHETIC.

INSULATION: R-13 FIBERGLASS BATT INSULATION (3-1/2" THICK) OR EQUIVALENT BETWEEN 2X FRAMING MEMBERS IN ALL SOFFIT AREAS, WITH SPECIAL ATTENTION TO OPEN-AIR GARAGE SOFFITS TO PREVENT HEAT LOSS AND PROTECT UTILITIES FROM FREEZING, MEETING 2015 IECC ZONE 5A REQUIREMENTS FOR EXPOSED CEILINGS.

UTILITY ACCESS: REMOVABLE OR HINGED PANELS IN SOFFIT FINISH, MINIMUM 24" X 24" SIZE, LOCATED AS REQUIRED FOR MAINTENANCE ACCESS TO HVAC, PLUMBING, AND OTHER UTILITIES, PER IBC SECTION 1209.2.

1 BUILDING SECTION

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

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
6435 Apple Orchard Lane, Rochester Hills, MI 48306
248.800.6505
roger@rogerberent.com

Owner:
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202 Walnut Blvd. Suite B Rochester, MI

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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE:
BUILDING SECTIONS

Drawing Number:
A-300

Seal:
STATE OF MICHIGAN
ROGER JASON BERENT
ARCHITECT
No. 52391
LICENSED ARCHITECT

TYPICAL EXTERIOR WALL ASSEMBLY:

1. EXTERIOR FINISH: MODULAR FACE BRICK VENEER, BELDEN BELCREST 760 OR BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES AT 24" O.C. FOR MOISTURE MANAGEMENT.
2. BRICK TIES: WIRE-BOND SURETIE WS TAPCON THERMAL, CORROSION-RESISTANT, SPACED AT 16" O.C. VERTICALLY AND HORIZONTALLY, EMBEDDED MINIMUM 1-1/2" INTO MORTAR JOINTS AND SECURED TO WOOD STUDS.
3. AIR SPACE: 1" MINIMUM CLEAR AIR CAVITY BETWEEN BRICK VENEER AND SHEATHING FOR DRAINAGE AND VENTILATION.
4. SHEATHING: ZIP SYSTEM WALL SHEATHING, HUBER ENGINEERED WOODS, WITH INTEGRATED WATER-RESISTIVE BARRIER (WRB), TAPED AT SEAMS FOR CONTINUOUS AIR AND MOISTURE PROTECTION
5. FRAMING: 2X6 WOOD STUDS, #2 GRADE OR BETTER (E.G., SOUTHERN PINE), SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
6. INSULATION: R-19 FIBERGLASS BATT INSULATION, FULLY FILLING 5-1/2" STUD CAVITY, MEETING 2015 IECC ZONE 5A R-VALUE REQUIREMENTS FOR WOOD-FRAMED WALLS.
7. VAPOR RETARDER: 6-MIL POLYETHYLENE SHEET, CLASS I, WITH JOINTS SEALED, ON WARM SIDE OF INSULATION PER 2015 IECC SECTION R702.7.
8. INTERIOR FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10).

TYPICAL FLOOR/CEILING ASSEMBLY (UPPER UNITS):

9. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
10. TOPPING: 1" GYPCRETE (GYPSUM CONCRETE), 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
11. SUBFLOOR: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
12. STRUCTURE: 24" OPEN WEB WOOD TRUSSES, SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
13. INSULATION: TWO LAYERS OF 12" MINERAL WOOL BATT INSULATION (R-38 EACH), FILLING TRUSS CAVITY FOR STC/IIC 50 PER IBC SECTION 1207.
14. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 24" O.C., PERPENDICULAR TO TRUSSES, ATTACHED WITH 1-1/4" TYPE S SCREWS.
15. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (UL LS28).

TYPICAL FLOOR/CEILING ASSEMBLY (BASEMENT UNITS):

16. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
17. TOPPING: 2" CONCRETE, 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
18. STRUCTURE: 10" HOLLOW CORE PRECAST CONCRETE PLANK, DESIGNED PER 2015 IBC CHAPTER 16, PROVIDING 2-HOUR FIRE RESISTANCE (UL K909).
19. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 16" O.C., ATTACHED TO PLANK WITH 1-1/2" CONCRETE SCREWS.
20. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS.

FACE BRICK FLASHING (WINDOWS, DOORS, AND OPENINGS):

21. THROUGH-WALL FLASHING: STAINLESS STEEL OR COPPER-LAMINATED FLASHING, EXTENDING FULL WIDTH OF BRICK VENEER AT WINDOWS, DOORS, AND OPENINGS, WITH DRIP EDGE PROJECTING 1/4" BEYOND FACE OF BRICK.
22. END DAMS: FORMED FLASHING END DAMS AT TERMINATIONS, EXTENDING 1" UP BEHIND WRB TO PREVENT LATERAL WATER MIGRATION.
23. WEEP HOLES: OPEN HEAD JOINTS OR WICK MATERIAL AT 24" O.C. ABOVE FLASHING TO FACILITATE DRAINAGE, PER IBC SECTION 1405.4.

FLASHING AND WEATHERPROOFING (WINDOWS AND LOOSE LINTELS):

24. SILL FLASHING: SELF-ADHERED FLEXIBLE FLASHING TAPE (E.G., GRACE VYCOR), EXTENDING 6" UP JAMBS AND 4" ONTO SHEATHING BELOW PELLA IMPERVIA WINDOWS, INTEGRATED WITH ZIP SYSTEM WRB.
25. SILL PAN: ENDURA VERSAPAN SLOPED SILL PAN, 4-9/16" OR 6-9/16" DEPTH MATCHING WINDOW JAMB, WITH 1-1/2" BACK DAM AND 1/4" PER FOOT SLOPE, SEALED WITH SILICONE AT CORNERS AND JOINTS.
26. LINTEL FLASHING: STAINLESS STEEL LOOSE LINTEL FLASHING, FULL WIDTH OF OPENING, WITH DRIP EDGE AND END DAMS, EXTENDING 2" BEYOND OPENING EDGES AND TURNED UP 1" BEHIND WRB.
27. HEAD AND JAMB FLASHING: SELF-ADHERED FLASHING TAPE, 9" WIDE, OVER LINTEL AND DOWN JAMBS, LAPPING OVER SILL FLASHING AND INTEGRATED WITH WRB FOR CONTINUOUS WATER PROTECTION.

BALCONY ASSEMBLY:

28. DECK SURFACE: COMPOSITE DECKING (E.G., TREX), WITH 1/4" GAPS FOR DRAINAGE, SUPPORTED ON PRESSURE-TREATED 2X FRAMING JOISTS.
29. JOISTS AND BEAMS: PRESSURE-TREATED 2X FRAMING JOISTS AND LVL BEAMS (REFER TO STRUCTURAL DRAWINGS FOR SIZING), SPACED PER DESIGN TO SUPPORT 40 PSF LIVE LOAD PER IBC TABLE 1607.1.
30. WATER MANAGEMENT: GALVANIZED METAL PAN, 24-GAUGE, SLOPED 1/4" PER FOOT, BELOW DECK JOISTS TO COLLECT AND DIRECT WATER TO GUTTER SYSTEM AT SIDES, CONNECTED TO 6" SQUARE BLACK METAL DOWNSPOUTS.
31. VERTICAL ELEMENTS: PRESSURE-TREATED 2X FRAMING WITH 3/4" PLYWOOD SHEATHING, WRAPPED IN KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, WITH FLASHING DETAILS AT BASE AND TOP.
32. RAILING: 42" HIGH ALUMINUM RAILING, BLACK FINISH, ATTACHED TO DECK FRAMING, DESIGNED FOR DURABILITY AND SAFETY.

PRIMARY ROOF ASSEMBLY (BUILDING):

33. ROOF FINISH: DUROLAST 60 MIL SINGLE-PLY MEMBRANE, DARK GRAY COLOR, WITH FULLY ADHERED SYSTEM FOR WATERPROOFING.
34. TAPERED INSULATION: EXPANDED POLYSTYRENE (EPS), TAPERED FROM 0" TO 11" MAXIMUM THICKNESS (R-44 AT HIGH POINT, R-4/INCH), SLOPED AT 1/4" PER FOOT FOR DRAINAGE.
35. PRIMARY INSULATION: 4" POLYISOCYANURATE (POLYISO) RIGID INSULATION, R-22.8 (R-5.7/INCH LTTR), ON TOP OF ROOF DECK AS CONTINUOUS INSULATION.
36. SECONDARY INSULATION: 1.2" CLOSED-CELL SPRAY FOAM, R-7.8 (R-6.5/INCH), APPLIED UNDERNEATH ROOF DECK, COMBINING WITH POLYISO FOR TOTAL R-30.6, MEETING ASHRAE 90.1-2019 R-30 CI REQUIREMENT FOR ZONE 5A.
37. ROOF DECK: 3/4" PLYWOOD, SECURED TO JOISTS WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
38. STRUCTURE: 16" OPEN WEB WOOD JOISTS, SPACED AT 24" O.C. (VERIFY WITH STRUCTURAL ENGINEER), DESIGNED PER 2015 IBC CHAPTER 23.

SECONDARY ROOF ASSEMBLY (OPEN-AIR GARAGE):

39. ROOF FINISH: STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
40. ROOF DECK: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
41. STRUCTURE: PRE-ENGINEERED WOOD TRUSSES, SPACED PER DESIGN (REFER TO STRUCTURAL DRAWINGS FOR SIZING AND SPACING), DESIGNED PER 2015 IBC CHAPTER 23, NO INSULATION REQUIRED FOR OPEN-AIR CONDITION.

GENERAL NOTE (CAULKING AND SEALING):
ALL EXTERIOR JOINTS, SEAMS, AND PENETRATIONS THROUGHOUT THE BUILDING, INCLUDING WINDOWS, DOORS, FLASHING, BALCONIES, HOLLOW CORE PLANK JOINTS, MASONRY, AND EXTERIOR JOINTS BETWEEN DISSIMILAR MATERIALS, SHALL BE SEALED WITH HIGH-PERFORMANCE, EXTERIOR-GRADE SILICONE CAULK (E.G., DOW 795 OR EQUIVALENT), MEETING ASTM C920, CLASS 35, FOR WEATHER RESISTANCE AND FLEXIBILITY IN ROCHESTER, MICHIGAN'S CLIMATE (ZONE 5A). CAULKING SHALL BE APPLIED OVER BACKER ROD WHERE JOINTS EXCEED 1/4" WIDTH, ENSURING A CONTINUOUS, WATERTIGHT SEAL, PER 2015 IBC SECTION 1403.2 AND MANUFACTURER RECOMMENDATIONS FOR SOUND AND MOISTURE CONTROL.

ELEVATOR SHAFT ROOF ASSEMBLY:

SHAFT WALLS: 8" CMU, UNGROUTED OR GROUTED AS REQUIRED, WITH REINFORCED BOND BEAM TOP COURSE (8" HIGH, #4 REBAR), PROVIDING 2-HOUR FIRE RESISTANCE RATING PER IBC SECTION 713.4.

ROOF STRUCTURE: 2X8 RAFTERS, DOUGLAS FIR-LARCH #2, SPANNING 8'-6" SHAFT WIDTH, SPACED AT 16" O.C. (APPROX. 6 RAFTERS OVER 7'-0" DEPTH), DESIGNED PER 2015 IBC CHAPTER 23.

ROOF PITCH: 2:12 SLOPE (1/4" RISE OVER 7'-0" DEPTH), SLOPING TO ONE SIDE, WITH BIRDSMOUTH CUTS ON LOW SIDE TO REST ON CMU WALL, DRAINING TO DUROLAST 60 MIL MAIN ROOF.

ROOF SHEATHING: 5/8" PLYWOOD OR OSB, FASTENED WITH 8D NAILS AT 6" O.C. EDGES AND 12" O.C. FIELD, PROVIDING STRUCTURAL DECK FOR ROOFING.

ROOFING: DUROLAST 60 MIL EPDM RUBBER MEMBRANE, DARK GRAY COLOR, EXTENDED FROM MAIN ROOF, FLASHED AND SEALED TO CMU WALLS FOR WATERPROOFING, PER IBC SECTION 1503.2.

CEILING STRUCTURE: 2X8 JOISTS, DOUGLAS FIR-LARCH #2, SPANNING 8'-0" SHAFT WIDTH, SPACED AT 16" O.C. (APPROX. 6 JOISTS), RESTING ON CMU WALLS, MAINTAINING 8'-0" MAXIMUM CLEARANCE FROM TOP LANDING.

CEILING FINISH: TWO LAYERS 5/8" TYPE X GYPSUM BOARD, FASTENED WITH 1-1/4" TYPE S SCREWS (12" O.C. BASE LAYER, 8" O.C. FACE LAYER), STAGGERED SEAMS, FIRE-TAPED FOR 2-HOUR FIRE RESISTANCE (UL U356).

INSULATION: MINERAL WOOL BATT INSULATION BETWEEN 2X8 JOISTS, FILLING CAVITY, ENHANCING 2-HOUR FIRE RATING AND ACOUSTIC PERFORMANCE.

ANCHORAGE: 1/2" DIAMETER J-BOLTS EMBEDDED IN GROUTED BOND BEAM, SPACED AT 16" O.C., SECURING 2X8 RAFTERS AND JOISTS WITH 2" X 8" X 1/4" STEEL BEARING PLATES AND NUTS.

FIRE BLOCKING: FIRESTOP CAULK (E.G., 3M FIRE BARRIER) AT CMU-TO-WOOD TRANSITIONS AND BETWEEN 2X8S, ENSURING CONTINUOUS 2-HOUR FIRE RATING PER IBC SECTION 718.2.

ELEVATOR ASSEMBLY:

ELEVATOR TYPE: KONE MONOSPACE 500 DX, MACHINE ROOM-LESS TRACTION ELEVATOR, DESIGNED PER 2015 IBC SECTION 3002 AND ASME A17.1 SAFETY CODE FOR ELEVATORS AND ESCALATORS.

CAPACITY: 3500 LB LOAD CAPACITY, ACCOMMODATING UP TO 23 PERSONS, SUITABLE FOR RESIDENTIAL MULTIFAMILY USE (R-2 OCCUPANCY).

SPEED: 150 FEET PER MINUTE (0.75 M/S), PROVIDING EFFICIENT VERTICAL TRANSPORTATION FOR 5 STOPS.

STOPS: 5 LEVELS, SERVING BASEMENT THROUGH FOURTH FLOOR, WITH DOORS AT EACH STOP PER IBC SECTION 1003.2.

CAR DIMENSIONS: 7'-0" WIDE X 5'-9" DEEP X 7'-6" HIGH INTERIOR HEIGHT, MEETING IBC SECTION 3002.4 MINIMUM HEIGHT REQUIREMENT OF 7'-0".

DOORS: RIGHT-OPENING SINGLE-SPEED STEEL DOORS, 42" WIDE X 7'-0" HIGH CLEAR OPENING, EQUIPPED WITH AUTOMATIC REOPENING DEVICE AND EDGE SENSORS, PER IBC SECTION 3002.6 AND ASME A17.1.

SHAFT: CMU ENCLOSURE, 8" THICK, PROVIDING 2-HOUR FIRE RESISTANCE RATING PER IBC SECTION 713.4, SIZED AT 8'-6" WIDE X 6'-11" DEEP TO ACCOMMODATE ELEVATOR HOISTWAY.

PIT: 5'-0" DEPTH BELOW LOWEST STOP, WITH WATERPROOFING AND DRAINAGE PER IBC SECTION 3002.2.

OVERHEAD: 13'-0" MINIMUM CLEARANCE ABOVE TOP STOP (UNDER HOIST BEAM), INCLUDING KONE ECODISC HOISTING MACHINE AND CONTROL EQUIPMENT, PER ASME A17.1 SECTION 2.7.

CONTROLS: INTEGRATED CONTROL SYSTEM LOCATED WITHIN SHAFT, KSS 570 SIGNALIZATION SERIES WITH BRUSHED STAINLESS STEEL FINISH, FLUSH-MOUNTED, AMBER DOT MATRIX DISPLAY, ONE CAR OPERATING PANEL AT 48" MAXIMUM HEIGHT PER IBC SECTION 407.4 AND ADA 4.10.

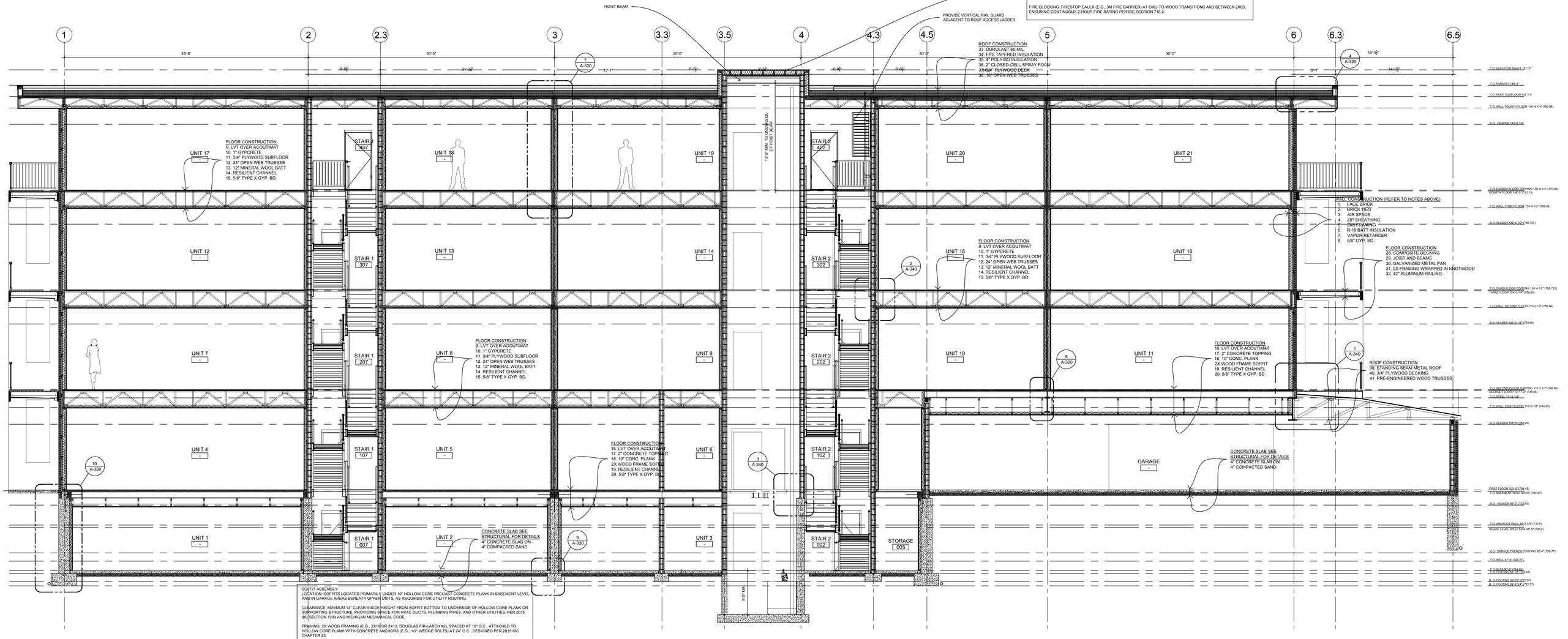
FINISH: COOL VINTAGE DESIGN SERIES (KONE DESIGN COLLECTION 42009). GRAPHIC BAMBOO PRINTED LAMINATE SIDE WALLS, CL.94 ASTURIAS SATIN BRUSHED STAINLESS STEEL FRONT AND REAR WALLS, WITH LED LIGHTING.

SAFETY FEATURES: EMERGENCY LIGHTING, ALARM, AND PHONE IN CAR, FIRE SERVICE OPERATION (PHASE I AND II), AND OVERLOAD PROTECTION, PER IBC SECTION 3002.3 AND ASME A17.1.

POWER: KONE ECODISC GEARLESS MOTOR, 460V 3-PHASE, ECO-EFFICIENT DESIGN REDUCING ENERGY USE, PER 2015 IECC SECTION C405.

HALL SIGNALIZATION: BRUSHED STAINLESS STEEL DIRECTIONAL LANTERN AND COMBO HALL POSITION INDICATOR IN LOBBY, WITH ALUMINUM SILL FINISH.

MAINTENANCE: 12-MONTH MAINTENANCE SERVICE WITH REGULAR TIME CALL-BACK SERVICE INCLUDED.



SOFFIT ASSEMBLY:
LOCATION: SOFFITS LOCATED PRIMARILY UNDER 10" HOLLOW CORE PRECAST CONCRETE PLANK IN BASEMENT LEVEL AND IN GARAGE AREAS BENEATH UPPER UNITS, AS REQUIRED FOR UTILITY ROUTING.

CLEARANCE: MINIMUM 14" CLEAR INSIDE HEIGHT FROM SOFFIT BOTTOM TO UNDERSIDE OF HOLLOW CORE PLANK OR SUPPORTING STRUCTURE, PROVIDING SPACE FOR HVAC DUCTS, PLUMBING PIPES, AND OTHER UTILITIES, PER 2015 IBC SECTION 1209 AND MICHIGAN MECHANICAL CODE.

FRAMING: 2X WOOD FRAMING (E.G., 2X10 OR 2X12, DOUGLAS FIR-LARCH #2), SPACED AT 16" O.C., ATTACHED TO HOLLOW CORE PLANK WITH CONCRETE ANCHORS (E.G., 1/2" WEDGE BOLTS) AT 24" O.C., DESIGNED PER 2015 IBC CHAPTER 23

FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO FRAMING WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10), PAINTED TO MATCH INTERIOR AESTHETIC.

INSULATION: R-13 FIBERGLASS BATT INSULATION (3-1/2" THICK) OR EQUIVALENT BETWEEN 2X FRAMING MEMBERS IN ALL SOFFIT AREAS, WITH SPECIAL ATTENTION TO OPEN-AIR GARAGE SOFFITS TO PREVENT HEAT LOSS AND PROTECT UTILITIES FROM FREEZING, MEETING 2015 IECC ZONE 5A REQUIREMENTS FOR EXPOSED CEILINGS.

UTILITY ACCESS: REMOVABLE OR HINGED PANELS IN SOFFIT FINISH, MINIMUM 24" X 24" SIZE, LOCATED AS REQUIRED FOR MAINTENANCE ACCESS TO HVAC, PLUMBING, AND OTHER UTILITIES, PER IBC SECTION 1209.2.

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

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE:
BUILDING SECTIONS

Drawing Number:
A-305

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52391 · LICENSED ARCHITECT

STAIR ASSEMBLY (BASEMENT TO FOURTH FLOOR):

STRUCTURE: PREFABRICATED METAL STAIR, STEEL CONSTRUCTION, WITH DIAMOND PLATE TREADS AND LANDINGS, DESIGNED PER 2015 IBC SECTION 1011 AND CHAPTER 16 FOR STRUCTURAL INTEGRITY.

RISERS AND TREADS: UNIFORM RISER HEIGHT 7" MAXIMUM AND TREAD DEPTH 11" MINIMUM, WITH DIAMOND PLATE STEEL, 1/4" THICK, PROVIDING SLIP-RESISTANT SURFACE PER IBC SECTION 1011.7.

LANDINGS: FOUR INTERMEDIATE LANDINGS, MINIMUM WIDTH EQUAL TO STAIR WIDTH (44" MINIMUM PER IBC SECTION 1011.6); CONSTRUCTED OF DIAMOND PLATE STEEL, LEVEL WITHIN 1/4" TOLERANCE.

WIDTH: 44" MINIMUM CLEAR WIDTH BETWEEN HANDRAILS, MEETING IBC SECTION 1011.2 FOR TYPE I STAIRS SERVING MULTIFAMILY OCCUPANCY (R-2).

GUARDRAILS: 42" MINIMUM HEIGHT ABOVE TREAD NOSING AND LANDING SURFACES, STEEL CONSTRUCTION WITH VERTICAL OR HORIZONTAL MEMBERS SPACED TO PREVENT PASSAGE OF A 4" SPHERE, PER IBC SECTION 1015.3 AND 1015.4.

HANDRAILS: CONTINUOUS STEEL HANDRAILS ON BOTH SIDES, 34" TO 38" ABOVE TREAD NOSING, 1-1/4" TO 2" DIAMETER, WITH 1-1/2" CLEARANCE FROM WALLS OR GUARDS, EXTENDING 12" BEYOND TOP AND BOTTOM RISERS, PER IBC SECTION 1014.

STAIR SHAFT: CMU WALLS, 8" THICK, PROVIDING 2-HOUR FIRE RESISTANCE RATING PER IBC SECTION 713.4 FOR ENCLOSED STAIR ENCLOSURES, WITH DOORS AND OPENINGS AS REQUIRED BY IBC SECTION 1023.

LOAD CAPACITY: DESIGNED FOR 100 PSF LIVE LOAD AND 300 LB CONCENTRATED LOAD AT ANY POINT, PER IBC SECTION 1607.1 AND TABLE 1607.1 FOR STAIRS.

ROOF ACCESS LADDER AND SCUTTLE:

LADDER: STEEL WALL-ATTACHED LADDER, FIXED TO CMU STAIR SHAFT WALL AT TOP OF ONE STAIR, WITH 3/4" DIAMETER RUNGS SPACED 12" O.C., 18" MINIMUM WIDTH, AND 7" MINIMUM TOE CLEARANCE, EXTENDING 42" ABOVE ROOF LANDING, PER IBC SECTION 1011.16.

GUARDRAILS: 42" HIGH STEEL GUARDRAILS AROUND LADDER ROOF OPENING, WITH MEMBERS SPACED TO PREVENT PASSAGE OF A 4" SPHERE, PER IBC SECTION 1015.8 FOR ROOF ACCESS PROTECTION.

ROOF SCUTTLE: BILCO TYPE F-50TB ROOF SCUTTLE, 36" X 54" SIZE, STEEL CONSTRUCTION WITH THERMAL BREAK, DARK GRAY FINISH, EQUIPPED WITH SPRING-ASSISTED COVER, CURB-MOUNTED ON ROOF DECK, PROVIDING WEATHER-TIGHT SEAL AND ACCESS TO ROOF.

CURB: 12" HIGH STEEL CURB, INTEGRAL TO SCUTTLE, FLASHED AND SEALED TO DUROLAST 60 MIL ROOF MEMBRANE FOR WATERPROOFING, PER IBC SECTION 1503.2.

TYPICAL EXTERIOR WALL ASSEMBLY:

1. EXTERIOR FINISH: MODULAR FACE BRICK VENEER, BELDEN BELCREST 760 OR BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES AT 24" O.C. FOR MOISTURE MANAGEMENT.
2. BRICK TIES: WIRE-BOND SURETIE WS TAPCON THERMAL, CORROSION-RESISTANT, SPACED AT 16" O.C. VERTICALLY AND HORIZONTALLY, EMBEDDED MINIMUM 1-1/2" INTO MORTAR JOINTS AND SECURED TO WOOD STUDS.
3. AIR SPACE: 1" MINIMUM CLEAR AIR CAVITY BETWEEN BRICK VENEER AND SHEATHING FOR DRAINAGE AND VENTILATION.
4. SHEATHING: ZIP SYSTEM WALL SHEATHING, HUBER ENGINEERED WOODS, WITH INTEGRATED WATER-RESISTIVE BARRIER (WRB), TAPED AT SEAMS FOR CONTINUOUS AIR AND MOISTURE PROTECTION
5. FRAMING: 2X6 WOOD STUDS, #2 GRADE OR BETTER (E.G., SOUTHERN PINE), SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
6. INSULATION: R-19 FIBERGLASS BATT INSULATION, FULLY FILLING 5-1/2" STUD CAVITY, MEETING 2015 IECC ZONE 5A R-VALUE REQUIREMENTS FOR WOOD-FRAMED WALLS.
7. VAPOR RETARDER: 6-MIL POLYETHYLENE SHEET, CLASS I, WITH JOINTS SEALED, ON WARM SIDE OF INSULATION PER 2015 IECC SECTION R702.7.
8. INTERIOR FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10).

TYPICAL FLOOR/CEILING ASSEMBLY (UPPER UNITS):

9. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
10. TOPPING: 1" GYPCRETE (GYPSUM CONCRETE), 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
11. SUBFLOOR: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
12. STRUCTURE: 24" OPEN WEB WOOD TRUSSES, SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
13. INSULATION: TWO LAYERS OF 12" MINERAL WOOL BATT INSULATION (R-38 EACH), FILLING TRUSS CAVITY FOR STC/IIC 50 PER IBC SECTION 1207.
14. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 24" O.C., PERPENDICULAR TO TRUSSES, ATTACHED WITH 1-1/4" TYPE S SCREWS.
15. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (UL L528).

TYPICAL FLOOR/CEILING ASSEMBLY (BASEMENT UNITS):

16. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
17. TOPPING: 2" CONCRETE, 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
18. STRUCTURE: 10" HOLLOW CORE PRECAST CONCRETE PLANK, DESIGNED PER 2015 IBC CHAPTER 16, PROVIDING 2-HOUR FIRE RESISTANCE (UL K909).
19. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 16" O.C., ATTACHED TO PLANK WITH 1-1/2" CONCRETE SCREWS.
20. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS.

FACE BRICK FLASHING (WINDOWS, DOORS, AND OPENINGS):

21. THROUGH-WALL FLASHING: STAINLESS STEEL OR COPPER-LAMINATED FLASHING, EXTENDING FULL WIDTH OF BRICK VENEER AT WINDOWS, DOORS, AND OPENINGS, WITH DRIP EDGE PROJECTING 1/4" BEYOND FACE OF BRICK.
22. END DAMS: FORMED FLASHING END DAMS AT TERMINATIONS, EXTENDING 1" UP BEHIND WRB TO PREVENT LATERAL WATER MIGRATION.
23. WEEP HOLES: OPEN HEAD JOINTS OR WICK MATERIAL AT 24" O.C. ABOVE FLASHING TO FACILITATE DRAINAGE, PER IBC SECTION 1405.4.

FLASHING AND WEATHERPROOFING (WINDOWS AND LOOSE LINTELS):

24. SILL FLASHING: SELF-ADHERED FLEXIBLE FLASHING TAPE (E.G., GRACE VYCOR), EXTENDING 6" UP JAMBS AND 4" ONTO SHEATHING BELOW PELLA IMPERVIA WINDOWS, INTEGRATED WITH ZIP SYSTEM WRB.
25. SILL PAN: ENDURA VERSAPAN SLOPED SILL PAN, 4-9/16" OR 6-9/16" DEPTH MATCHING WINDOW JAMB, WITH 1-1/2" BACK DAM AND 1/4" PER FOOT SLOPE, SEALED WITH SILICONE AT CORNERS AND JOINTS.
26. LINTEL FLASHING: STAINLESS STEEL LOOSE LINTEL FLASHING, FULL WIDTH OF OPENING, WITH DRIP EDGE AND END DAMS, EXTENDING 2" BEYOND OPENING EDGES AND TURNED UP 1" BEHIND WRB.
27. HEAD AND JAMB FLASHING: SELF-ADHERED FLASHING TAPE, 9" WIDE, OVER LINTEL AND DOWN JAMBS, LAPPING OVER SILL FLASHING AND INTEGRATED WITH WRB FOR CONTINUOUS WATER PROTECTION.

BALCONY ASSEMBLY:

28. DECK SURFACE: COMPOSITE DECKING (E.G., TREX), WITH 1/4" GAPS FOR DRAINAGE, SUPPORTED ON PRESSURE-TREATED 2X FRAMING JOISTS.
29. JOISTS AND BEAMS: PRESSURE-TREATED 2X FRAMING JOISTS AND LVL BEAMS (REFER TO STRUCTURAL DRAWINGS FOR SIZING), SPACED PER DESIGN TO SUPPORT 40 PSF LIVE LOAD PER IBC TABLE 1607.1.
30. WATER MANAGEMENT: GALVANIZED METAL PAN, 24-GAUGE, SLOPED 1/4" PER FOOT, BELOW DECK JOISTS TO COLLECT AND DIRECT WATER TO GUTTER SYSTEM AT SIDES, CONNECTED TO 6" SQUARE BLACK METAL DOWNSPOUTS.
31. VERTICAL ELEMENTS: PRESSURE-TREATED 2X FRAMING WITH 3/4" PLYWOOD SHEATHING, WRAPPED IN KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, WITH FLASHING DETAILS AT BASE AND TOP.
32. RAILING: 42" HIGH ALUMINUM RAILING, BLACK FINISH, ATTACHED TO DECK FRAMING, DESIGNED FOR DURABILITY AND SAFETY.

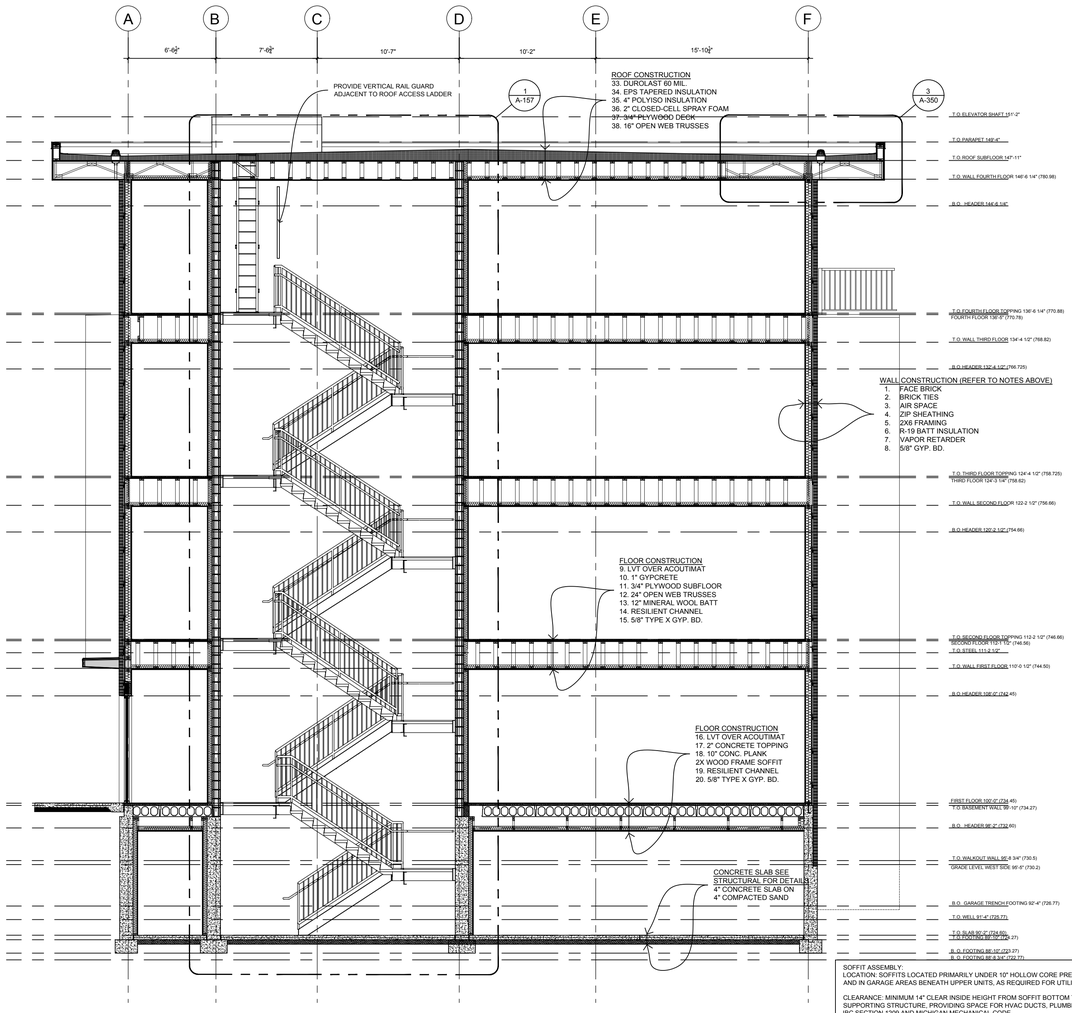
PRIMARY ROOF ASSEMBLY (BUILDING):

33. ROOF FINISH: DUROLAST 60 MIL SINGLE-PLY MEMBRANE, DARK GRAY COLOR, WITH FULLY ADHERED SYSTEM FOR WATERPROOFING.
34. TAPERED INSULATION: EXPANDED POLYSTYRENE (EPS), TAPERED FROM 0" TO 11" MAXIMUM THICKNESS (R-44 AT HIGH POINT, R-4/INCH), SLOPED AT 1/4" PER FOOT FOR DRAINAGE.
35. PRIMARY INSULATION: 4" POLYISOCYANURATE (POLYISO) RIGID INSULATION, R-22.8 (R-5.7/INCH LTTR), ON TOP OF ROOF DECK AS CONTINUOUS INSULATION.
36. SECONDARY INSULATION: 1.2" CLOSED-CELL SPRAY FOAM, R-7.8 (R-6.5/INCH), APPLIED UNDERNEATH ROOF DECK, COMBINING WITH POLYISO FOR TOTAL R-30.6, MEETING ASHRAE 90.1-2019 R-30 CI REQUIREMENT FOR ZONE 5A.
37. ROOF DECK: 3/4" PLYWOOD, SECURED TO JOISTS WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
38. STRUCTURE: 16" OPEN WEB WOOD JOISTS, SPACED AT 24" O.C. (VERIFY WITH STRUCTURAL ENGINEER), DESIGNED PER 2015 IBC CHAPTER 23.

SECONDARY ROOF ASSEMBLY (OPEN-AIR GARAGE):

39. ROOF FINISH: STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
40. ROOF DECK: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
41. STRUCTURE: PRE-ENGINEERED WOOD TRUSSES, SPACED PER DESIGN (REFER TO STRUCTURAL DRAWINGS FOR SIZING AND SPACING), DESIGNED PER 2015 IBC CHAPTER 23, NO INSULATION REQUIRED FOR OPEN-AIR CONDITION.

GENERAL NOTE (CAULKING AND SEALING):
ALL EXTERIOR JOINTS, SEAMS, AND PENETRATIONS THROUGHOUT THE BUILDING, INCLUDING WINDOWS, DOORS, FLASHING, BALCONIES, HOLLOW CORE PLANK JOINTS, MASONRY, AND EXTERIOR JOINTS BETWEEN DISSIMILAR MATERIALS, SHALL BE SEALED WITH HIGH-PERFORMANCE, EXTERIOR-GRADE SILICONE CAULK (E.G., DOW 795 OR EQUIVALENT), MEETING ASTM C920, CLASS 35, FOR WEATHER RESISTANCE AND FLEXIBILITY IN ROCHESTER, MICHIGAN'S CLIMATE (ZONE 5A). CAULKING SHALL BE APPLIED OVER BACKER ROD WHERE JOINTS EXCEED 1/4" WIDTH, ENSURING A CONTINUOUS, WATERTIGHT SEAL PER 2015 IBC SECTION 1403.2 AND MANUFACTURER RECOMMENDATIONS FOR SOUND AND MOISTURE CONTROL.



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

SOFFIT ASSEMBLY:
LOCATION: SOFFITS LOCATED PRIMARILY UNDER 10" HOLLOW CORE PRECAST CONCRETE PLANK IN BASEMENT LEVEL AND IN GARAGE AREAS BENEATH UPPER UNITS, AS REQUIRED FOR UTILITY ROUTING.

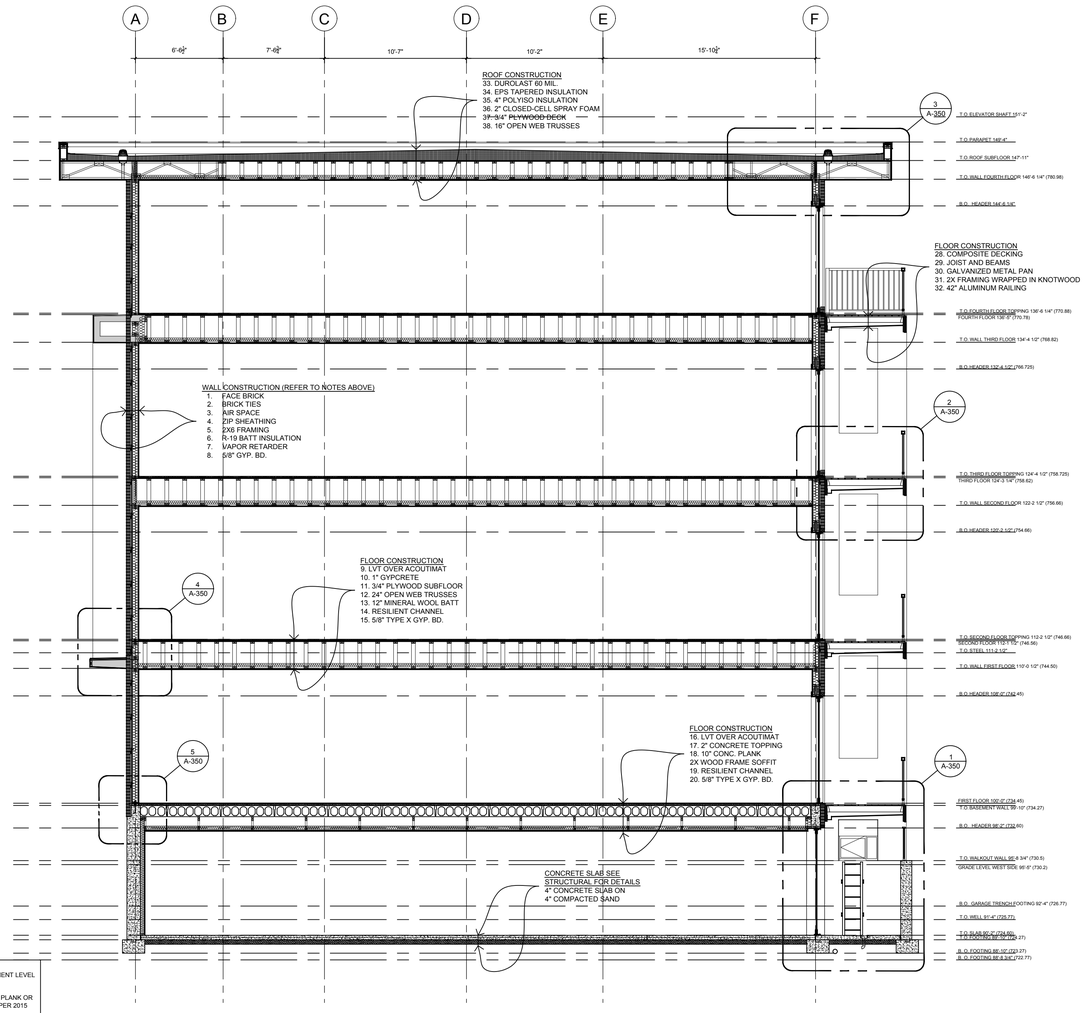
CLEARANCE: MINIMUM 14" CLEAR INSIDE HEIGHT FROM SOFFIT BOTTOM TO UNDERSIDE OF HOLLOW CORE PLANK OR SUPPORTING STRUCTURE, PROVIDING SPACE FOR HVAC DUCTS, PLUMBING PIPES, AND OTHER UTILITIES, PER 2015 IBC SECTION 1209 AND MICHIGAN MECHANICAL CODE.

FRAMING: 2X WOOD FRAMING (E.G., 2X10 OR 2X12, DOUGLAS FIR-LARCH #2), SPACED AT 16" O.C., ATTACHED TO HOLLOW CORE PLANK WITH CONCRETE ANCHORS (E.G., 1/2" WEDGE BOLTS) AT 24" O.C., DESIGNED PER 2015 IBC CHAPTER 23

FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO FRAMING WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10), PAINTED TO MATCH INTERIOR AESTHETIC.

INSULATION: R-13 FIBERGLASS BATT INSULATION (3-1/2" THICK) OR EQUIVALENT BETWEEN 2X FRAMING MEMBERS IN ALL SOFFIT AREAS, WITH SPECIAL ATTENTION TO OPEN-AIR GARAGE SOFFITS TO PREVENT HEAT LOSS AND PROTECT UTILITIES FROM FREEZING, MEETING 2015 IECC ZONE 5A REQUIREMENTS FOR EXPOSED CEILINGS.

UTILITY ACCESS: REMOVABLE OR HINGED PANELS IN SOFFIT FINISH, MINIMUM 24" X 24" SIZE, LOCATED AS REQUIRED FOR MAINTENANCE ACCESS TO HVAC, PLUMBING, AND OTHER UTILITIES, PER IBC SECTION 1209.2.



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

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: BUILDING SECTIONS

Drawing Number: A-310

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

TYPICAL EXTERIOR WALL ASSEMBLY:

1. EXTERIOR FINISH: MODULAR FACE BRICK VENEER, BELDEN BELCREST 760 OR BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES AT 24" O.C. FOR MOISTURE MANAGEMENT.
2. BRICK TIES: WIRE-BOND SURETIE WS TAPCON THERMAL, CORROSION-RESISTANT, SPACED AT 16" O.C. VERTICALLY AND HORIZONTALLY, EMBEDDED MINIMUM 1-1/2" INTO MORTAR JOINTS AND SECURED TO WOOD STUDS.
3. AIR SPACE: 1" MINIMUM CLEAR AIR CAVITY BETWEEN BRICK VENEER AND SHEATHING FOR DRAINAGE AND VENTILATION.
4. SHEATHING: ZIP SYSTEM WALL SHEATHING, HUBER ENGINEERED WOODS, WITH INTEGRATED WATER-RESISTIVE BARRIER (WRB), TAPED AT SEAMS FOR CONTINUOUS AIR AND MOISTURE PROTECTION
5. FRAMING: 2X6 WOOD STUDS, #2 GRADE OR BETTER (E.G., SOUTHERN PINE), SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
6. INSULATION: R-19 FIBERGLASS BATT INSULATION, FULLY FILLING 5-1/2" STUD CAVITY, MEETING 2015 IECC ZONE 5A R-VALUE REQUIREMENTS FOR WOOD-FRAMED WALLS.
7. VAPOR RETARDER: 6-MIL POLYETHYLENE SHEET, CLASS I, WITH JOINTS SEALED, ON WARM SIDE OF INSULATION PER 2015 IECC SECTION R702.7.
8. INTERIOR FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10).

TYPICAL FLOOR/CEILING ASSEMBLY (UPPER UNITS):

9. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
10. TOPPING: 1" GYPCRETE (GYPSUM CONCRETE), 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
11. SUBFLOOR: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
12. STRUCTURE: 24" OPEN WEB WOOD TRUSSES, SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
13. INSULATION: TWO LAYERS OF 12" MINERAL WOOL BATT INSULATION (R-38 EACH), FILLING TRUSS CAVITY FOR STC/IC 50 PER IBC SECTION 1207.
14. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 24" O.C., PERPENDICULAR TO TRUSSES, ATTACHED WITH 1-1/4" TYPE S SCREWS.
15. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (UL L528).

TYPICAL FLOOR/CEILING ASSEMBLY (BASEMENT UNITS):

16. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
17. TOPPING: 2" CONCRETE, 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
18. STRUCTURE: 10" HOLLOW CORE PRECAST CONCRETE PLANK, DESIGNED PER 2015 IBC CHAPTER 16, PROVIDING 2-HOUR FIRE RESISTANCE (UL K909).
19. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 16" O.C., ATTACHED TO PLANK WITH 1-1/2" CONCRETE SCREWS.
20. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS.

FACE BRICK FLASHING (WINDOWS, DOORS, AND OPENINGS):

21. THROUGH-WALL FLASHING: STAINLESS STEEL OR COPPER-LAMINATED FLASHING, EXTENDING FULL WIDTH OF BRICK VENEER AT WINDOWS, DOORS, AND OPENINGS, WITH DRIP EDGE PROJECTING 1/4" BEYOND FACE OF BRICK.
22. END DAMS: FORMED FLASHING END DAMS AT TERMINATIONS, EXTENDING 1" UP BEHIND WRB TO PREVENT LATERAL WATER MIGRATION.
23. WEEP HOLES: OPEN HEAD JOINTS OR WICK MATERIAL AT 24" O.C. ABOVE FLASHING TO FACILITATE DRAINAGE, PER IBC SECTION 1405.4.

FLASHING AND WEATHERPROOFING (WINDOWS AND LOOSE LINTELS):

24. SILL FLASHING: SELF-ADHERED FLEXIBLE FLASHING TAPE (E.G., GRACE VYCOR), EXTENDING 6" UP JAMBS AND 4" ONTO SHEATHING BELOW PELLA IMPERVIA WINDOWS, INTEGRATED WITH ZIP SYSTEM WRB.
25. SILL PAN: ENDURA VERSAPAN SLOPED SILL PAN, 4-9/16" OR 6-9/16" DEPTH MATCHING WINDOW JAMB, WITH 1-1/2" BACK DAM AND 1/4" PER FOOT SLOPE, SEALED WITH SILICONE AT CORNERS AND JOINTS.
26. LINTEL FLASHING: STAINLESS STEEL LOOSE LINTEL FLASHING, FULL WIDTH OF OPENING, WITH DRIP EDGE AND END DAMS, EXTENDING 2" BEYOND OPENING EDGES AND TURNED UP 1" BEHIND WRB.
27. HEAD AND JAMB FLASHING: SELF-ADHERED FLASHING TAPE, 9" WIDE, OVER LINTEL AND DOWN JAMBS, LAPPING OVER SILL FLASHING AND INTEGRATED WITH WRB FOR CONTINUOUS WATER PROTECTION.

BALCONY ASSEMBLY:

28. DECK SURFACE: COMPOSITE DECKING (E.G., TREX), WITH 1/4" GAPS FOR DRAINAGE, SUPPORTED ON PRESSURE-TREATED 2X FRAMING JOISTS.
29. JOISTS AND BEAMS: PRESSURE-TREATED 2X FRAMING JOISTS AND LVL BEAMS (REFER TO STRUCTURAL DRAWINGS FOR SIZING), SPACED PER DESIGN TO SUPPORT 40 PSF LIVE LOAD PER IBC TABLE 1607.1.
30. WATER MANAGEMENT: GALVANIZED METAL PAN, 24-GAUGE, SLOPED 1/4" PER FOOT, BELOW DECK JOISTS TO COLLECT AND DIRECT WATER TO GUTTER SYSTEM AT SIDES, CONNECTED TO 6" SQUARE BLACK METAL DOWNSPOUTS.
31. VERTICAL ELEMENTS: PRESSURE-TREATED 2X FRAMING WITH 3/4" PLYWOOD SHEATHING, WRAPPED IN KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, WITH FLASHING DETAILS AT BASE AND TOP.
32. RAILING: 42" HIGH ALUMINUM RAILING, BLACK FINISH, ATTACHED TO DECK FRAMING, DESIGNED FOR DURABILITY AND SAFETY.

PRIMARY ROOF ASSEMBLY (BUILDING):

33. ROOF FINISH: DUROLAST 60 MIL SINGLE-PLY MEMBRANE, DARK GRAY COLOR, WITH FULLY ADHERED SYSTEM FOR WATERPROOFING.
34. TAPERED INSULATION: EXPANDED POLYSTYRENE (EPS), TAPERED FROM 0" TO 11" MAXIMUM THICKNESS (R-44 AT HIGH POINT, R-4/INCH), SLOPED AT 1/4" PER FOOT FOR DRAINAGE.
35. PRIMARY INSULATION: 4" POLYISOCYANURATE (POLYISO) RIGID INSULATION, R-22.8 (R-5.7/INCH LTTR), ON TOP OF ROOF DECK AS CONTINUOUS INSULATION.
36. SECONDARY INSULATION: 1.2" CLOSED-CELL SPRAY FOAM, R-7.8 (R-6.5/INCH), APPLIED UNDERNEATH ROOF DECK, COMBINING WITH POLYISO FOR TOTAL R-30.6, MEETING ASHRAE 90.1-2019 R-30 CI REQUIREMENT FOR ZONE 5A.
37. ROOF DECK: 3/4" PLYWOOD, SECURED TO JOISTS WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
38. STRUCTURE: 16" OPEN WEB WOOD JOISTS, SPACED AT 24" O.C. (VERIFY WITH STRUCTURAL ENGINEER), DESIGNED PER 2015 IBC CHAPTER 23.

SECONDARY ROOF ASSEMBLY (OPEN-AIR GARAGE):

39. ROOF FINISH: STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
40. ROOF DECK: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
41. STRUCTURE: PRE-ENGINEERED WOOD TRUSSES, SPACED PER DESIGN (REFER TO STRUCTURAL DRAWINGS FOR SIZING AND SPACING), DESIGNED PER 2015 IBC CHAPTER 23, NO INSULATION REQUIRED FOR OPEN-AIR CONDITION.

GENERAL NOTE (CAULKING AND SEALING):
ALL EXTERIOR JOINTS, SEAMS, AND PENETRATIONS THROUGHOUT THE BUILDING, INCLUDING WINDOWS, DOORS, FLASHING, BALCONIES, HOLLOW CORE PLANK JOINTS, MASONRY, AND EXTERIOR JOINTS BETWEEN DISSIMILAR MATERIALS, SHALL BE SEALED WITH HIGH-PERFORMANCE, EXTERIOR-GRADE SILICONE CAULK (E.G., DOW 795 OR EQUIVALENT), MEETING ASTM C920, CLASS 35, FOR WEATHER RESISTANCE AND FLEXIBILITY IN ROCHESTER, MICHIGAN'S CLIMATE (ZONE 5A). CAULKING SHALL BE APPLIED OVER BACKER ROD WHERE JOINTS EXCEED 1/4" WIDTH, ENSURING A CONTINUOUS, WATERTIGHT SEAL PER 2015 IBC SECTION 1403.2 AND MANUFACTURER RECOMMENDATIONS FOR SOUND AND MOISTURE CONTROL.

SOFFIT ASSEMBLY:
LOCATION: SOFFITS LOCATED PRIMARILY UNDER 10" HOLLOW CORE PRECAST CONCRETE PLANK IN BASEMENT LEVEL AND IN GARAGE AREAS BENEATH UPPER UNITS, AS REQUIRED FOR UTILITY ROUTING.

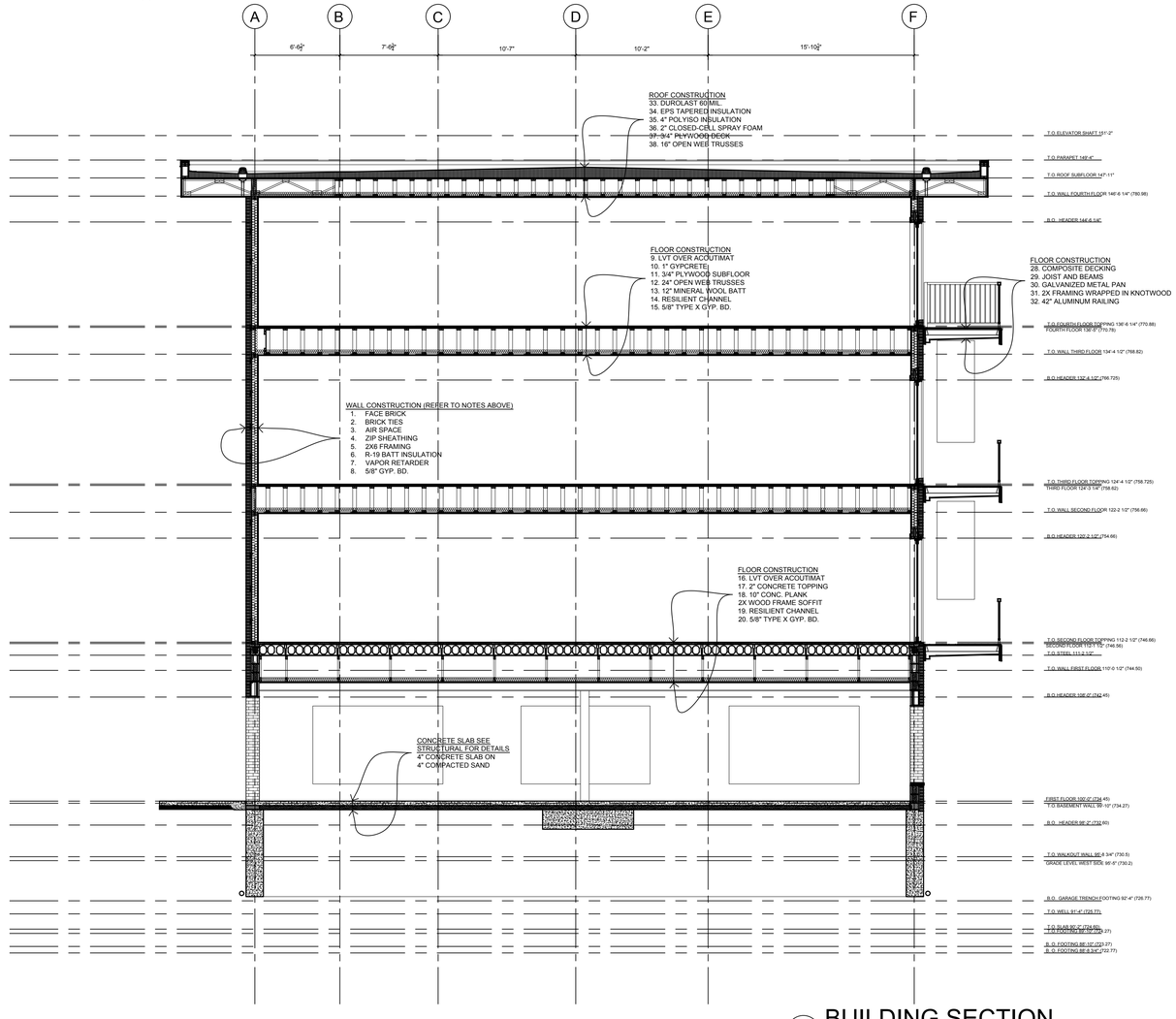
CLEARANCE: MINIMUM 14" CLEAR INSIDE HEIGHT FROM SOFFIT BOTTOM TO UNDERSIDE OF HOLLOW CORE PLANK OR SUPPORTING STRUCTURE, PROVIDING SPACE FOR HVAC DUCTS, PLUMBING PIPES, AND OTHER UTILITIES, PER 2015 IBC SECTION 1209 AND MICHIGAN MECHANICAL CODE.

FRAMING: 2X WOOD FRAMING (E.G., 2X10 OR 2X12, DOUGLAS FIR-LARCH #2), SPACED AT 16" O.C., ATTACHED TO HOLLOW CORE PLANK WITH CONCRETE ANCHORS (E.G., 1/2" WEDGE BOLTS) AT 24" O.C., DESIGNED PER 2015 IBC CHAPTER 23

FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO FRAMING WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10), PAINTED TO MATCH INTERIOR AESTHETIC.

INSULATION: R-13 FIBERGLASS BATT INSULATION (3-1/2" THICK) OR EQUIVALENT BETWEEN 2X FRAMING MEMBERS IN ALL SOFFIT AREAS, WITH SPECIAL ATTENTION TO OPEN-AIR GARAGE SOFFITS TO PREVENT HEAT LOSS AND PROTECT UTILITIES FROM FREEZING, MEETING 2015 IECC ZONE 5A REQUIREMENTS FOR EXPOSED CEILINGS.

UTILITY ACCESS: REMOVABLE OR HINGED PANELS IN SOFFIT FINISH, MINIMUM 24" X 24" SIZE, LOCATED AS REQUIRED FOR MAINTENANCE ACCESS TO HVAC, PLUMBING, AND OTHER UTILITIES, PER IBC SECTION 1209.2.



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

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan

Date:	Drawn By:	Drawing Number: A-315
Scale:	Checked By:	
DRAWING TITLE: BUILDING SECTIONS		

Seal: STATE OF MICHIGAN · ROGER JASON BERENT ARCHITECT No. 52391 · LICENSED ARCHITECT

2022KP11.11.2024CH11.11.2024_A3_LSP

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LAYOUT NOT TO SCALE. MODEL SPACE 1:1

ELEVATOR ASSEMBLY:

ELEVATOR TYPE: KONE MONOSPACE 500 DX, MACHINE ROOM-LESS TRACTION ELEVATOR, DESIGNED PER 2015 IBC SECTION 3002 AND ASME A17.1 SAFETY CODE FOR ELEVATORS AND ESCALATORS.

CAPACITY: 3500 LB LOAD CAPACITY, ACCOMMODATING UP TO 23 PERSONS, SUITABLE FOR RESIDENTIAL MULTIFAMILY USE (R-2 OCCUPANCY).

SPEED: 150 FEET PER MINUTE (0.75 M/S), PROVIDING EFFICIENT VERTICAL TRANSPORTATION FOR 5 STOPS.

STOPS: 5 LEVELS, SERVING BASEMENT THROUGH FOURTH FLOOR, WITH DOORS AT EACH STOP PER IBC SECTION 1003.2.

CAR DIMENSIONS: 7'-0" WIDE X 5'-9" DEEP X 7'-6" HIGH INTERIOR HEIGHT, MEETING IBC SECTION 3002.4 MINIMUM

HEIGHT REQUIREMENT OF 7'-0".

DOORS: RIGHT-OPENING SINGLE-SPEED STEEL DOORS, 42" WIDE X 7'-0" HIGH CLEAR OPENING, EQUIPPED WITH AUTOMATIC REOPENING DEVICE AND EDGE SENSORS, PER IBC SECTION 3002.6 AND ASME A17.1.

SHAFT: CMU ENCLOSURE, 8" THICK, PROVIDING 2-HOUR FIRE RESISTANCE RATING PER IBC SECTION 713.4, SIZED AT 8'-6" WIDE X 6'-11" DEEP TO ACCOMMODATE ELEVATOR HOISTWAY.

PIT: 5'-0" DEPTH BELOW LOWEST STOP, WITH WATERPROOFING AND DRAINAGE PER IBC SECTION 3002.2.

OVERHEAD: 13'-0" MINIMUM CLEARANCE ABOVE TOP STOP (UNDER HOIST BEAM), INCLUDING KONE ECODISC HOISTING MACHINE AND CONTROL EQUIPMENT, PER ASME A17.1 SECTION 2.7.

CONTROLS: INTEGRATED CONTROL SYSTEM LOCATED WITHIN SHAFT, KSS 570 SIGNALIZATION SERIES WITH BRUSHED STAINLESS STEEL FINISH, FLUSH-MOUNTED, AMBER DOT MATRIX DISPLAY, ONE CAR OPERATING PANEL AT 48" MAXIMUM HEIGHT PER IBC SECTION 407.4 AND ADA 4.10.

FINISH: COOL VINTAGE DESIGN SERIES (KONE DESIGN COLLECTION 42009), GRAPHIC BAMBOO PRINTED LAMINATE SIDE WALLS, CL 94 ASTURIAS SATIN BRUSHED STAINLESS STEEL FRONT AND REAR WALLS, WITH LED LIGHTING.

SAFETY FEATURES: EMERGENCY LIGHTING, ALARM, AND PHONE IN CAR, FIRE SERVICE OPERATION (PHASE I AND II), AND OVERLOAD PROTECTION, PER IBC SECTION 3002.3 AND ASME A17.1.

POWER: KONE ECODISC GEARLESS MOTOR, 480V 3-PHASE, ECO-EFFICIENT DESIGN REDUCING ENERGY USE, PER 2015 IECC SECTION C405.

HALL SIGNALIZATION: BRUSHED STAINLESS STEEL DIRECTIONAL LANTERN AND COMBO HALL POSITION INDICATOR IN LOBBY, WITH ALUMINUM SILL FINISH.

MAINTENANCE: 12-MONTH MAINTENANCE SERVICE WITH REGULAR TIME CALL-BACK SERVICE INCLUDED.

ELEVATOR SHAFT ROOF ASSEMBLY:

SHAFT WALLS: 8" CMU, UNGROUTED OR GROUTED AS REQUIRED, WITH REINFORCED BOND BEAM TOP COURSE (8" HIGH, #4 REBAR), PROVIDING 2-HOUR FIRE RESISTANCE RATING PER IBC SECTION 713.4.

ROOF STRUCTURE: 2X8 RAFTERS, DOUGLAS FIR-LARCH #2, SPANNING 8'-6" SHAFT WIDTH, SPACED AT 16" O.C. (APPROX. 6 RAFTERS OVER 7'-0" DEPTH), DESIGNED PER 2015 IBC CHAPTER 23.

ROOF PITCH: 2:12 SLOPE (14" RISE OVER 7'-0" DEPTH), SLOPING TO ONE SIDE, WITH BIRDSMOUTH CUTS ON LOW SIDE TO REST ON CMU WALL, DRAINING TO DUROLAST 60 MIL MAIN ROOF.

ROOF SHEATHING: 5/8" PLYWOOD OR OSB, FASTENED WITH 8D NAILS AT 6" O.C. EDGES AND 12" O.C. FIELD, PROVIDING STRUCTURAL DECK FOR ROOFING.

ROOFING: DUROLAST 60 MIL EPDM RUBBER MEMBRANE, DARK GRAY COLOR, EXTENDED FROM MAIN ROOF, FLASHED AND SEALED TO CMU WALLS FOR WATERPROOFING, PER IBC SECTION 1503.2.

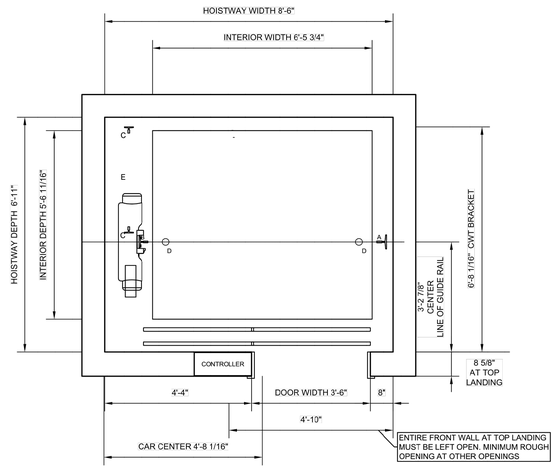
CEILING STRUCTURE: 2X8 JOISTS, DOUGLAS FIR-LARCH #2, SPANNING 8'-6" SHAFT WIDTH, SPACED AT 16" O.C. (APPROX. 6 JOISTS), RESTING ON CMU WALLS, MAINTAINING 8'-0" MAXIMUM CLEARANCE FROM TOP LANDING.

CEILING FINISH: TWO LAYERS 5/8" TYPE X GYPSUM BOARD, FASTENED WITH 1-1/4" TYPE S SCREWS (12" O.C. BASE LAYER, 8" O.C. FACE LAYER), STAGGERED SEAMS, FIRE-TAPED FOR 2-HOUR FIRE RESISTANCE (UL U356).

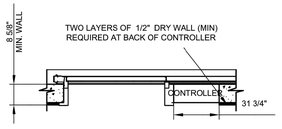
INSULATION: MINERAL WOOL BATT INSULATION BETWEEN 2X8 JOISTS, FILLING CAVITY, ENHANCING 2-HOUR FIRE RATING AND ACOUSTIC PERFORMANCE.

ANCHORAGE: 1/2" DIAMETER J-BOLTS EMBEDDED IN GROUTED BOND BEAM, SPACED AT 16" O.C., SECURING 2X8 RAFTERS AND JOISTS WITH 2" X 8" X 1/4" STEEL BEARING PLATES AND NUTS.

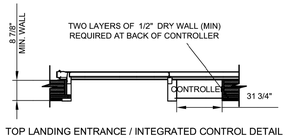
FIRE BLOCKING: FIRESTOP CAULK (E.G., 3M FIRE BARRIER) AT CMU-TO-WOOD TRANSITIONS AND BETWEEN 2X8S, ENSURING CONTINUOUS 2-HOUR FIRE RATING PER IBC SECTION 718.2.



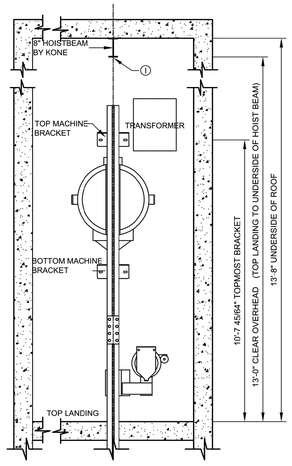
HOISTWAY PLAN VIEW



TOP LANDING ENTRANCE / INTEGRATED CONTROL DETAIL CONCRETE



TOP LANDING ENTRANCE / INTEGRATED CONTROL DETAIL DRYWALL



ELEVATION VIEW FROM HOISTWAY LOOKING AT MACHINE

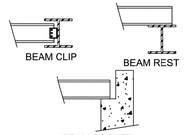
BRKTS ABOVE TOPMOST LANDING - IMPACT LOADING REACTIONS			
REACTION LOCATION	A	B	C
X DIRECTION	1580	240	50
Y DIRECTION	530	1670	100

BRKTS BELOW TOPMOST LANDING - RUNNING REACTIONS			
X DIRECTION	290	240	50
Y DIRECTION	200	110	100
MAX DEFLECTION NOT TO EXCEED 0.125" (3mm) DUE TO APPLIED LOADS			

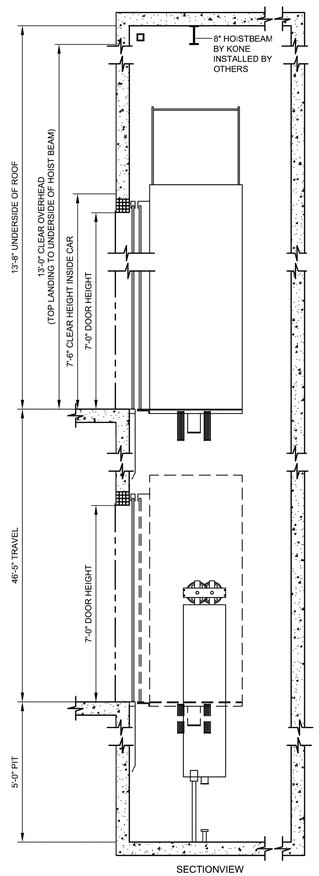
VERTICAL FORCES ONTO PIT FLOOR					
REACTION LOCATION	A	B	C	D	E
Z DIRECTION	21400	16700	6000	12200	1920

**VERTICAL REACTIONS A, B & C OCCUR SIMULTANEOUSLY. VERTICAL REACTIONS D & E OCCUR INDIVIDUALLY AND SEPARATELY FROM A, B & C.

HOISTBEAM & LIFELINE VERTICAL FORCES				
REACTION LOCATION	A	B	C	D
Z DIRECTION	4800	4700	5000	5000



FLOOR BY FLOOR HEIGHTS CHART					
Floor Number	Elevation	Front Opening	Back Opening	Inter Floor Distance (ft)	Inter Floor Distance (in)
5	46' 5"	X	--		
				12	2
4	34' 3"	X	--		
				12	2
3	22' 1"	X	--		
				12	2
2	9' 11"	X	--		
				9	11
1	0' 0"	X	--		



SECTIONVIEW

PREPARATORY WORK BY OTHERS: THE CUSTOMER OR CUSTOMER'S CONTRACTOR, SHALL BE RESPONSIBLE FOR THE FOLLOWING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK AT NO COST TO KONE, INC LOCAL CODES SHALL PREVAIL WHEN APPLICABLE

1. PROVIDE A CLEAR, PLUMB HOISTWAY OF THE SIZE SHOWN ON THE FINAL KONE LAYOUT. VARIATIONS MUST NOT EXCEED 1". (TOLERANCE = -0" + 1")
2. PROVIDE ADEQUATE SUPPORT FOR GUIDE RAIL BRACKETS (INCLUDING DIVIDER BEAMS FOR MULTIPLE ELEVATORS IN A COMMON HOISTWAY) FROM PIT FLOOR TO THE TOP OF THE HOISTWAY AND NOT SPANNING FURTHER THAN ALLOWED BY THE GOVERNING CODE AUTHORITY. FIREPROOFING SHALL BE AFTER INSTALLATION OF ELEVATOR BRACKETS.
3. HOISTWAY VENTILATION SHALL BE PROVIDED PER CODE REQUIREMENTS.
4. PROJECTIONS REQUIRING BEVELING IN ACCORDANCE WITH CODE REQUIREMENTS SHALL BE BEVELED AT AN ANGLE NOT LESS THAN 75 DEGREES FROM THE HORIZONTAL.
5. PROVIDE REMOVABLE, OSHA COMPLIANT BARRICADES AROUND ALL HOISTWAY OPENINGS AND BETWEEN ELEVATORS INSIDE OF THE HOISTWAY AS REQUIRED. PROVIDE TWO LIFELINE ATTACHMENTS AT THE TOP, FRONT OF THE HOISTWAY.
6. ARRANGE FOR ALL BLOCK OUT / CUTOUT OF OPENINGS TO INSTALL HALL PUSHBUTTONS, SIGNAL FIXTURES, AND HATCH DUCT.
7. PROVIDE A DRY PIT REINFORCED TO SUSTAIN VERTICAL FORCE FROM RAILS AND BUFFERS. REFERENCE THE REACTION LOAD TABLES FOR VERTICAL FORCES. SUMPS AND / OR PUMPS (WHERE PERMITTED) LOCATED WITHIN THE PIT MAY NOT INTERFERE WITH THE ELEVATOR EQUIPMENT.
8. PROVIDE SUITABLE LIGHTING FOR THE MACHINE SPACE WITH A LIGHT SWITCH LOCATED IN THE HOISTWAY. PROVIDE A LIGHT FIXTURE AND A SEPARATE GFCI PROTECTED DUPLEX CONVENIENCE OUTLET IN THE ELEVATOR PIT.
9. ENTRANCE WALLS ARE TO BE LEFT OPEN UNTIL THE ELEVATOR EQUIPMENT IS INSTALLED. ADEQUATE SUPPORT FOR ENTRANCE ATTACHMENT POINTS IS REQUIRED AT ALL LANDINGS. ALL FINISHED FLOORING AND GROUTING IS TO BE INSTALLED AFTER THE ENTRANCE FRAMES ARE INSTALLED.
10. A PIT LADDER IS SUPPLIED BY KONE UNLESS OTHERWISE NOTED ON THE LAYOUT DRAWING. LOCATE AND INSTALL PER KONE FINAL LAYOUT DRAWINGS.
11. AN I-BEAM AND SAFETY LINE BEAM, PROVIDED BY KONE, MUST BE INSTALLED IN THE ELEVATOR HOISTWAY OVERHEAD PER THE KONE FINAL LAYOUT DRAWINGS. WHERE AN ELEVATOR HAS BOTH A FRONT AND REAR OPENING, TWO SAFETY LINE BEAMS ARE REQUIRED.
12. FOR PROPER EQUIPMENT OPERATION, THE MACHINE SPACE AT THE TOP OF THE HOISTWAY MUST BE PROPERLY VENTED PER CODE REQUIREMENTS. MAX ALLOWED HUMIDITY IS 95% NON-CONDENSING. HOISTWAY MUST MAINTAIN A TEMPERATURE BETWEEN 41 F AND 104 F.
13. THE ACCESS DOOR TO THE CONTROL SPACE OR THE CONTROL ROOM MUST BE SECURED AGAINST UNAUTHORIZED ACCESS. IT SHALL BE SELF-LOCKING AND SELF-CLOSING.
14. PROVIDE A 15-AMP 120V AC FUSED SERVICE WITH GROUND (VIA EMERGENCY LIGHT SUPPLY IF AVAILABLE) CONNECTED TO EACH CONTROL CABINET FOR LIGHTING AND FAN. PROVIDE DEDICATED ANALOG PHONE LINE TERMINATING AT THE ELEVATOR CONTROL CABINET.
15. FOR CONTROL SPACES LOCATED REMOTELY FROM THE ELEVATOR HOISTWAY, PROVIDE A GOVERNOR ACCESS DOOR OF SIZE AND LOCATION PER KONE FINAL LAYOUT DRAWINGS. THE ACCESS DOOR SHALL BE SECURED AGAINST UNAUTHORIZED ACCESS.
16. FOR INTEGRATED CONTROL SPACE LOCATED IN SEISMIC AREA, PROVIDE A SEISMIC SWITCH ACCESS DOOR OF SIZE AND LOCATION PER KONE FINAL LAYOUT DRAWINGS. THE ACCESS DOOR SHALL BE SECURED AGAINST UNAUTHORIZED ACCESS.
17. PROVIDE A SUITABLE WORKING ENVIRONMENT INCLUDING ADEQUATE ACCESS TO THE BUILDING, PROPER LIGHTING IN ALL AREAS. CLEAN AND SAFE STORAGE ADJACENT TO THE HOISTWAY, PROPERLY INSTALLED TEMPORARY SINGLE AND THREE-PHASE POWER, AND SUFFICIENT ON-SITE REFUSE CONTAINERS FOR THE DISPOSAL OF ELEVATOR PACKING MATERIALS.
18. THIS DRAWING MUST BE REVIEWED AND APPROVED BY A LICENSED PROFESSIONAL TO ENSURE COMPLIANCE WITH LOCAL BUILDING CODES.
19. THESE DRAWINGS ARE FOR INFORMATION PURPOSES ONLY AND MUST NOT BE USED FOR CONSTRUCTION PURPOSES. FULLY DETAILED CONSTRUCTION DRAWINGS ARE AVAILABLE FROM THE PRODUCT MANUFACTURER.

SPECIFICATIONS	
PRODUCT NAME	: MonoSpace 500 DX
SEISMIC ZONE	: NON-SEISMIC
CAPACITY	: 3500 lb
SPEED	: 150 FPM
DOOR	: RIGHT OPENING
TRAVEL	: 46'-5"
CONTROL LOCATION	: INTEGRATED
POWER SUPPLY	: 480 V
REQUIRED FUSE AMPS	: 25 AMPS
CONTROLLER HEAT OUTPUT	: 3 KBTU/HR
MACHINE HEAT OUTPUT	: 1.5 KBTU/HR

KONE

ONE KONE COURT
MOLINE, IL
P: 1-800-956-KONE (5663)
F: 309-743-5469
www.kone.us

PROJECT NAME

-

BUILDING LOCATION

-

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-
-

E000689705/KONE-4540751/FNO_99_3500_77.7_66.7

ETB 11.88/svc_flcad_cad_prod12

FenixEcoSpaceENA R23.2

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
6435 Apple Orchard Lane, Rochester Hills, MI 48306
248.800.6505
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202 Walnut Blvd. Suite B Rochester, MI

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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:

210 DIVERSION

Rochester, Michigan

Date: | Drawn By:

Scale: | Checked By:

DRAWING TITLE:

BUILDING SECTIONS

Drawing Number:

A-318

Seal: STATE OF MICHIGAN — ROGER JASON BERENT ARCHITECT No. 52391 — LICENSED ARCHITECT

TYPICAL EXTERIOR WALL ASSEMBLY:

1. EXTERIOR FINISH: MODULAR FACE BRICK VENEER, BELDEN BELCREST 760 OR BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES AT 24" O.C. FOR MOISTURE MANAGEMENT.
2. BRICK TIES: WIRE-BOND SURETIE WS TAPCON THERMAL, CORROSION-RESISTANT, SPACED AT 16" O.C. VERTICALLY AND HORIZONTALLY, EMBEDDED MINIMUM 1-1/2" INTO MORTAR JOINTS AND SECURED TO WOOD STUDS.
3. AIR SPACE: 1" MINIMUM CLEAR AIR CAVITY BETWEEN BRICK VENEER AND SHEATHING FOR DRAINAGE AND VENTILATION.
4. SHEATHING: ZIP SYSTEM WALL SHEATHING, HUBER ENGINEERED WOODS, WITH INTEGRATED WATER-RESISTIVE BARRIER (WRB), TAPED AT SEAMS FOR CONTINUOUS AIR AND MOISTURE PROTECTION
5. FRAMING: 2X6 WOOD STUDS, #2 GRADE OR BETTER (E.G., SOUTHERN PINE), SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
6. INSULATION: R-19 FIBERGLASS BATT INSULATION, FULLY FILLING 5-1/2" STUD CAVITY, MEETING 2015 IECC ZONE 5A R-VALUE REQUIREMENTS FOR WOOD-FRAMED WALLS.
7. VAPOR RETARDER: 6-MIL POLYETHYLENE SHEET, CLASS I, WITH JOINTS SEALED, ON WARM SIDE OF INSULATION PER 2015 IECC SECTION R702.7.
8. INTERIOR FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10).

TYPICAL FLOOR/CEILING ASSEMBLY (UPPER UNITS):

8. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
10. TOPPING: 1" GYPCRETE (GYPSUM CONCRETE), 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
11. SUBFLOOR: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
12. STRUCTURE: 24" OPEN WEB WOOD TRUSSES, SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
13. INSULATION: TWO LAYERS OF 12" MINERAL WOOL BATT INSULATION (R-38 EACH), FILLING TRUSS CAVITY FOR STC/IIC 50 PER IBC SECTION 1207.
14. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 24" O.C., PERPENDICULAR TO TRUSSES, ATTACHED WITH 1-1/4" TYPE S SCREWS.
15. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (UL L528).

TYPICAL FLOOR/CEILING ASSEMBLY (BASEMENT UNITS):

16. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
17. TOPPING: 2" CONCRETE, 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
18. STRUCTURE: 10" HOLLOW CORE PRECAST CONCRETE PLANK, DESIGNED PER 2015 IBC CHAPTER 16, PROVIDING 2-HOUR FIRE RESISTANCE (UL K909).
19. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 16" O.C., ATTACHED TO PLANK WITH 1-1/2" CONCRETE SCREWS.
20. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS.

FACE BRICK FLASHING (WINDOWS, DOORS, AND OPENINGS):

21. THROUGH-WALL FLASHING: STAINLESS STEEL OR COPPER-LAMINATED FLASHING, EXTENDING FULL WIDTH OF BRICK VENEER AT WINDOWS, DOORS, AND OPENINGS, WITH DRIP EDGE PROJECTING 1/4" BEYOND FACE OF BRICK.
22. END DAMS: FORMED FLASHING END DAMS AT TERMINATIONS, EXTENDING 1" UP BEHIND WRB TO PREVENT LATERAL WATER MIGRATION.
23. WEEP HOLES: OPEN HEAD JOINTS OR WICK MATERIAL AT 24" O.C. ABOVE FLASHING TO FACILITATE DRAINAGE, PER IBC SECTION 1405.4.

FLASHING AND WEATHERPROOFING (WINDOWS AND LOOSE LINTELS):

24. SILL FLASHING: SELF-ADHERED FLEXIBLE FLASHING TAPE (E.G., GRACE VYCOR), EXTENDING 6" UP JAMBS AND 4" ONTO SHEATHING BELOW PELLA IMPERVIA WINDOWS, INTEGRATED WITH ZIP SYSTEM WRB.
25. SILL PAN: ENDURA VERSAPAN SLOPED SILL PAN, 4-9/16" OR 6-9/16" DEPTH MATCHING WINDOW JAMB, WITH 1-1/2" BACK DAM AND 1/4" PER FOOT SLOPE, SEALED WITH SILICONE AT CORNERS AND JOINTS.
26. LINTEL FLASHING: STAINLESS STEEL LOOSE LINTEL FLASHING, FULL WIDTH OF OPENING, WITH DRIP EDGE AND END DAMS, EXTENDING 2" BEYOND OPENING EDGES AND TURNED UP 1" BEHIND WRB.
27. HEAD AND JAMB FLASHING: SELF-ADHERED FLASHING TAPE, 9" WIDE, OVER LINTEL AND DOWN JAMBS, LAPPING OVER SILL FLASHING AND INTEGRATED WITH WRB FOR CONTINUOUS WATER PROTECTION.

BALCONY ASSEMBLY:

28. DECK SURFACE: COMPOSITE DECKING (E.G., TREX), WITH 1/4" GAPS FOR DRAINAGE, SUPPORTED ON PRESSURE-TREATED 2X FRAMING JOISTS.
29. JOISTS AND BEAMS: PRESSURE-TREATED 2X FRAMING JOISTS AND LVL BEAMS (REFER TO STRUCTURAL DRAWINGS FOR SIZING), SPACED PER DESIGN TO SUPPORT 40 PSF LIVE LOAD PER IBC TABLE 1607.1.
30. WATER MANAGEMENT: GALVANIZED METAL PAN, 24-GAUGE, SLOPED 1/4" PER FOOT, BELOW DECK JOISTS TO COLLECT AND DIRECT WATER TO GUTTER SYSTEM AT SIDES, CONNECTED TO 6" SQUARE BLACK METAL DOWNSPOUTS.
31. VERTICAL ELEMENTS: PRESSURE-TREATED 2X FRAMING WITH 3/4" PLYWOOD SHEATHING, WRAPPED IN KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, WITH FLASHING DETAILS AT BASE AND TOP.
32. RAILING: 42" HIGH ALUMINUM RAILING, BLACK FINISH, ATTACHED TO DECK FRAMING, DESIGNED FOR DURABILITY AND SAFETY.

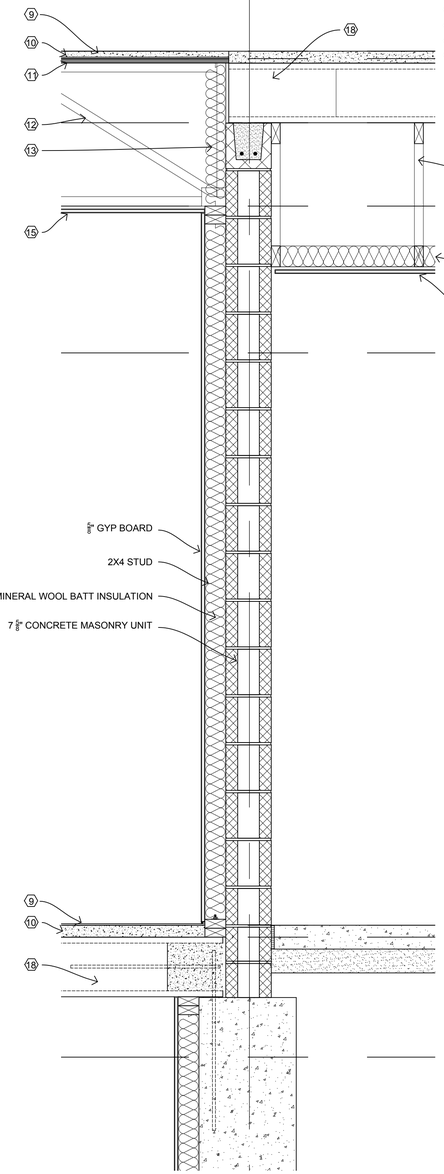
PRIMARY ROOF ASSEMBLY (BUILDING):

33. ROOF FINISH: DUROLAST 60 MIL SINGLE-PLY MEMBRANE, DARK GRAY COLOR, WITH FULLY ADHERED SYSTEM FOR WATERPROOFING.
34. TAPERED INSULATION: EXPANDED POLYSTYRENE (EPS), TAPERED FROM 0" TO 11" MAXIMUM THICKNESS (R-44 AT HIGH POINT, R-4/INCH), SLOPED AT 1/4" PER FOOT FOR DRAINAGE.
35. PRIMARY INSULATION: 4" POLYISOCYANURATE (POLYISO) RIGID INSULATION, R-22.8 (R-5.7/INCH LTTR), ON TOP OF ROOF DECK AS CONTINUOUS INSULATION.
36. SECONDARY INSULATION: 1.2" CLOSED-CELL SPRAY FOAM, R-7.8 (R-6.5/INCH), APPLIED UNDERNEATH ROOF DECK, COMBINING WITH POLYISO FOR TOTAL R-30.6, MEETING ASHRAE 90.1-2019 R-30 CI REQUIREMENT FOR ZONE 5A.
37. ROOF DECK: 3/4" PLYWOOD, SECURED TO JOISTS WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
38. STRUCTURE: 16" OPEN WEB WOOD JOISTS, SPACED AT 24" O.C. (VERIFY WITH STRUCTURAL ENGINEER), DESIGNED PER 2015 IBC CHAPTER 23.

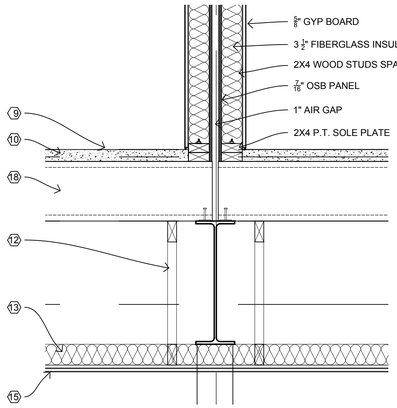
SECONDARY ROOF ASSEMBLY (OPEN-AIR GARAGE):

39. ROOF FINISH: STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
40. ROOF DECK: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
41. STRUCTURE: PRE-ENGINEERED WOOD TRUSSES, SPACED PER DESIGN (REFER TO STRUCTURAL DRAWINGS FOR SIZING AND SPACING), DESIGNED PER 2015 IBC CHAPTER 23, NO INSULATION REQUIRED FOR OPEN-AIR CONDITION.

GENERAL NOTE (CAULKING AND SEALING):
ALL EXTERIOR JOINTS, SEAMS, AND PENETRATIONS THROUGHOUT THE BUILDING, INCLUDING WINDOWS, DOORS, FLASHING, BALCONIES, HOLLOW CORE PLANK JOINTS, MASONRY, AND EXTERIOR JOINTS BETWEEN DISSIMILAR MATERIALS, SHALL BE SEALED WITH HIGH-PERFORMANCE, EXTERIOR-GRADE SILICONE CAULK (E.G., DOW 795 OR EQUIVALENT), MEETING ASTM C920, CLASS 35, FOR WEATHER RESISTANCE AND FLEXIBILITY IN ROCHESTER, MICHIGAN'S CLIMATE (ZONE 5A). CAULKING SHALL BE APPLIED OVER BACKER ROD WHERE JOINTS EXCEED 1/4" WIDTH, ENSURING A CONTINUOUS, WATERTIGHT SEAL PER 2015 IBC SECTION 1403.2 AND MANUFACTURER RECOMMENDATIONS FOR SOUND AND MOISTURE CONTROL.



6 WALL SECTION
SCALE: 1" = 1'-0"



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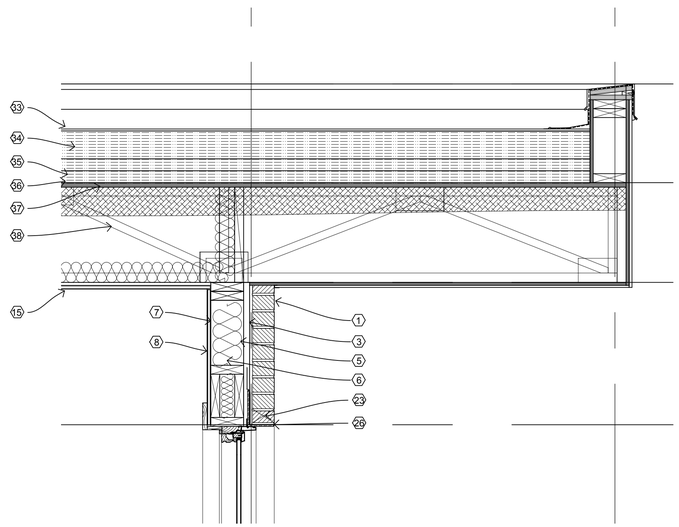

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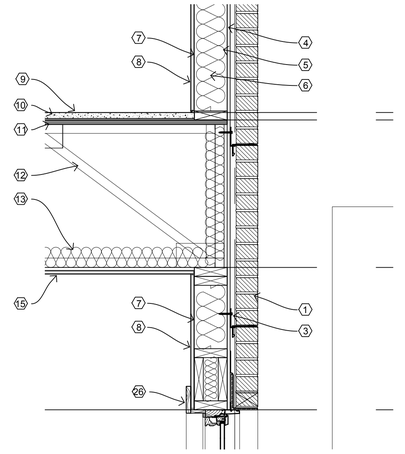

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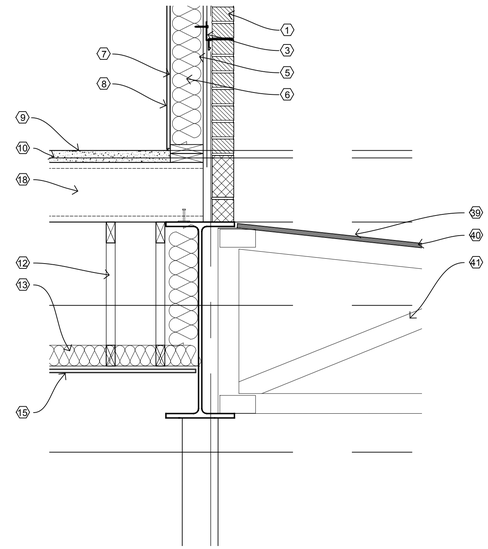

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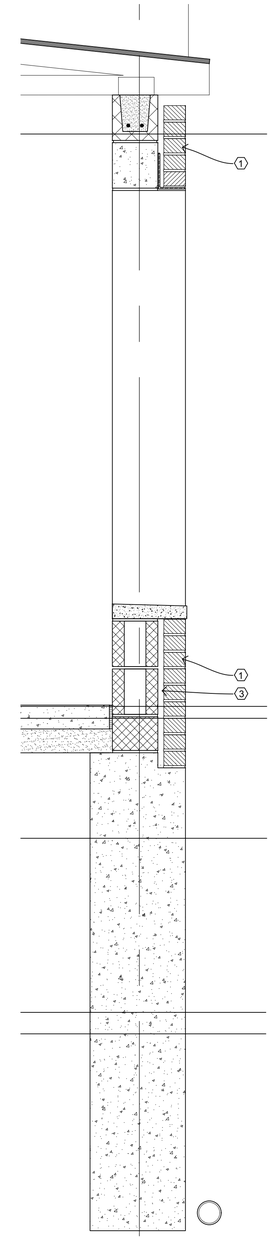

1 WALL SECTION
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Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: BUILDING SECTION DETAILS

Drawing Number: A-320

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

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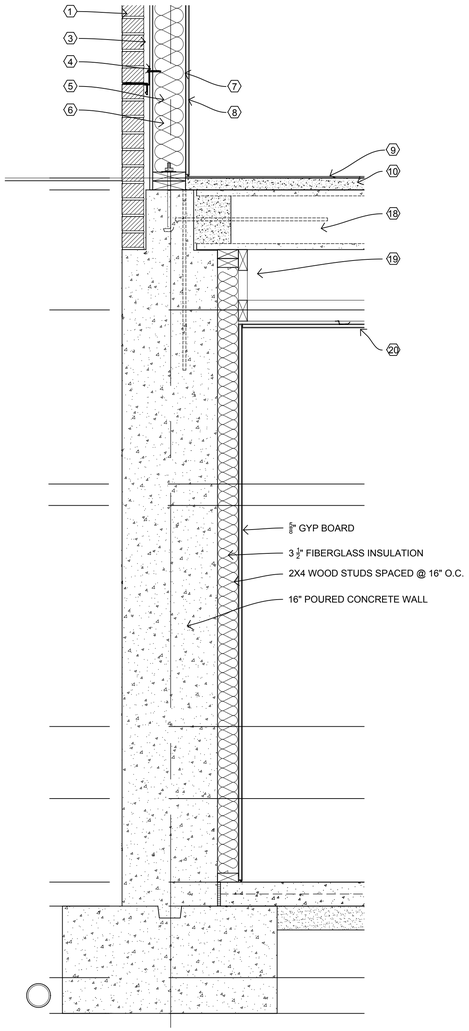
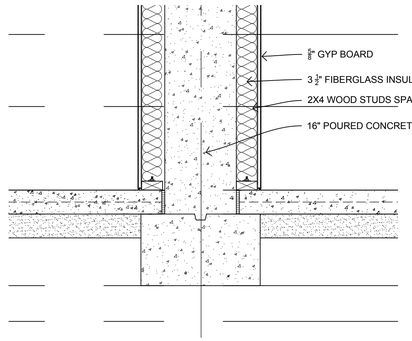


10 WALL SECTION
SCALE: 1" = 1'-0"



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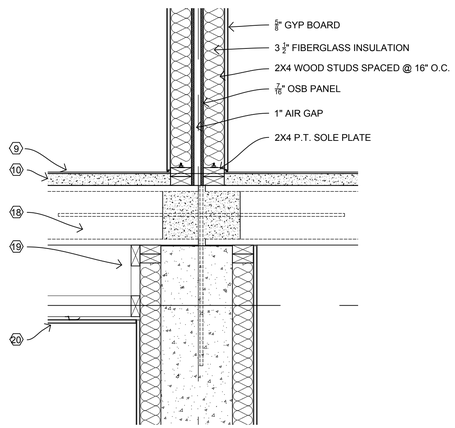

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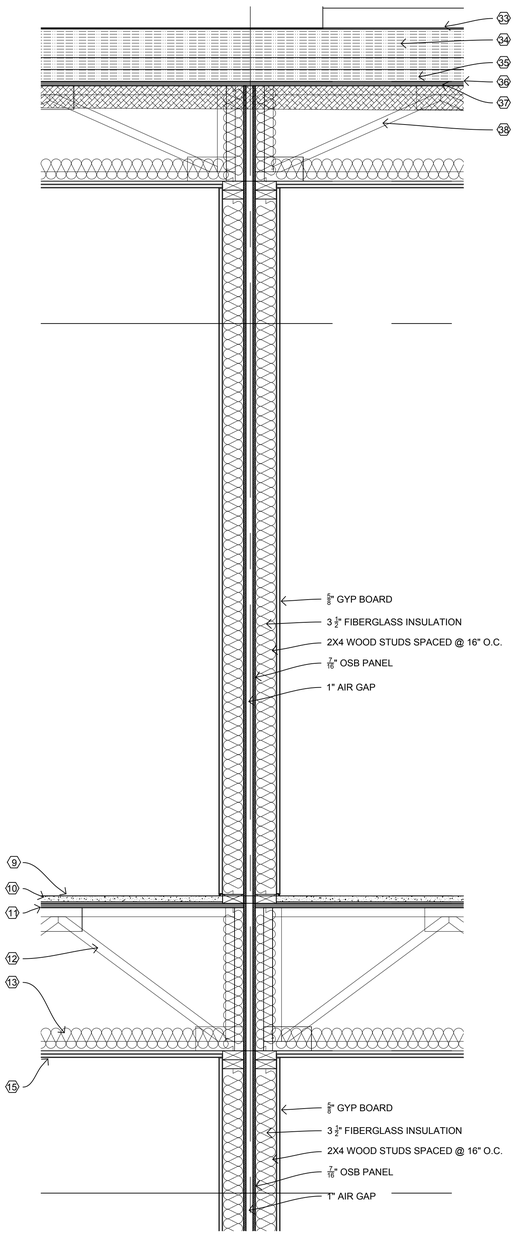

7 WALL SECTION
SCALE: 1" = 1'-0"

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By: | Scale: | Checked By:

DRAWING TITLE: BUILDING SECTION DETAILS

Drawing Number: A-330

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

TYPICAL EXTERIOR WALL ASSEMBLY:

1. EXTERIOR FINISH: MODULAR FACE BRICK VENEER, BELDEN BELCREST 760 OR BELDEN METALIC BLACK SANDMOLD. WITH MORTAR JOINTS AND WEEP HOLES AT 24" O.C. FOR MOISTURE MANAGEMENT.
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3. AIR SPACE: 1" MINIMUM CLEAR AIR CAVITY BETWEEN BRICK VENEER AND SHEATHING FOR DRAINAGE AND VENTILATION.
4. SHEATHING: ZIP SYSTEM WALL SHEATHING, HUBER ENGINEERED WOODS, WITH INTEGRATED WATER-RESISTIVE BARRIER (WRB), TAPED AT SEAMS FOR CONTINUOUS AIR AND MOISTURE PROTECTION
5. FRAMING: 2X6 WOOD STUDS, #2 GRADE OR BETTER (E.G., SOUTHERN PINE), SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
6. INSULATION: R-19 FIBERGLASS BATT INSULATION, FULLY FILLING 5-1/2" STUD CAVITY, MEETING 2015 IECC ZONE 5A R-VALUE REQUIREMENTS FOR WOOD-FRAMED WALLS.
7. VAPOR RETARDER: 6-MIL POLYETHYLENE SHEET, CLASS I. WITH JOINTS SEALED, ON WARM SIDE OF INSULATION PER 2015 IECC SECTION R702.7.
8. INTERIOR FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10).

TYPICAL FLOOR/CEILING ASSEMBLY (UPPER UNITS):

9. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
10. TOPPING: 1" GYPCRETE (GYPSUM CONCRETE), 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
11. SUBFLOOR: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
12. STRUCTURE: 24" OPEN WEB WOOD TRUSSES, SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
13. INSULATION: TWO LAYERS OF 12" MINERAL WOOL BATT INSULATION (R-38 EACH), FILLING TRUSS CAVITY FOR STC/IIC 50 PER IBC SECTION 1207.
14. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 24" O.C., PERPENDICULAR TO TRUSSES, ATTACHED WITH 1-1/4" TYPE S SCREWS.
15. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (UL L528).

TYPICAL FLOOR/CEILING ASSEMBLY (BASEMENT UNITS):

16. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
17. TOPPING: 2" CONCRETE, 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
18. STRUCTURE: 10" HOLLOW CORE PRECAST CONCRETE PLANK, DESIGNED PER 2015 IBC CHAPTER 16, PROVIDING 2-HOUR FIRE RESISTANCE (UL K909).
19. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 16" O.C., ATTACHED TO PLANK WITH 1-1/2" CONCRETE SCREWS.
20. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS.

FACE BRICK FLASHING (WINDOWS, DOORS, AND OPENINGS):

21. THROUGH-WALL FLASHING: STAINLESS STEEL OR COPPER-LAMINATED FLASHING, EXTENDING FULL WIDTH OF BRICK VENEER AT WINDOWS, DOORS, AND OPENINGS, WITH DRIP EDGE PROJECTING 1/4" BEYOND FACE OF BRICK.
22. END DAMS: FORMED FLASHING END DAMS AT TERMINATIONS, EXTENDING 1" UP BEHIND WRB TO PREVENT LATERAL WATER MIGRATION.
23. WEEP HOLES: OPEN HEAD JOINTS OR WICK MATERIAL AT 24" O.C. ABOVE FLASHING TO FACILITATE DRAINAGE, PER IBC SECTION 1405.4.

FLASHING AND WEATHERPROOFING (WINDOWS AND LOOSE LINTELS):

24. SILL FLASHING: SELF-ADHERED FLEXIBLE FLASHING TAPE (E.G., GRACE VYCOR), EXTENDING 6" UP JAMBS AND 4" ONTO SHEATHING BELOW PELLA IMPERVIA WINDOWS, INTEGRATED WITH ZIP SYSTEM WRB.
25. SILL PAN: ENDURA VERSAPAN SLOPED SILL PAN, 4-9/16" OR 6-9/16" DEPTH MATCHING WINDOW JAMB, WITH 1-1/2" BACK DAM AND 1/4" PER FOOT SLOPE, SEALED WITH SILICONE AT CORNERS AND JOINTS.
26. LINTEL FLASHING: STAINLESS STEEL LOOSE LINTEL FLASHING, FULL WIDTH OF OPENING, WITH DRIP EDGE AND END DAMS, EXTENDING 2" BEYOND OPENING EDGES AND TURNED UP 1" BEHIND WRB.
27. HEAD AND JAMB FLASHING: SELF-ADHERED FLASHING TAPE, 9" WIDE, OVER LINTEL AND DOWN JAMBS, LAPPING OVER SILL FLASHING AND INTEGRATED WITH WRB FOR CONTINUOUS WATER PROTECTION.

BALCONY ASSEMBLY:

28. DECK SURFACE: COMPOSITE DECKING (E.G., TREX), WITH 1/4" GAPS FOR DRAINAGE, SUPPORTED ON PRESSURE-TREATED 2X FRAMING JOISTS.
29. JOISTS AND BEAMS: PRESSURE-TREATED 2X FRAMING JOISTS AND LVL BEAMS (REFER TO STRUCTURAL DRAWINGS FOR SIZING), SPACED PER DESIGN TO SUPPORT 40 PSF LIVE LOAD PER IBC TABLE 1607.1.
30. WATER MANAGEMENT: GALVANIZED METAL PAN, 24-GAUGE, SLOPED 1/4" PER FOOT, BELOW DECK JOISTS TO COLLECT AND DIRECT WATER TO GUTTER SYSTEM AT SIDES, CONNECTED TO 6" SQUARE BLACK METAL DOWNSPOUTS.
31. VERTICAL ELEMENTS: PRESSURE-TREATED 2X FRAMING WITH 3/4" PLYWOOD SHEATHING, WRAPPED IN KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, WITH FLASHING DETAILS AT BASE AND TOP.
32. RAILING: 42" HIGH ALUMINUM RAILING, BLACK FINISH, ATTACHED TO DECK FRAMING, DESIGNED FOR DURABILITY AND SAFETY.

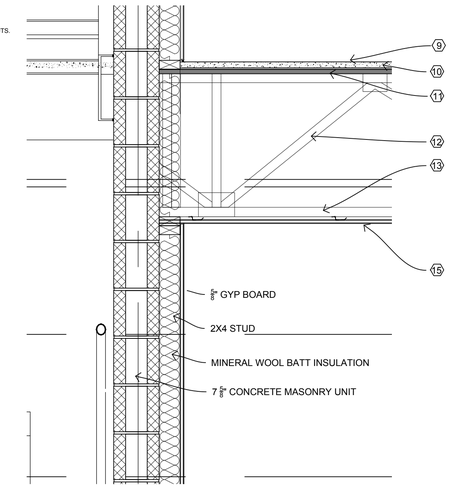
PRIMARY ROOF ASSEMBLY (BUILDING):

33. ROOF FINISH: DUROLAST 60 MIL SINGLE-PLY MEMBRANE, DARK GRAY COLOR, WITH FULLY ADHERED SYSTEM FOR WATERPROOFING.
34. TAPERED INSULATION: EXPANDED POLYSTYRENE (EPS), TAPERED FROM 0" TO 11" MAXIMUM THICKNESS (R-44 AT HIGH POINT, R-4/INCH), SLOPED AT 1/4" PER FOOT FOR DRAINAGE.
35. PRIMARY INSULATION: 4" POLYISOCYANURATE (POLYISO) RIGID INSULATION, R-22.8 (R-5.7/INCH LTTR), ON TOP OF ROOF DECK AS CONTINUOUS INSULATION.
36. SECONDARY INSULATION: 1.2" CLOSED-CELL SPRAY FOAM, R-7.8 (R-6.5/INCH), APPLIED UNDERNEATH ROOF DECK, COMBINING WITH POLYISO FOR TOTAL R-30.6, MEETING ASHRAE 90.1-2019 R-30 CI REQUIREMENT FOR ZONE 5A.
37. ROOF DECK: 3/4" PLYWOOD, SECURED TO JOISTS WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
38. STRUCTURE: 16" OPEN WEB WOOD JOISTS, SPACED AT 24" O.C. (VERIFY WITH STRUCTURAL ENGINEER), DESIGNED PER 2015 IBC CHAPTER 23.

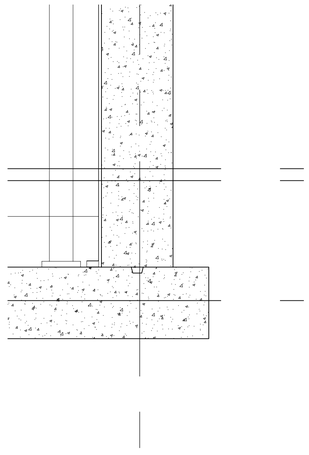
SECONDARY ROOF ASSEMBLY (OPEN-AIR GARAGE):

39. ROOF FINISH: STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
40. ROOF DECK: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
41. STRUCTURE: PRE-ENGINEERED WOOD TRUSSES, SPACED PER DESIGN (REFER TO STRUCTURAL DRAWINGS FOR SIZING AND SPACING), DESIGNED PER 2015 IBC CHAPTER 23, NO INSULATION REQUIRED FOR OPEN-AIR CONDITION.

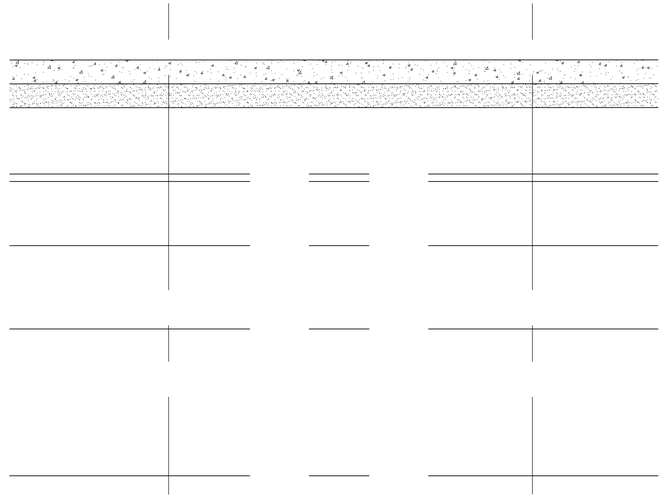
GENERAL NOTE (CAULKING AND SEALING):
ALL EXTERIOR JOINTS, SEAMS, AND PENETRATIONS THROUGHOUT THE BUILDING, INCLUDING WINDOWS, DOORS, FLASHING, BALCONIES, HOLLOW CORE PLANK JOINTS, MASONRY, AND EXTERIOR JOINTS BETWEEN DISSIMILAR MATERIALS, SHALL BE SEALED WITH HIGH-PERFORMANCE, EXTERIOR-GRADE SILICONE CAULK (E.G., DOW 795 OR EQUIVALENT), MEETING ASTM C920, CLASS 35, FOR WEATHER RESISTANCE AND FLEXIBILITY IN ROCHESTER, MICHIGAN'S CLIMATE (ZONE 5A). CAULKING SHALL BE APPLIED OVER BACKER ROD WHERE JOINTS EXCEED 1/4" WIDTH, ENSURING A CONTINUOUS, WATERTIGHT SEAL PER 2015 IBC SECTION 1403.2 AND MANUFACTURER RECOMMENDATIONS FOR SOUND AND MOISTURE CONTROL.



2 WALL SECTION
SCALE: 1" = 1'-0"



3 WALL SECTION
SCALE: 1" = 1'-0"



1 WALL SECTION
SCALE: 1" = 1'-0"

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.

Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: BUILDING SECTION DETAILS

Drawing Number: A-340

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

TYPICAL EXTERIOR WALL ASSEMBLY:

1. EXTERIOR FINISH: MODULAR FACE BRICK VENEER, BELDEN BELCREST 760 OR BELDEN METALIC BLACK SANDMOLD, WITH MORTAR JOINTS AND WEEP HOLES AT 24" O.C. FOR MOISTURE MANAGEMENT.
2. BRICK TIES: WIRE-BOND SURETIE WS TAPCON THERMAL, CORROSION-RESISTANT, SPACED AT 16" O.C. VERTICALLY AND HORIZONTALLY, EMBEDDED MINIMUM 1-1/2" INTO MORTAR JOINTS AND SECURED TO WOOD STUDS.
3. AIR SPACE: 1" MINIMUM CLEAR AIR CAVITY BETWEEN BRICK VENEER AND SHEATHING FOR DRAINAGE AND VENTILATION.
4. SHEATHING: ZIP SYSTEM WALL SHEATHING, HUBER ENGINEERED WOODS, WITH INTEGRATED WATER-RESISTIVE BARRIER (WRB), TAPED AT SEAMS FOR CONTINUOUS AIR AND MOISTURE PROTECTION
5. FRAMING: 2X6 WOOD STUDS, #2 GRADE OR BETTER (E.G., SOUTHERN PINE), SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
6. INSULATION: R-19 FIBERGLASS BATT INSULATION, FULLY FILLING 5-1/2" STUD CAVITY, MEETING 2015 IECC ZONE 5A R-VALUE REQUIREMENTS FOR WOOD-FRAMED WALLS.
7. VAPOR RETARDER: 6-MIL POLYETHYLENE SHEET, CLASS I, WITH JOINTS SEALED, ON WARM SIDE OF INSULATION PER 2015 IECC SECTION R702.7.
8. INTERIOR FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (PER IBC TABLE 707.3.10).

TYPICAL FLOOR/CEILING ASSEMBLY (UPPER UNITS):

9. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
10. TOPPING: 1" GYPCRETE (GYPSUM CONCRETE), 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
11. SUBFLOOR: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
12. STRUCTURE: 24" OPEN WEB WOOD TRUSSES, SPACED AT 16" O.C., DESIGNED PER 2015 IBC CHAPTER 23.
13. INSULATION: TWO LAYERS OF 12" MINERAL WOOL BATT INSULATION (R-38 EACH), FILLING TRUSS CAVITY FOR STC/IIC 50 PER IBC SECTION 1207.
14. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 24" O.C., PERPENDICULAR TO TRUSSES, ATTACHED WITH 1-1/4" TYPE S SCREWS.
15. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS (UL L528).

TYPICAL FLOOR/CEILING ASSEMBLY (BASEMENT UNITS):

16. FLOOR FINISH: LUXURY VINYL TILE (LVT), OVER 1/4" ACOUSTIMAT 2 SOUND MAT.
17. TOPPING: 2" CONCRETE, 3000 PSI, OVER ACOUSTIMAT FOR SOUND ISOLATION AND LEVELING.
18. STRUCTURE: 10" HOLLOW CORE PRECAST CONCRETE PLANK, DESIGNED PER 2015 IBC CHAPTER 16, PROVIDING 2-HOUR FIRE RESISTANCE (UL K909).
19. CEILING SUPPORT: CLARKDIETRICH RC DELUXE RESILIENT CHANNELS, 25-GAUGE, SPACED AT 16" O.C., ATTACHED TO PLANK WITH 1-1/2" CONCRETE SCREWS.
20. CEILING FINISH: 5/8" TYPE X GYPSUM BOARD, FASTENED TO CHANNELS WITH #6 SCREWS AT 12" O.C., PROVIDING ½-HOUR FIRE RESISTANCE WITH NFPA 13R SPRINKLERS.

FACE BRICK FLASHING (WINDOWS, DOORS, AND OPENINGS):

21. THROUGH-WALL FLASHING: STAINLESS STEEL OR COPPER-LAMINATED FLASHING, EXTENDING FULL WIDTH OF BRICK VENEER AT WINDOWS, DOORS, AND OPENINGS, WITH DRIP EDGE PROJECTING 1/4" BEYOND FACE OF BRICK.
22. END DAMS: FORMED FLASHING END DAMS AT TERMINATIONS, EXTENDING 1" UP BEHIND WRB TO PREVENT LATERAL WATER MIGRATION.
23. WEEP HOLES: OPEN HEAD JOINTS OR WICK MATERIAL AT 24" O.C. ABOVE FLASHING TO FACILITATE DRAINAGE, PER IBC SECTION 1405.4.

FLASHING AND WEATHERPROOFING (WINDOWS AND LOOSE LINTELS):

24. SILL FLASHING: SELF-ADHERED FLEXIBLE FLASHING TAPE (E.G., GRACE VYCOR), EXTENDING 6" UP JAMBS AND 4" ONTO SHEATHING BELOW PELLA IMPERVIA WINDOWS, INTEGRATED WITH ZIP SYSTEM WRB.
25. SILL PAN: ENDURA VERSAPAN SLOPED SILL PAN, 4-9/16" OR 6-9/16" DEPTH MATCHING WINDOW JAMB, WITH 1-1/2" BACK DAM AND 1/4" PER FOOT SLOPE, SEALED WITH SILICONE AT CORNERS AND JOINTS.
26. LINTEL FLASHING: STAINLESS STEEL LOOSE LINTEL FLASHING, FULL WIDTH OF OPENING, WITH DRIP EDGE AND END DAMS, EXTENDING 2" BEYOND OPENING EDGES AND TURNED UP 1" BEHIND WRB.
27. HEAD AND JAMB FLASHING: SELF-ADHERED FLASHING TAPE, 9" WIDE, OVER LINTEL AND DOWN JAMBS, LAPPING OVER SILL FLASHING AND INTEGRATED WITH WRB FOR CONTINUOUS WATER PROTECTION.

BALCONY ASSEMBLY:

28. DECK SURFACE: COMPOSITE DECKING (E.G., TREX), WITH 1/4" GAPS FOR DRAINAGE, SUPPORTED ON PRESSURE-TREATED 2X FRAMING JOISTS.
29. JOISTS AND BEAMS: PRESSURE-TREATED 2X FRAMING JOISTS AND LVL BEAMS (REFER TO STRUCTURAL DRAWINGS FOR SIZING), SPACED PER DESIGN TO SUPPORT 40 PSF LIVE LOAD PER IBC TABLE 1607.1.
30. WATER MANAGEMENT: GALVANIZED METAL PAN, 24-GAUGE, SLOPED 1/4" PER FOOT, BELOW DECK JOISTS TO COLLECT AND DIRECT WATER TO GUTTER SYSTEM AT SIDES, CONNECTED TO 6" SQUARE BLACK METAL DOWNSPOUTS.
31. VERTICAL ELEMENTS: PRESSURE-TREATED 2X FRAMING WITH 3/4" PLYWOOD SHEATHING, WRAPPED IN KNOTWOOD 6" CLADDING, COLOR WESTERN RED CEDAR, WITH FLASHING DETAILS AT BASE AND TOP.
32. RAILING: 42" HIGH ALUMINUM RAILING, BLACK FINISH, ATTACHED TO DECK FRAMING, DESIGNED FOR DURABILITY AND SAFETY.

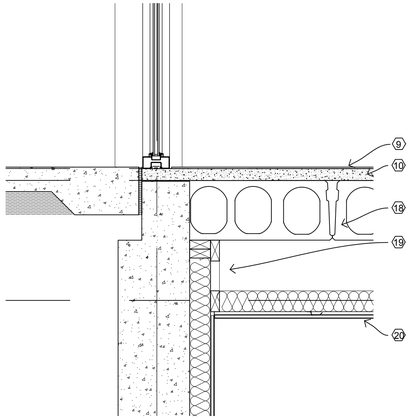
PRIMARY ROOF ASSEMBLY (BUILDING):

33. ROOF FINISH: DUROLAST 60 MIL SINGLE-PLY MEMBRANE, DARK GRAY COLOR, WITH FULLY ADHERED SYSTEM FOR WATERPROOFING.
34. TAPERED INSULATION: EXPANDED POLYSTYRENE (EPS), TAPERED FROM 0" TO 11" MAXIMUM THICKNESS (R-44 AT HIGH POINT, R-4/INCH), SLOPED AT 1/4" PER FOOT FOR DRAINAGE.
35. PRIMARY INSULATION: 4" POLYISOCYANURATE (POLYISO) RIGID INSULATION, R-22.8 (R-5.7/INCH LTTR), ON TOP OF ROOF DECK AS CONTINUOUS INSULATION.
36. SECONDARY INSULATION: 1.2" CLOSED-CELL SPRAY FOAM, R-7.8 (R-6.5/INCH), APPLIED UNDERNEATH ROOF DECK, COMBINING WITH POLYISO FOR TOTAL R-30.6, MEETING ASHRAE 90.1-2019 R-30 CI REQUIREMENT FOR ZONE 5A.
37. ROOF DECK: 3/4" PLYWOOD, SECURED TO JOISTS WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
38. STRUCTURE: 16" OPEN WEB WOOD JOISTS, SPACED AT 24" O.C. (VERIFY WITH STRUCTURAL ENGINEER), DESIGNED PER 2015 IBC CHAPTER 23.

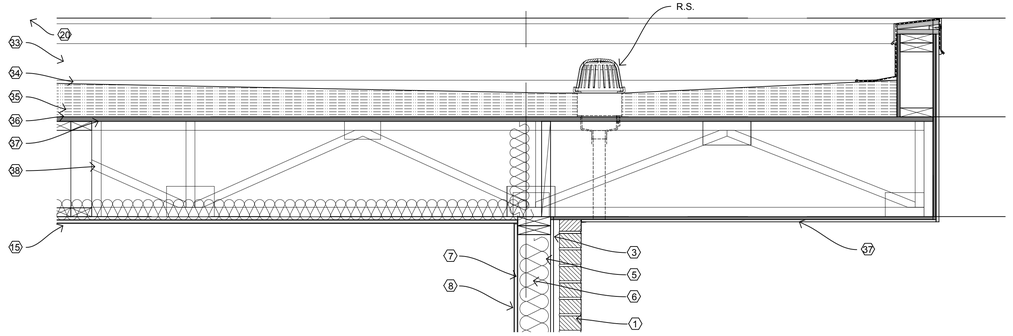
SECONDARY ROOF ASSEMBLY (OPEN-AIR GARAGE):

39. ROOF FINISH: STANDING SEAM METAL ROOF SYSTEM, BLACK FINISH, WITH CONCEALED FASTENERS AND UNDERLAYMENT FOR WATERPROOFING.
40. ROOF DECK: 3/4" PLYWOOD, SECURED TO TRUSSES WITH #8 SCREWS AT 6" O.C. EDGES AND 12" O.C. FIELD.
41. STRUCTURE: PRE-ENGINEERED WOOD TRUSSES, SPACED PER DESIGN (REFER TO STRUCTURAL DRAWINGS FOR SIZING AND SPACING), DESIGNED PER 2015 IBC CHAPTER 23, NO INSULATION REQUIRED FOR OPEN-AIR CONDITION.

GENERAL NOTE (CAULKING AND SEALING):
ALL EXTERIOR JOINTS, SEAMS, AND PENETRATIONS THROUGHOUT THE BUILDING, INCLUDING WINDOWS, DOORS, FLASHING, BALCONIES, HOLLOW CORE PLANK JOINTS, MASONRY, AND EXTERIOR JOINTS BETWEEN DISSIMILAR MATERIALS, SHALL BE SEALED WITH HIGH-PERFORMANCE, EXTERIOR-GRADE SILICONE CAULK (E.G., DOW 795 OR EQUIVALENT), MEETING ASTM C920, CLASS 35, FOR WEATHER RESISTANCE AND FLEXIBILITY IN ROCHESTER, MICHIGAN'S CLIMATE (ZONE 5A). CAULKING SHALL BE APPLIED OVER BACKER ROD WHERE JOINTS EXCEED 1/4" WIDTH, ENSURING A CONTINUOUS, WATERTIGHT SEAL PER 2015 IBC SECTION 1403.2 AND MANUFACTURER RECOMMENDATIONS FOR SOUND AND MOISTURE CONTROL.



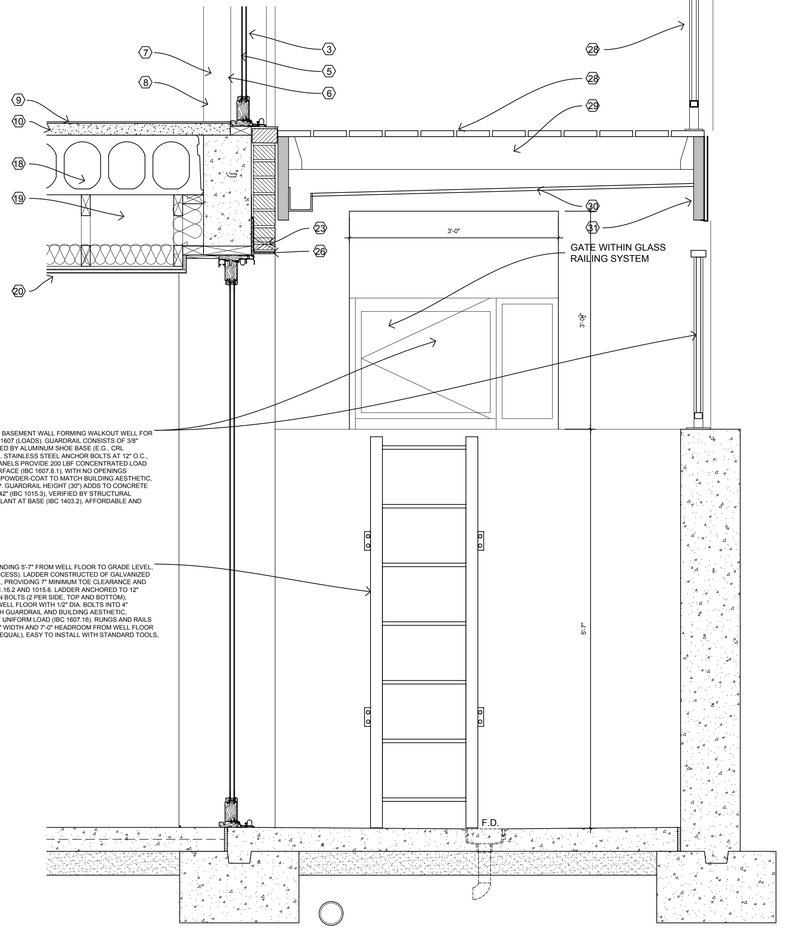
5 WALL DETAIL
SCALE: 1" = 1'-0"



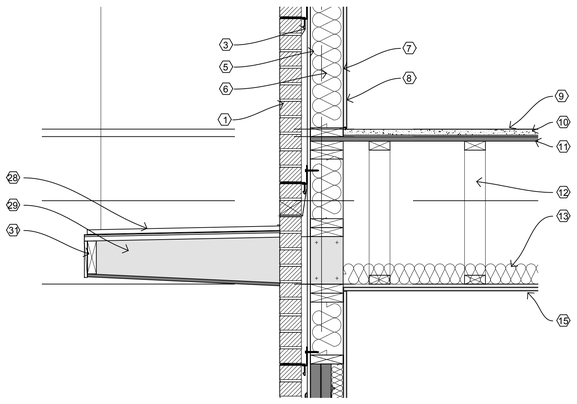
3 WALL DETAIL
SCALE: 1" = 1'-0"

30" GLASS GUARDRAIL ON CONCRETE WALL SPEC:
30" HIGH GLASS GUARDRAIL INSTALLED ON TOP OF 12" THICK CONCRETE BASEMENT WALL FORMING WALKOUT WELL FOR BASEMENT UNITS, DESIGNED PER 2015 IBC SECTION 1015 (GUARDS) AND 1607 (LOADS). GUARDRAIL CONSISTS OF 3/8" TEMPERED GLASS PANELS (FULL HEIGHT, 30" X PANEL WIDTH), SUPPORTED BY ALUMINUM SHOE BASE (E.G., CRL TAPER-LOC SYSTEM), ANCHORED TO CONCRETE WALL TOP WITH 1/2" DIA. STAINLESS STEEL ANCHOR BOLTS AT 12" O.C., EMBEDDED 3" INTO 4000 PSI CONCRETE (ACI 318 SECTION 17.5). GLASS PANELS PROVIDE 200 LBF CONCENTRATED LOAD RESISTANCE AT TOP EDGE AND 50 PSF UNIFORM LOAD OVER ENTIRE SURFACE (IBC 1607.8.1), WITH NO OPENINGS EXCEEDING 4" SPHERE (IBC 1015.4). ALUMINUM SHOE FINISHED IN BLACK POWDER-COAT TO MATCH BUILDING AESTHETIC, INSTALLED WITH LEVEL BASE (±1/4" TOLERANCE) ON GROUTED WALL TOP. GUARDRAIL HEIGHT (30") ADDS TO CONCRETE WALL HEIGHT, ENSURING TOTAL HEIGHT FROM WALKOUT WELL FLOOR ≥42" (IBC 1015.3). VERIFIED BY STRUCTURAL ENGINEER. INSTALLATION TO BE WEATHERPROOFED WITH SILICONE SEALANT AT BASE (IBC 1403.2). AFFORDABLE AND EASY-TO-INSTALL SYSTEM WITH PRE-FABRICATED COMPONENTS.

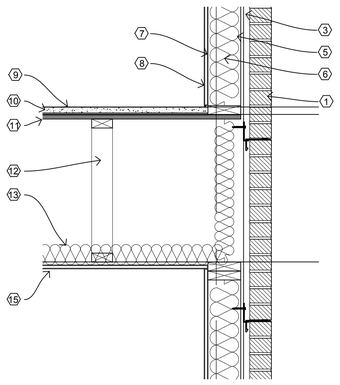
METAL EGRESS LADDER FROM WALKOUT WELL SPEC:
METAL EGRESS LADDER INSTALLED IN BASEMENT WALKOUT WELL, EXTENDING 5'-7" FROM WELL FLOOR TO GRADE LEVEL, DESIGNED PER 2015 IBC SECTION 1011.16 (LADDERS) AND 1009.3 (EXIT ACCESS). LADDER CONSTRUCTED OF GALVANIZED STEEL, 16" WIDE MINIMUM, WITH 3/4" DIA. ROUND RUNGS SPACED 12" O.C., PROVIDING 7" MINIMUM TOE CLEARANCE AND EXTENDING 42" ABOVE GRADE WITH SIDE RAILS (1-1/2" DIA.), PER IBC 1011.16.2 AND 1015.6. LADDER ANCHORED TO 12" CONCRETE BASEMENT WALL WITH 1/2" DIA. STAINLESS STEEL EXPANSION BOLTS (2 PER SIDE, TOP AND BOTTOM); EMBEDDED 3" INTO 4000 PSI CONCRETE (ACI 318 SECTION 17.5), AND TO WELL FLOOR WITH 1/2" DIA. BOLTS INTO 4" CONCRETE SLAB (IBC 1907). FINISHED IN BLACK POWDER-COAT TO MATCH GUARDRAIL AND BUILDING AESTHETIC. DESIGNED FOR 300 LBF CONCENTRATED LOAD AT ANY POINT AND 50 PSF UNIFORM LOAD (IBC 1607.10). RUNGS AND RAILS PROVIDE SLIP-RESISTANT SURFACE, WITH NO OBSTRUCTIONS WITHIN 30" WIDTH AND 7'-0" HEADROOM FROM WELL FLOOR (IBC 1011.16.3). AFFORDABLE PRE-FABRICATED LADDER (E.G., VESTIL OR EQUAL), EASY TO INSTALL WITH STANDARD TOOLS, VERIFIED BY STRUCTURAL ENGINEER FOR LOAD AND STABILITY.



1 WALL DETAIL
SCALE: 1" = 1'-0"



4 WALL DETAIL
SCALE: 1" = 1'-0"



2 WALL DETAIL
SCALE: 1" = 1'-0"

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI

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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project: 210 DIVERSION, Rochester, Michigan

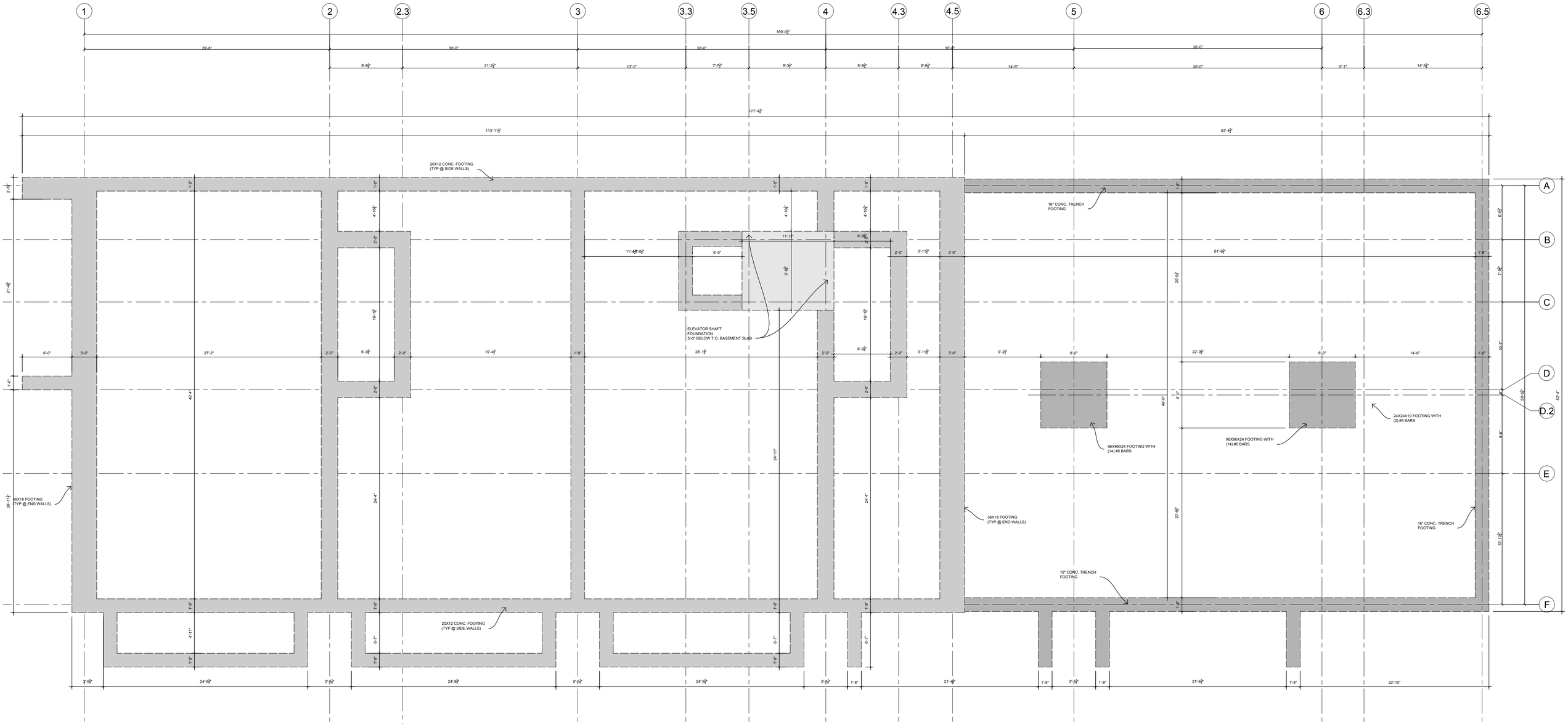
Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE: BUILDING SECTION DETAILS

Drawing Number: A-350

Seal: STATE OF MICHIGAN — ROGER JASON BERENT — ARCHITECT — No. 52391 — LICENSED ARCHITECT

TYPICAL CONCRETE FOOTINGS ASSEMBLY:

FOOTING TYPES: REINFORCED CONCRETE SPREAD FOOTINGS OR STRIP FOOTINGS FOR BASEMENT, TRENCH FOOTINGS AROUND GARAGE AREA, AND ELEVATOR SHAFT FOUNDATION, DESIGNED PER 2015 IBC CHAPTER 18 AND ACI 318.
SUBGRADE PREPARATION: REMOVE EXISTING FILL (UP TO 8-1/2 TO 9 FT DEEP, INCLUDING 2 IN TOPSOIL, SILTY SAND FILL, AND SANDY CLAY FILL) AND NATIVE SILTY CLAY WITH ORGANIC MATTER (4.5-5.3% ORGANIC CONTENT) BENEATH BASEMENT, GARAGE, AND ELEVATOR SHAFT FOOTPRINTS AND ZONES OF INFLUENCE, PER G2 REPORT (200544), TO EXPOSE NATIVE MEDIUM COMPACT TO VERY COMPACT SAND, SILTY SAND, GRAVELLY SAND, OR SANDY SILT (N-VALUES 16-70).
ENGINEERED FILL: BACKFILL UNDERCUTS WITH MDOT 21AA DENSE-GRADED GRANULAR MATERIAL, PLACED IN 9-INCH MAXIMUM LOOSE LIFTS, COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557), EXTENDING TO FOOTING BASE ELEVATION WHERE REQUIRED, PROVIDING IMPROVED BEARING CAPACITY, PER G2 RECOMMENDATION.
BASEMENT FOOTINGS: SPREAD OR STRIP FOOTINGS TO BEAR ON COMPACTED ENGINEERED FILL OVER NATIVE GRANULAR SOILS AT APPROXIMATELY 11' BELOW FINISHED GRADE (±1'), EXCEEDING 42 IN FROST DEPTH (IBC 1809.5, ROCHESTER, MI), WIDTH AND DEPTH PER STRUCTURAL ENGINEER (TYPICALLY 24" TO 48" WIDE X 12" TO 18" THICK).
GARAGE TRENCH FOOTINGS: CONTINUOUS TRENCH FOOTINGS AROUND GARAGE PERIMETER, 16" WIDE X 12" DEEP, EXCAVATED TO 7" DEPTH TO BEAR DIRECTLY ON NATIVE MEDIUM COMPACT TO VERY COMPACT GRANULAR SOILS (N-VALUES 16-70), SUPPORTING GARAGE WALLS AND SECONDARY ROOF LOADS (25 PSF SNOW + 10 PSF DEAD LOAD), PER IBC 1809.
ELEVATOR SHAFT FOUNDATION: REINFORCED CONCRETE MAT OR STRIP FOOTINGS FOR 8'-6" X 6'-11" SHAFT (KONE MONOSPACE 500 DX), BEARING ON COMPACTED ENGINEERED FILL OVER NATIVE GRANULAR SOILS AT APPROXIMATELY 16' BELOW FINISHED GRADE (±1', 5' BELOW BASEMENT FOOTING LEVEL), SIZED PER STRUCTURAL ENGINEER FOR ELEVATOR LOADS AND 2-HOUR CMU SHAFT WALLS.
CONCRETE STRENGTH: 4000 PSI MINIMUM 28-DAY COMPRESSIVE STRENGTH, AIR-ENTRAINED (5-7% AIR CONTENT) FOR FREEZE-THAW RESISTANCE IN ZONE 5A, PER ACI 318 AND IBC SECTION 1904, FOR ALL FOOTING TYPES.
REINFORCEMENT: GRADE 60 STEEL REBAR, SIZED AND SPACED PER STRUCTURAL ENGINEER DESIGN (E.G., #5 BARS AT 12" O.C. EACH WAY TYPICAL FOR SPREAD FOOTINGS, #4 BARS AT 12" O.C. LONGITUDINAL FOR TRENCH FOOTINGS), WITH 3" MINIMUM CLEAR COVER TO BOTTOM AND SIDES, PER ACI 318 SECTION 20.6.
BEARING CAPACITY: ALLOWABLE BEARING PRESSURE OF 3000 PSF ON COMPACTED MDOT 21AA ENGINEERED FILL OVER NATIVE GRANULAR SOILS OR DIRECTLY ON NATIVE GRANULAR SOILS FOR GARAGE TRENCH FOOTINGS (PRELIMINARY, PER G2 REPORT), TO BE CONFIRMED WITH ADDITIONAL BORINGS POST-LAYOUT.
FORMWORK: STRAIGHT AND VERTICAL SIDES FOR ALL FOOTINGS, CONSTRUCTED TO PREVENT FROZEN SOIL ADHESION AND UPLIFT, WITH TEMPORARY BRACING AS NEEDED DURING POUR, PER IBC SECTION 1906.
GROUNDWATER CONTROL: SUMPS AND PUMPS TO LOWER GROUNDWATER 1-2 FT BELOW EXCAVATION DEPTH (6 FT MINIMUM BELOW GRADE PER G2, UP TO 7 FT FOR GARAGE TRENCH FOOTINGS, 11 FT ±1' FOR BASEMENT FOOTINGS, AND 16 FT ±1' FOR ELEVATOR SHAFT), WITH EXTENSIVE DEWATERING REQUIRED AS EXCAVATIONS EXCEED 8-1/2 TO 9 FT, PER G2 REPORT SECTION ON GROUNDWATER CONDITIONS.
INSPECTION: GEOTECHNICAL ENGINEER TO OBSERVE SUBGRADE PREPARATION, ENGINEERED FILL PLACEMENT (WHERE USED), AND FOOTING EXCAVATIONS FOR ALL FOOTING TYPES TO CONFIRM CONDITIONS MATCH G2 REPORT FINDINGS, WITH ADDITIONAL TESTING AS REQUIRED, PER IBC SECTION 1705.6.



1 FOOTING PLAN
SCALE: 3/16" = 1'-0"

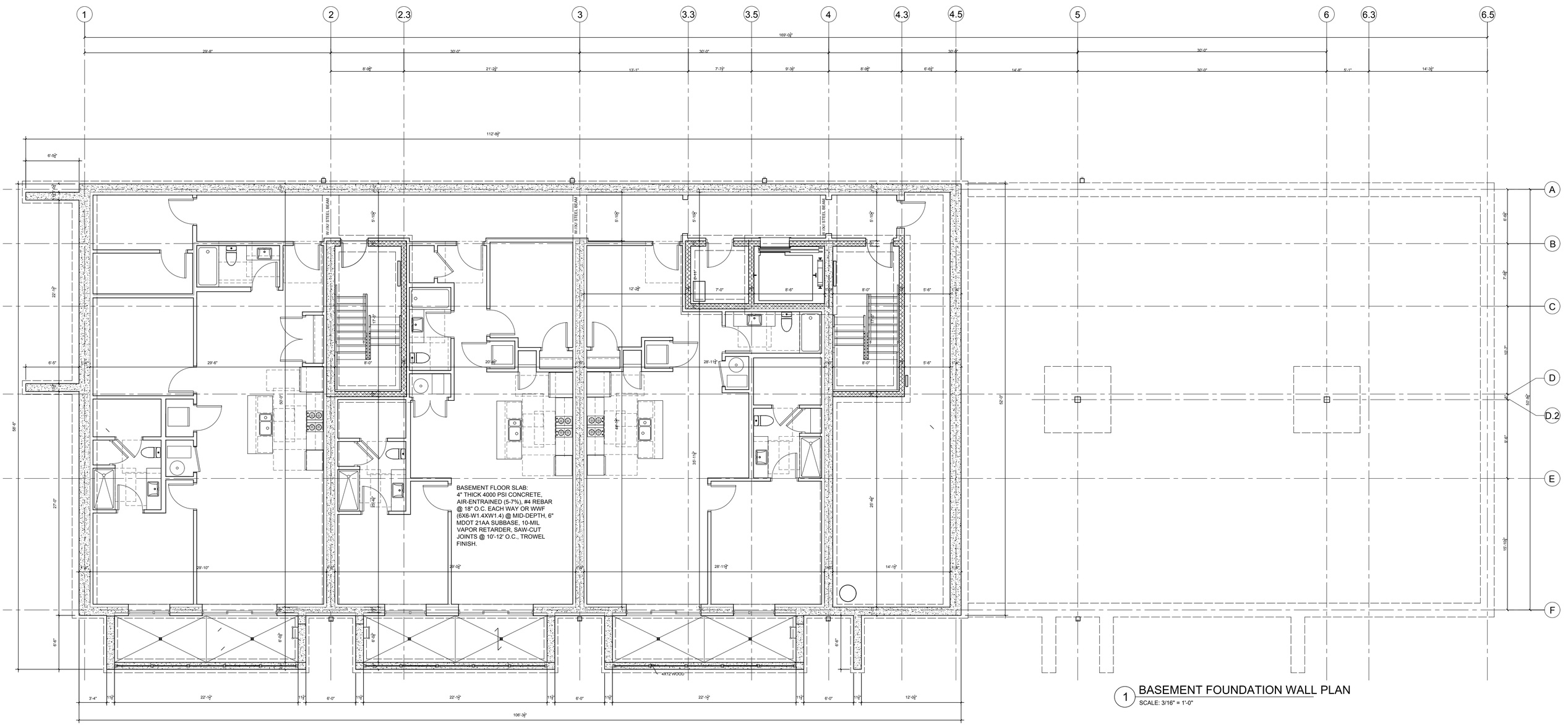
Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHPRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan	Date: / Drawn By: / Scale: / Checked By: / DRAWING TITLE:	Drawing Number: S-050 STRUCTURAL-050

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 53981 LICENSED ARCHITECT

GENERAL POURED FOUNDATION WALLS ASSEMBLY:

WALL TYPE: REINFORCED CONCRETE FOUNDATION WALLS, POURED-IN-PLACE, DESIGNED PER 2015 IBC CHAPTER 18 AND ACI 318, SUPPORTING BUILDING AND GARAGE STRUCTURES.
THICKNESS: 12" THICK CONCRETE WALLS FOR MOST FOUNDATION AREAS, 16" THICK CONCRETE WALLS FOR DESIGNATED LOCATIONS (E.G., HIGH LOAD OR RETAINING AREAS), AS SPECIFIED ON STRUCTURAL DRAWINGS.
HEIGHT: WALLS EXTEND FROM FOOTING TOP (11' ±1' BELOW GRADE FOR BASEMENT, 7' BELOW GRADE FOR GARAGE, 16' ±1' FOR ELEVATOR SHAFT) TO GRADE OR ABOVE AS REQUIRED, PER STRUCTURAL DESIGN.
CONCRETE STRENGTH: 4000 PSI MINIMUM 28-DAY COMPRESSIVE STRENGTH, AIR-ENTRAINED (5-7% AIR CONTENT) FOR FREEZE-THAW RESISTANCE IN ZONE 5A, MAXIMUM 0.45 WATER-CEMENT RATIO, PER ACI 318 AND IBC SECTION 1904.
REINFORCEMENT: GRADE 60 STEEL REBAR, VERTICAL #5 BARS AT 12" O.C. AND HORIZONTAL #4 BARS AT 12" O.C. EACH FACE (TYPICAL), SIZED AND SPACED PER STRUCTURAL ENGINEER DESIGN, WITH 2" MINIMUM CLEAR COVER TO EXTERIOR AND INTERIOR FACES, PER ACI 318 SECTION 20.6.
FORMWORK: STRAIGHT AND VERTICAL FORMS, CONSTRUCTED TO MAINTAIN WALL THICKNESS AND ALIGNMENT, WITH TEMPORARY BRACING DURING POUR, REMOVED AFTER SUFFICIENT CURING, PER IBC SECTION 1906.
WATERPROOFING: EXTERIOR-APPLIED LIQUID WATERPROOFING MEMBRANE (E.G., BITUTHENE OR EQUIVALENT), EXTENDING FROM FOOTING BASE TO 6" BELOW FINISHED GRADE, WITH PROTECTION BOARD (1/4" THICK), PER IBC SECTION 1805.3 FOR BELOW-GRADE WALLS.
DRAINAGE: 4" PERFORATED PVC DRAIN TILE AT FOOTING BASE, SURROUNDED BY 12" OF MDOT 21AA GRAVEL, SLOPED 1/8" PER FT TO DAYLIGHT OR SUMP, COVERED WITH FILTER FABRIC, CONNECTED TO STORM SYSTEM, PER IBC SECTION 1805.4.2.
BACKFILL: MDOT 21AA GRANULAR MATERIAL, PLACED IN 9-INCH MAXIMUM LOOSE LIFTS, COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557), AGAINST WATERPROOFED WALLS, PER G2 REPORT (200544) AND IBC SECTION 1805.4.1.
JOINTS: VERTICAL CONTROL JOINTS AT 25' O.C. MAXIMUM AND AT CHANGES IN WALL DIRECTION OR THICKNESS, 1/2" DEEP, SEALED WITH POLYURETHANE SEALANT (E.G., SIKAFLEX-1A), AND HORIZONTAL CONSTRUCTION JOINTS WITH KEYWAY AND WATERSTOP (E.G., PVC OR HYDROPHILIC), PER ACI 318 SECTION 22.3.
GROUNDWATER CONTROL: SUMPS AND PUMPS TO LOWER GROUNDWATER 1-2 FT BELOW EXCAVATION DEPTH (6 FT MINIMUM BELOW GRADE PER G2, UP TO 11' ±1' FOR BASEMENT AND 16' ±1' FOR ELEVATOR SHAFT), WITH EXTENSIVE DEWATERING AS EXCAVATIONS EXCEED 8-1/2 TO 9 FT, PER G2 REPORT SECTION ON GROUNDWATER CONDITIONS.
INSPECTION: GEOTECHNICAL ENGINEER TO OBSERVE EXCAVATION, FORMWORK, REINFORCEMENT PLACEMENT, AND CONCRETE POURING TO ENSURE COMPLIANCE WITH DESIGN AND G2 REPORT FINDINGS, PER IBC SECTION 1705.3.

OPENINGS IN 12" CONCRETE BASEMENT WALLS NOTE:
OPENINGS IN 12" THICK CONCRETE BASEMENT WALLS FOR 9' WIDE SLIDING DOORS AND ≤5' WIDE WINDOWS FORMED AND SUPPORTED PER 2015 IBC CHAPTER 19 (CONCRETE) AND ACI 318. LINTELS DESIGNED TO SUPPORT THREE STORIES PLUS ROOF LOAD ABOVE (~1650 PLF), USING GALVANIZED STEEL LOOSE LINTELS FOR AFFORDABILITY AND EASE OF INSTALLATION. SLIDING DOOR OPENINGS (9'-0" WIDE) SUPPORTED WITH L8X4X3/8" LINTEL (108" LONG), BEARING 6" EACH SIDE ON 12" CONCRETE WALL, PROVIDING ~2500 PLF CAPACITY. WINDOW OPENINGS (≤5'-0" WIDE) SUPPORTED WITH L6X4X1/4" LINTEL (66" LONG), BEARING 6" EACH SIDE, PROVIDING ~2400 PLF CAPACITY. LINTELS EMBEDDED 2" INTO CONCRETE WITH 1/2" DIA. ANCHOR BOLTS AT 24" O.C. EACH SIDE, OR SET ON PRECAST BEARING PADS (2"X12"X1/2") WITH NON-SHRINK GROUT, PROPPED AT 4' O.C. UNTIL CONCRETE CURES (28 DAYS, 4000 PSI MIN.). FORMING TO USE PRECAST LINTEL BEAM POCKETS OR TEMPORARY WOOD FORMS (2X12 BLOCKOUTS), REMOVED POST-CURE, WITH REINFORCEMENT AROUND OPENINGS (2-#5 VERTICAL BARS EACH SIDE, 2-#4 HORIZONTAL BARS ABOVE AND BELOW, TIED TO WALL REBAR), PER ACI 318 SECTION 11.7. OPENINGS SIZED WITH 1/2" CLEARANCE EACH SIDE FOR INSTALLATION, SEALED WITH BACKER ROD AND SILICONE CAULK (IBC 1403.2). ALL LINTELS AND FORMING VERIFIED BY STRUCTURAL ENGINEER FOR LOAD AND STABILITY.



1 BASEMENT FOUNDATION WALL PLAN
SCALE: 3/16" = 1'-0"

BASEMENT FLOOR SLAB ASSEMBLY:

SLAB TYPE: REINFORCED CONCRETE SLAB-ON-GRADE, DESIGNED PER 2015 IBC CHAPTER 19 AND ACI 318, FOR BASEMENT LEVEL OF MULTIFAMILY BUILDING.
SUBGRADE PREPARATION: REMOVE EXISTING FILL (UP TO 8-1/2 TO 9 FT DEEP, INCLUDING 2 IN TOPSOIL, SILTY SAND FILL, AND SANDY CLAY FILL) AND NATIVE SILTY CLAY WITH ORGANIC MATTER (4.5-5.3% ORGANIC CONTENT) BENEATH BASEMENT FOOTPRINT, PER G2 REPORT (200544), TO EXPOSE NATIVE MEDIUM COMPACT TO VERY COMPACT SAND, SILTY SAND, GRAVELLY SAND, OR SANDY SILT (N-VALUES 16-70).
ENGINEERED FILL: BACKFILL UNDERCUTS WITH MDOT 21AA DENSE-GRADED GRANULAR MATERIAL, PLACED IN 9-INCH MAXIMUM LOOSE LIFTS, COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557), EXTENDING TO SLAB SUBBASE ELEVATION (APPROX. 11' ±1' BELOW GRADE), PROVIDING STABLE SUPPORT, PER G2 RECOMMENDATION.
SUBBASE: 6" THICK LAYER OF MDOT 21AA CRUSHED AGGREGATE, COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557), OVER ENGINEERED FILL, PROVIDING UNIFORM BEARING AND DRAINAGE, PER IBC SECTION 1805.4.1.
VAPOR RETARDER: 10-MIL POLYETHYLENE SHEET, CLASS A, WITH JOINTS LAPPED 6" AND SEALED, PLACED BENEATH SLAB OVER SUBBASE, EXTENDING TO WALL EDGES, TO PREVENT MOISTURE MIGRATION, PER ACI 302.1R AND IBC SECTION 1907.
SLAB THICKNESS: 4" THICK CONCRETE, REINFORCED, LEVEL WITHIN 1/4" TOLERANCE, SUITABLE FOR RESIDENTIAL LOADS (100 PSF LIVE LOAD PER IBC TABLE 1607.1), CONFIRMED BY STRUCTURAL ENGINEER FOR SPECIFIC CONDITIONS.
CONCRETE STRENGTH: 4000 PSI MINIMUM 28-DAY COMPRESSIVE STRENGTH, AIR-ENTRAINED (5-7% AIR CONTENT) FOR FREEZE-THAW RESISTANCE IN ZONE 5A, MAXIMUM 0.45 WATER-CEMENT RATIO, PER ACI 318 AND IBC SECTION 1904.
REINFORCEMENT: GRADE 60 STEEL REBAR, #4 BARS AT 18" O.C. EACH WAY, OR WELDED WIRE FABRIC (6X6-W1.4XW1.4), PLACED AT MID-DEPTH, WITH 1-1/2" MINIMUM CLEAR COVER TO TOP AND BOTTOM, PER ACI 318 SECTION 20.6, TO CONTROL CRACKING.
JOINTS: SAW-CUT CONTROL JOINTS AT 10'-12' O.C. MAXIMUM (2-3 TIMES SLAB THICKNESS IN FT), 1/4 SLAB DEPTH, WITHIN 12 HOURS OF FINISHING, SEALED WITH POLYURETHANE SEALANT (E.G., SIKAFLEX-1A), AND ISOLATION JOINTS AT WALLS AND COLUMNS WITH 1/2" PREFORMED JOINT FILLER, PER ACI 302.1R.
BEARING CAPACITY: ALLOWABLE BEARING PRESSURE OF 3000 PSF ON COMPACTED MDOT 21AA ENGINEERED FILL OVER NATIVE GRANULAR SOILS (PRELIMINARY, PER G2 REPORT), SUPPORTING 100 PSF LIVE LOAD, TO BE CONFIRMED WITH ADDITIONAL BORINGS POST-LAYOUT.
FINISH: TROWEL FINISH FOR SMOOTH SURFACE, SUITABLE FOR LVT FLOORING, WITH LEVELNESS WITHIN F25 STANDARDS (ACI 117), PROTECTED WITH CURING COMPOUND IMMEDIATELY AFTER FINISHING, PER ACI 302.1R.
GROUNDWATER CONTROL: SUMPS AND PUMPS TO LOWER GROUNDWATER 1-2 FT BELOW EXCAVATION DEPTH (6 FT MINIMUM BELOW GRADE PER G2, UP TO 11' ±1' FOR BASEMENT), WITH EXTENSIVE DEWATERING REQUIRED AS EXCAVATIONS EXCEED 8-1/2 TO 9 FT, PER G2 REPORT SECTION ON GROUNDWATER CONDITIONS.
INSPECTION: GEOTECHNICAL ENGINEER TO OBSERVE SUBGRADE PREPARATION, ENGINEERED FILL PLACEMENT, SUBBASE COMPACTION, AND SLAB PLACEMENT TO CONFIRM CONDITIONS MATCH G2 REPORT FINDINGS, WITH DENSITY TESTING AS REQUIRED, PER IBC SECTION 1705.6.

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210 DIVERSION
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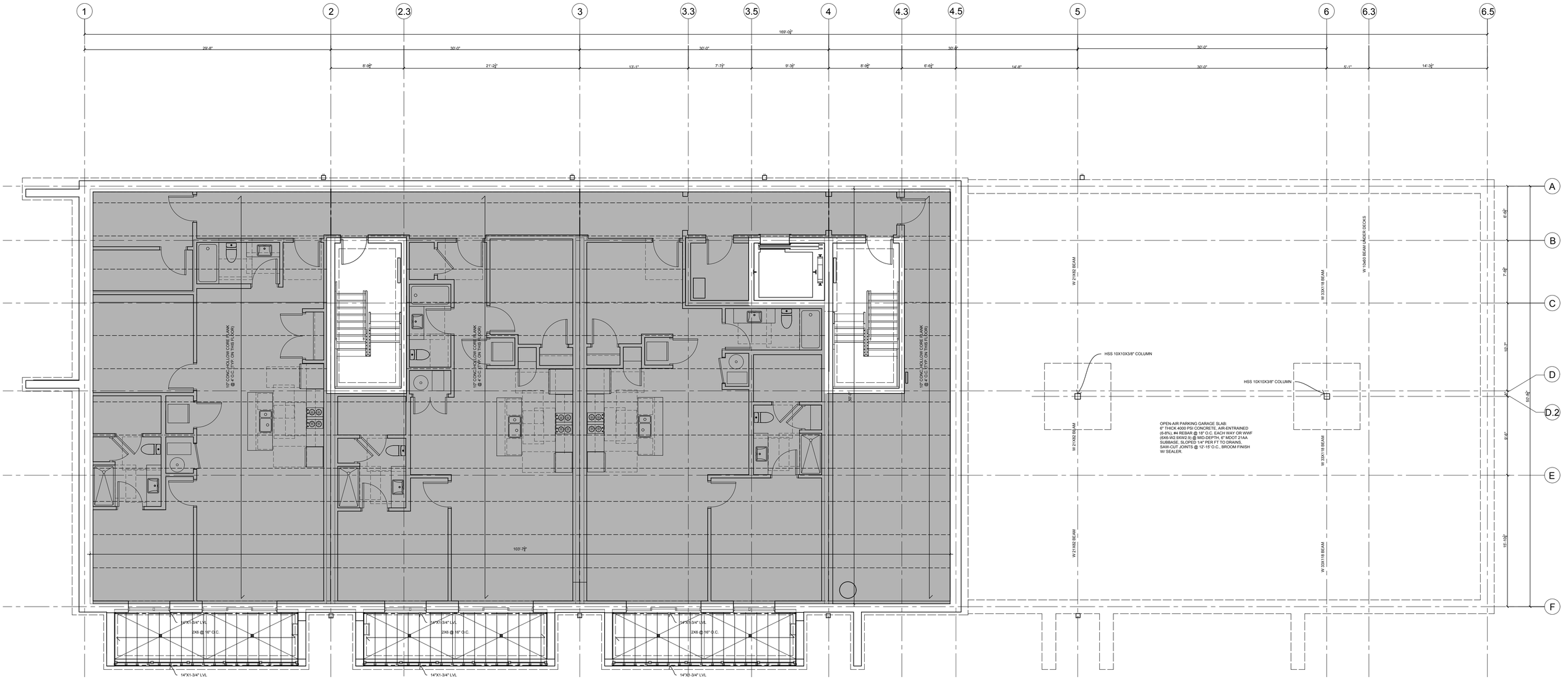
Drawing Number:
S-080
STRUCTURAL-080

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52391 · LICENSED ARCHITECT

OPEN-AIR PARKING GARAGE SLAB-ON-GRADE ASSEMBLY:

SLAB TYPE: REINFORCED CONCRETE SLAB-ON-GRADE, DESIGNED PER 2015 IBC CHAPTER 19 AND ACI 318, FOR OPEN-AIR PARKING GARAGE BENEATH BUILDING UNITS.
SUBGRADE PREPARATION: REMOVE EXISTING FILL (UP TO 3-1/2 FT DEEP, INCLUDING 2 IN TOPSOIL AND MEDIUM COMPACT SILTY SAND FILL WITH 2.7% ORGANIC CONTENT) BENEATH GARAGE FOOTPRINT, PER G2 REPORT (200544), TO EXPOSE NATIVE MEDIUM COMPACT TO VERY COMPACT SAND, SILTY SAND, GRAVELLY SAND, OR SANDY SILT (N-VALUES 16-70), OR UNDERCUT TO 8-1/2 FT IF DEEPER FILL IS ENCOUNTERED.
ENGINEERED FILL: BACKFILL UNDERCUTS WITH MDOT 21AA DENSE-GRADED GRANULAR MATERIAL, PLACED IN 9-INCH MAXIMUM LOOSE LIFTS, COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557), EXTENDING TO SLAB SUBBASE ELEVATION, PROVIDING STABLE SUPPORT, PER G2 RECOMMENDATION.
SUBBASE: 6" THICK LAYER OF MDOT 21AA CRUSHED AGGREGATE, COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557), OVER ENGINEERED FILL OR NATIVE GRANULAR SOILS, PROVIDING UNIFORM BEARING AND DRAINAGE, PER IBC SECTION 1805.4.1.
SLAB THICKNESS: 6" MINIMUM THICKNESS, REINFORCED CONCRETE, SLOPED 1/4" PER FT MINIMUM FOR DRAINAGE TO DESIGNATED OUTLETS, PER IBC SECTION 1907.
CONCRETE STRENGTH: 4000 PSI MINIMUM 28-DAY COMPRESSIVE STRENGTH, AIR-ENTRAINED (6-8% AIR CONTENT) FOR FREEZE-THAW RESISTANCE IN ZONE 5A, WITH MAXIMUM 0.45 WATER-CEMENT RATIO, PER ACI 318 AND IBC SECTION 1904.
REINFORCEMENT: GRADE 60 STEEL REBAR, #4 BARS AT 18" O.C. EACH WAY, OR WELDED WIRE FABRIC (6X6-W2.9XW2.9), PLACED AT MID-DEPTH, WITH 2" MINIMUM CLEAR COVER TO TOP AND BOTTOM, PER ACI 318 SECTION 20.6, TO CONTROL CRACKING.
JOINTS: SAW-CUT CONTROL JOINTS AT 12'-15' O.C. MAXIMUM (2-3 TIMES SLAB THICKNESS IN FT), 1/4 SLAB DEPTH, WITHIN 12 HOURS OF FINISHING, AND SEALED WITH POLYURETHANE SEALANT (E.G., SIKAFLEX-1A), PER ACI 302.1R; ISOLATION JOINTS AT COLUMNS AND WALLS WITH 1/2" PREFORMED JOINT FILLER.
BEARING CAPACITY: ALLOWABLE BEARING PRESSURE OF 3000 PSF ON COMPACTED MDOT 21AA ENGINEERED FILL OR NATIVE GRANULAR SOILS (PRELIMINARY, PER G2 REPORT), SUPPORTING 2500 PSF UNIFORM LOAD FOR PARKING GARAGES (IBC TABLE 1607.1), TO BE CONFIRMED WITH ADDITIONAL BORINGS POST-LAYOUT.
FINISH: BROOM FINISH FOR SLIP RESISTANCE, WITH 1% MINIMUM SLOPE TO DRAINS, PROTECTED WITH PENETRATING SEALER (E.G., SILANE-SILOXANE) FOR DURABILITY IN OPEN-AIR CONDITIONS, PER ACI 302.1R.
GROUNDWATER CONTROL: SUMPS AND PUMPS TO LOWER GROUNDWATER 1-2 FT BELOW EXCAVATION DEPTH (6 FT MINIMUM BELOW GRADE PER G2), WITH EXTENSIVE DEWATERING IF UNDERCUTS REACH 8-1/2 FT, PER G2 REPORT SECTION ON GROUNDWATER CONDITIONS.
INSPECTION: GEOTECHNICAL ENGINEER TO OBSERVE SUBGRADE PREPARATION, ENGINEERED FILL PLACEMENT, AND SUBBASE COMPACTION TO CONFIRM CONDITIONS MATCH G2 REPORT FINDINGS, WITH DENSITY TESTING AS REQUIRED, PER IBC SECTION 1705.6.



OPENINGS IN 12" CONCRETE BASEMENT WALLS NOTE:
OPENINGS IN 12" THICK CONCRETE BASEMENT WALLS FOR 9' WIDE SLIDING DOORS AND ≤5' WIDE WINDOWS FORMED AND SUPPORTED PER 2015 IBC CHAPTER 19 (CONCRETE) AND ACI 318. LINTELS DESIGNED TO SUPPORT THREE STORIES PLUS ROOF LOAD ABOVE (~1650 PLF), USING GALVANIZED STEEL LOOSE LINTELS FOR AFFORDABILITY AND EASE OF INSTALLATION. SLIDING DOOR OPENINGS (9'-0" WIDE) SUPPORTED WITH L8X4X3/8" LINTEL (108" LONG), BEARING 6" EACH SIDE ON 12" CONCRETE WALL, PROVIDING ~2500 PLF CAPACITY. WINDOW OPENINGS (≤5'-0" WIDE) SUPPORTED WITH L6X4X1/4" LINTEL (66" LONG), BEARING 6" EACH SIDE, PROVIDING ~2400 PLF CAPACITY. LINTELS EMBEDDED 2" INTO CONCRETE WITH 1/2" DIA. ANCHOR BOLTS AT 24" O.C. EACH SIDE, OR SET ON PRECAST BEARING PADS (2"X12"X1/2") WITH NON-SHRINK GROUT, PROPPED AT 4' O.C. UNTIL CONCRETE CURES (28 DAYS, 4000 PSI MIN.). FORMING TO USE PRECAST LINTEL BEAM POCKETS OR TEMPORARY WOOD FORMS (2X12 BLOCKOUTS), REMOVED POST-CURE, WITH REINFORCEMENT AROUND OPENINGS (2-#5 VERTICAL BARS EACH SIDE, 2-#4 HORIZONTAL BARS ABOVE AND BELOW, TIED TO WALL REBAR), PER ACI 318 SECTION 11.7. OPENINGS SIZED WITH 1/2" CLEARANCE EACH SIDE FOR INSTALLATION, SEALED WITH BACKER ROD AND SILICONE CAULK (IBC 1403.2). ALL LINTELS AND FORMING VERIFIED BY STRUCTURAL ENGINEER FOR LOAD AND STABILITY.

1 FIRST FLOOR FRAMING PLAN
SCALE: 3/16" = 1'-0"

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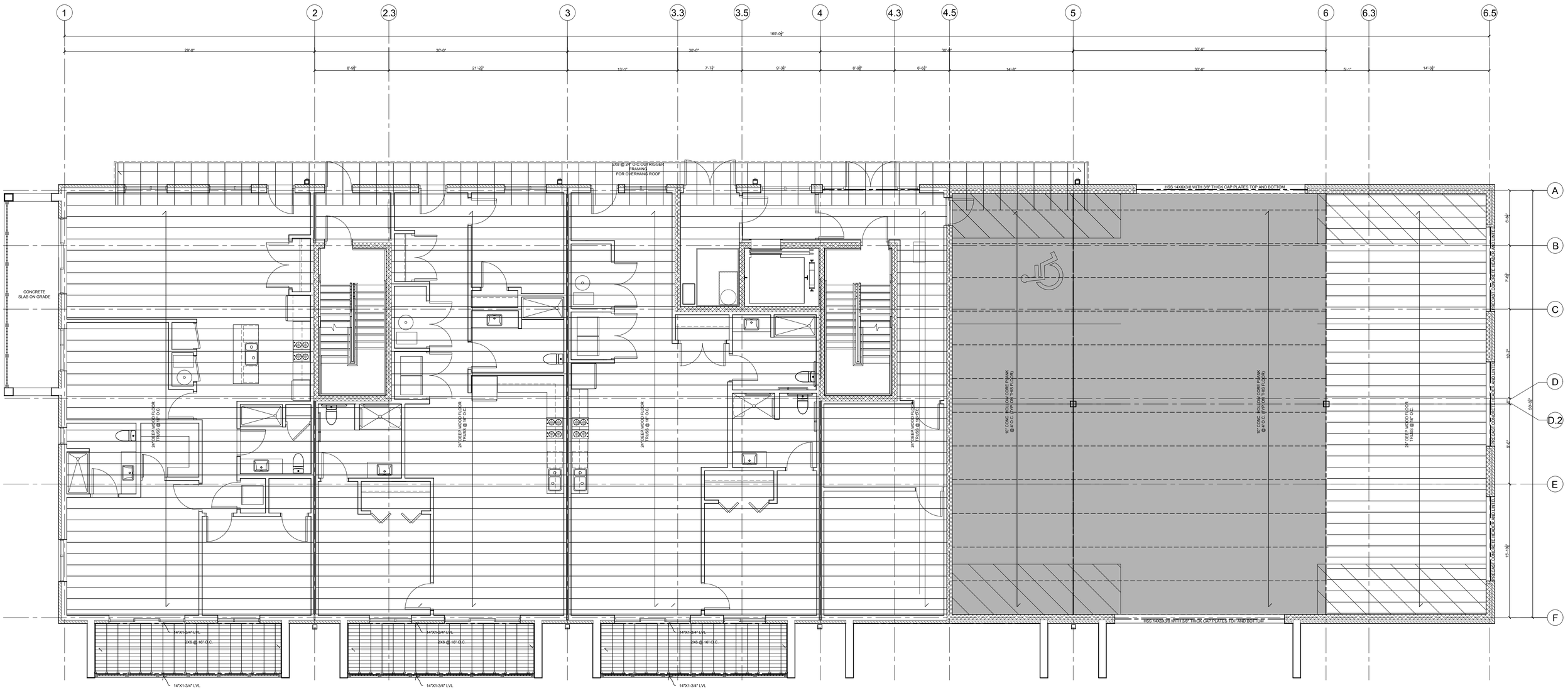
STRUCTURAL-100

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52391 · LICENSED ARCHITECT

GENERAL STRUCTURAL FLOOR ASSEMBLY:

FLOOR SYSTEM TYPES: 24" OPEN WEB WOOD FLOOR TRUSSES AT 16" O.C. FOR UPPER FLOOR LEVELS AND 10" HOLLOW CORE PRECAST CONCRETE PLANK WITH 2" CONCRETE TOPPING FOR BASEMENT LEVEL, DESIGNED PER 2015 IBC CHAPTER 16 AND APPLICABLE STANDARDS (APA FOR TRUSSES, PCI FOR PRECAST).
TRUSS DESIGN: 24" DEEP OPEN WEB FLOOR TRUSSES, ENGINEERED WOOD (E.G., SOUTHERN PINE OR SPRUCE-PINE-FIR, #2 GRADE OR BETTER), SPACED AT 16" O.C., DESIGNED TO SUPPORT 40 PSF LIVE LOAD + 10 PSF DEAD LOAD (IBC TABLE 1607.1, R-2 OCCUPANCY), WITH MAXIMUM DEFLECTION OF L/360, PER IBC SECTION 1604.3 AND MANUFACTURER SPECIFICATIONS.
TRUSS FABRICATION: PRE-ENGINEERED TRUSSES WITH METAL PLATE CONNECTORS, FABRICATED PER TPI 1 (NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSSES), SIZED AND BRACED PER STRUCTURAL ENGINEER SHOP DRAWINGS, SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
TRUSS SUPPORT: BEAR ON 2X6 WOOD STUD WALLS (12" OR 16" THICK CONCRETE WALLS WHERE APPLICABLE), SECURED WITH METAL HANGERS (E.G., SIMPSON STRONG-TIE LUS OR EQUIVALENT), ANCHORED TO WALLS WITH 1/2" DIA. BOLTS OR APPROVED FASTENERS AT 16" O.C., PER IBC SECTION 2304.10.
TRUSS SHEATHING: 3/4" PLYWOOD OR OSB, APA RATED, FASTENED TO TRUSS TOP CHORDS WITH 8D NAILS AT 6" O.C. EDGES AND 12" O.C. FIELD, PROVIDING DIAPHRAGM ACTION, PER IBC SECTION 2306.
HOLLOW CORE PLANK: 10" THICK PRECAST CONCRETE HOLLOW CORE PLANK, DESIGNED TO SUPPORT 100 PSF LIVE LOAD + 10 PSF DEAD LOAD (IBC TABLE 1607.1, BASEMENT USE), WITH 2-HOUR FIRE RESISTANCE (UL K909), SPANNING PER STRUCTURAL ENGINEER DESIGN (TYPICALLY 20'-30'), PER PCI MNL-116.
PLANK TOPPING: 2" THICK CONCRETE TOPPING, 3000 PSI MINIMUM 28-DAY COMPRESSIVE STRENGTH, PLACED OVER 1/4" ACOUSTIMAT 2 SOUND MAT, PROVIDING SOUND ISOLATION (STC/IIC 50 PER IBC SECTION 1207) AND LEVELING, WITH #3 REBAR AT 24" O.C. EACH WAY IF REQUIRED BY STRUCTURAL ENGINEER, PER ACI 318.
PLANK SUPPORT: BEAR ON 12" OR 16" POURED CONCRETE FOUNDATION WALLS OR STEEL BEAMS, WITH 3" MINIMUM BEARING LENGTH, GROUTED AT JOINTS WITH NON-SHRINK GROUT, ANCHORED AS SPECIFIED BY STRUCTURAL ENGINEER, PER IBC SECTION 1911 AND PCI MNL-120.
SUBGRADE PREPARATION: FOR PLANK SUPPORT, UNDERLYING FOOTINGS AND WALLS BEAR ON COMPACTED MDOT 21AA ENGINEERED FILL OVER NATIVE GRANULAR SOILS (N-VALUES 16-70) AT 11' ±1' BELOW GRADE, PER G2 REPORT (200544), WITH UNDERCUTTING OF 8-1/2 TO 9 FT OF UNSUITABLE FILL AND ORGANIC SILTY CLAY (2.7-5.3% ORGANIC CONTENT).
CONNECTIONS: TRUSSES CONNECTED TO SUPPORTS WITH HANGERS AND TOP PLATE TIES (E.G., SIMPSON H2.5A), PLANK CONNECTED TO WALLS WITH EMBEDDED STEEL PLATES OR DOWELS AS SPECIFIED, ALL FASTENERS GALVANIZED OR STAINLESS STEEL FOR DURABILITY, PER IBC SECTION 2304.10.6.
INSPECTION: STRUCTURAL ENGINEER TO REVIEW SHOP DRAWINGS AND INSPECT TRUSS AND PLANK INSTALLATION, GEOTECHNICAL ENGINEER TO VERIFY SUBGRADE CONDITIONS MATCH G2 REPORT, WITH FIELD TESTING AS REQUIRED, PER IBC SECTION 1705.



1 SECOND FLOOR FRAMING PLAN
SCALE: 3/16" = 1'-0"

HEADER AND LOOSE LINTEL NOTES:
HEADERS AND LINTELS DESIGNED FOR 9' WIDE SLIDING DOORS AND ≤5' WIDE WINDOWS, SUPPORTING EXTERIOR WOOD-FRAMED AND MASONRY WALLS WITH THREE STORIES PLUS ROOF LOAD ABOVE OPENINGS, PER 2015 IBC CHAPTER 23 (WOOD) AND 21 (MASONRY). STEEL LINTELS (L8X4X3/8" FOR DOORS, L6X4X1/4" FOR WINDOWS) ARE GALVANIZED A36 STEEL, AFFORDABLE AND EASY TO INSTALL, PROPPED AT 4' O.C. UNTIL MORTAR CURES (IBC 2304.10.2). WOOD HEADERS (2-11-7/8" LVL) IN 2X6 WALLS, NAILED WITH 16D NAILS AT 16" O.C. DOUBLE ROW OR PER MANUFACTURER SPEC, BEARING 6" EACH SIDE ON DOUBLE 2X6 TOP PLATE AND JACK STUDS.

HEADER AND LOOSE LINTEL SCHEDULE:

OPENING TYPE	WIDTH	HEADER/LINTEL TYPE	SIZE	MATERIAL	BEARING LENGTH	NOTES
SLIDING DOOR	9'-0"	WOOD HEADER	2-11-7/8" LVL (114" LONG) 1.9E LVL		6" EACH SIDE	DOUBLE PLY, NAIL PER MANUF.
SLIDING DOOR (MASONRY)	9'-0"	STEEL LOOSE LINTEL	L8X4X3/8" (108")	GALVANIZED STEEL	6" EACH SIDE	SINGLE ANGLE, PROP UNTIL CURED
WINDOW (≤5'-0")	≤5'-0"	WOOD HEADER	2-11-7/8" LVL (66" LONG) 1.9E LVL		6" EACH SIDE	DOUBLE PLY, NAIL PER MANUF.
WINDOW (MASONRY)	≤5'-0"	STEEL LOOSE LINTEL	L6X4X1/4" (66")	GALVANIZED STEEL	6" EACH SIDE	SINGLE ANGLE, PROP UNTIL CURED

Structural Engineer:

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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

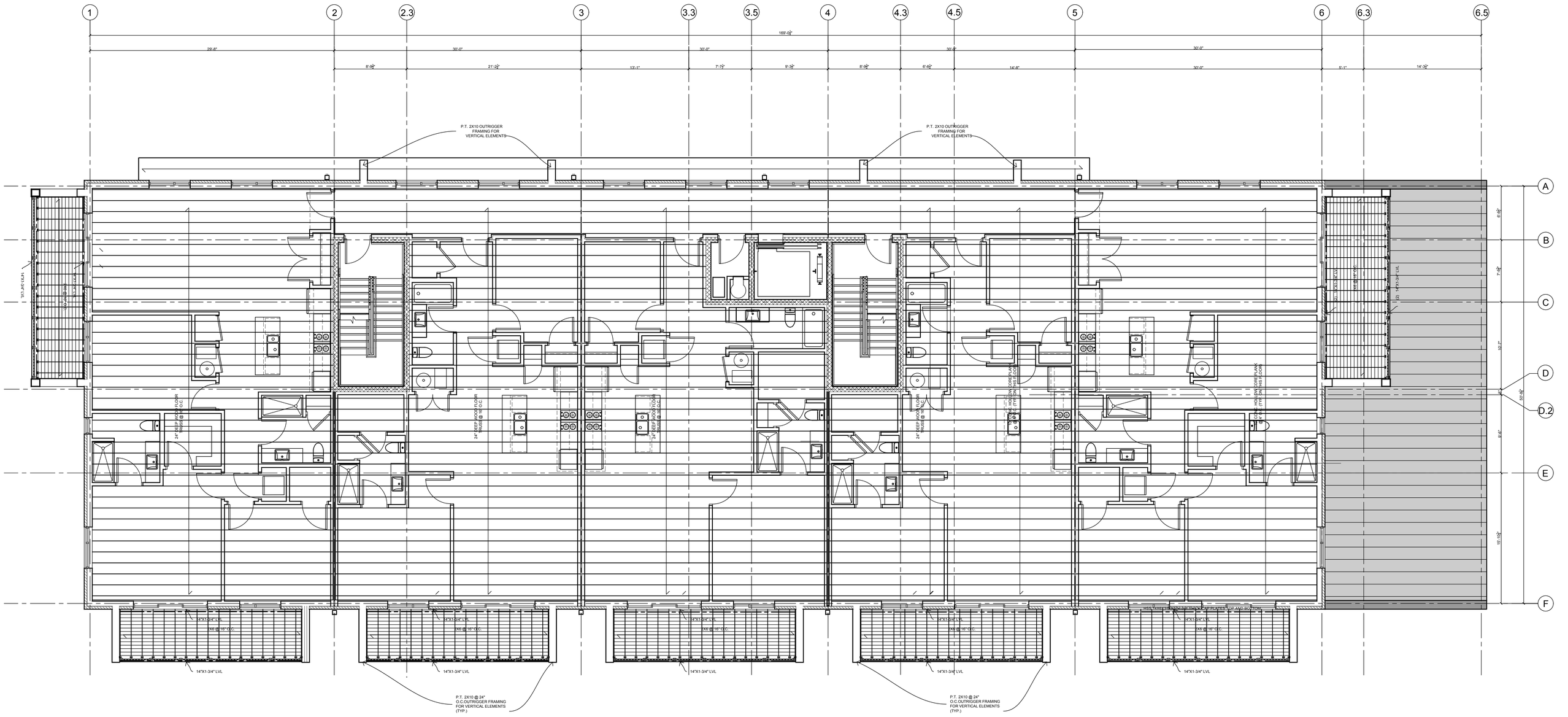
Date:
Drawn By:
Scale:
Checked By:
DRAWING TITLE:

Drawing Number:
S-110
STRUCTURAL-110

Seal:
STATE OF MICHIGAN
ROGER JASON BERENT
ARCHITECT
No. 52391
LICENSED ARCHITECT

GENERAL STRUCTURAL FLOOR ASSEMBLY:

FLOOR SYSTEM TYPES: 24" OPEN WEB WOOD FLOOR TRUSSES AT 16" O.C. FOR UPPER FLOOR LEVELS AND 10" HOLLOW CORE PRECAST CONCRETE PLANK WITH 2" CONCRETE TOPPING FOR BASEMENT LEVEL, DESIGNED PER 2015 IBC CHAPTER 16 AND APPLICABLE STANDARDS (APA FOR TRUSSES, PCI FOR PRECAST).
TRUSS DESIGN: 24" DEEP OPEN WEB FLOOR TRUSSES, ENGINEERED WOOD (E.G., SOUTHERN PINE OR SPRUCE-PINE-FIR, #2 GRADE OR BETTER), SPACED AT 16" O.C., DESIGNED TO SUPPORT 40 PSF LIVE LOAD + 10 PSF DEAD LOAD (IBC TABLE 1607.1, R-2 OCCUPANCY), WITH MAXIMUM DEFLECTION OF L/360, PER IBC SECTION 1604.3 AND MANUFACTURER SPECIFICATIONS.
TRUSS FABRICATION: PRE-ENGINEERED TRUSSES WITH METAL PLATE CONNECTORS, FABRICATED PER TPI 1 (NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSSES), SIZED AND BRACED PER STRUCTURAL ENGINEER SHOP DRAWINGS, SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
TRUSS SUPPORT: BEAR ON 2X6 WOOD STUD WALLS (12" OR 16" THICK CONCRETE WALLS WHERE APPLICABLE), SECURED WITH METAL HANGERS (E.G., SIMPSON STRONG-TIE LUS OR EQUIVALENT), ANCHORED TO WALLS WITH 1/2" DIA. BOLTS OR APPROVED FASTENERS AT 16" O.C., PER IBC SECTION 2304.10.
TRUSS SHEATHING: 3/4" PLYWOOD OR OSB, APA RATED, FASTENED TO TRUSS TOP CHORDS WITH 8D NAILS AT 6" O.C. EDGES AND 12" O.C. FIELD, PROVIDING DIAPHRAGM ACTION, PER IBC SECTION 2306.
HOLLOW CORE PLANK: 10" THICK PRECAST CONCRETE HOLLOW CORE PLANK, DESIGNED TO SUPPORT 100 PSF LIVE LOAD + 10 PSF DEAD LOAD (IBC TABLE 1607.1, BASEMENT USE), WITH 2-HOUR FIRE RESISTANCE (UL K909), SPANNING PER STRUCTURAL ENGINEER DESIGN (TYPICALLY 20'-30'), PER PCI MNL-116.
PLANK TOPPING: 2" THICK CONCRETE TOPPING, 3000 PSI MINIMUM 28-DAY COMPRESSIVE STRENGTH, PLACED OVER 1/4" ACOUSTIMAT 2 SOUND MAT, PROVIDING SOUND ISOLATION (STC/IIC 50 PER IBC SECTION 1207) AND LEVELING, WITH #3 REBAR AT 24" O.C. EACH WAY IF REQUIRED BY STRUCTURAL ENGINEER, PER ACI 318.
PLANK SUPPORT: BEAR ON 12" OR 16" POURED CONCRETE FOUNDATION WALLS OR STEEL BEAMS, WITH 3" MINIMUM BEARING LENGTH, GROUTED AT JOINTS WITH NON-SHRINK GROUT, ANCHORED AS SPECIFIED BY STRUCTURAL ENGINEER, PER IBC SECTION 1911 AND PCI MNL-120.
SUBGRADE PREPARATION: FOR PLANK SUPPORT, UNDERLYING FOOTINGS AND WALLS BEAR ON COMPACTED MDOT 21AA ENGINEERED FILL OVER NATIVE GRANULAR SOILS (N-VALUES 16-70) AT 11' ±1' BELOW GRADE, PER G2 REPORT (200544), WITH UNDERCUTTING OF 8-1/2 TO 9 FT OF UNSUITABLE FILL AND ORGANIC SILTY CLAY (2.7-5.3% ORGANIC CONTENT).
CONNECTIONS: TRUSSES CONNECTED TO SUPPORTS WITH HANGERS AND TOP PLATE TIES (E.G., SIMPSON H2.5A), PLANK CONNECTED TO WALLS WITH EMBEDDED STEEL PLATES OR DOWELS AS SPECIFIED, ALL FASTENERS GALVANIZED OR STAINLESS STEEL FOR DURABILITY, PER IBC SECTION 2304.10.6.
INSPECTION: STRUCTURAL ENGINEER TO REVIEW SHOP DRAWINGS AND INSPECT TRUSS AND PLANK INSTALLATION, GEOTECHNICAL ENGINEER TO VERIFY SUBGRADE CONDITIONS MATCH G2 REPORT, WITH FIELD TESTING AS REQUIRED, PER IBC SECTION 1705.



1 THIRD AND FOURTH FLOOR FRAMING PLAN

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

HEADER AND LOOSE LINTEL NOTES:
HEADERS AND LINTELS DESIGNED FOR 9' WIDE SLIDING DOORS AND ≤5' WIDE WINDOWS, SUPPORTING EXTERIOR WOOD-FRAMED AND MASONRY WALLS WITH THREE STORIES PLUS ROOF LOAD ABOVE OPENINGS, PER 2015 IBC CHAPTER 23 (WOOD) AND 21 (MASONRY). STEEL LINTELS (L8X4X3/8" FOR DOORS, L6X4X1/4" FOR WINDOWS) ARE GALVANIZED A36 STEEL, AFFORDABLE AND EASY TO INSTALL, PROPPED AT 4' O.C. UNTIL MORTAR CURES (IBC 2304.10.2). WOOD HEADERS (2-11-7/8" LVL) IN 2X6 WALLS, NAILED WITH 16D NAILS AT 16" O.C. DOUBLE ROW OR PER MANUFACTURER SPEC, BEARING 6" EACH SIDE ON DOUBLE 2X6 TOP PLATE AND JACK STUDS.

HEADER AND LOOSE LINTEL SCHEDULE:

OPENING TYPE	WIDTH	HEADER/LINTEL TYPE	SIZE	MATERIAL	BEARING LENGTH	NOTES
SLIDING DOOR	9'-0"	WOOD HEADER	2-11-7/8" LVL (114" LONG) 1.9E LVL		6" EACH SIDE	DOUBLE PLY, NAIL PER MANUF.
SLIDING DOOR (MASONRY)	9'-0"	STEEL LOOSE LINTEL	L8X4X3/8" (108")	GALVANIZED STEEL	6" EACH SIDE	SINGLE ANGLE, PROP UNTIL CURED
WINDOW (≤5'-0")	≤5'-0"	WOOD HEADER	2-11-7/8" LVL (66" LONG) 1.9E LVL		6" EACH SIDE	DOUBLE PLY, NAIL PER MANUF.
WINDOW (MASONRY)	≤5'-0"	STEEL LOOSE LINTEL	L6X4X1/4" (66")	GALVANIZED STEEL	6" EACH SIDE	SINGLE ANGLE, PROP UNTIL CURED

Structural Engineer:

Architect:
RBA
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248.800.6505
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Owner:
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Drawing Issue:

No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

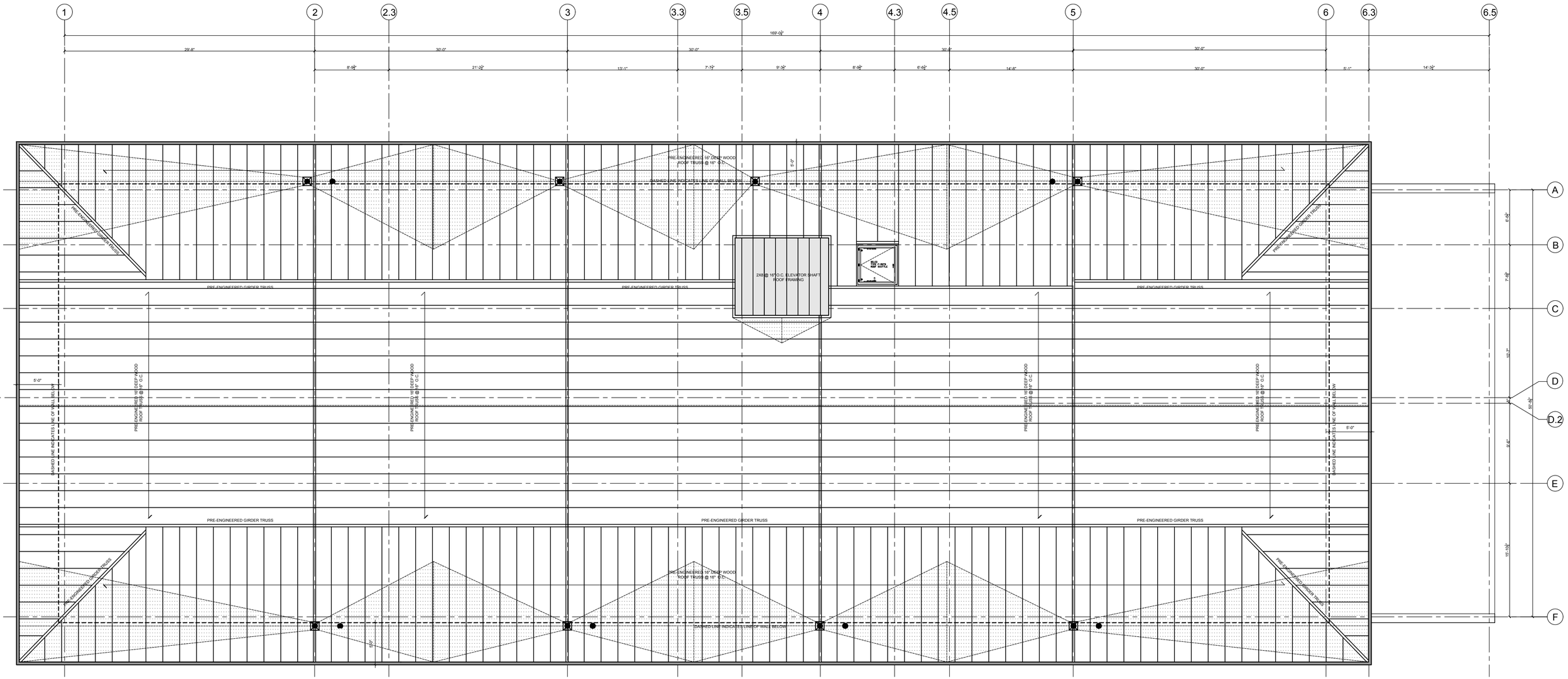
Date: | Drawn By:
Scale: | Checked By:
DRAWING TITLE:

Drawing Number:
S-120
STRUCTURAL-120

Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52391 · LICENSED ARCHITECT

GENERAL STRUCTURAL ROOF FRAMING ASSEMBLY:

ROOF SYSTEM TYPES: 16" OPEN WEB WOOD ROOF TRUSSES AT 24" O.C., GIRDER TRUSSES FOR LARGER SPANS, AND ELEVATOR SHAFT ROOF FRAMING, DESIGNED PER 2015 IBC CHAPTER 16 AND APPLICABLE STANDARDS (APA FOR TRUSSES, ACI 318 FOR CONCRETE SUPPORTS).
ROOF TRUSS DESIGN: 16" DEEP OPEN WEB ROOF TRUSSES, ENGINEERED WOOD (E.G., SOUTHERN PINE OR SPRUCE-PINE-FIR, #2 GRADE OR BETTER), SPACED AT 24" O.C., DESIGNED TO SUPPORT 25 PSF SNOW LOAD + 10 PSF DEAD LOAD (ASCE 7-10, ROCHESTER, MI, PER G2 REPORT), WITH MAXIMUM DEFLECTION OF L/240, PER IBC SECTION 1604.3 AND MANUFACTURER SPECIFICATIONS.
GIRDER TRUSS DESIGN: ENGINEERED WOOD GIRDER TRUSSES, DEPTH AND SPAN PER STRUCTURAL ENGINEER (TYPICALLY 24"-36" DEEP), SUPPORTING ROOF TRUSSES AND TRANSFERING LOADS TO PRIMARY BEARING WALLS OR COLUMNS, DESIGNED FOR COMBINED LOADS (25 PSF SNOW + 10 PSF DEAD + TRUSS REACTIONS), PER IBC SECTION 2303.4.
TRUSS FABRICATION: PRE-ENGINEERED TRUSSES AND GIRDER TRUSSES WITH METAL PLATE CONNECTORS, FABRICATED PER TPI 1 (NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSSES), SIZED AND BRACED PER STRUCTURAL ENGINEER SHOP DRAWINGS, SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
TRUSS SUPPORT: BEAR ON 2X6 WOOD STUD WALLS OR 12"/16" CONCRETE FOUNDATION WALLS, SECURED WITH METAL HANGERS (E.G., SIMPSON STRONG-TIE LUS OR EQUIVALENT), ANCHORED TO SUPPORTS WITH 1/2" DIA. BOLTS OR APPROVED FASTENERS AT 24" O.C. FOR TRUSSES AND AS SPECIFIED FOR GIRDER TRUSSES, PER IBC SECTION 2304.10.
ROOF SHEATHING: 5/8" PLYWOOD OR OSB, APA RATED, FASTENED TO TRUSS TOP CHORDS WITH 8D NAILS AT 6" O.C. EDGES AND 12" O.C. FIELD, PROVIDING DIAPHRAGM ACTION, PER IBC SECTION 2306, SUPPORTING DUROLAST 60 MIL MEMBRANE.
ELEVATOR SHAFT ROOF FRAMING: 2X8 RAFTERS AND JOISTS, DOUGLAS FIR-LARCH #2, SPANNING 8'-6" SHAFT WIDTH, SPACED AT 16" O.C. (APPROX. 6 MEMBERS OVER 7'-0" DEPTH), WITH 2:12 PITCH (14" RISE), BEARING ON 8" CMU WALLS WITH 1/2" J-BOLTS IN GROUTED BOND BEAM AT 16" O.C., DESIGNED FOR 25 PSF SNOW + 10 PSF DEAD LOAD, PER IBC CHAPTER 23.
ELEVATOR SHAFT ROOF FINISH: 5/8" PLYWOOD OR OSB SHEATHING, FASTENED WITH 8D NAILS AT 6" O.C. EDGES AND 12" O.C. FIELD, COVERED WITH DUROLAST 60 MIL EPDM MEMBRANE FLASHED TO CMU, AND CEILING OF TWO LAYERS 5/8" TYPE X GYPSUM BOARD FOR 2-HOUR FIRE RESISTANCE (UL U356), PER IBC SECTION 713.4.
SUBGRADE PREPARATION: UNDERLYING FOOTINGS AND WALLS BEAR ON COMPACTED MDOT 21AA ENGINEERED FILL OVER NATIVE GRANULAR SOILS (N-VALUES 16-70) AT 11" ±1" BELOW GRADE FOR BUILDING AND ELEVATOR SHAFT SUPPORTS, WITH UNDERCUTTING OF 8-1/2 TO 9 FT OF UNSUITABLE FILL AND ORGANIC SILTY CLAY (2.7-5.3% ORGANIC CONTENT), PER G2 REPORT (200544).
CONNECTIONS: TRUSSES AND GIRDER TRUSSES CONNECTED TO SUPPORTS WITH HANGERS AND TOP PLATE TIES (E.G., SIMPSON H2.5A), ELEVATOR RAFTERS/JOISTS SECURED WITH STEEL BEARING PLATES AND NUTS, ALL FASTENERS GALVANIZED OR STAINLESS STEEL FOR DURABILITY, PER IBC SECTION 2304.10.6.
INSULATION: FOR ELEVATOR SHAFT ROOF, MINERAL WOOL BATT INSULATION BETWEEN 2X8S, FILLING CAVITY, ENHANCING 2-HOUR FIRE RATING AND ACOUSTICS, PER PRIMARY ROOF ASSEMBLY; NO INSULATION REQUIRED FOR OPEN GARAGE ROOF TRUSSES.
INSPECTION: STRUCTURAL ENGINEER TO REVIEW SHOP DRAWINGS AND INSPECT TRUSS, GIRDER, AND ELEVATOR ROOF FRAMING INSTALLATION, GEOTECHNICAL ENGINEER TO VERIFY SUBGRADE CONDITIONS MATCH G2 REPORT, WITH FIELD TESTING AS REQUIRED, PER IBC SECTION 1705.



1 ROOF STRUCTURE PLAN
SCALE: 3/16" = 1'-0"

HEADER AND LOOSE LINTEL NOTES:
HEADERS AND LINTELS DESIGNED FOR 9' WIDE SLIDING DOORS AND ≤5' WIDE WINDOWS, SUPPORTING EXTERIOR WOOD-FRAMED AND MASONRY WALLS WITH THREE STORIES PLUS ROOF LOAD ABOVE OPENINGS, PER 2015 IBC CHAPTER 23 (WOOD) AND 21 (MASONRY). STEEL LINTELS (L8X4X3/8" FOR DOORS, L6X4X1/4" FOR WINDOWS) ARE GALVANIZED A36 STEEL, AFFORDABLE AND EASY TO INSTALL, PROPPED AT 4' O.C. UNTIL MORTAR CURES (IBC 2304.10.2). WOOD HEADERS (2-11-7/8" LVL) IN 2X6 WALLS, NAILED WITH 16D NAILS AT 16" O.C. DOUBLE ROW OR PER MANUFACTURER SPEC, BEARING 6" EACH SIDE ON DOUBLE 2X6 TOP PLATE AND JACK STUDS.

HEADER AND LOOSE LINTEL SCHEDULE:

OPENING TYPE	WIDTH	HEADER/LINTEL TYPE	SIZE	MATERIAL	BEARING LENGTH	NOTES
SLIDING DOOR	9'-0"	WOOD HEADER	2-11-7/8" LVL (114" LONG) 1.9E LVL		6" EACH SIDE	DOUBLE PLY, NAIL PER MANUF.
SLIDING DOOR (MASONRY)	9'-0"	STEEL LOOSE LINTEL	L8X4X3/8" (108")	GALVANIZED STEEL	6" EACH SIDE	SINGLE ANGLE, PROP UNTIL CURED
WINDOW (≤5'-0")	≤5'-0"	WOOD HEADER	2-11-7/8" LVL (66" LONG) 1.9E LVL		6" EACH SIDE	DOUBLE PLY, NAIL PER MANUF.
WINDOW (MASONRY)	≤5'-0"	STEEL LOOSE LINTEL	L6X4X1/4" (66")	GALVANIZED STEEL	6" EACH SIDE	SINGLE ANGLE, PROP UNTIL CURED

Structural Engineer:

Architect:
RBA
ROGER BERENT ARCHITECTS
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Owner:
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Drawing Issue:

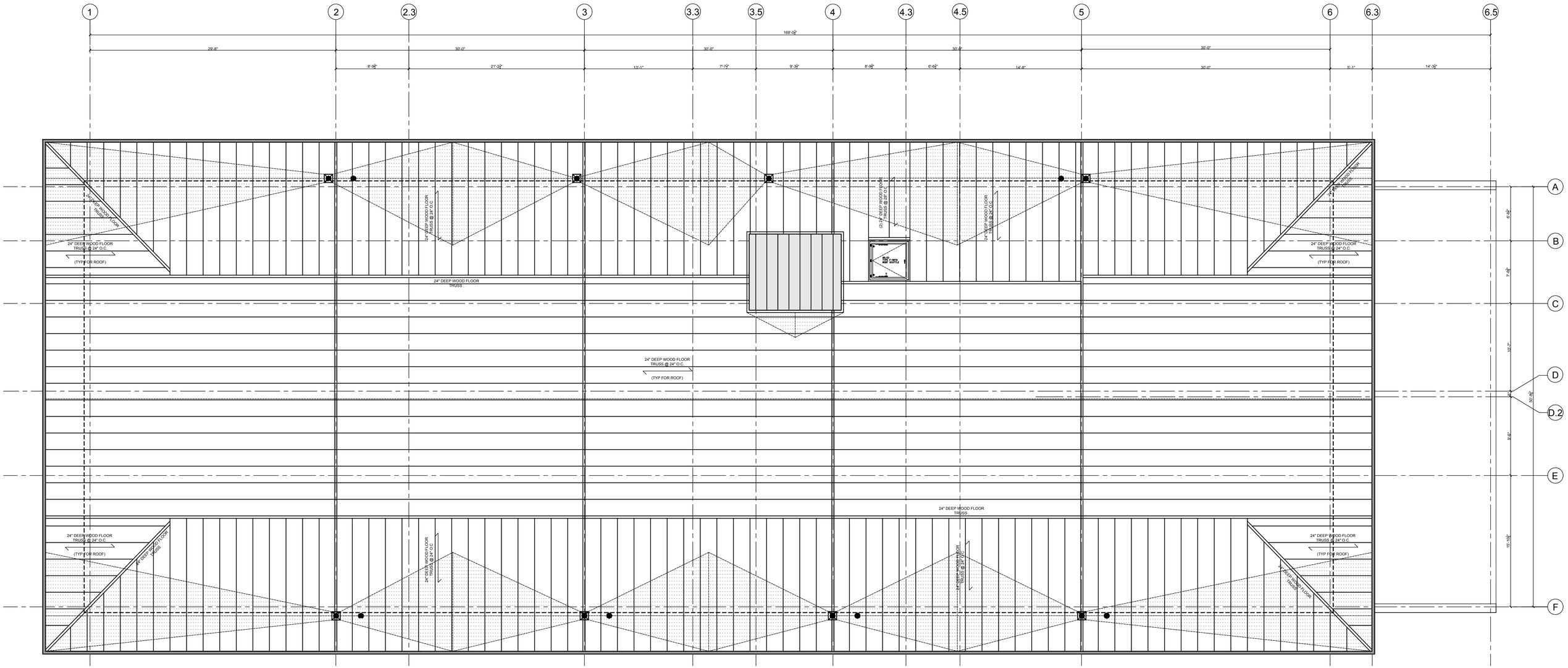
No.	Date	Description
	04.01.2025	ISSUED FOR BID

Project:
210 DIVERSION
Rochester, Michigan

Date:
Drawn By:
Scale:
Checked By:
DRAWING TITLE:

Drawing Number:
S-130
STRUCTURAL-130

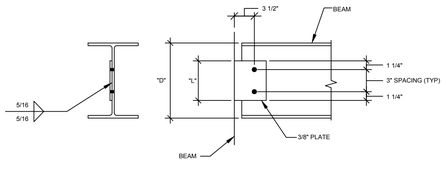
Seal: STATE OF MICHIGAN · ROGER JASON BERENT · ARCHITECT · No. 52391 · LICENSED ARCHITECT



1 ROOF STRUCTURE PLAN
SCALE: 3/16" = 1'-0"

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan	Date: / Drawn By: / Scale: / Checked By: / DRAWING TITLE:	Drawing Number: S-140 STRUCTURAL-140

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT



D (IN)	L (IN)
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8-10	5.5
12-14	8.5
15-18	11.5
20-21	14.5
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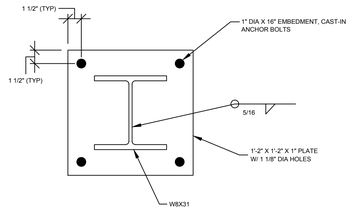
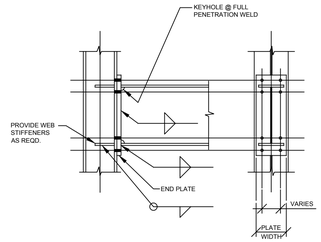
27	20.5
30	23.5
33	26.5
36	29.5

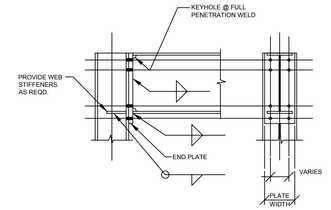
TYPICAL SINGLE-PLATE CONNECTION
SCALE: NONE



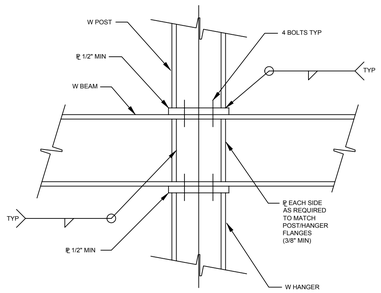
TYPICAL W8X31 BASEPLATE
SCALE; 1 1/2"=1'-0"



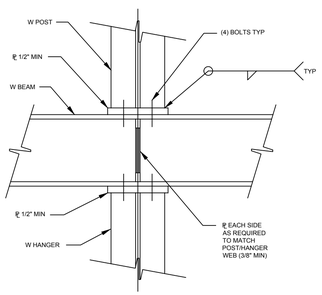
END PLATE CONNECTION TO COLUMN FLANGE @ FLOOR



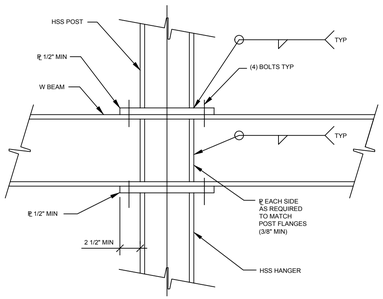
END PLATE CONNECTION TO COLUMN FLANGE @ ROOF



TYPICAL BOLTED "W" POST/HANGER CONNECTION
SCALE: NONE

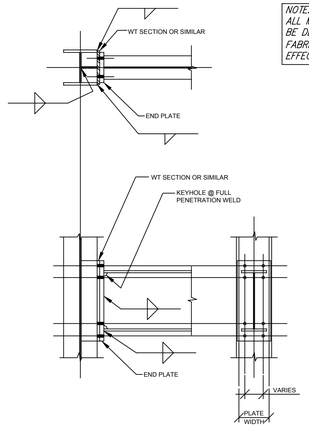


TYPICAL BOLTED "W" POST/HANGER CONNECTION
SCALE: NONE

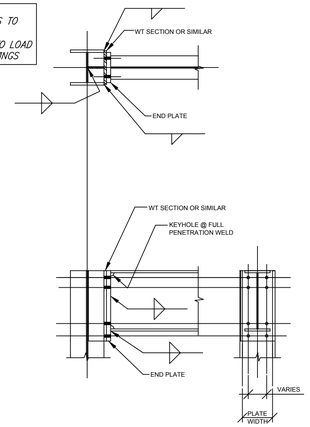


TYPICAL BOLTED HSS POST/HANGER CONNECTION
SCALE: NONE

NOTE:
ALL MOMENT CONNECTIONS TO BE DESIGNED BY STEEL FABRICATOR'S ENGINEER TO LOAD EFFECTS SHOWN ON DRAWINGS



END PLATE CONNECTION TO COLUMN WEB @ FLOOR



END PLATE CONNECTION TO COLUMN WEB @ ROOF

TYPICAL END PLATE MOMENT CONNECTIONS
SCALE: NONE

Structural Engineer:	Architect: RBA ROGER BERENT ARCHITECTS 6435 Apple Orchard Lane, Rochester Hills, MI 48306 248.800.6505 roger@rogerberent.com	Owner: LOCHIRCO CUSTOM HOMES 202 Walnut Blvd. Suite B Rochester, MI	These drawings are instruments of service and as such are the property of the Architect. The Architect's drawings, specifications and related documents are not to be used by the Owner or others on other projects, for additions to this Project, or for completion of this Project by others.	Drawing Issue: No. / Date / Description: 04.01.2025 ISSUED FOR BID	Project: 210 DIVERSION Rochester, Michigan	Date: / Drawn By: / Scale: / Checked By: / DRAWING TITLE:	Drawing Number: S-200 STRUCTURAL-200

Seal: STATE OF MICHIGAN ROGER JASON BERENT ARCHITECT No. 52391 LICENSED ARCHITECT

City of Rochester

400 Sixth Street
Rochester, MI 48307
P: (248) 651-9061
F: (248) 651-2624
www.rochestermi.org

To: Honorable Planning Commission Members

From: Jeremy Peckens, Planning and Zoning Administrator

Date: April 23, 2025

RE: Request of Payment in Lieu of providing parking request of 8 additional spaces for 125 S. Main.

We are in receipt of a request from the new tenants of the former Kumon, located at 125 S. Main. The applicant is requesting Payment in lieu of Parking

The request for payment in lieu of parking, based on the use change to from general office to a restaurant without alcohol. This property is credited with 8 parking spaces, this change in use put them into a parking deficit of required parking by 7 spaces. They are now seeking a Special Exception for payment in lieu of providing for the 7 spaces.

In reviewing their new floor plan layout, we determined that on the first floor 2300 sq. feet of space must be designated as a restaurant by our Zoning Ordinance Standards. The calculation for required parking for a restaurant without alcohol is 1 parking space per 150 gross sq. ft. of area or 15 spaces.

This space is credited at a rate which is calculated at 1 space per 300 gross sq. feet of area (general office) or 8 spaces. That leaves the applicant with a 7 parking spaces deficit. The cost per space is $1,000 and they are seeking the special exception for 7 spaces.

Staff is in support of their request; we think the use of this space fits nicely into our downtown retail/service offerings.

We would suggest that you set a public hearing for their special exception request at your next available meeting.

Please feel free to call me if you have any questions.

Respectfully,

Jeremy Peckens, MPA
Planning & Zoning Administrator

ROCHESTER
Where you live.

PAY TO THE ORDER OF
CHASE BANK
FOR DEPOSIT ONLY
CITY OF ROCHESTER CASH
RECEIPTS 2
#7581384

City of Rochester

RECEIVED
MAY -7 2025
CITY OF ROCHESTER

400 Sixth Street
Rochester, MI 48307
P: (248) 651-9061
F: (248) 651-2624
www.rochestermi.org

PLANNING COMMISSION SITE PLAN PROCEDURE GUIDE

The Rochester Zoning Ordinance requires site plan approval in a number of situations. This Procedure Guide is intended to assist you in processing a site plan. This guide does not replace nor supersede any provisions of the Zoning Ordinance or any other Code of Ordinance of the City. It is recommended that you obtain a copy of the Zoning Ordinance, as amended. The attached form must be submitted with your request for site plan review.

The Planning Commission will examine the impact of the proposed development on adjoining and nearby properties, persons and activities and will, therefore, be interested in the configuration of the new structures, durability and standards of design. The site plan submittal shall accurately depict the location, height, mass of buildings, grading plans and typical elevations and all other data required by Article 27 of the Zoning Ordinance. Site plans deemed to be incomplete may be returned by the city without placing them on the Planning Commission agenda or the Planning Commission may table (postpone) the site plan review without discussion. Final building plans are not required as part of the site plan submittal; however, a Building Permit cannot be issued except for the plans that conform to the site plan and final engineering approval. Site plan approval by the City does not include a finding of conformance with deed restrictions. If the site plan involves a need for variance from the Board of Appeals, the site plan should first be submitted to the Planning Commission so that the Board of Appeals may benefit from the findings of the Planning Commission. In such cases, the Planning Commission may, in its discretion, grant a site plan approval conditioned on Board of Appeals action. The Planning Commission may also refer the matter to the Board of Appeals without taking action on the proposed site plan.

DEADLINES

- Site plan submittals must be received by the Permit Coordinator no later than 4:00 p.m., four (4) weeks prior to the next regular meeting of the Planning Commission.
- On items that have been previously considered by the Planning Commission, the revised submittals must be submitted to the Permit Coordinator no later than 4:00 p.m., three (3) weeks prior to the next regular meeting of the Planning Commission.
- The city will review the submitted documents and inform the applicant when it will be on the schedule for Planning Commission consideration. There are no set timelines for submittals, as they are dependent on thoroughness of the submitted documents and any revisions that are needed .

Note: The Planning Commission normally meets the first Monday of each month at 7:00 p.m. in the Municipal Building, 400 Sixth Street. Please check the city website for the date of each meeting.

REQUIREMENTS

- Provide all required documentation and appropriate fee(s) to the Permit Coordinator at Jpeckens@rochestermi.org
- Provide 1 DIGITAL (flash drive) & 9 COPIES of the blueprint drawings of the site plan (pre-folded to ¼ size with the blueprint seal on the outside), including the completed application, any correspondence & written supporting documents.

- Provide a check payable to the City of Rochester for the site plan/special exception/special project/rezoning submittal fee (see page 2 for appropriate fee amounts).

APPEARANCE IS REQUIRED:

APPLICANT OR A REPRESENTATIVE FOR THE APPLICANT MUST ATTEND THE PLANNING COMMISSION MEETING IN ORDER TO ANSWER ANY QUESTIONS BY THE COMMISSION MEMBERS. FAILURE OF THE APPLICANT OR APPLICANT REPRESENTATIVE TO ATTEND THE PLANNING COMMISSION MEETING MAY RESULT IN TABLING CONSIDERATION OF THE SITE PLAN OR DENIAL OF THE SITE PLAN.

SCHEDULE OF FEES:

Until all applicable fees have been paid in full, no action shall be taken on any application or appeal. The schedule of fees shall be as follows:

APPLICATION FOR:	FEE:
ZONING BOARD OF APPEALS	$400
Administrative Processing Fee	$100
Special Planning Commission Meeting	$1500
REZONING APPLICATION	
Administrative Processing Fee	$100
Rezoning Application, less than one acre	$750
Rezoning Application, more than one acre	$50 per each additional
SITE PLAN APPLICATION	
Administrative Processing Fee	$100
Site Plan Review, less than one acre	$1,250 first review, $500 each review, thereafter, subject to $500 resubmittal fee.
Site Plan Review, more than one acre	$1,250 for 1st acre + $50 per each additional acre, each review, thereafter, subject to $500 resubmittal fee.
CONDOMINIUM PLAN APPLICATION	
Administrative Processing Fee	$100
Condo Project Application, less than one acre	$1,000 first review. Each review, thereafter, subject to $500 resubmittal fee.
Condo Project Application, more than one acre	$1,000 first review + $50 per each additional acre, each review, thereafter, subject to $500 resubmittal fee.

2

OTHER	
Special Exception Hearing Application	$500
Special Project Application within a Potential Intensity Change Area (PICA)	$500
Community / Traffic Impact Study Review	As billed by City Consultant

In addition to the aforementioned fees, the applicant shall be responsible for all necessary engineering costs incurred by the City in processing applications for rezoning and/or site plan approval. A cash deposit (as determined by Administration) shall be deposited by the applicant with the City before any such engineering costs are incurred. Thereafter, all engineering costs shall be deducted from said deposit as incurred from time to time. In the event that said deposit shall be insufficient to cover all such engineering costs, the applicant shall be required to deposit additional sums as determined by the City to be necessary to completely recover the remainder of said engineering costs prior to the continuation of such engineering services. An applicant's failure to deposit such additional sums shall result in a cessation of further engineering services or building inspections by the City and may constitute an abandonment of the application. Upon completion or abandonment, as provided for below, all remaining deposits on hand shall be refunded to the applicant.

Inactivity on the part of an applicant for a period of ninety (90) days or longer in the processing of a rezoning request and/or a site plan approval request, shall be deemed an abandonment of the application requiring submission of a new application and repayment of the above fees, unless prior approval of the applicable board or commission is obtained for a longer period of delay due to extenuating circumstances.

PLANNING COMMISSION - APPLICATION FOR APPROVAL OF SITE PLAN/SPECIAL EXCEPTION/SPECIAL PROJECT

Return to Permit Coordinator with check & required documents listed on page 1

Date Filed: 5-7-2025 Amount of Review Fee Paid : $_____

Approval of the site plan is hereby requested for the following parcel of land in the City of Rochester. This application is submitted with the required number of copies of the site plan and payment of the appropriate review fee. The checklist below has been completed to certify the data contained on the site plan. If the required data is not reflected in the site plan, the appropriate box has been checked and a detailed statement is attached explaining why the data is not provided. I understand that if my site plan is deemed to be incomplete, it may be returned by the city without being placed on the Planning Commission agenda or the Planning Commission my table (postpone) the site plan without discussion. By signing this application, the undersigned hereby grants full authority to the City of Rochester, its agents, employees, representatives and/or appointees to enter upon the undersigned lands and properties for the purpose of inspection and examination incidental hereto.

PROJECT COORDINATOR'S NAME: Sayaf Munasar

PROJECT COORDINATOR'S E-MAIL ADDRESS:

_____

PROJECT COORDINATOR'S PRIMARY PHONE NUMBER:

_____

1. Name of proposed development:

   _____

2. Location of property: 125 S Main side of West of Main St. Road, between

   _____ and

   _____Roads.

3. Street address: 125 S Main St

   _____

4. The property is presently zoned as:

   Office
   _____

5. The total site area is 2,300 Sqft _____acres(s).

6. Portion of total site being developed:

   _____

7. It is proposed the property will be developed as:

   _____

   Cafe
   _____

8. A Special Exception is being requested. ✓ Yes _____ No.

9. Site Plan - Required Data: Check the appropriate line. If "not provided" line is checked, attach detailed explanation.

PROVIDED	NOT PROVIDED	DESCRIPTION
		a. Date, including revision.
		b. Plan scale of 1" equals 10', 1" = 40'
		c. North arrow.

		d. Inserted location sketch showing location of subject property in the mile section.
		e. The seal of one or more of the following: registered architect, registered civil engineer, registered land surveyor, registered landscape architect or registered community planner.
		f. Existing and proposed grades at all lot corners and catch basins, and at a plan grid interval of not more than fifty (50) feet along all lot lines, road center lines and on the site and beyond for at least fifty (50) feet. Any proposed change of more than twenty-four (24) inches in the existing grade shall require specific approval by the Planning Commission as part of a site plan. Highlight any grade changes in excess of 24".
		g. Existing building(s) and street(s) on site and within one hundred (100) feet of site.
		h. Center line and existing and proposed right-of-way lines of all streets and roads on property or adjoining roads or streets.
		i. Boundaries of subject property including distances and bearings.
		j. Proposed buildings and structures on property, including off street parking; walkways, walls, carports and trash receptacles; dimensions of improvements; and acceleration, deceleration and passing lanes, designation of fire lanes and/or other areas in which parking will be prohibited.
		k. Any proposed sidewalks or walkways within the right-of-way of adjoining roads or streets.
		l. Sufficient information describing the proposed use and occupancy of the premises to ascertain compliance with the use of regulations of the district.
		m. As applicable, number of dwelling units, number of bedrooms, number of off-street parking spaces per dwelling unit and per bedroom, percentage of land covered by buildings, total and usable floor areas for purposes of determining off-street parking requirements.
		n. Landscape plan including tree inventory. (Section 2800).
		o. Description of utilities including storm drainage; sewage disposal; electrical distribution; telephone and/or television system; natural gas distribution; exterior lighting; water distribution and source; fire hydrant locations; proposed method of solid waste storage, collection and disposal.
		p. The cover letter, signed by the owner and prospective developer holding an equitable interest in the property, shall include legal description and acreage of property; existing zoning classification and proposed zoning classification, if different; general description or proposed development; and estimation of timetable of development.

		q. The site plan shall be accompanied by architectural sketches showing the proposed building elevations and maximum heights. The site plan package shall also include architectural sketches showing the relationships of the subject building to buildings located to the rear. 1) Clearly demonstrate the impact of the proposed building height and bulk on neighboring buildings with "model", color photo or video display.
		r. As applicable, the site plan submittal shall be accompanied by an application form, furnished by the Administrative Office, for rezoning.
		s. Exterior lighting plan and design, with photometrics.

10. Present landowner: _____

E-MAIL: ari@edenpropertygroup.com

Address: _____

City: _____ State: _____ Zip: _____ Phone: _____

11. Firm or (individual) requesting site plan approval: _____

E-MAIL: Munasar Sayaf 77@gmail.com

Address: 8634 Dennison

City: Detroit State: MI Zip: 48210 Phone: (313) 896-6142

Signature _____ of Applicant

Print Name Sayaf Munasar Date 05-7-2023

Sayaf Munasar

Business Proposal

May 27, 2025

125 S Main St. Rochester, MI 48307

I am writing to formally present my vision for opening a Yemeni coffee shop on South Main Street in the heart of downtown Rochester, Michigan. I am enthusiastic about this opportunity and passionate about what this establishment will bring not only to our vibrant downtown district, but to the greater Rochester community.

Why Yemeni Coffee?

Yemeni coffee has been gaining high popularity across the United States and particularly in Michigan. Known for its rich history—Yemen is one of the oldest coffee-producing countries in the world—Yemeni coffee is characterized by its unique, earthy flavor profile and traditional brewing methods. These cultural elements offer an authentic and immersive experience that more and more customers are seeking in today's coffee landscape.

My passion for Yemeni coffee is both cultural and personal. As someone deeply connected to its traditions, I've experienced firsthand how this coffee brings people together. It represents heritage, hospitality, and history. My goal is to share this cultural richness with Rochester residents and visitors in a way that is welcoming, warm, and community driven.

Why South Main Street?

The proposed location on South Main Street is ideal for several reasons:

- **High Visibility and Foot Traffic**: This area is one of the busiest in Rochester and serves as a hub for shoppers, professionals, families, and tourists. The steady foot and vehicle traffic presents a strong foundation for sustained customer volume.
- **Community-Oriented Atmosphere**: Downtown Rochester is known for its charm, walkability, and support for small, unique businesses. Our Yemeni coffee shop would complement the city's existing character while offering something new.
- **Close Proximity to Other Businesses and Events**: Being situated near other restaurants, retail shops, and public events such as the Rochester Farmers' Market and the Rochester Big Bright Light Show during the holidays, ensures regular exposure and consistent community engagement.

What Sets This Coffee Shop Apart?

While there are several coffee shops in the area, none offer the authenticity or cultural focus of a true Yemeni coffee experience. Our coffee house will stand out in several distinct ways:

- **Traditional Yemeni Coffee and Teas**: We will serve exclusive blends sourced directly from Yemen and prepared using traditional methods.
- **Cultural Aesthetic and Atmosphere**: The interior will reflect the warmth and hospitality of Yemeni culture, creating a space where patrons can relax, connect, and explore something new.
- **Inclusive Community Hub**: We aim to create a third place—outside of work and home—where people can gather, study, work remotely, and participate in cultural events.
- **Support for Local Artists and Creatives**: We will feature local artwork and host events that promote cultural exchange and creativity.

Hours of Operation

Our hours of operation will be similar to those of other coffee shops, ensuring we are available to early-morning commuters, mid-day shoppers, and evening socializers. Tentatively, we plan the following hours:

- **Monday–Thursday**: 7:00 AM – 10:00 PM
- **Friday–Saturday**: 7:00 AM – 11:00 PM
- **Sunday**: 8:00 AM – 10:00 PM

These hours allow for flexible customer engagement while maintaining a respectful presence in the neighborhood.

Conclusion

I am committed to ensuring this coffee shop is more than just a place to get a great cup of coffee. It will be a celebration of culture, a community space, and a new destination for locals and visitors alike. The vision aligns with Rochester's charm and commitment to diversity, small business, and community life.

Thank you for considering my proposal. I would welcome the opportunity to speak with you further and provide any additional information needed to move forward. I am confident that with the city's support, this project will be a successful and meaningful addition to downtown Rochester.

Sayaf Munasar

COFFEE SHOP
125 S MAIN ST ROCHESTER, MI 48307

PROJECT DATA..	
PROPERTY OWNER	EDEN PROPERTY GROUP LLC
PROPERTY SITE ADDRESS	103 S Main St, Rochester, MI 48307
PARCEL ID:	68-15-15-277-016
PROJECT NAME:	COFFEE SHOP
PLANS PREPARED BY:	PRO ARCHITECT
PHONE #:	313-775-1777
BUILDING ZONING	BI
Occupancy	Shopping Centers - Neighborhood
YEAR BUILT	1969
TOTAL BUILDING FLOOR AREA	14,680 SF
TENANT AREA TO BE RENOVATE:	2,300 SF SUIT #125
EXISTING USE:	RETAIL M USE
PROPOSED USE:	A2 COFFEE SHOP
NUMBER OF STORIES	1
AVERAGE STORY HEIGHT	14 FT
EXISTING CAR PARKING SPACES	37 CARS SPACE (2-B.F. ACCESSIBLE)
Legal Description	
T3N, R11E, SEC 15 ORIGINAL PLAT OF ROCHESTER LOTS 28, 29 & 30	
NOTE:	
THERE IS NO CHANG TO EXISTING EXTERIOR OR EXISTING INTERIOR WALLS ALL GENERAL WALLS TO REMAIN AS IS.	
HVAC SYSTEM INCLOUD DUCT WORK IS EXISTING REMAIN AS IS	
EXISTING 2 RESTROOM TO REMAIN AS IS .	
ALL FLOOR AND CEILING,WALLS FINISH ARE EXISTING REMAIN AS IS .	
ALARN SYSTEM IS EXISTING	
DEFERRED SUBMITTAL NOTE:	
MECHANICAL CONTRACTOR TO VERIFY EX. GAS SIZE WITH LOCAL UTILITY COMPANY (DEFERRED SUBMITTAL)	
ALARN SYSTEM TO BE DEFERRED SUBMITTAL	

PRIMARY CODE	
2021 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDING ALTERATION LEVEL : 2(RECONFIGURATION OF SPACE) WORK AREA METHOD : ALTERATION SHALL COMPLY WITH PROVISIONS OF CHAPTER 7 FOR 1 , CHAPTER 8. ALL NEW WORK TO BE UNDER THE 2021 MBC	
BUILDING	2021 Michigan Building Code 2015
REHAB	2021 Michigan Rehabilitation Code for Existing Buildings
MECHANICAL CODE	2021 MICHIGAN MECHANICAL CODE
PLUMBING CODE	2021 MICHIGAN PLUMBING CODE
FIRE CODE:	2018 International Fire Code
Fire Suppression	2019 NFPA 13 and 13R
Fire Alarm	2019 NFPA 72
ELECTRICAL	2023 NEC WITH PART 8
ENERGY	2021 MBC-ASHRAE 90.1-2007
Fuel gas	2021 International Fuel Gas Cod
ACCESSIBILITY	ANSI 117.1-2009 ACCESSIBILITY
EXISTING USE GROUPS	M USE
PROPOSED USE GROUPS	A2 USE COFFEE SHOP
CONSTRUCTION TYPE	IIB
FIRE SUPPRESSION	NO
TOTAL OCCUPANCY LOAD	45- PERSON
RESTROOM FIXTURES	EXISTING 2 RESTROOM REMAIN AS IS
FIRE RATED WALL REQUIRED	EXISTING 2HR RATED WALL BETWEEN TENANT SPACES
MIN. NO. EXITS REQ.	2- PROVIDED=2-EXITS

MBC PER. TABLE 1004.1.2 (BY SEAT METHOD)		
ROOM NAME	**OCCUPANT METHED USE**	**TOTAL OCCUPA...**
SEATING AREA 1,2	1P/15 449/15=	30p
SEATING AREA 3,4	1PX18" 20'X12"=240"/18"	13P
KITCHEN	1P/200 292/200=	1P
STORAGE AREA	1P/300 201/300=	1P
TOTAL		**45P**

PROPOSED TENANT AREA		
EXISTING USE GROUP	M USE RETAIL	
PROPOSED USE GROUP	A2 (COFFEE SHOP)	
CONSTRUCTION TYPE	IIB	
TENANT FLOOR AREA	2,300 S.F. AREA (INCLUDING EXTERIOR	
MIN. OF EGRESS REQ.	2 -PROVIDE -2	
OCCUPANT LOAD	(45 PERSONS)	
SPRINKLERED	NO	

LOCATION MAP

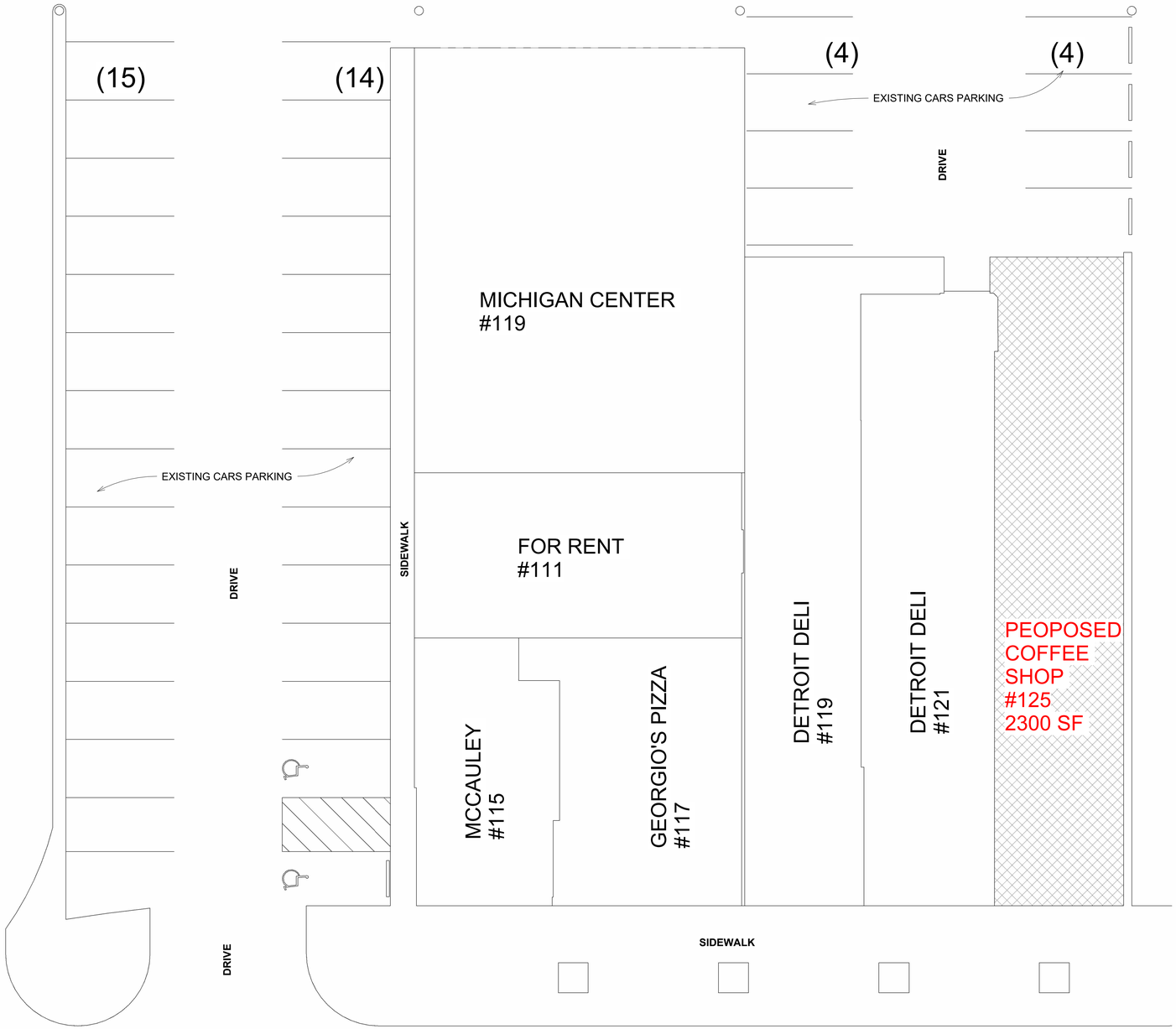
NOTE:PER SEC. 1010.2.9.3
PANIC HARDWARE REQUIRED ON ALL EGRESS DOORS

Sheet Index	
Sheet Number	**Sheet Name**
Architectural	
A101	EXISTING SITE PLAN
A102	LIFE SAFETY PLAN
A103	ACCESSIBLITY DETAILS
A104	EQUIPMENT PLAN
A105	EQUIPMENT SPEC.
A106	INTERIOR WALL SECTION
A107	REFLECTED CEILING PLAN
Plumbing	
P101	WATER PLAN
P102	SANITARY PLAN
P103	SANITARY SPEC.
Mechanical	
M101	HVAC PLAN
Electrical	
E101	POWER PLAN
E102	LIGHTING PLAN

WALL LEGEND	
WA1	EX. INTERIOR - TENANT SEPARATION FIRE WALL (2-HR)
WA2	EXISTING EXTERIOR- WALL
WA3	EXISTING INTERIOR PARTITION
WA4	PROPOSED INTERIOR PARTITION 4" STEEL STUD @16" OC.

OCCUPANT LOAD PER 2015 MBC TABLE 1004.1.2		
ROOM NAME	**OCCUPANT METHED USE**	**TOTAL OCCUPANT**
SEATING AREA	1P/15 1154/15=	77p
KITCHEN	1P/200 292/200=	2P
STORAGE AREA	1P/300 201/300=	1P
TOTAL		**80P**

PUBLIC ALLEY



MAIN ST

4 EXISTING SITE PLAN
1" = 10'-0"

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT

EXISTING SITE PLAN

PROJECT NUMBER:

DATE: 2029
05/3/2025

DRAWN BY:
ABDULRAHMAN ALQADHI

A101

SCALEAs indicated

24"X36" SHEET

STATE OF MICHIGAN
ARTHUR E. KALAJIAN
LICENSE No. 1301027775
REGISTERED ARCHITECT

MBC PER. TABLE 1004.1.2 (BY SEAT METHOD)

ROOM NAME	OCCUPANT METHED USE	TOTAL OCCUPA...
SEATING AREA 1,2	1P/15 449/15=	30p
SEATING AREA 3,4	1PX18" 20'X12"=240"/18"	13P
KITCHEN	1P/200 292/200=	1P
STORAGE AREA	1P/300 201/300=	1P
TOTAL		**45P**

PROPOSED TENANT AREA

EXISTING USE GROUP	M USE RETAIL	
PROPOSED USE GROUP	A2 (COFFEE SHOP)	
CONSTRUCTION TYPE	IIB	
TENANT FLOOR AREA	2,300 S.F. AREA (INCLUDING EXTERIOR	
MIN. OF EGRESS REQ.	2 -PROVIDE -2	
OCCUPANT LOAD	(45 PERSONS)	
SPRINKLERED	NO	

WALL LEGEND

WA1	EX. INTERIOR - TENANT SEPARATION FIRE WALL (2-HR)
WA2	EXISTING EXTERIOR- WALL
WA3	EXISTING INTERIOR PARTITION
WA4	PROPOSED INTERIOR PARTITION 4" STEEL STUD @16" OC.

LEGEND

FE	PROPOSED FIRE EXTINGUISHER
EM	EXISTING EMERGENCY LIGHT W/BACKUP BATTERY
EML	EXISTING EMERGENCY LIGHT&EXIT W/BACKUP BATTERY
EML2	PROPOSED EMERGENCY LIGHT&EXIT W/BACKUP BATTERY
LP-A	EX. ELECTRICAL PANEL 200 A
LP-B	EX. ELECTRICAL SUB PANEL 100A

Path of Travel Schedule

From Room	Length	Speed	Time
DINING 1	52' - 8"	3.0 mph	12.0 s
DINING 1	52' - 8"	3.0 mph	12.0 s

Door Schedule

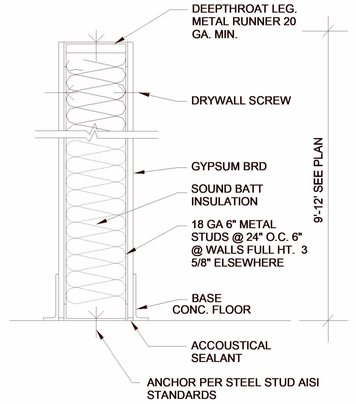
Phase Created	Door Mark	Size Width	Size Height	Material	L - LOCKSET PR - PRIVACY PA - PASSAGE	PONIC	PUSH	DOOR CLOSER	METAL KICK PL	TEMP	INSUL TEMP	INSUL
EXSITING	D01	3' - 6"	8' - 0"	AL	L	PD		DC			ITG	
EXSITING	D02	3' - 0"	6' - 8"	SWD	PR			DC	MKP			
EXSITING	D03	4' - 0"	6' - 8"	PM	L	PD		DC				IT
New Construction	D04	3' - 4"	6' - 11"	PM	L			DC	KP			
EXSITING	D05	3' - 0"	6' - 8"	PM	PR			DC	MKP			
EXSITING	D06	0' - 0"	0' - 0"									
EXSITING	D07	3' - 6"	8' - 0"	AL	L	PD		DC			ITG	
Grand total: 8												

Room Finish Schedule1

Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Ceiling Height
1	DINING	C.T.	C.T.	GWB	GWP	
2	KITCHEN	C.T.	C.T	GWB	GWP	
3	PREP &STORAGE AREA	C.T.	C.T	FRP	PRO. 2x4 VINYL WRAPPED CEILING GRID 1Ø'-4" AFF	
4	EX. ELECTRICAL	C.T.	C.T.	GWB	PRO. 2x4 VINYL WRAPPED CEILING GRID 1Ø'-Ø" AFF	
5	EX. MEN RESTROOM	C.T.	C.T	5' C.T. +GWB	EX. 2X2 CEILING TILE 1Ø'-4" AFF	
6	EX. WOMEN RESTROOM	C.T.	C.T	5' C.T. +GWB	EX. 2X2 CEILING TILE 1Ø'-4" AFF	
7	CORRIDOR	C.T.	C.T.	GWB	C.T.	
8	EX.AIRLOCK	C.T.	C.T.	GWB	GWP	

LIFE SAFETY SCHEDULE

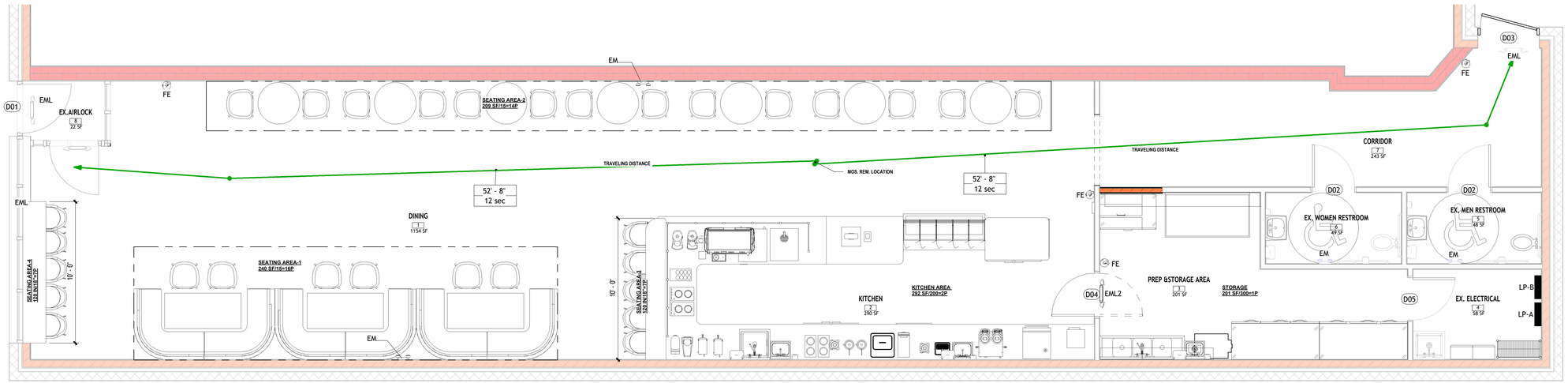
Phase Created	Type Mark	Description	Count
EXSITING	Control Station Duct Detector	Three position enclosure for one remote annunciator and two remote expanders, including two interconnection cables	1
EXSITING	EM	Emergency Lighting Emergency Unit	4
EXSITING	EML	LFI LIGHTS COMBO EXIT SIGN EMERGENCY LIGHT	4
New Construction	EML2	LFI LIGHTS COMBO EXIT SIGN EMERGENCY LIGHT	1
New Construction	FE	FIRE EXTINGUISHER	5
Grand total: 15			



METAL STUD DETAIL

ABBREVIATIONS:

AL= ALUMIUM
SWD= SOLID CORE WOOD
WD= WOOD
PR= PAIR
BF= B1-FOLD DR.
EX= EXISTING
PD= POCKET DOOR
TG = TEMPERED GLASS
PM = PRE-FINISHED METAL



1 LIFE SAFETY PLAN
1/4" = 1'-0"

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT

LIFE SAFETY PLAN

PROJECT NUMBER:

DATE: 2029
05/3/2025

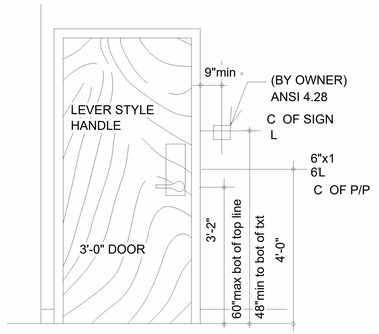
DRAWN BY:
ABDULRAHMAN ALQADHI

A102

SCALEAs indicated

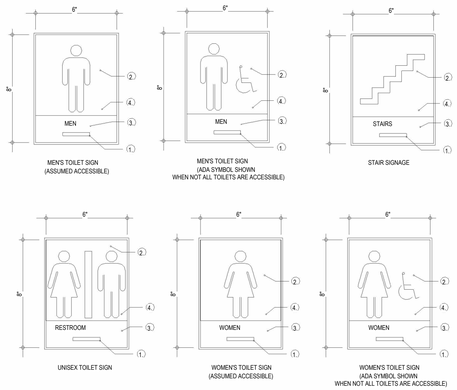
24"X36" SHEET

STATE OF MICHIGAN
ARTHUR E. KALAJIAN
LICENSE No. 1301027775
REGISTERED ARCHITECT



ADA DOOR DETAIL

SCALE : N.T.S.



INTERIOR FINISH NOTES:

1. ALL INTERIOR FINISHES AND TRIM SHALL CONFORM TO SECTION 803, 804

   a. INTERIOR WALL & CEILING FINISH MATERIAL TO BE A SMOKE DEVELOPED RATING OF 450 OR LESS AND A FIRE SPREAD OF 200 OR LESS.
   b. MATERIAL CLASSIFICATION C = 76-200 FLAME SPREAD ALL CORRIDORS PROVIDE EXIT ACCESS WALL/ CEILING = CLASS C. ALL ENCLOSED ROOM WALLS TO BE CLASS C.
   c. ALL CARPETING TO BE CLASS II.
   d. ALL WALKING SURFACES OF CORRIDORS AND OTHER COMPONENTS OF THE MEANS OF EGRESS, SHALL HAVE A SLIP-RESISTANCE SURFACE.

2. ALL GYPSUM BOARD MATERIALS AND ACCESSORIES SHALL CONFORM TO THE APPROPRIATE MATERIAL STANDARDS MICHIGAN CODE SECTION 2503.2 AND INSTALLED PER SECTION 2504.0 TABLE 2503.2.

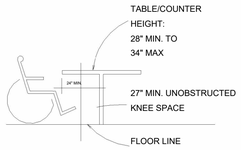
3. PAINTING SHALL INCLUDE ONE COAT OF PRIMER AND TWO COATS OF LATEX EPOXY PAINT IN RESTROOMS, BREWING, COOLER AND BAR AREAS.

4. THE INTERIOR FINISH MATERIALS SHALL HAVE A MINIMUM FLAME RATINGS PER SECTIONS 803.1, 803.5 SPREAD/SMOKE DEVELOPED AND TABLE 803.5.

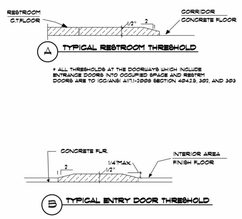
5. THE CLASS "C" FLAME SPREAD INDEX 16-200, THE SMOKE DEVELOPED INDEX Ø-450 FOR ALL, EXIT ACCESS, AND ENCLOSED SPACES. CORRIDORS, EXIT WAYS, ROOMS AND
6. VERITY ALL FINISHES WITH OWNER. GENERAL CONTRACTOR TO PROVIDE SAMPLES TO OWNER FOR APPROVAL

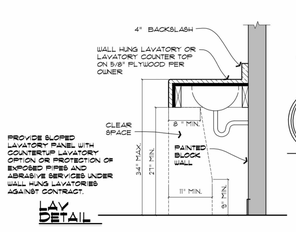
GENERAL DOOR NOTES:

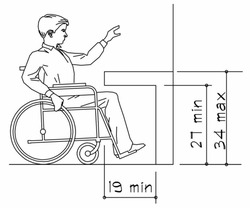
1. LOCKS REQUIRING KEYS ARE PROHIBITED IN DIRECTION OF EGRESS IN ALL EXIT WAY DOORS.
2. PUSH PULL TO BE AT INTERIOR ENTRANCE DOORS WHERE LOCKING HARDWARE IS NOT USED OR REQUIRED NO LABEL.
3. ALL GLASS DOORS, SIDELITES, & GLASS STOREFRONTS SHALL HAVE SAFETY GLAZING IN ACCORDANCE WITH CPSC 16 CFR, PART 1201 AND M.B.C. 2003, SECTION 2406.1, 2406.1.1 AND 2406.3 SPECIFIC HAZARDOUS LOCATIONS:
   * GLAZING IN INGRESS & MEANS OF EGRESS DOORS
   * GLAZING IN INDIVIDUAL FIXED PANELS ADJACENT TO THE DOOR WHERE THE NEAREST EXPOSED EDGE OF THE GLAZING IS WITHIN 24" ARCH OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE WALKING SURFACE
   * EXPOSED AREA OF INDIVIDUAL PANE GREATER THAN 9 S.F.
   * EXPOSED BOTTOM EDGE LESS THAN 18" ABOVE THE FLOOR
   * EXPOSED TOP EDGE GREATER THAN 36" ABOVE THE FLOOR
4. ALL HARDWARE TO BE HEAVY DUTY TYPE. ALL PROPOSED LATCHING HARDWARE TO HAVE LEVER TYPE HANDLES, ADA ACCEPTABLE CORBIN-RUSSWIN CL-3451-NZDX626 OR EQUAL,
   VERIFY STYLE & COLOR WITH OWNER. . PROVIDE CATALOG CUTS AND SAMPLES FOR VERIFICATION BY OWNER. HINGES SHALL BE HEAVY DUTY.
5. ALL DOOR STOPS TO BE WALL MOUNTED. PROVIDE STUD OR BLOCKING SUPPORT BEHIND ALL WALL MOUNTED BUMPERS.
6. A WOOD DOORS TO BE BIRCH (BASE BID) SOLID CORE WITH MATCHING EDGES, STAINED AND WITH STAIN AND SEALER PER OWNERS SELECTION.
8. INTERIOR METAL FRAMES TO BE PRE-FINISHED REDI-FRAMES WITH LEGACY DOORS, OR SIMILAR, COLOR & FINISH TO BE SELECTED BY OWNER.
9. ALL DOORS ARE TO BE HANDICAP ACCESSIBLE U.N.O. INCLUDING THRESHOLDS, HARDWARE AND CLOSURES AS REQUIRED PER ANSI/CABO STANDARDS.
10. ALL MEANS OF EGRESS DOOR HARDWARE MUST BE OPERATED BY A SINGLE HAND WITHOUT MEANS OF TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST. ALL MEANS OF EGRESS DOORS MUST ALSO BE READILY OPERABLE FROM THE SIDE FROM WHICH THE EGRESS IS MADE WITHOUT A KEY, SPECIAL KNOWLEDGE OR SPECIAL EFFORT
11. DOOR HANDLES, PULLS LATCHES, LOCKS, & OTHER OPERATING DEVICES SHALL BE AT A MAX. HEIGHT OF 48" A.F.F.
12. ALL MEANS OF EGRESS DOORS SHALL SWING IN THE DIRECTION OF EGRESS WHERE SERVING OCCUPANT LOAD OF 50 OR MORE.
13. THE OPENING FORCE FOR INTERIOR SIDE SWING IN DOORS WITHOUT CLOSURES SHALL NOT EXCEED A 5 POUND FORCE. FOR ALL OTHER SIDE SWINGING/ FOLDING DOORS, THE DOOR LATCH SHALL RELEASE WHEN SUBJECTED TO A 15 POUND FORCE AND BE ABLE TO SWING TO A FULL OPEN POSITION. FORCES SHALL BE APPOINTED TO THE LATCH SIDE.
15. ALL INTERIOR SWINGING DOORS ARE TO BE SOLID WOOD CORE INCLUDING POCKET DOORS U.N.O.



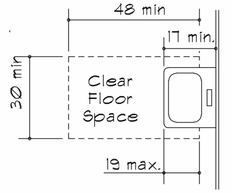
ADA DESK / COUNTER DETAIL



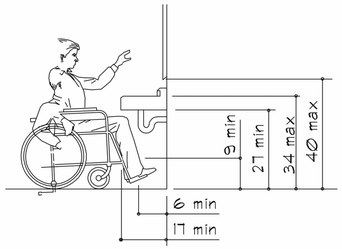




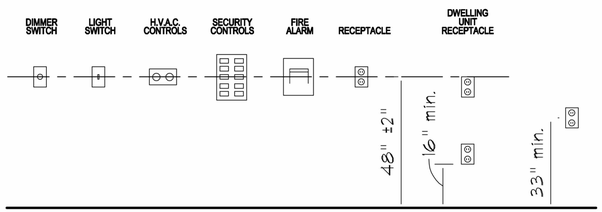
COUNTER CLEARANCES

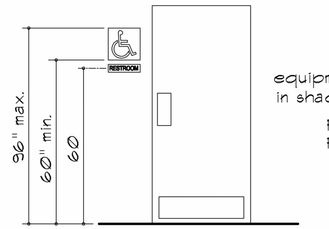


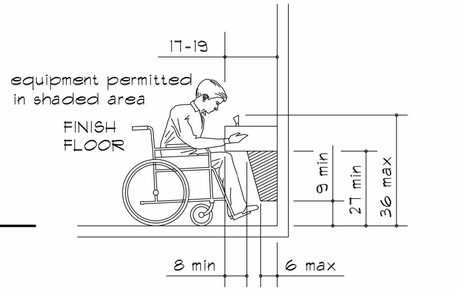
CLEAR FLOOR SPACE AT LAVATORY



LAVATORY CLEARANCES



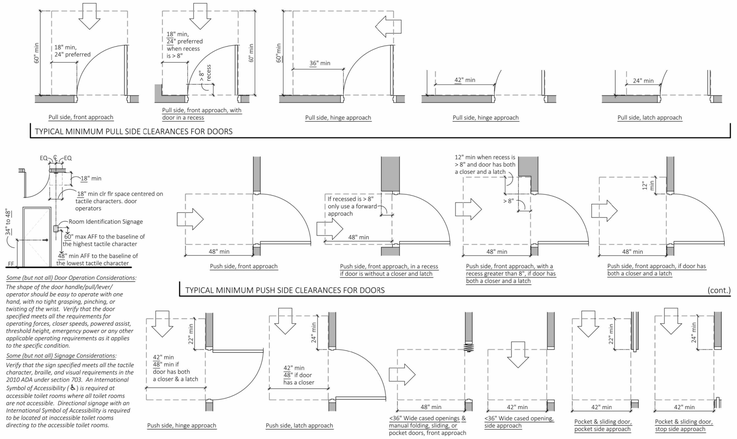




FIXTURE TO COMPLY WITH ANSI 60

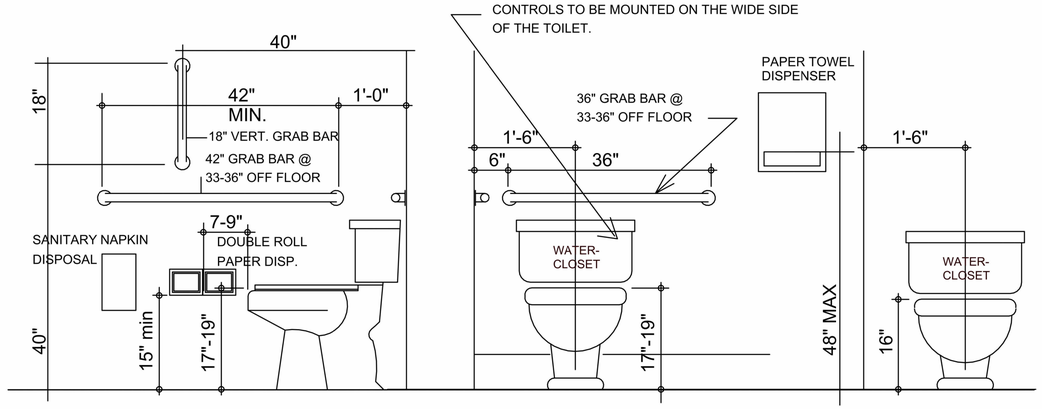
SPOUT HEIGHT AND KNEE CLEARANCE

DESIGN STANDARDS



Some (but not all) Door Operation Considerations:
The shape of the door handle/pull/lever/ operator should be easy to operate with one hand, with no tight grasping, pinching, or twisting of the wrist. Verify that the door specified meets all the requirements for operating forces, closer speeds, powered assist, threshold height, emergency power or any other applicable operating requirements as it applies to the specific condition.

Some (but not all) Signage Considerations:
Verify that the sign specified meets all the tactile character, braille, and visual requirements in the 2010 ADA under section 703. An International Symbol of Accessibility (♿) is required at accessible toilet rooms where all toilet rooms are not accessible. Directional signage with an International Symbol of Accessibility is required to be located at inaccessible toilet rooms directing to the accessible toilet rooms.



PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT

ACCESSIBLITY DETAILS

PROJECT NUMBER:

DATE: 2029

05/3/2025

DRAWN BY:

ABDULRAHMAN ALQADHI

A103

SCALE

24"X36" SHEET

STATE OF MICHIGAN
ARTHUR E. KALAJIAN
LICENSE No. 1301027775
REGISTERED ARCHITECT

Equipment Schedule

Phase Created	Mark	Count	Description	Manufacturer	Model	FL Amps	Volts	Phase	Panel
New Construction	1	1	Avantco SS-UC-48R-HC 48" Undercounter Refrigerator	Avantco	SS-UC-48R-HC	2 A	115 V	1	LP-A
New Construction	2	1	Avantco BCFD-72 70 7/8" White Square Dry Bakery Display Case with LED	Oscartek	BCFD-72				LP-A
New Construction	3	5	DISPLAY CASES	ANTUNES	DC-14R (9500706)				
New Construction	4	1	Point of Sale / Cash Register	BIMsmith Generics	Point of Sale / Cash Register				LP-A
New Construction	6	1	Astoria Tempesta Espresso Machine 3-Group	ASTORIA	P4Y-MB-3GR	0 A	220 V	3	LP-A
New Construction	7	1	Avantco SS-UC-27R-HC 27" Undercounter Refrigerator	Avantco	SS-UC-27R-HC 27"	2 A	115 V	1	LP-A
New Construction	8	1	ESPRESSO GRINDER E65W GBS	MAZZER	E65W GBS	5 A	120 V	1	LP-A
New Construction	8A	1	ESPRESSO GRINDER E65W GBS	MAZZER	E65W GBS	5 A	120 V	1	LP-A
New Construction	9	1	Flatware Holder	Vollrath	CTFWH-8B				
New Construction	10	1	Electric Cooktop	Summit	SINCH115V2B	15 A	115 V	1	LP-A
New Construction	10A	1	Electric Cooktop	Summit	SINCH115V2B	15 A	115 V	1	LP-A
New Construction	11	1	GVH-3, 120V	BUNN GRINDER	55600.0300	11 A	120 V	1	LP-A
New Construction	12	1	ALLROUND GRINDER EK43 S	MAZZER	EK43 S	7 A	120 V	1	LP-A
New Construction	13	1	HOT WATER DISPENSER	BUNN	43600.0026	15 A	120 V	1	LP-A
New Construction	13A	1	HOT WATER DISPENSER	BUNN	43600.0026	15 A	120 V	1	LP-A
New Construction	14	1	Warmer	APW Wyott	W4-2	1 A	120 V	1	LP-A
New Construction	14A	1	Warmer	APW Wyott	W4-2	1 A	120 V	1	LP-A
New Construction	14B	1	Avantco SS-UC-48R-HC 48" Undercounter Refrigerator	Avantco	SS-UC-48R-HC	2 A	115 V	1	LP-A
New Construction	15	1	Blender	Waring	MX1500XTXP	13 A	120 V	1	LP-A
New Construction	15A	1	Blender	Waring	MX1500XTXP	13 A	120 V	1	LP-A
New Construction	16	1	ROUND WARMERS	STAR MANUFACTURING	4RW-P	5 A	120 V	1	LP-A
New Construction	16A	1	ROUND WARMERS	STAR MANUFACTURING	4RW-P	5 A	120 V	1	LP-A
New Construction	17	1	Warmer	APW Wyott	W4-2	1 A	120 V	1	LP-A
New Construction	18	1	BUNN ICB Twin Tall Platinum	BUNN	53200.0101	25 A	240 V	3	LP-A
New Construction	18A	2	COFFEE MAKER	BUNN	42750.0000	0 A	0 V	0	
New Construction	19	1	HEAVY-DUTY COUNTERTOP CONVECTION OVEN WITH DIGITAL CONTROLS & HUMIDITY	CADCO	XAFT-04HS-LD	16 A	208 V	1	LP-A
New Construction	20	1	Toaster	APW Wyott	AT Express	14 A	120 V	1	LP-A
New Construction	21	1	Avantco A Plus APST-48-12 48" 2 Door Stainless Steel Refrigerated Sandwich / Salad Prep Table	Avantco	APST-48-12 48"	2 A	115 V	1	LP-B
New Construction	22	1	PRO. Work Table	AERO Manufacturing	1TGBX-3684				
New Construction	23	1	Avantco SS-3R-HC 81 5/16" Stainless Steel Solid Door Reach-In Refrigerator	Avantco	SS-3R-HC	7 A	115 V	1	LP-B
New Construction	23A	1	Avantco SS-3F-HC 81 5/16" Stainless Steel Solid Door Reach-In Freezer	Avantco	SS-3F-HC 81	14 A	250 V	1	LP-B
New Construction	24	3	Wall Shelf	AERO Manufacturing	4W-1224				
New Construction	PTD	1	Toilet Tissue Dispenser	Bradley Corporation	5402				
New Construction	PTR	3	Automated Touchless Paper Towel Dispenser	GP PRO Georgia-Pacific LLC	59798				
New Construction	SG	10	PRO. SNEEZE GUARD AS REQ.	Vollrath	89263				
New Construction	SSD	3	Soap Dispenser						
New Construction	TD	1	Automated Touchless Paper Towel Dispenser	GP PRO Georgia-Pacific LLC	59798				
New Construction	UIM	1	Ice Maker, Undercounter	SCOTSMAN	CU3030SA-32A	15 A	208 V	1	LP-A

Grand total: 58

Door Schedule

Phase Created	Door Mark	Size Width	Size Height	Material	L - LOCKSET PR - PRIVACY PA - PASSAGE	PONIC	PUSH	DOOR CLOSER	METAL KICK PL	TEMP	INSUL TEMP	INSUL
EXSITING	D01	3' - 6"	8' - 0"	AL	L	PD		DC			ITG	
EXSITING	D02	3' - 0"	6' - 8"	SWD	PR			DC	MKP			
EXSITING	D03	4' - 0"	6' - 8"	PM	L	PD		DC				IT
New Construction	D04	3' - 4"	6' - 11"	PM	L			DC	KP			
EXSITING	D05	3' - 0"	6' - 8"	PM	PR			DC	MKP			
EXSITING	D06	0' - 0"	0' - 0"									
EXSITING	D07	3' - 6"	8' - 0"	AL	L	PD		DC			ITG	

Grand total: 8

Room Finish Schedule1

Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Ceiling Height
1	DINING	C.T.	C.T.	GWB	GWP	
2	KITCHEN	C.T.	C.T	GWB	GWP	
3	PREP &STORAGE AREA	C.T.	C.T	FRP	PRO. 2x4 VINYL WRAPPED CEILING GRID 1Ø'-4" AFF	
4	EX. ELECTRICAL	C.T.	C.T.	GWB	PRO. 2x4 VINYL WRAPPED CEILING GRID 1Ø'-Ø" AFF	
5	EX. MEN RESTROOM	C.T.	C.T	5' C.T. +GWB	EX. 2X2 CEILING TILE 1Ø'-4" AFF	
6	EX. WOMEN RESTROOM	C.T.	C.T	5' C.T. +GWB	EX. 2X2 CEILING TILE 1Ø'-4" AFF	
7	CORRIDOR	C.T.	C.T.	GWB	C.T.	
8	EX.AIRLOCK	C.T.	C.T.	GWB	GWP	

Plumbing Fixture Schedule

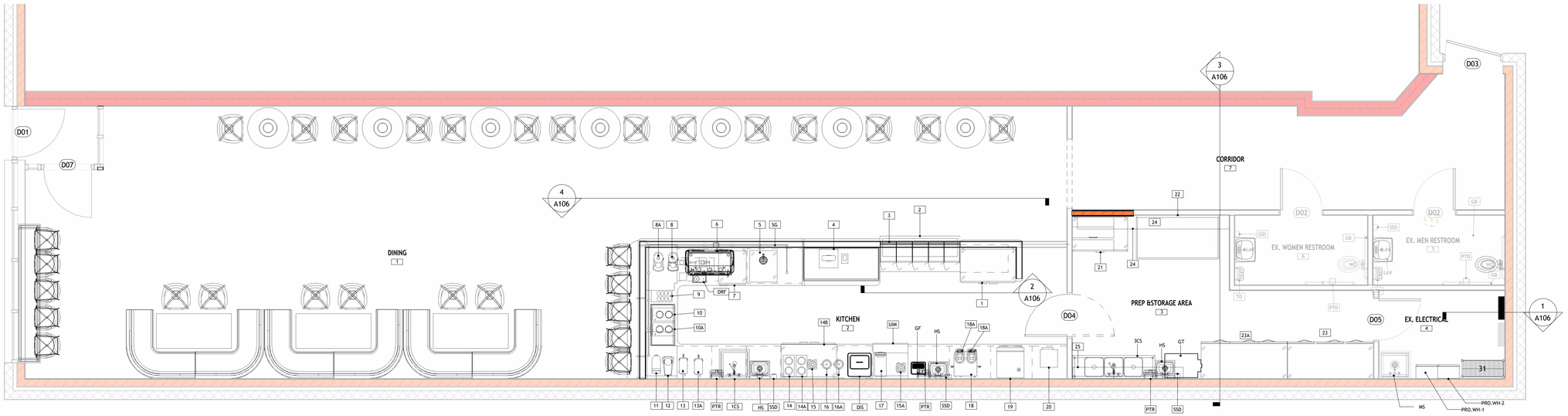
Phase Created	Type Mark	Description	Count
EXSITING		Centerset bathroom sink faucet	2
New Construction	1CS	1 Compartment Sink	1
New Construction	3CS	3 Compartment Sink	1
New Construction	DIS	DROP-IN, ICE STATION	1
New Construction	DRF	Drop In Rinser Faucet	1
EXSITING	EX.FD		1
New Construction	FCO.	FoodSafe Floor Clean Out, 4 in Outlet, SCH 40	1
New Construction	FD	3" FLOOR DRAIN	3
New Construction	FS	PVC Floor Sink, 12 Inch Square x 6 Inch Deep	4
New Construction	GF	Glass Filler	1
New Construction	GT	Low Profile Grease Interceptor	1
New Construction	HS	Hand Sink	3
EXSITING	LAV	21 1/4Inch x 18 1/8Inch wall-mount/concealed arm carrier bathroom sink with single faucet hole	2
EXSITING	MS	EX. Mop Sink	1
New Construction	PRO.WH-1	380K BTU GAS Tankless Water Heater	1
EXSITING	PRO.WH-2	380K BTU GAS Tankless Water Heater	1
New Construction	VENT	Oatey Moda , SureVent, Std Drain	1
EXSITING	WC	WATER CLOSET - FLUSH VALVE (ADA)	2

Grand total: 28

WALL LEGEND	
WA1	EX. INTERIOR - TENANT SEPARATION FIRE WALL (2-HR)
WA2	EXISTING EXTERIOR- WALL
WA3	EXISTING INTERIOR PARTITION
WA4	PROPOSED INTERIOR PARTITION 4" STEEL STUD @16" OC.

NOTE:PER SEC. 1010.2.9.3
PANIC HARDWARE REQUIRED ON ALL EGRESS DOORS

NOTE:
1-EX. INTERIOR - TENANT SEPARATION FIRE BARRIER WALL (2-HR) TO REMAIN AS IS.



1 EQUIPMENT PLAN
1/4" = 1'-0"

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT
EQUIPMENT PLAN

PROJECT NUMBER:
DATE: 2029
05/3/2025
DRAWN BY:
ABDULRAHMAN ALQADHI

A104

SCALE 1/4" = 1'-0"
24"X36" SHEET

STATE OF MICHIGAN
ARTHUR E. KALAJIAN
LICENSE No. 1301027775
REGISTERED ARCHITECT

Avantco Refrigeration

Item #: 178SS3HC Project:
Qty: Date: Approval:

Avantco SS-3R-HC 81 5/16" Stainless Steel Solid Door Reach-In Refrigerator

Item #: 178SS3HC

Technical Data

Width	81 5/16 Inches
Depth	32 3/16 Inches
Height	82 1/2 Inches
Power Cord Length	96 Inches
Interior Width	76 1/8 Inches
Left Door Opening Width	23 Inches
Middle Door Opening Width	22 7/8 Inches
Right Door Opening Width	23 Inches
Shelf Width	26 7/8 - 32 3/16 Inches
Interior Depth	27 1/8 Inches

Features

- Corrosion-resistant stainless steel exterior and interior with LED lighting
- Features 3 self-closing and stay-open locking doors with full-length stainless steel handles
- Reinforced interior rear or dual-fan better air flow
- Digital temperature controller with automatic defrost function
- 5/8 HP refrigerant, 115V, 6 ft 5 in

Certifications

ETL-SA, cULus, 3-2P, ETL Sanitation

Avantco Refrigeration

Item #: 178SS3HC Project:
Qty: Date: Approval:

Avantco SS-3F-HC 81 5/16" Stainless Steel Solid Door Reach-In Freezer

Item #: 178SS3FHC

Technical Data

Width	81 5/16 Inches
Depth	32 3/16 Inches
Height	82 1/2 Inches
Power Cord Length	96 Inches
Interior Width	76 1/8 Inches
Left Door Opening Width	23 Inches
Middle Door Opening Width	22 7/8 Inches
Right Door Opening Width	23 Inches
Shelf Width	26 7/8 - 32 3/16 Inches
Interior Depth	27 1/8 Inches

Features

- Corrosion-resistant stainless steel exterior and interior with LED lighting
- Features 3 self-closing and stay-open locking doors with full-length stainless steel handles
- Reinforced interior rear or dual-fan better air flow
- Digital temperature controller with automatic defrost function
- 115V, 1.12 hp, R290 refrigerant

Certifications

ETL, cULus, 3-2P, ETL Sanitation

© 2020 Avantco Refrigeration

Avantco Refrigeration

Qty: Date: Approval:

Avantco SS-UC-27R-HC 27" Undercounter Refrigerator

Item #: 178SS27RHC

Technical Data

Width	27 Inches
Depth	29 1/2 Inches
Height	35 3/4 Inches
Power Cord Length	120 Inches
Interior Width	22 1/2 Inches
Right Door Opening Width	22 1/4 Inches
Interior Depth	22 7/8 Inches
Interior Height	23 1/2 Inches
Work Surface Height	35 3/4 Inches
Pans	2.2 Amps

Features

- Strong and sleek 430 type stainless steel exterior
- 304 type stainless steel interior maintains temperatures from 33 to 40 degrees Fahrenheit
- Foamed-in-place polyurethane insulation
- Castors for easy mobility
- 115V, 5.9 hp

Certifications

ETL-SA

© 2020 Avantco Refrigeration

Avantco Refrigeration

Item #: 178APSTHC Project:
Qty: Date: Approval:

Avantco A Plus APST-48-12 48" 2 Door Stainless Steel Refrigerated Sandwich / Salad Prep Table

Item #: 178APSTHC

Technical Data

Width	48 Inches
Depth	30 Inches
Height	43 Inches
Cutting Board Width	10 Inches
Interior Width	42 Inches
Removal Width	40 Inches
Cutting Board Depth	10 Inches
Interior Depth	23 5/16 Inches
Interior Height	24 Inches
Pans	2.5 Amps

Features

- Top is thermoformed 22G 1/4-slot, 4" deep food pans (sold separately)
- Industry-last 72" deep cutting board is built in for convenient prep space and durable worktop
- Electronic control with stainless hook
- Corrosion-resistant stainless steel exterior and exterior
- 115V, 2.5 hp, 8.3A refrigerant

Certifications

Imported From Mexico, 3-2P, ETL Sanitation, ETL-SA, ETL-SA Canada

© 2020 Avantco Refrigeration

Avantco Refrigeration

Item #: 178SS3CHRHC Project:
Qty: Date: Approval:

Avantco SS-UC-48R-HC 48" Undercounter Refrigerator

Item #: 178SS3CHRHC

Technical Data

Width	47 3/4 Inches
Depth	29 1/2 Inches
Height	35 3/4 Inches
Power Cord Length	96 Inches
Interior Width	44 1/2 Inches
Left Door Opening Width	19 3/4 Inches
Right Door Opening Width	19 3/4 Inches
Interior Depth	22 7/8 Inches
Interior Height	23 1/2 Inches
Work Surface Height	35 3/4 Inches
Pans	2.2 Amps

Features

- Strong and sleek 430 type stainless steel exterior
- 304 type stainless steel interior maintains temperatures from 33 to 40 degrees Fahrenheit
- Foamed-in-place polyurethane insulation
- Digital temperature controller and auto-defrost function
- 115V, 5.9 hp, R290 refrigerant

Certifications

ETL-SA, cULus, 3-2P, ETL Sanitation

© 2020 Avantco Refrigeration

Regency Tables & Sinks

Project: Date: Approval: Qty: Item #: 600SS14X30

Regency 70" 16 Gauge Stainless Steel Three Compartment Sink with Galvanized Steel Legs and Two Drainboards - 14" x 16" x 12" Bowls

Technical Data

Width	70 Inches
Depth	25 1/2 Inches
Height	34 Inches
Bowl Depth Left	12 Inches
Bowl Depth Center	14 Inches
Bowl Depth Right	12 Inches
Drainboard Length	24 Inches
Faucet	Not Included
Finish	16 Gauge

Features

- 16 gauge type 304 stainless steel with galvanized steel legs and adjustable bullet feet
- Designed with 16 1/2" deep bowls and rounded corners for easy cleaning
- Galvanized steel legs with adjustable bullet feet for added durability
- Includes 1 1/2" IPS drain connection and 9 1/2" flanged strainers
- Backsplash and rolled edges prevent splashes and overflow

Certifications

NSF-listed

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IMC/TEDDY

FS-AS Anti-Spill Floor Sink/Utility Sink

General Information

Project Name:
Consultant:
Item #:
Model #:
Quantity:

Specifications

FS-AS Model Anti-Splash Utility Sink is 16¼" x 22¼" x 7" deep corner sink bowl with a built-in pitch to 2" IPS outlet.

Service/Utility Sinks are constructed of 16GA type 300 series stainless steel, with integrated full-height apron. Integral 4in backsplash. Coved corner in the sink and off the floor.

Product Guide

IMC Utility Sinks are easily cleanable without the use of tools. All corners are coved, and all seams are fully welded and polished.

Rugged type 304, 18-8 stainless steel construction, engineered to stand up under day-in and day-out abuse.

Options

- **SSF** - Wall Faucet
- **HA** - 34" Hose
- **WH3** - Mop Holder (3)
- **WH4** - Mop Holder (4)
- **LH6** - 6" High Legs
- **LH8** - 8" High Legs
- **IPS2** - 2" IPS Drain
- **BW-3k** - Custom Bowl up to 36" x 24"
- **FL48** - 48" High Flashing at Rear or Sides
- **FL48-W** - Welded 48" High Flashing on 3 Sides
- **RS58** - Riser & Side Splash 8" High
- **UDH34** - 24" Utility Shelf
- **UDH36** - 36" Utility Shelf
- **WSB** - Wall Mounted Bracket
- **WSB** - Un-Rusted Steel (Painted)
- **FF-SS** - S/S Flanged Feet (Each)
- **SSC** - Directional Package

FS-AS-SHEET0

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Cadco

BAKERLUX™ TOUCH Heavy-Duty Digital Countertop Convection Oven

Half Size 4 Shelves

BAKERLUX™ - baking ahead of its time

XAFT-0405-TS: BAKERLUX™ TOUCH Panel

Heavy-Duty Countertop Convection Oven with Digital Controls & Humidity

Made to Cadco Ltd. specifications by VADI S.p.A., Italy ● NSF, METI to cUL & CSA Standards
Cadco Model XAFT-0405-TS • VADI Model XAFT-0404-ETDV-US

FEATURES

- Advanced airflow design & automatically reversible fan for even baking
- USB programming capability ● 9 baking steps
- Digital programmable controls: Time, Temperature, Humidity
- Wi-Fi ● Data driven cooking
- Heat settings from 175°-500° F
- Stores up to 99 programs with graphic control panel
- Handles 4 half size sheet pans (not included)
- 6 wire shelves included
- Cooking chamber: 19-1/4" H x 19-1/4" W x 14" D (17.4 cu. ft.)
- 10 hour timer or continuous operation
- Audible alert signals the end of cycle
- Heavy-duty stainless steel construction
- Heavy duty door & hinge construction
- Double pane window for long lasting use
- 2-1/4" high-temperature gasket

OPTIONAL ACCESSORIES: ● XAKPT-SBHC Proofer ● XAKHC-HCHC Ventilation Hood ● XAKPT-SDHC-E Stacking Kit

- 6 Tier, 2 fan speeds
- Interior LED light
- Auto shut off when door is opened
- Includes electric valve for direct plumbed water connection
- "Cool-touch" double wall glass door opens from top
- Stackable with optional XAKQT-SDHS-E Stacking Kit
- 2-1/2" NEMA 6-20P Plug
- Energy Star rated
- Chef Support – via phone
- Chef Connect – Internet per One-site service & parts, 2nd year parts only(**)
- ******** day warranty on light bulbs & gasket (not service items) ● Parts warranty: 1 year ● Labor warranty: 1 year
- 208-240 Volts / 3800 Watts / 15 Amps / Single Phase 1Ø/3Ø
- NEMA 6-20P Plug
- Shipping weight: 250 lbs. NOTE: This model must ship by truck, not UPS.
- Stands: QST-24A-C, QST-34A-C
- Avoid Duct Work Needed (SV-HD)

Model	Color	Volts	Watts	Temp	Amps	Unit Dimensions	Unit Wt.	Ship Wt.	Carton Dimensions	Cube	UPC#
XAFT-0405-TS	Stainless	208-240	3800	175° - 500° F	15	34.25"w x 30.75"d x 29.5" H	250 lbs.	300 lbs.	34"w x 32"d x 38"H	28.5 CF	050476-55141-5

*Includes accessories & weight (approx. 40 lbs.) of shipping skid

For more information, please contact Cadco, Ltd. 200 International Way, Winsted, CT, 06098
Tel. (860)738-2500 ● Fax (860) 738-9772 ● E-mail info@cadcoltd.com ● Web site: cadco-ltd.com

Due to continual product improvement, all product specifications, designs and prices are subject to change without notice. 3/14/2018 R00

© 2020 Avantco Refrigeration

Avantco Refrigeration

Item #: 358TRCC72W Project:
Qty: Date: Approval:

Avantco Bakery Display Case with L Lighting

Item #: 358TRCC72W

Technical Data

Width	72 7/8 Inches
Depth	26 5/8 Inches
Height	49 3/4 Inches
Interior Width	70 1/2 Inches
Interior Depth	22 1/2 Inches
Interior Height	22 1/2 Inches
Area	13.26 Amps
Watts	1 Phase
Phase	1 Phase
Voltage	120 Volts

Features

- Upper and lower large-width bright, cool LED lighting effectively highlights baked goods
- Features a square double-pane glass design for maximum product visibility
- Sliding glass doors for easy access without blocking walking area
- 2 adjustable glass shelves and 4 crumb tray holders allow for an organized display
- Stainless steel, low-e tempered glass

Certifications

ETL-Sanitation, 3-2P

© 2020 Avantco Refrigeration

SUMMIT

SINCH115V2B

1.88" x 11.38" x 20.5" (H x W x D)

1800W 115V 12" wide 2-zone built-in induction cooktop in black glass with touch controls, pre-installed power cord, and 30-minute auto-shutoff feature

Highlights:

115V design with pre-installed power cord and 3-prong plug included

30 minute auto shutoff prevents unsupervised heating

Magnetically generated heat produces no open flame and keeps heat confined to cookware

Product Features:

2-Burner Induction Cooktop	Smooth-top glass cooktop ideal for hotels, apartments, and other small kitchen spaces
Safety First Cooktop series	Specially designed to ensure maximum guest safety with several protective features included
30 minute automatic shutoff	Burners will automatically turn off after 30 minutes of inactivity, helping to prevent unsupervised heating
Extended warranty	3-year warranty for parts & labor
Power cord included	Pre-installed 115V NEMA 5-15P 3-pronged cord for easier setup
Induction heating	Electromagnetic heating technology where heat is generated inside your cookware, ensuring a more efficient process with less energy waste, faster heating, and a safer cooking experience
Smooth glass surface	Easy cleanup and elegant style on a smooth ceramic glass surface in a jet black finish
Large rear element	8 1/4" element operates at a maximum of 1800W
Standard front element	6 1/4" 1300W front element to cover most general cooking needs

SUMMIT APPLIANCE DIVISION, FELIX STORCH, INC. | ISO 9001:2015 Certified
770 Garrison Avenue Bronx, NY 10474 USA. TEL 718-993-3900 FAX 844-478-8786
info@summitappliance.com www.summitappliance.com

ICB Twin Tall Platinum Edn, 120/240V SST

35.0" x 22.0" x 20.5"
(88.9cm x 55.9cm x 50.8cm)

Specifications

Product #: 03400.0101
Water Access: Plumbed
Interface: Wireless
Finish: Stainless
Funnel: Stainless Steel

Additional Features

- 4.3" Color Touchscreen aides in customizing recipes, brewing options and control
- SmartWAVE sprayhead technology provides enhanced uniformity of extraction and time scale reduction
- USB programming for uploading and downloading recipes and software updates, all in less than a minute
- Brews into 2.5 to 3.8L (84 to 128 oz) airpots and 3.8 to 5.7L (1 to 1.5 gallon) Stainless Thermoflask servers
- Energy-saver mode reduces tank temperature during idle periods
- Exclusive Peak Extraction™ Sprayhead is multi-directional with a 17 hole design to ensure ultimate uniformity of extraction
- Electronic funnel lock prevents removal of the brew funnel until drip- through is complete
- Brew counter keeps track of how many batches are brewed
- Pre-infusion and pulse brew for maximum flavor extraction. Cold start-ready & digital temperature control further ensure top-notch brewing
- Hot water faucet (supplied for custom installation)

Agency: cULus, NSF

Glastender

A family company manufacturing in the USA
www.glastender.com

DI-RF18

DI-RF24

Dimensional Information

Drop-In Rinser Faucet

DI-RF7, DI-RF12, DI-RF18, DI-RF24

Standard Features

- All stainless steel construction
- Pan includes radius interior corners for easy cleaning
- Drain is a 1.5" welded tailpiece that exits from the bottom of the unit
- Drain pan includes 1.2" flange
- Installation kit includes: 10" of clear vinyl drain tube, five – 3" V-straps, and two – 1.72" plastic elbows
- Install by making cut-out to work surface (see Cut-Out Dimensions) and inserting rinser faucet. Then secure sealed to underside of flange. Set in place and finish plumbing the unit.

Specifications

Drains:
- 1.25" welded tailpiece

Cut-out Dimensions:
- Model DI-RF7 is 4-1/4" by 6-1/4"
- Model DI-RF12 is 4-1/4" by 11-1/4"
- Model DI-RF18 is 4-1/4" by 17-1/4"
- Model DI-RF24 is 4-1/4" by 23-1/4"

Materials:
- All stainless steel

Faucet:
- Accepts 3/8" cold water lead
- 30 psi water pressure regulator included
- 1.2 gallons per minute

To view cleaning and care instructions, please visit: https://www.glastender.com/PDF/7-423-01_ss_clean_care.pdf

* Glastender, Inc. • 7495 N Michigan Rd • Saginaw, MI • 48604-9760 • 989.752.4273 • 800.748.0423 • Fax 989.752.4444 • www.glastender.com

Specifications subject to change without notice. For current specifications please see or contact us.

Printed in USA

Approval Notes:

03012383
Rinser Faucet Assembly

Conforms to NSF/ANSI 372 (0.25 lead content)

DI-RF7 Rev. 04-15-22

T&S BRASS AND BRONZE WORKS, INC.
2 Saddleback Cove, Travelers Rest, SC 29690

Sales Dept. SC: 800-476-4103 • Sim Valley, CA: 800-423-5150 • Fax: 864-834-3518 • www.tsbrass.com

This Space for Architect/Engineer Approval

Job Name: Date:
Model Specified: Quantity:
Customer/Wholesaler:
Contractor:
Architect/Engineer:

Model No.
B-1230
Item No.

Just Specifications

Mount Water Station w/ Pedestal Type Glass Filler, 18 Gauge Stainless Steel Drip Pan & 1-1/4" Drain

Material

18 Gauge Stainless Steel Pan w/ Beaded Edge Supplied w/ Mastic & Stainless Steel Screws for Mounting Supplied Cut Out Drilled Hole to 1-5/8" & 5" Customer to Verify Actual Cut Out Needed Prior to Installation.

qty	Item	Description	Part	Approved	Date
1	PJ01	3-Faucet	JRM		06/26/18

Scale: 1/8 Sheet 1 of 2

PRO ARCHITECT

EMAIL: PROARCHITECT2025@GMAIL.COM

Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT EQUIPMENT SPEC.

PROJECT NUMBER:

DATE: 2029
05/3/2025

DRAWN BY:
ABDULRAHMAN ALQADHI

A105

SCALE
24"X36" SHEET

Avantco Equipment

Item #: 178T3000B Project:
Qty: Date: Approval:

Avantco T2300B Commercial 50" Wide Conveyor Toaster with 3" Opening - 208V, 3300W, 800 Slices per Hour

Item #: 178T3000B

Technical Data

Width	19 1/2 Inches
Depth	19 Inches
Conveyor Width	10 1/2 Inches
Opening Height	3 Inches
Area	13.86 Amps
Watts	3300
Phase	1 Phase
Voltage	208 Volts

Features

- Toasts up to 800 slices of bread or bagels per hour; fits two slices side by side on 10" wide belt
- Ideal for a wide variety of breads, bagels, and muffins; finish product golden brown and crispy
- Fully adjustable conveyor speed and 5 setting independent dual controls to accommodate any product
- Heavy-duty stainless steel exterior with stainless steel legs and control knobs
- 208V, 3300W

Certifications

ETL-Sanitation, ETL-SA, 3-2P

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Prodigy

CU3030 - 300lb Self-Contained Ice Machine

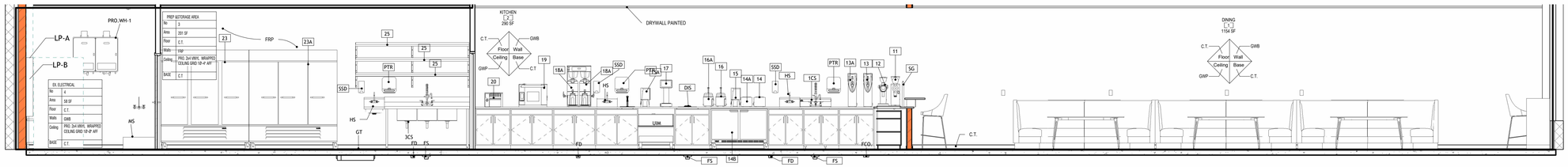
Prodigy® Undercounter Cuber with Storage

Features and Benefits

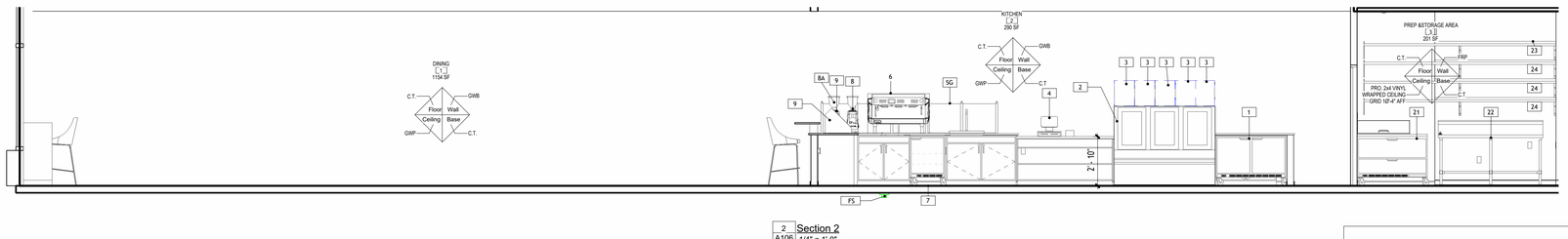
- Prodigy® undercounter cubers use significantly less energy and water than standard ice machines, maximizing efficiency and energy efficiency regulations.
- An added™ control panel can communicate operating status and signal when it's time to clean, so you can keep your ice machine running at its best.
- The patented Harvest has a digital ice count system to prevent ice shortages and waste by reducing cycle backlogs for a longer time between cleanings.
- All cuber and ice dispenser models are suited for external delivery applications.
- Precautionary maintenance is simpler than ever with easily-removed doors that grant easy access for cleaning. Most service to all internal components and is performed from the front of the machine.
- Includes ice scoop, 6" adjustable legs and 5' power cord.

Features

- Stainless steel construction
- Ice machine sold separately



1 A106 Section 1
1/4" = 1'-0"



2 A106 Section 2
1/4" = 1'-0"

3 A106 Section 3
1/4" = 1'-0"

4 A106 Section 4
1/4" = 1'-0"

Equipment Schedule

Phase Created	Mark	Count	Description	Manufacturer	Model	FL Amps	Volts	Phase	Panel
New Construction	1	1	Avantco SS-UC-48R-HC 48" Undercounter Refrigerator	Avantco	SS-UC-48R-HC	2 A	115 V	1	LP-A
New Construction	2	1	Avantco BCFD-72 70 7/8" White Square Dry Bakery Display Case with LED	Oscartek	BCFD-72				LP-A
New Construction	3	5	DISPLAY CASES	ANTUNES	DC-14R (9500706)				
New Construction	4	1	Point of Sale / Cash Register	BIMsmith Generics	Point of Sale / Cash Register				LP-A
New Construction	6	1	Astoria Tempesta Espresso Machine 3-Group	ASTORIA	P4Y-MB-3GR	0 A	220 V	3	LP-A
New Construction	7	1	Avantco SS-UC-27R-HC 27" Undercounter Refrigerator	Avantco	SS-UC-27R-HC 27"	2 A	115 V	1	LP-A
New Construction	8	1	ESPRESSO GRINDER E65W GBS	MAZZER	E65W GBS	5 A	120 V	1	LP-A
New Construction	8A	1	ESPRESSO GRINDER E65W GBS	MAZZER	E65W GBS	5 A	120 V	1	LP-A
New Construction	9	1	Flatware Holder	Vollrath	CTFWH-8B				
New Construction	10	1	Electric Cooktop	Summit	SINCH115V2B	15 A	115 V	1	LP-A
New Construction	10A	1	Electric Cooktop	Summit	SINCH115V2B	15 A	115 V	1	LP-A
New Construction	11	1	GVH-3, 120V	BUNN GRINDER	55600.0300	11 A	120 V	1	LP-A
New Construction	12	1	ALLROUND GRINDER EK43 S	MAZZER	EK43 S	7 A	120 V	1	LP-A
New Construction	13	1	HOT WATER DISPENSER	BUNN	43600.0026	15 A	120 V	1	LP-A
New Construction	13A	1	HOT WATER DISPENSER	BUNN	43600.0026	15 A	120 V	1	LP-A
New Construction	14	1	Warmer	APW Wyott	W4-2	1 A	120 V	1	LP-A
New Construction	14A	1	Warmer	APW Wyott	W4-2	1 A	120 V	1	LP-A
New Construction	14B	1	Avantco SS-UC-48R-HC 48" Undercounter Refrigerator	Avantco	SS-UC-48R-HC	2 A	115 V	1	LP-A
New Construction	15	1	Blender	Waring	MX1500XTXP	13 A	120 V	1	LP-A
New Construction	15A	1	Blender	Waring	MX1500XTXP	13 A	120 V	1	LP-A
New Construction	16	1	ROUND WARMERS	STAR MANUFACTURING	4RW-P	5 A	120 V	1	LP-A
New Construction	16A	1	ROUND WARMERS	STAR MANUFACTURING	4RW-P	5 A	120 V	1	LP-A
New Construction	17	1	Warmer	APW Wyott	W4-2	1 A	120 V	1	LP-A
New Construction	18	1	BUNN ICB Twin Tall Platinum	BUNN	53200.0101	25 A	240 V	3	LP-A
New Construction	18A	2	COFFEE MAKER	BUNN	42750.0000	0 A	0 V	0	
New Construction	19	1	HEAVY-DUTY COUNTERTOP CONVECTION OVEN WITH DIGITAL CONTROLS & HUMIDITY	CADCO	XAFT-04HS-LD	16 A	208 V	1	LP-A
New Construction	20	1	Toaster	APW Wyott	AT Express	14 A	120 V	1	LP-A
New Construction	21	1	Avantco A Plus APST-48-12 48" 2 Door Stainless Steel Refrigerated Sandwich / Salad Prep Table	Avantco	APST-48-12 48"	2 A	115 V	1	LP-B
New Construction	22	1	PRO. Work Table	AERO Manufacturing	1TGBX-3684				
New Construction	23	1	Avantco SS-3R-HC 81 5/16" Stainless Steel Solid Door Reach-In Refrigerator	Avantco	SS-3R-HC	7 A	115 V	1	LP-B
New Construction	23A	1	Avantco SS-3F-HC 81 5/16" Stainless Steel Solid Door Reach-In Freezer	Avantco	SS-3F-HC 81	14 A	250 V	1	LP-B
New Construction	24	3	Wall Shelf	AERO Manufacturing	4W-1224				
New Construction	PTD	1	Toilet Tissue Dispenser	Bradley Corporation	5402				
New Construction	PTR	3	Automated Touchless Paper Towel Dispenser	GP PRO Georgia-Pacific LLC	59798				
New Construction	SG	10	PRO. SNEEZE GUARD AS REQ.	Vollrath	89263				
New Construction	SSD	3	Soap Dispenser						
New Construction	TD	1	Automated Touchless Paper Towel Dispenser	GP PRO Georgia-Pacific LLC	59798				
New Construction	UIM	1	Ice Maker, Undercounter	SCOTSMAN	CU3030SA-32A	15 A	208 V	1	LP-A

Grand total: 58

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT

INTERIOR WALL SECTION

PROJECT NUMBER:

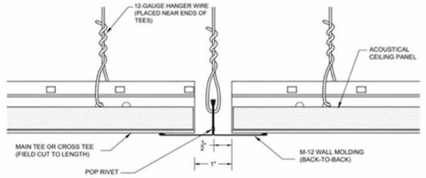
DATE: 2029
05/3/2025

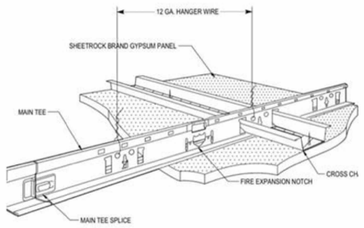
DRAWN BY:
ABDULRAHMAN ALQADHI

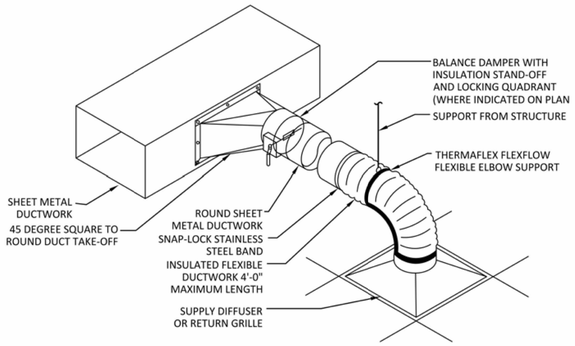
A106

SCALE 1/4" = 1'-0"

24"X36" SHEET







LIFE SAFETY SCHEDULE			
Phase Created	Type Mark	Description	Count
EXSITING	Control Station Duct Detector	Three position enclosure for one remote annunciator and two remote expanders, including two interconnection cables	1
EXSITING	EM	Emergency Lighting Emergency Unit	4
EXSITING	EML	LFI LIGHTS COMBO EXIT SIGN EMERGENCY LIGHT	4
New Construction	EML2	LFI LIGHTS COMBO EXIT SIGN EMERGENCY LIGHT	1
New Construction	FE	FIRE EXTINGUISHER	5

Grand total: 15

LEGEND

B LT1	2X2 FLAT LED LIGHT
LT2 A	2X4 FLAT LED LIGHT
LT3	PENDANT LIGHT
OS	OCCUPANCY SENSOR
EF	CFM EXHAUST VENT TO OUTSIDE
EM	EX. EMERGENCY LIGHT W/BACKUP BATTERY
EML	EX. LIGHTS COMBO EXIT SIGN EMERGENCY LIGHT WITH BATTERY BACKUP
EML2	PROPOSED EMERGENCY LIGHT&EXIT W/BACKUP BATTERY
SA	SUPPLY AIR DIFFUSER
RA	RETURN AIR DIFFUSER
LP-X	ELECTRICAL PANEL

Room Finish Schedule1

Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Ceiling Height
1	DINING	C.T.	C.T.	GWB	GWP	
2	KITCHEN	C.T.	C.T	GWB	GWP	
3	PREP &STORAGE AREA	C.T.	C.T	FRP	PRO. 2x4 VINYL WRAPPED CEILING GRID 1Ø'-4" AFF	
4	EX. ELECTRICAL	C.T.	C.T.	GWB	PRO. 2x4 VINYL WRAPPED CEILING GRID 1Ø'-Ø" AFF	
5	EX. MEN RESTROOM	C.T.	C.T	5' C.T. +GWB	EX. 2X2 CEILING TILE 1Ø'-4" AFF	
6	EX. WOMEN RESTROOM	C.T.	C.T	5' C.T. +GWB	EX. 2X2 CEILING TILE 1Ø'-4" AFF	
7	CORRIDOR	C.T.	C.T.	GWB	C.T.	
8	EX.AIRLOCK	C.T.	C.T.	GWB	GWP	

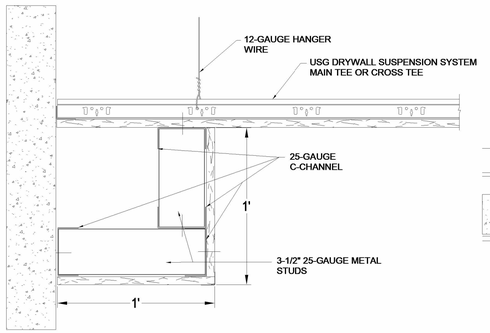
LIGHTING FIXURE

Phase Created	Type Mark	Description	Count
EXSITING	LT1	2X2 FLAT LED LIGHT	3
EXSITING	LT2	2X4 FLAT LED LIGHT	26
New Construction	LT3	The Lumenpulse Cylinder Nano Pendant is a high-performance LED luminaire that is ideal for commercial, residential or hospitality applications and delivers up to 2000 lumens from a 2.75 in diameter. The Nano Pendant comes in a number of finishes, or can be color-specified to fit your taste. Its accessories, beam angles, trims, and optics are easily and quickly changeable in the field.	18

Grand total: 47

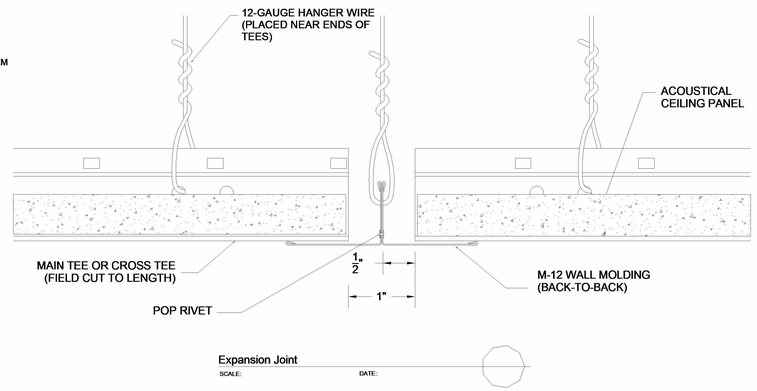
NOTE:

ALL EXHAUST OUTLETS TO BE A MIN. 10' AWAY FROM ANY FRESH AIR INTAKE OF RTU. OR MUA.
ALL DUCT WORK IS EXISTING REMAIN AS IS .
ALL EXHAUST ARE TO BE DUCTED UP THROW ROOF OR REAR SIDE WALLS OF BUILDING WITH COVER AS REQ.



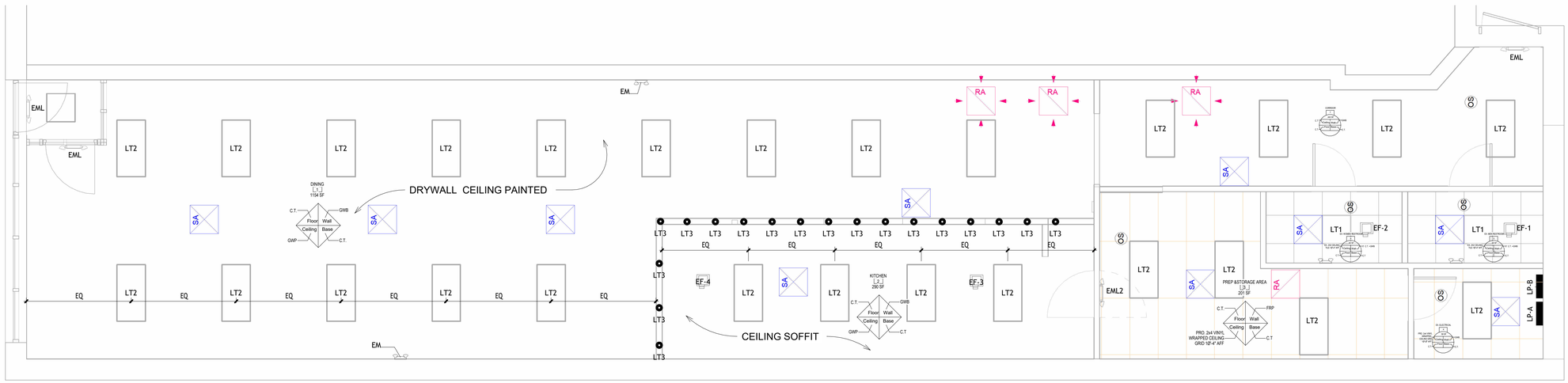
Supporting Stud Soffit

SCALE: NTS DATE:



Expansion Joint

SCALE: DATE:



1 REFLECTED Ceiling Plan
1/4" = 1'-0"

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT

REFLECTED CEILING PLAN

PROJECT NUMBER:

DATE: 2029

05/3/2025

DRAWN BY:

ABDULRAHMAN ALQADHI

A107

SCALEAs indicated

24"X36" SHEET

STATE OF MICHIGAN ARTHUR E. KALAJIAN LICENSE No. 1301027775 REGISTERED ARCHITECT

Electrical Circuit Schedule

Apparent Current	Apparent Load	Load Name	Count	Circuit Number	Panel	Voltage
2 A	182 VA	SEATING AREA LIGHTING / EM / EML	1	27	LP-B	120 V
7 A	832 VA	STORAGE LIGHTING / EM	1	1	LP-B	120 V
2 A	230 VA	REFRIGERATOR/ WORKTOP	1	27	LP-A	120 V
13 A	1500 VA	BLENDER	1	20	LP-A	120 V
6 A	720 VA	SEATING AREA REC.	1	16	LP-B	120 V
0 A	0 VA	CASH REGISTER-1	1	1	LP-A	120 V
8 A	960 VA	Bakery Display	1	7	LP-A	120 V
22 A	8000 VA	Espresso Machine	1	19,21,23	LP-A	208 V
5 A	580 VA	ESPRESSO GRINDER	1	25	LP-A	120 V
5 A	580 VA	ESPRESSO GRINDER	1	29	LP-A	120 V
4 A	450 VA	TOP JUICER -COLD PREW	1	31	LP-A	120 V
14 A	1725 VA	Electric Cooktop	1	33	LP-A	120 V
14 A	1725 VA	Electric Cooktop	1	35	LP-A	120 V
2 A	276 VA	Undercounter Refrigerator	1	41	LP-A	120 V
15 A	1850 VA	HOT WATER DISPENSER	1	2	LP-A	120 V
15 A	1850 VA	HOT WATER DISPENSER	1	4	LP-A	120 V
11 A	1320 VA	BUNN GRINDER	1	6	LP-A	120 V
7 A	800 VA	ALLROUND GRINDER EK43 S	1	8	LP-A	120 V
2 A	276 VA	Undercounter Refrigerator	1	12	LP-A	120 V
5 A	600 VA	ROUND WARMERS	1	16	LP-A	120 V
5 A	600 VA	ROUND WARMERS	1	18	LP-A	120 V
1 A	104 VA	WARMER	1	22	LP-A	120 V
1 A	104 VA	WARMER	1	24	LP-A	120 V
1 A	104 VA	PRINTING ON DRINKS	1	26	LP-A	120 V
17 A	6000 VA	BUNN COFFEE MICH.	1	13,15,17	LP-A	208 V
18 A	3800 VA	COUNTERTOP CONVECTION OVEN	1	9,11	LP-A	208 V
13 A	1500 VA	BLENDER	1	3	LP-A	120 V
2 A	230 VA	Refrigerated Sandwich / Salad Prep Table	1	17	LP-B	120 V
25 A	2989 VA	TOASTER	1	5	LP-A	120 V
8 A	960 VA	380K BTU TANKLESS WATER HEATER	1	25	LP-B	120 V
7 A	828 VA	3 DOOR Solid Door Reach-In Refrigerator	1	23	LP-B	120 V
17 A	3500 VA	3 Solid Door Reach-In FREEZER	1	19,21	LP-B	208 V
8 A	900 VA	KITCHEN Receptacle	1	6	LP-B	120 V
11 A	1260 VA	KITCHEN Receptacle	1	8	LP-B	120 V
6 A	720 VA	STORAGE Receptacle	1	10	LP-B	120 V
8 A	900 VA	SEATING Receptacle	1	14	LP-B	120 V
6 A	720 VA	SEATING Receptacle	1	18	LP-B	120 V
1 A	96 VA	ELECTRICAL ROOM LTG	1	13	LP-B	120 V
22 A	2597 VA	DINING Lighting - Dwelling Unit	1	15	LP-B	120 V
0 A	0 VA	KITCHEN LIGHTING / EM	1	9	LP-B	120 V
2 A	182 VA	WOMEN RESTROOM LTG	1	29	LP-B	120 V
15 A	3120 VA	ICE MAKER	1	28,30	LP-A	208 V
2 A	240 VA	EF-3,EF-4 (2) 200 CFM EXHAUSTE	1	11	LP-B	120 V
3 A	384 VA	KITCHEN-1 Lighting - Dwelling Unit	1	31	LP-B	120 V
42 A	14987 VA	HVAC RTU	1	3,5,7	LP-B	208 V

Grand total: 45

PANEL NAME: LP-B — **PANEL SCHEDULE** — **LOCATION:**

OPTIONS: COPPER BUS, BOLT-ON BREAKERS; SOLID COPPER GROUND BUS, AND NEUTRAL BUS; ENCLOSURE: TYPE 1

SERVICE: 120/240 VOLT, 3 PHASE, 4 WIRE; SERVED FROM:

STANDARD: SQUARE D NQOD; AIC RATING: 22,000; MOUNTING: WALL; BUS SIZE: 100 A; MLO SIZE:1...

Note	CIR. #	LOAD DESCRIPTION	BKR	P	A		B		C		P	BKR	LOAD DESCRIPTION	CIR. #	Note
	1	STORAGE LIGHTING / EM	20	1	0.83									2	
	3	HVAC RTU	20	3			5.00							4	
	5	--	--	--					5.00	0.90	1	20	KITCHEN Receptacle	6	
	7	--	--	--	5.00	1.26					1	20	KITCHEN Receptacle	8	
	9	KITCHEN LIGHTING / EM	20	1			0.00	0.72			1	20	STORAGE Receptacle	10	
	11	EF-3,EF-4 (2) 200 CFM EXHAUSTE	20	1					0.24					12	
	13	ELECTRICAL ROOM LTG	20	1	0.10	0.90					1	20	SEATING Receptacle	14	
	15	DINING Lighting - Dwelling Unit	20	1			2.60	0.72			1	20	SEATING AREA REC.	16	
	17	Refrigerated Sandwich / Salad Prep Table	20	1					0.23	0.72	1	20	SEATING Receptacle	18	
	19	3 Solid Door Reach-In FREEZER	20	2	1.75									20	
	21	--	--	--			1.75							22	
	23	3 DOOR Solid Door Reach-In Refrigerator	20	1					0.83					24	
	25	380K BTU TANKLESS WATER HEATER	20	1	0.96									26	
	27	SEATING AREA LIGHTING / EM / EML	20	1			0.18							28	
	29	WOMEN RESTROOM LTG	20	1					0.18					30	
	31	KITCHEN-1 Lighting - Dwelling Unit	20	1	0.38									32	
	33													34	
	35													36	
	37													38	
	39													40	
	41													42	
		TOTAL CONNECTED KVA PER PHASE:			11.15 kVA		10.92 kVA		8.09 kVA						
		TOTAL CONNECTED AMPS PER PHASE:			97 A		95 A		67 A						

LOAD CLASSIFICATION	CONNECTED LOAD	D.F.	REMARKS	DEMAND LOAD
LTG	0 VA	0.00%		0 VA
REC	0 VA	0.00%		0 VA
HVAC	0 VA	0.00%		0 VA
EQUIP	0 VA	0.00%		0 VA
MISC	0 VA	0.00%		0 VA
TOTAL CONNECTED LOAD:	30.16 kVA		**TOTAL DEMAND LOAD:**	30.16 kVA
			TOTAL DEMAND CURRENT:	83.7 A

CONNECTED CURRENT TOTALS	
PHASE A CONNECTED CURRENT:	96.6 A
PHASE B CONNECTED CURRENT:	94.6 A
PHASE C CONNECTED CURRENT:	67 A
NEUTRAL CONNECTED CURRENT:	28 A

NOTES:

PANEL NAME: LP-A — **PANEL SCHEDULE** — **LOCATION:**

OPTIONS: COPPER BUS, BOLT-ON BREAKERS; SOLID COPPER GROUND BUS, AND NEUTRAL BUS; ENCLOSURE: TYPE 1

SERVICE: 120/240 VOLT, 3 PHASE, 4 WIRE; SERVED FROM:

STANDARD: SQUARE D NQOD; AIC RATING: 22,000; MOUNTING:; BUS SIZE: 200 A; MCB...

Note	CIR. #	LOAD DESCRIPTION	BKR	P	A		B		C		P	BKR	LOAD DESCRIPTION	CIR. #	Note
	1	CASH REGISTER-1	20	1	0.00	1.85					1	20	HOT WATER DISPENSER	2	
	3	BLENDER	20	1			1.50	1.85			1	20	HOT WATER DISPENSER	4	
	5	TOASTER	20	1					2.99	1.32	1	20	BUNN GRINDER	6	
	7	Bakery Display	20	1	0.96	0.80					1	20	ALLROUND GRINDER EK43 S	8	
	9	COUNTERTOP CONVECTION OVEN	20	2			1.90							10	
	11	--	--	--					1.90	0.28	1	20	Undercounter Refrigerator	12	
	13	BUNN COFFEE MICH.	20	3	2.00									14	
	15	--	--	--			2.00	0.60			1	20	ROUND WARMERS	16	
	17	--	--	--					2.00	0.60	1	20	ROUND WARMERS	18	
	19	Espresso Machine	20	3	2.67	1.50					1	20	BLENDER	20	
	21	--	--	--			2.67	0.10			1	20	WARMER	22	
	23	--	--	--					2.67	0.10	1	20	WARMER	24	
	25	ESPRESSO GRINDER	20	1	0.58	0.10					1	20	PRINTING ON DRINKS	26	
	27	REFRIGERATOR/ WORKTOP	20	1			0.23	3.12			2	20	ICE MAKER	28	
	29	ESPRESSO GRINDER	20	1					0.58	0.00	--	--	--	30	
	31	TOP JUICER -COLD PREW	20	1	0.45									32	
	33	Electric Cooktop	20	1			1.73							34	
	35	Electric Cooktop	20	1					1.73					36	
	37													38	
	39													40	
	41	Undercounter Refrigerator	20	1					0.28					42	
		TOTAL CONNECTED KVA PER PHASE:			10.91 kVA		15.70 kVA		14.44 kVA						
		TOTAL CONNECTED AMPS PER PHASE:			91 A		135 A		125 A						

LOAD CLASSIFICATION	CONNECTED LOAD	D.F.	REMARKS	DEMAND LOAD
LTG	0 VA	0.00%		0 VA
REC	0 VA	0.00%		0 VA
HVAC	0 VA	0.00%		0 VA
EQUIP	0 VA	0.00%		0 VA
MISC	0 VA	0.00%		0 VA
TOTAL CONNECTED LOAD:	41.04 kVA		**TOTAL DEMAND LOAD:**	41.04 kVA
			TOTAL DEMAND CURRENT:	113.9 A

CONNECTED CURRENT TOTALS	
PHASE A CONNECTED CURRENT:	90.9 A
PHASE B CONNECTED CURRENT:	135.3 A
PHASE C CONNECTED CURRENT:	125 A
NEUTRAL CONNECTED CURRENT:	40 A

NOTES:

NOTE:
ALL EQUIPMENT IS PROPOSED

Quantities - Electrical Fixtures	
Family and Type	Count
Duplex Receptacle: GFCI	16

Grand total: 16

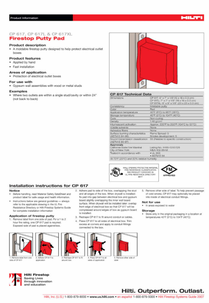
GENERAL NOTES:

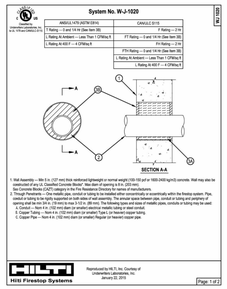
ALL SINGLE PHASE 20A BRANCH CIRCUITING SHALL BE 2# 12, 1#12 GRD-3/4" C. U.O.N. ALL THREE PHASE 20A BRANCH CIRCUITING SHALL BE 3# 12+1#12 GRD-3/4"C. U.O.N. REFER TO SINGLE LINE DIAGRAM FOR ADDITIONAL WIRE SIZES.

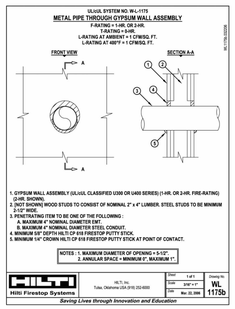
CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN A BALANCED LOAD ON ALL CIRCUITRY ADDED TO EXISTING PANELS. CONTRACTOR SHALL NOT EXCEED 80% OF THE CIRCUIT BREAKER RATING FOR ANY GIVEN CIRCUIT BREAKER. CONTRACTOR SHALL FIELD VERIFY AND MATCH AIC RATING PRIOR TO PURCHASING ANY CIRCUIT BREAKER .

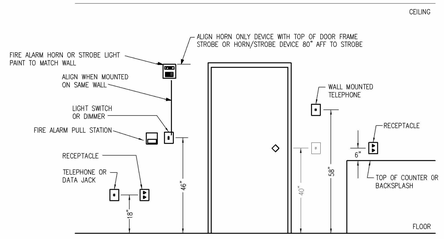
NOTE:
1-ALL EQUIPMENT IS PROPOSED
2-ALL ELECTRICAL SHOWN IN RISER DIAGRAM IS EXISTING INCLUDED DISCONNECTS PANELS, GROUNDS
3- CONTRACTOR RESPONSIBLE TO VERIFY ALL WIRE SIZING AND MAKE SURE TO MEET 2020 NEC CODE REQUIRMENTS

NOTE:
PER: 700.12(I)(2) EMERGENCY UNIT EQUIPMENTS IS REQUIRED TO BE CONNECTED TO A COMPLIANT LIGHTING CIRCUIT. AND BE EQUIPPED WITH A 90 MINUTE BATTERY.

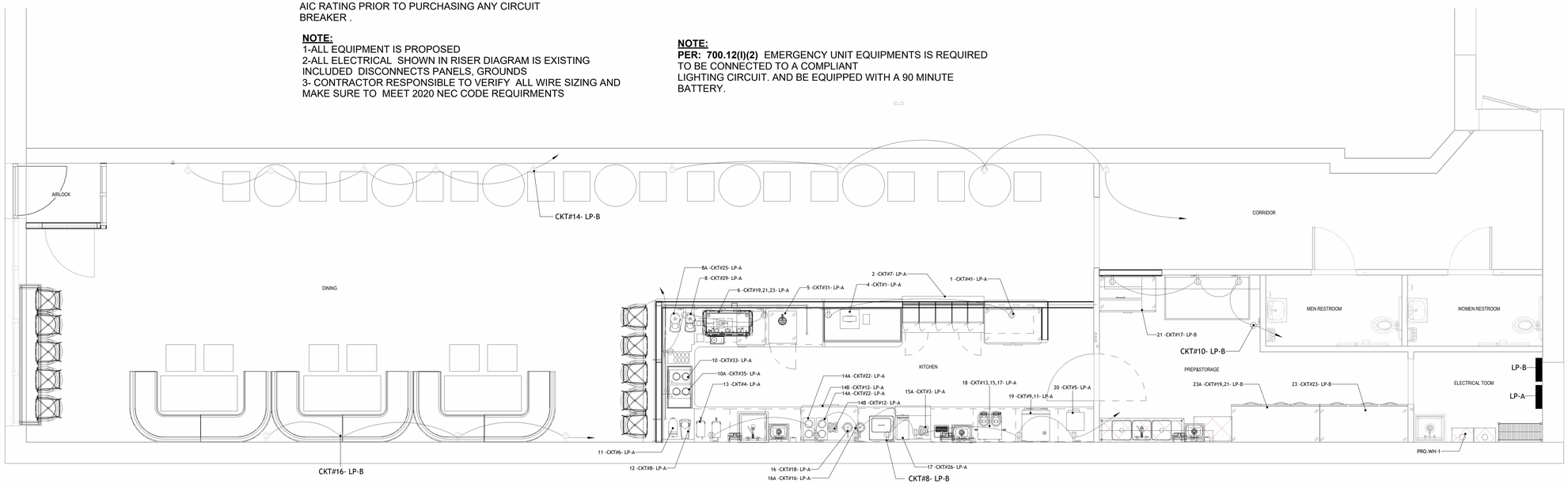








TYPICAL DEVICE MOUNTING HEIGHTS
NONE



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

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT
POWER PLAN

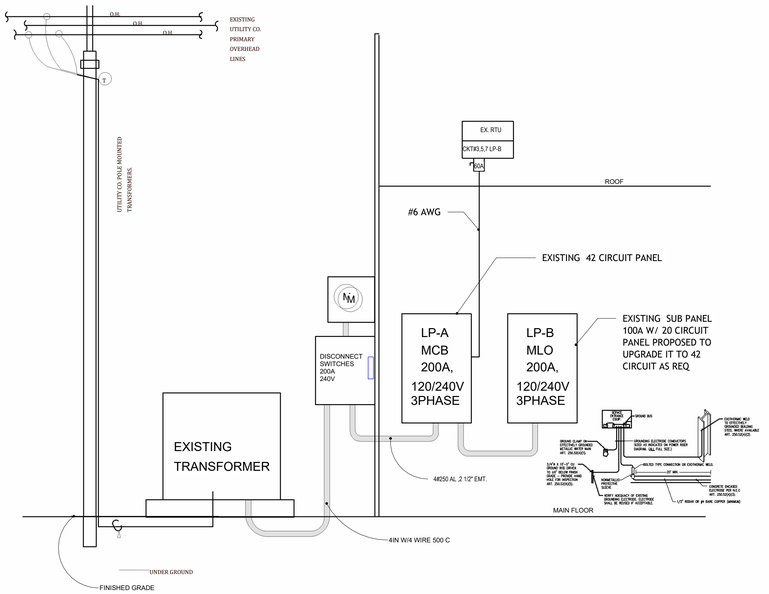
PROJECT NUMBER:
DATE: 2029
05/3/2025
DRAWN BY:
ABDULRAHMAN ALQADHI

E101

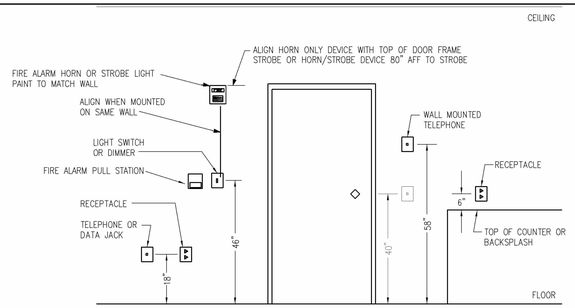
SCALE 1/4" = 1'-0"

24"X36" SHEET

STATE OF MICHIGAN
ARTHUR E. KALAJIAN
LICENSE No. 1301027775
LICENSED ARCHITECT



EXISTING ELECTRICAL RISER DIAGRAM



TYPICAL DEVICE MOUNTING HEIGHTS

NONE

LIGHTING FIXURE

Phase Created	Type Mark	Description	Count
EXSITING	LT1	2X2 FLAT LED LIGHT	3
EXSITING	LT2	2X4 FLAT LED LIGHT	26
New Construction	LT3	The Lumenpulse Cylinder Nano Pendant is a high-performance LED luminaire that is ideal for commercial, residential or hospitality applications and delivers up to 2000 lumens from a 2.75 in diameter. The Nano Pendant comes in a number of finishes, or can be color-specified to fit your taste. Its accessories, beam angles, trims, and optics are easily and quickly changeable in the field.	18

Grand total: 47

NOTE:
PER: 700.12(I)(2) (2020 NORTH CAROLINA ELECTRICAL CODE)
EMERGENCY UNIT EQUIPMENTS IS REQUIRED TO BE CONNECTED TO A COMPLIANT LIGHTING CIRCUIT. AND BE EQUIPPED WITH A 90 MINUTE BATTERY.

NOTE:
*UTILIZE EX. AVAILABLE CIRCUITS ELECTRICAL. SERVICE +PANELS ARE TO REMAIN AS IS.
*ELECTRICAL CONTRACTOR TO VERIFY CAPACITY OF EX. ELECTRICAL SERVICES FOR PROPOSED EQUIPMENT .
* PROPOSED TO CHANGE PRE-EXISTING LIGHT AS SHOWN
*ALL ELECTRICAL DRAWING TO BE DEFERRED SUBMITTER BY OTHER IF NEEDED
GENERAL ELECTRICAL NOTES :

1. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT FOR WORK AS REQUIRED FOR ALL ELECTRICAL WORK WHICH IS INDICATED, IMPLIED,OR SPECIFIED. ALL WORK TO BE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES INCLUDING NEC., AND NFPA.

2. ALL EQUIPMENT SHALL BE INSTALLED AND USED IN ACCORDANCE WITH ANY INSTRUCTIONS INCLUDED IN THE LISTING OR LABELING. ,ALL EQUIPMENT SHALL BE INSTALLED AND USED IN ACCORDANCE WITH ANY

3. THE ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE GOVERNING RULES AND REGULATIONS OF THE MICHIGAN ELECTRIC CODE(MEC), NATIONAL ELECTRICAL CODE(NEC), ALL LOCAL GOVERNING BOARDS HAVING JURISDTION AND IN ADDITION SHALL MEET ALL STANDARDS AND REQUIREMENTS OF THE Owner

4. E.C. TO PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND ACCESSORIES MENTIONED OR NECESSARY FOR FURNISHING AND INSTALLATION AS INDICATED ON THE DRAWINGS OR REQUIRED TO COMPLETE OPERATION INDICATED FOR OPERATION OF THE SYSTEMS.

5. PERMITS AND GIVE ALL REQUIRED NOTICES OF INSPECTIONS REQUIRED BY OR OTHER REQULATION. E.C. SHALL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE ELECTRICAL LAWS

6. PROVIDE COPPER-CAD 3/4" INCH DIAMETER, 10' LONG STEEL ROD WITH APPROVED COPPER COMPRESSION CLAMP-ON CONNECTION, CAST BRONZE OR BRASS.

7. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL PERTINENT FIELD CONDITIONS INCLUDING AND COORDINATE ANY EQUIPMENT THAT MAY BE REQUIRED FROM LOCAL POWER COMPANY, INCLUDING SIZE AND LOCATION OF TRANSFORMER

8. REGARDING INFINITY Bus, FINAL PNL. INTERRUPTING RATING CONTINGENT UPON DETROIT EDISON AVAILABLE FAULT CURRENT.

9. E.C. SHALL ALLOW COST REQUIRED FOR FINAL HOOKUP TO EQUIPMENT WITH MANUFACTURE PRESENT ON SITE IN THEIR BASE BID. EC. SHALL COORDINATE EXACT LOCATION OF MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN ELECTRICAL WORK

10. PROVIDE LIGHTING CONTROL AND RECEPTACLE SERVICES AS REQUIRED INCLUDING ALL MATERIALS, PLATES AND BOXES. COMPLY WITH NEC. AND UL REQUIREMENTS AND WIRING OF THE ELECTRICAL DEVICES. CONVENIENCE RECEPTACLES SHALL BE RATED FOR 20A, 125V, SINGLE PHASE SERVICE, 2 POLE 3 WIRE GROUNDING TYPE, INSTALLED

11" AFF. UNLESS NOTED OTHERWISE. PROVIDE GFCI. AT REQUIRED LOCATIONS AND AS INDICATED ON THE DRAWINGS. SWITCHES SHALL BE HEAVY DUTY, FLUSH, QUITE TYPE, AND SHALL BE INSTALLED NEAR DOORS AT STRIKE SIDE OF DOORS 6" FROM THE DOOR FRAME GANG TOGETHER ALL SWITCHES IN ONE AREA THAT SERVE THE AREA.

12. ALL LIGHT FIXTURES TO BE UL LABELED. EXTERIOR LIGHTS TO BE CONTROL BY PHOTO CELL AND SITE LIGHTING TO BE CONTROL BY TORK TIMER CLOCK VIA PHOTO CELL.

13. ALL RECESSED FIXTURES SHALL BE PROPERLY INSTALLED AND HAVE ADEQUATE CLEARANCES AND SHALL HAVE THERMAL PROTECTION, AND BE MOUNTED ONA JUNCTION BOX. ALL FLUORESCENT FIXTURES SHALL HAVE THERMAL PROTECTION INTEGRAL WITHIN THE BALLAST.

14. E.C. TO PROVIDE 3/4 EMPTY CONDUIT TO 6" ABROVE CEILING FOR TELEPHONE/AND OR COMPUTER SYSTEM LOCATIONS EXCEPT EXPOSED ARE WHICH CONDUITS REQUIRED TO BE INSTALL FOR WHOLE RUNS. ALL WIRE, WIRE TERMINATIONS AND COMMUNICATION EQUIPMENT TO BE BY TELEPHONE OR COMPUTER CONTRACTOR PROVIDE EMPTY CONDUIT AND CABLE TERMINATIONS AT EMPTY CONDUITS AND RUN COMMUNICATION CONDUITS UP INTO CEILING SPACE.

15. THE DISCONNECTING MEANS FOR A MOTOR SHALL BE A FUSIBLE DISCONNECT SWITCH RATED IN HP, A CIRCUIT BREAKER, OR A MOLDED CASE SWITCH AND FOR A CORD AND PLUG CONNECTED MOTOR AND A HP RATED ATTACHMENT PLUG AND RECEPTACLE. COPPER WITH MAIN CIRCUIT BREAKER (MCB). ELECTRICAL LIGHTING AND POWER CABINETS

16. EXIT AND EMERGENCY LIGHTS SHALL BE BATTERY BACK-UP TYPE UNITS. ALL EMERGENCY BALLAST FOR EMERGENCY FIXTURES, EXIT AND NIGHT LIGHTS MUST FEED FROM THE SAME BRANCH CIRCUIT AS THAT SERVING THE NORMAL LIGHTING IN THE SAME AREA AND CONNECTED AHEAD OF ANY LOCAL SWITCH.

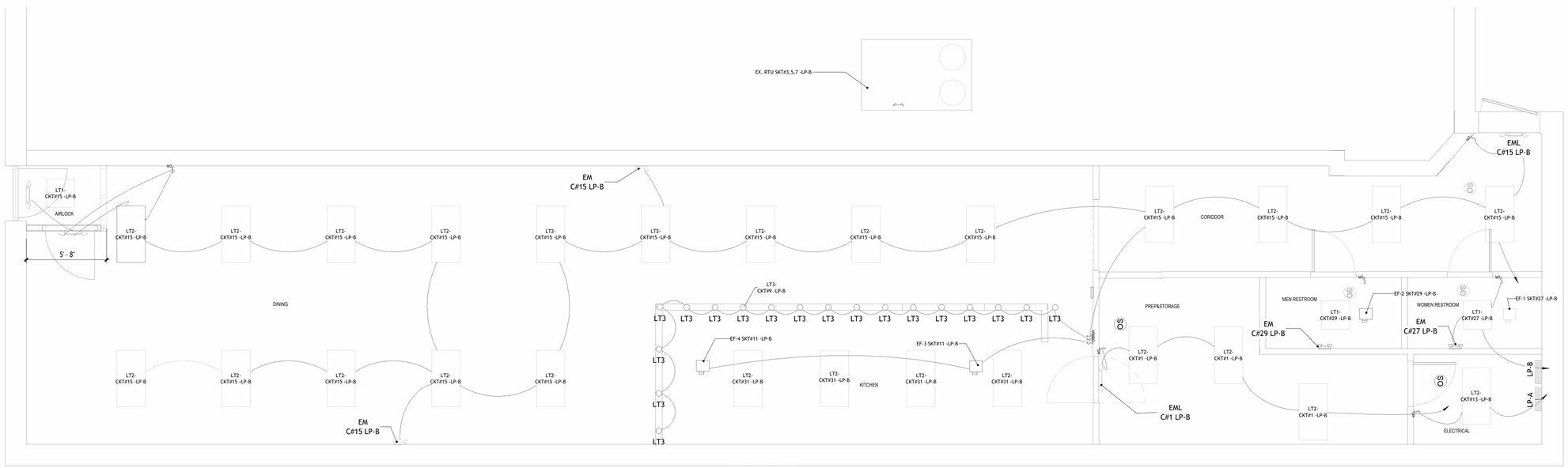
17. EXHAUST FANS 4 RTU'S SHALL BE PROVIDED WITH MOTOR STARTERS BY MECHANICAL TRADES AND CONNECTED BY ELECTRICIAN, WATER HEATERS ELECTRICAL TERMINATIONS TO BE INSTALLED BY THE ELECTRICIAN.

18. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL BE WIRED WITH 2"#12, 1#12 GRD, 1/2" EMT CONDUIT OR 3/C MC CABLE IF EXCEPTABLE BY CODE. ALL CIRCUIT IN THE EXPOSED AREA MUST BE IN CONDUIT SYSTEM.

19. ALL CIRCUIT AND WIRING MUST BE INSTALL AS INDICATED. ALL CIRCUIT MUST HAVE IT OUN NEUTRAL NO SHARING NEUTRAL ARE EXCEPTED.
20. ALL ELECTRICAL PANEL SHALL BE PANEL BOARD WITH BOLT ON BREAKERS WITH COPPER PANEL BOARD SHALL BUSSING. LOAD CENTER TYPE PANEL ARE NOT ACCEPTABLE. MANUFACTURED BY: SQ "D", SEMENS, GENERAL ELECTRIC.

21. E.C. SHALL FIELD MARK ALL ELECTRICAL EQUIPMENT TO WARN QUALIFY PERSONS OF POTENTIAL ARC FLUSH HAZARD AS PER NE.C. ARTICLE 110.16. 25. E.C. SHALL PROVIDE TYPED DIRECTORY FOR ALL ELECTRICAL PANEL AND IDENTIFY ALL PLASTIC. ELECTRICAL EQUIPMENT WITH 2" X 4" LETTER ON LUMINATING

22. E.C. TO PROVIDE STEEL BOX FOR ALL LIGHT FIXTURES WHICH IS MOUNTING ON THE OF THE FIXTURE. CEILING, SECURED THE BACK BOX AS REQUIRED TO HANDLE THE WEIGHT
21. SECURITY SYSTEM 1S OPTIONAL WITH DOOR MONITORS AT ALL EXTERIOR DOORS AND MOTION SENSORS AT CORRIDORS. SYSTEM SHALL BE BY THE SECURITY CONTRACTOR UNDER A SEPARATE BID.



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

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT

LIGHTING PLAN

PROJECT NUMBER:

DATE: 2029
05/3/2025

DRAWN BY:
ABDULRAHMAN ALQADHI

E102

SCALEAs indicated

24"X36" SHEET

STATE OF MICHIGAN
ARTHUR E. KALAJIAN
LICENSE No. 1301027775
REGISTERED ARCHITECT

Space Outdoor Air Schedule1

Number	Space Type	Outdoor Air Method	Outdoor Air per Area (Ra)	Area (Az)	Number of People (Pz)	Outdoor Airflow (Vbz)	Actual Return Airflow	Actual Supply Airflow	Calculated Cooling Load	Calculated Heating Load	Calculated Supply Airflow	Calculated Cooling Load per area	Calculated Heating Load per area	Calculated Supply Airflow per area	Design Cooling Load	Design Heating Load
1	Dining Area	by People and by Area	0.18 CFM/SF	1154 SF	75.079539	771 CFM	3340 CFM	2400 CFM	68259.0 Btu/h	-6887.6 Btu/h	1846 CFM	59.12 Btu/(h·ft²)	-5.97 Btu/(h·ft²)	1.60 CFM/SF	68259.0 Btu/h	-6887.6 Btu/h
2	KITCHEN COOKING	by People and by Area	0.12 CFM/SF	290 SF	14.52281	144 CFM	0 CFM	600 CFM	5262.7 Btu/h	6085.9 Btu/h	143 CFM	18.12 Btu/(h·ft²)	20.95 Btu/(h·ft²)	0.49 CFM/SF	5262.7 Btu/h	6085.9 Btu/h
3	Food Preparation	by People and by Area	0.18 CFM/SF	201 SF	3.736975	64 CFM	400 CFM	400 CFM	13682.9 Btu/h	7864.2 Btu/h	389 CFM	68.03 Btu/(h·ft²)	39.10 Btu/(h·ft²)	1.94 CFM/SF	13682.9 Btu/h	7864.2 Btu/h
4	Electrical/Mechanical	by People and by Area	0.06 CFM/SF	58 SF	0.162543	3 CFM	0 CFM	120 CFM	4102.0 Btu/h	3474.5 Btu/h	117 CFM	70.34 Btu/(h·ft²)	59.58 Btu/(h·ft²)	2.00 CFM/SF	4102.0 Btu/h	3474.5 Btu/h
5	Restrooms (1)	by People and by Area	0.00 CFM/SF	48 SF	0	0 CFM	0 CFM	100 CFM	2936.6 Btu/h	2456.8 Btu/h	84 CFM	60.92 Btu/(h·ft²)	50.96 Btu/(h·ft²)	1.73 CFM/SF	2936.6 Btu/h	2456.8 Btu/h
6	Restrooms (1)	by People and by Area	0.00 CFM/SF	49 SF	0	0 CFM	0 CFM	100 CFM	2749.0 Btu/h	2117.1 Btu/h	78 CFM	56.53 Btu/(h·ft²)	43.54 Btu/(h·ft²)	1.61 CFM/SF	2749.0 Btu/h	2117.1 Btu/h
7	<Building>	by People and by Area	0.18 CFM/SF	243 SF	7.913964	103 CFM	260 CFM	260 CFM	9098.3 Btu/h	1408.1 Btu/h	259 CFM	37.38 Btu/(h·ft²)	5.79 Btu/(h·ft²)	1.06 CFM/SF	9098.3 Btu/h	1408.1 Btu/h
8	Lobby	by People and by Area	0.06 CFM/SF	22 SF	3.109454	17 CFM	0 CFM	0 CFM	3486.8 Btu/h	1162.4 Btu/h	85 CFM	156.27 Btu/(h·ft²)	52.09 Btu/(h·ft²)	3.81 CFM/SF	3486.8 Btu/h	1162.4 Btu/h
Grand total: 8				2067 SF	104.525285	1102 CFM	4000 CFM	3980 CFM	109577.3 Btu/h	17681.3 Btu/h	3001 CFM	526.71 Btu/(h·ft²)	266.04 Btu/(h·ft²)	14.25 CFM/SF	109577.3 Btu/h	17681.3 Btu/h

AIR TERMINAL SCHEDULE

TYPE MARK	DESCRIPTION	SIZE	AIRFLOW	MATERIAL	FINISH
RA	RETURN AIR DIFFUSER	12"x12"	1670 CFM	ALUMINUM	WHITE
RA	RETURN AIR DIFFUSER	12"x12"	400 CFM	ALUMINUM	WHITE
RA	RETURN AIR DIFFUSER	12"x12"	260 CFM	ALUMINUM	WHITE
RA	RETURN AIR DIFFUSER	12"x12"	1670 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	100 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	100 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	120 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	400 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	600 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	600 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	600 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	600 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	600 CFM	ALUMINUM	WHITE
SA	SUPPLY DIFFUSER	12"x12"	260 CFM	ALUMINUM	WHITE

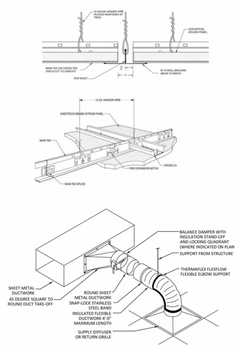
Grand total: 14

NOTE:

- ALL DUCT WORK IS EXISTING PROVIDE TOPS WHERE REQUIRED .
- EXISTING 10 TON RTU TO REMAIN AS IS.
- ALL DUCT WORKS IS EXISTING IF THERE IS ANY CHANGE INCLUDED SIZING TO BE PROVIDE BY CONTRACTOR AS DEFERRED SUBMITTAL IF NEED.
- ALL RTU. & EXHAUSTS FAN TO BE A MIN. OF 10' AWAY FROM EDGE OF ROOF.
- ALL EXHAUST OUTLETS TO BE A MIN. 10' AWAY FROM ANY FRESH AIR INTAKE OF RTU. OR MUA.
-

ABBREVIATIONS:

CSAF: CALCULATED SUPPLY AIRFLOW
ASAF: ACTUAL SUPPLY AIRFLOW
NOP: NUMBER OF PEOPLE
ODA: OUTDOOR AIR



NOTE:

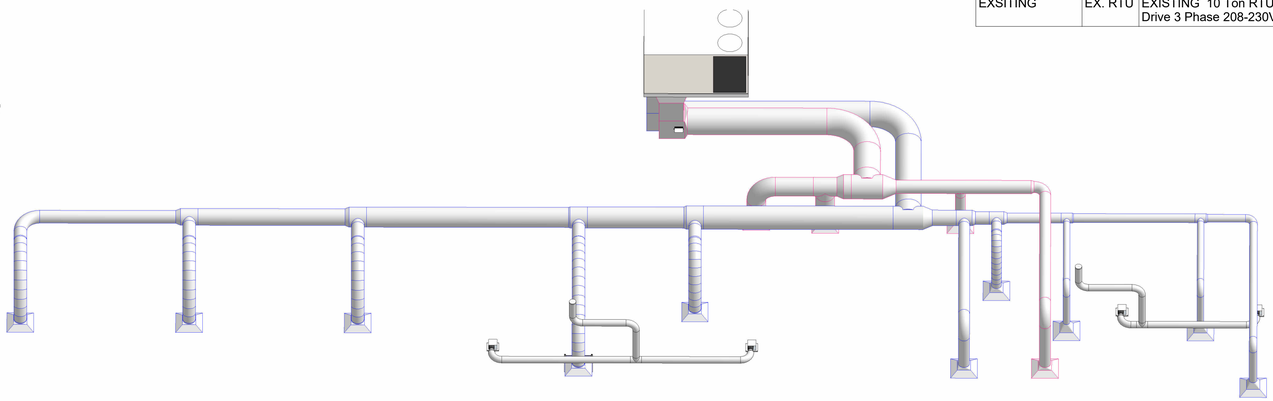
- PER: 2021 MICHIGAN MECHANICAL CODE (MMC) SECTION 606.4.1, DUCT SMOKE DETECTORS MUST BE CONNECTED TO A FIRE ALARM SYSTEM.
- IN OCCUPANCIES NOT REQUIRED TO BE EQUIPPED WITH A FIRE ALARM SYSTEM, ACTUATION OF A SMOKE DETECTOR SHALL ACTIVATE A VISIBLE AND AN AUDIBLE SIGNAL IN AN APPROVED LOCATION. SMOKE DETECTOR TROUBLE CONDITIONS SHALL ACTIVATE A VISIBLE OR AUDIBLE SIGNAL IN AN APPROVED LOCATION AND SHALL BE IDENTIFIED AS AIR DUCT DETECTOR TROUBLE
- EXISTING AND PROPOSED 7.5 TON RTU HAVE ECONOMIZER
- GAS PIPE RISER PLAN , TOTAL GAS LOAD IN CFH ,THE GAS INLET PRESSURE AND , THE PRESSURE DROP WILL BE DEFERRED SUBMITTAL BEFORE FINAL INPECTION

HVAC LEGEND

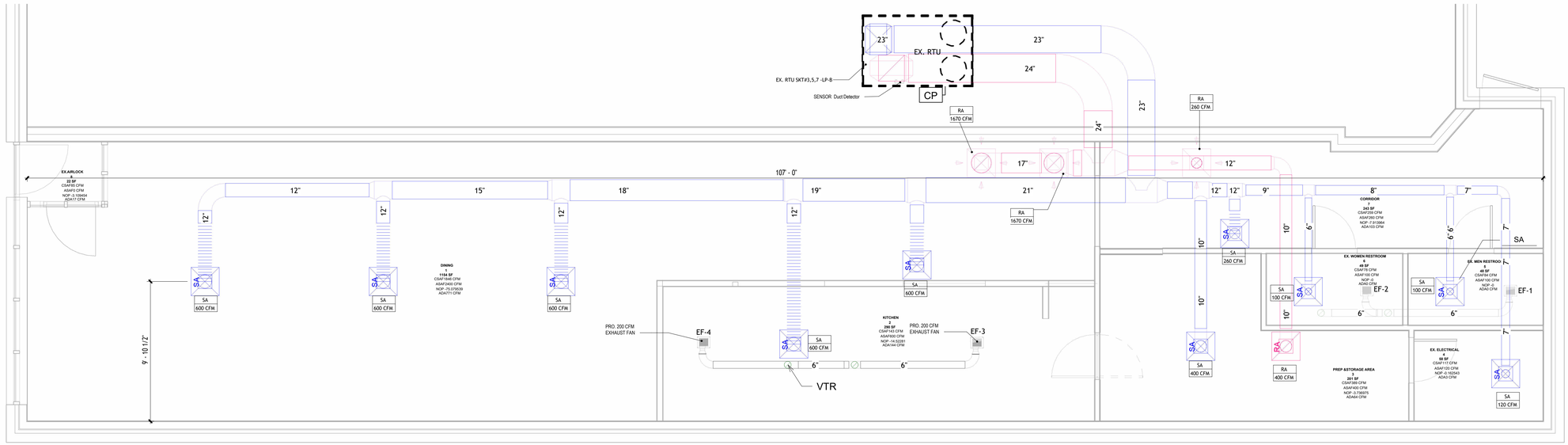
	EXISTING 10 TON RTU GAS/ELECTRIC DIRECT DRIVE 3 PHASE 208-230V WITH ECONOMIZER
RA	RETURN AIR DIFFUSER
SA	SUPPLY AIR DIFFUSER
EF	PRO. 100 CFM EXHAUST VENT TO OUTSIDE

Mechanical Equipment Schedule

Phase Created	Mark	Type
EXSITING	EF-1	100 CFM EXHAUST
EXSITING	EF-2	100 CFM EXHAUST
New Construction	EF-3	200 CFM EXHAUST
New Construction	EF-4	200 CFM EXHAUST
EXSITING	EX. RTU	EXISTING 10 Ton RTU Gas/Electric Direct Drive 3 Phase 208-230V WITH economizer



2 EXISTING HVAC



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

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT

HVAC PLAN

PROJECT NUMBER:
DATE: 2029
05/3/2025
DRAWN BY:
ABDULRAHMAN ALQADHI

M101

SCALE 1/4" = 1'-0"

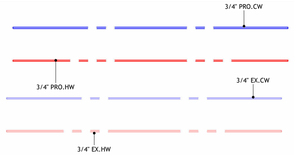
24"X36" SHEET

STATE OF MICHIGAN
ARTHUR E. KALAJIAN
LICENSE No. 1301027775
REGISTERED ARCHITECT

PLUMBING LEGEND

TYPE MARK	2D VIEW	DESCRIPTION
GT		50 GPM GREASE TRAP
MS		MOP SINK
WH-		EX.380K BTU TANKLESS WATER HEATER
WC		ADA WATER CLOSET
FS		FLOOR SINK
FD	FD	FLOOR DRAIN
FCO	FCO.	FLOOR CLEANOUT
LAV		ADA WALL HUNG LAVATORY
3CS		TRIPLE COMPARTMENT SINK
ICS		SINGLE COMPARTMENT SINK
HS		HAND SINK
UIM		UNDERCOUNTER ICE MAKER
DIS		DROP-IN, ICE STATION
DRF		DROP IN RINSER FAUCET
GF		GLASS FILLER

NOTE:
ALL PROPOSED WATER LINE TO BE OVER HEAD.
PROPOSED TO REPLACE PRE-EXISTING WATER HEATER AND RELOCATED AS SHOWN IN SHEET (P101)
ALL METERS &GAS PIPING ARE EXISTING TO REMAIN AS IS



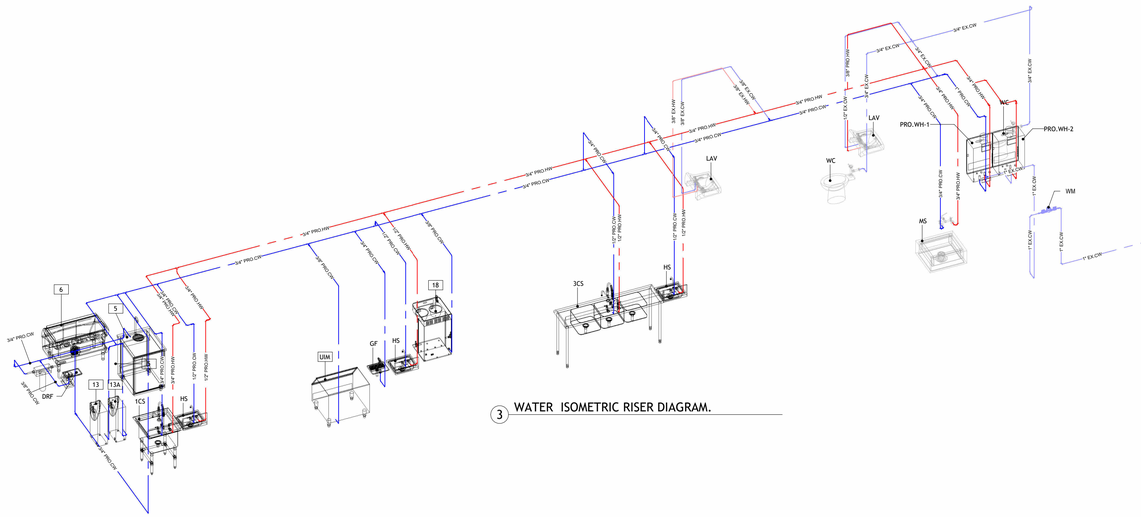
1 WATER LEGEND
1/4" = 1'-0"

NOTE :

- WHERE A STORAGE WATER HEATER IS SUPPLIED WITH COLD WATER THAT PASSES THROUGH A CHECK VALVE, PRESSURE REDUCING VALVE OR BACKFLOW PREVENTER, A THERMAL EXPANSION CONTROL DEVICE SHALL BE CONNECTED TO THE WATER HEATER COLD WATER SUPPLY PIPE AT A POINT THAT IS DOWNSTREAM OF ALL CHECK VALVES, PRESSURE REDUCING VALVES AND BACKFLOW PREVENTERS. THERMAL EXPANSION CONTROL DEVICES SHALL BE SIZED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SHALL BE SIZED SUCH THAT THE PRESSURE IN THE WATER DISTRIBUTION SYSTEM SHALL NOT EXCEED THAT REQUIRED BY SECTION 604.8.
- PER SEC. 702.5 WHERE THE WASTE WATER TEMPERATURE WILL BE GREATER THAN 140°F (60°C), THE SANITARY DRAINAGE PIPING MATERIAL SHALL BE RATED FOR THE HIGHEST TEMPERATURE OF THE WASTE WATER.

PLUMBING SYMBOL

SYMBOL	DESCRIPTION
PRO	PROPOSED
EX	EXISTING
FD	FLOOR DRAIN
FCO.	CLEAN OUT W/CAP
VTR	VENT TO ROOF W/LEAD DOOT
V	VENT
SAN	SANITARY
C/W	COLD WATER
H/W	HOT WATER
HS	HAND SINK
LAV	HANDICAP WALL HUNG LAVATORY
WC	HANDICAP WATER CLOSET
MS	MOP SINK
FS	FLOOR SINK
CO.	CONTINUE
1CS	SINGLE E COMPARTMENT SINK
GT	GREASE TRAP
3CS	TRIPLE COMPARTMENT SINK
WH	WATER HEATER
GF	GLASS FILLER
DRF	DROP IN RINSER FAUCET
DIS	DROP-IN, ICE STATION



3 WATER ISOMETRIC RISER DIAGRAM.

NORITZ

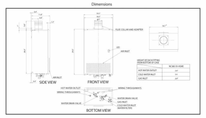
Model NC380-SV-ASME
Commercial Water Heater
Specification Sheet

Job Name _____
Location _____
Architect/Engineer _____
Wholesaler _____
Mechanical Contractor _____
Model No. _____
Gas Type _____
No. of Units (Qty) _____ Total BTU/hr Input _____
Plumber _____
Notes _____

- **Standard Input** - gas consumption ranges from 23,000 BTU/hr to 380,000 BTU/hr
- **Compact Design** - ANSI Z21.10.3/CSA 4.3 certified design that can be wall mounted indoors or installed outdoors using optional Vent Cap
- **Durable Stainless Steel Casing**
- **Heat Exchanger** - manufactured with commercial grade copper, 25% thicker copper than standard models.
- **Venting** - available in standard power vent model that requires 3" Category III stainless steel vent
- **Direct Electronic Ignition**
- **Multi System Capability** - units can be linked together by using either the optional E-Link Quick Connect or multi-unit System Controller for up to 24 units.
- **Fully Modulating** - BTU Input can range from 23,000 to 9.7 million BTUh (for 24 unit Multi System)
- **Thermal Efficiency** - 96% efficient for use with natural gas and 94% for propane.
- **Temperature Controls** - includes remote thermostat that can precisely control temperature ranges from 100°F to 180°F.
- **Safety Devices** - Flame Sensor, Overheat Prevention Device, Lightning Protect, Anti-Freeze Protection
- **Five Year Limited Heat Exchanger Warranty for Commercial Use**
- **Five Year Limited Parts Warranty & 1 Year Reasonable Labor**
- **ASME Certified** - all models meet the requirements of ASME and the National Board

NORITZ AMERICA CORPORATION
11160 Grace Avenue, Fountain Valley, CA 92708 Tel: 1-866-740NRTZ www.noritz.com

Model
NC380 - SV - ASME
Accessories
Vent Cap (APVC 102)
Outdoor Kit(Kit-OPT-380-1 / Kit-OPT-380-2)
Quick Connect Kit (QCK-1)
Quick Connect Cord Kit (QCC-1)
Controller
Multi-Unit (NRC-MU-OPT-400)
Multi-Unit (NRC-MU-OPT-1000)
Multi-Unit (NRC-MU-OPT-2000)



Flow Rates

Temperature Rise (°F)	35	50
Flow Rate (GPM)	2 unit	6.5
	3 unit	11.6
	4 unit	15.4
	5 unit	19.1
	6 unit	22.7
	7 unit	26.4
	8 unit	30.1
Flow Rate (GPM)	2 unit	9.8
	3 unit	17.4
	4 unit	23.1
	5 unit	28.6
	6 unit	34.1
	7 unit	39.6
	8 unit	45.1

Pressure Loss

NOTE: For Quick Connect and Multi System installations, pressure loss common to all models throughout the entire manifold of the installation will be the same as the pressure loss of one of the models in the manifold. Flow rate and pressure loss will be determined by the number of units in the manifold.

Power Supply and Consumption

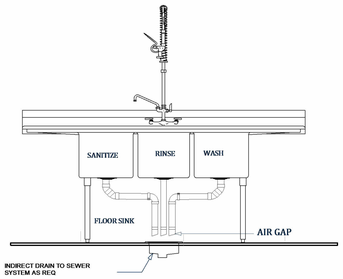
Model Name	Supply	Consumption
NC380-SV-ASME	120VAC, 60Hz, 1Ph, 15A (Fused)	1.5A (Standby) 180W (Max. Fan Power)

Temperature Settings and Options

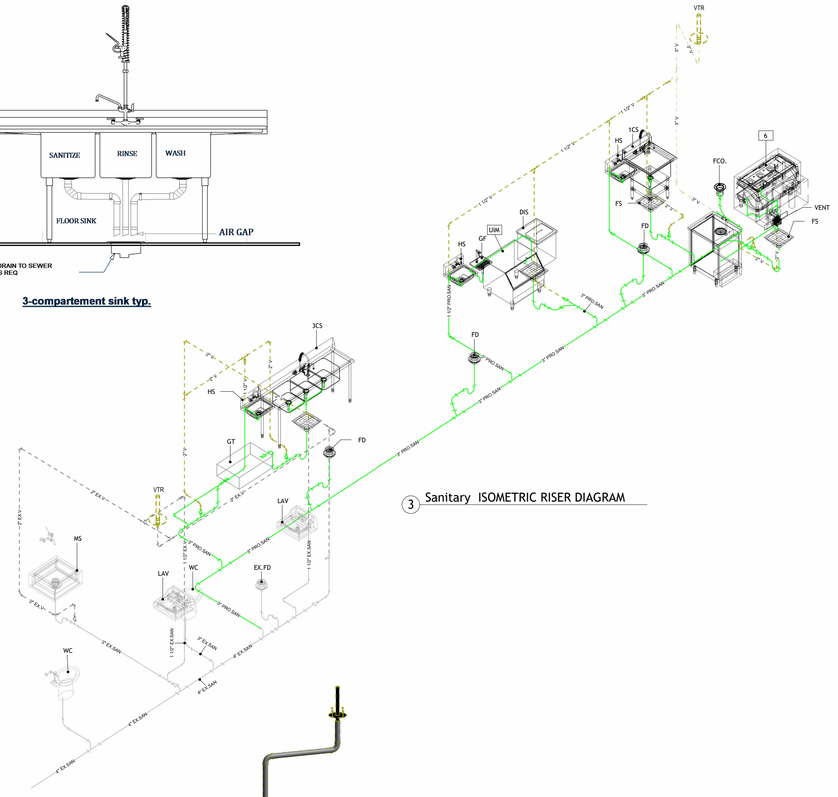
Temperature Settings	100°F to 180°F (Adjustable in 1°F Increments)
Default Temperature Setting	120°F
Options	115, 130, 140, 150°F (Default to 120°F)

Specification

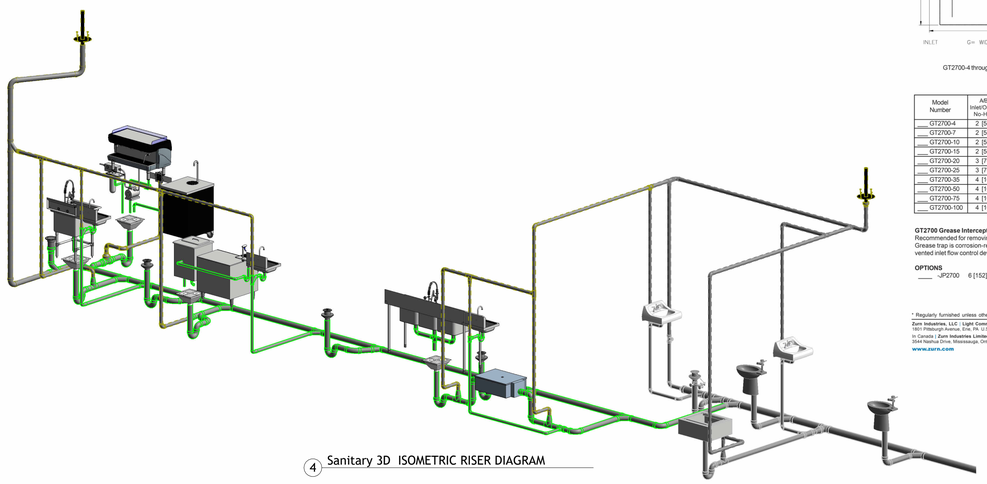
Commercial, gas-fired, wall mounted water heater(s) shall be power vent type and shall be manufactured by Noritz America Corporation. The water heater(s) shall have a Low Nitrous Oxide Exchanger rated for use with natural and propane gases and shall be certified by the International to the most edition of ANSI standard Z21.10.3/CSA 4.3. Water heater(s) shall have a nominal flow rate capacity of ____ GPH at 70°F rise. Gas input shall be ____ BTU/hr. Water heater(s) shall have a thermal efficiency of 96% for natural gas and 94% for propane. Water heater(s) shall have a turndown ratio of 24:1. Water heater(s) shall be capable of operating at inlet water pressures of 30 PSIG minimum and 150 PSIG maximum. Water heater(s) shall be capable of operating at ambient temperatures of 32°F to 104°F. Water heater(s) shall be capable of operating at vent lengths of 0 to 100 equivalent feet



3-compartement sink typ.



3 Sanitary ISOMETRIC RISER DIAGRAM

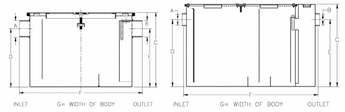


4 Sanitary 3D ISOMETRIC RISER DIAGRAM

Plumbing Fixture Schedule			
Phase Created	Type Mark	Description	Count
EXSITING		Centerset bathroom sink faucet	2
New Construction	1CS	1 Compartment Sink	1
New Construction	3CS	3 Compartment Sink	1
New Construction	DIS	DROP-IN, ICE STATION	1
New Construction	DRF	Drop In Rinser Faucet	1
EXSITING	EX.FD		1
New Construction	FCO.	FoodSafe Floor Clean Out, 4 in Outlet, SCH 40	1
New Construction	FD	3" FLOOR DRAIN	3
New Construction	FS	PVC Floor Sink, 12 Inch Square x 6 Inch Deep	4
New Construction	GF	Glass Filler	1
New Construction	GT	Low Profile Grease Interceptor	1
New Construction	HS	Hand Sink	3
EXSITING	LAV	21 1/4Inch x 18 1/8Inch wall-mount/concealed arm carrier bathroom sink with single faucet hole	2
EXSITING	MS	EX. Mop Sink	1
New Construction	PRO.WH-1	380K BTU GAS Tankless Water Heater	1
EXSITING	PRO.WH-2	380K BTU GAS Tankless Water Heater	1
New Construction	VENT	Oatey Moda , SureVent, Std Drain	1
EXSITING	WC	WATER CLOSET - FLUSH VALVE (ADA)	2
Grand total: 28			

ZURN GT2700
GREASE INTERCEPTOR
SPECIFICATION SHEET
TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



GT2700-4 through GT2700-50

GT2700-75 & GT2700-100

Model Number	A/B Inlet/Outlet No-Hub	Flow Rate G.P.M. [L]	Capacity Grease Lbs. [kg]	Dimension in Inches C	D/E	F	G
GT2700-4	2 [51]	4 [15]	8 [4]	10 [254]	7-1/4 [184]	16-3/8 [416]	9-7/8 [251]
GT2700-7	2 [51]	7 [26]	14 [6]	11-1/8 [283]	8-1/8 [206]	17-3/4 [451]	11-7/8 [302]
GT2700-10	2 [51]	10 [38]	20 [9]	11-3/4 [298]	8-1/4 [210]	19-3/4 [502]	14 [356]
GT2700-15	2 [51]	15 [57]	30 [14]	13-3/8 [340]	9-3/8 [238]	21-3/4 [552]	16-3/4 [425]
GT2700-20	3 [76]	20 [76]	40 [18]	15 [381]	11-3/4 [298]	24-5/8 [625]	17-1/4 [438]
GT2700-25	3 [76]	25 [94]	50 [23]	17 [432]	12-7/16 [316]	26-5/8 [676]	19-7/8 [505]
GT2700-35	4 [102]	35 [132]	70 [32]	18-3/4 [476]	14-3/16 [360]	28-1/2 [724]	22-1/2 [572]
GT2700-50	4 [102]	50 [189]	100 [45]	21-1/2 [546]	16 [406]	30-3/8 [772]	24-1/2 [622]
GT2700-75	4 [102]	75 [283]	150 [68]	22-3/4 [587]	18-1/2 [470]	40-1/4 [1022]	28-5/8 [727]
GT2700-100	4 [102]	100 [378]	200 [91]	27 [685]	23 [584]	44 [1118]	33-5/8 [854]

GT2700 Grease Interceptor
Recommended for removing and retaining grease from wastewater in kitchen and restaurant areas where food is prepared. Grease trap is corrosion-resistant coated fabricated steel with no-hub connections, flow diffusing baffle, integral trap, and vented inlet flow control device.

OPTIONS
—— HP2700 6 [152] Extension

APPROVED Sizes 4 - 50

NSF Sizes 20 G.P.M. - 50 G.P.M.

* Regularly furnished unless otherwise specified.

Zurn Industries, LLC. | Light Commercial Plumbing Products
1801 Pittsburgh Avenue, Erie, PA U.S.A. 16502 · Ph. 800-883-9876, Fax 814-454-7929
In Canada | Zurn Industries Limited
3544 Nashua Drive, Mississauga, Ontario L4V 1L2 · Ph. 905-405-8272, Fax 905-405-1292
www.zurn.com

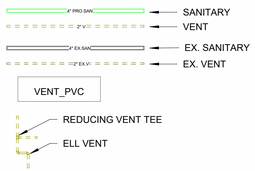
Rev. C
Date: 2/15/2018
C.N. No. 139638
Prod. | Dwg. No. GT2700

PLUMBING LEGEND

TYPE MARK	2D VIEW	DESCRIPTION
GT		50 GPM GREASE TRAP
MS		MOP SINK
WH-		EX.380K BTU TANKLESS WATER HEATER
WC		ADA WATER CLOSET
FS		FLOOR SINK
FD	FD	FLOOR DRAIN
FCO	FCO.	FLOOR CLEANOUT
LAV		ADA WALL HUNG LAVATORY
3CS		TRIPLE COMPARTMENT SINK
ICS		SINGLE COMPARTMENT SINK
HS		HAND SINK
UIM		UNDERCOUNTER ICE MAKER
DIS		DROP-IN, ICE STATION
DRF		DROP IN RINSER FAUCET
GF		GLASS FILLER

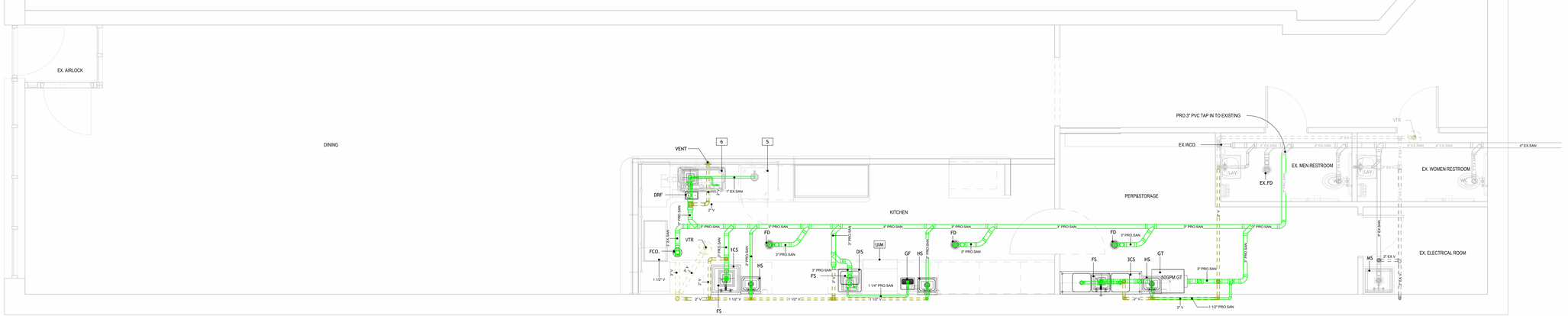
NOTE:
THE SIZE, TYPE AND LOCATION OF EACH INTERCEPTOR AND OF EACH SEPARATOR SHALL BE APPROVED BY THE PLUMBING OFFICIAL. WHERE THE INTERCEPTOR OR SEPARATOR IS LOCATED WITHIN AN ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM, SUCH INTERCEPTOR OR SEPARATOR SHALL BE APPROVED BY THE HEALTH OFFICIAL. THE INTERCEPTOR OR SEPARATOR SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER 'S INSTRUCTIONS AND THE REQUIREMENTS OF THIS SECTION. WASTES THAT DO NOT REQUIRE TREATMENT OR SEPARATION SHALL NOT BE DISCHARGED INTO ANY INTERCEPTOR OR SEPARATOR.

PIPE SYSTEMS



PLUMBING SYMBOL

SYMBOL	DESCRIPTION
PRO	PROPOSED
EX	EXISTING
FD	FLOOR DRAIN
FCO.	CLEAN OUT W/CAP
VTR	VENT TO ROOF W/LEAD DOOT
V	VENT
SAN	SANITARY
C/W	COLD WATER
H/W	HOT WATER
HS	HAND SINK
LAV	HANDICAP WALL HUNG LAVATORY
WC	HANDICAP WATER CLOSET
MS	MOP SINK
FS	FLOOR SINK
CO.	CONTINUE
1CS	SINGLE E COMPARTMENT SINK
GT	GREASE TRAP
3CS	TRIPLE COMPARTMENT SINK
WH	WATER HEATER
GF	GLASS FILLER
DRF	DROP IN RINSER FAUCET
DIS	DROP-IN, ICE STATION



2 SANITARY PLAN
1/4" = 1'-0"

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT

SANITARY PLAN

PROJECT NUMBER:

DATE: 2029
05/3/2025

DRAWN BY:
ABDULRAHMAN ALQADHI

P102

SCALEAs indicated

24"X36" SHEET

STATE OF MICHIGAN
ARTHUR E. KALAJIAN
LICENSE No. 1301027775
REGISTERED ARCHITECT

NOTE PER 2021 MBC BUILDING CODE:

PER-607.3 THERMAL EXPANSION CONTROL
WHERE A STORAGE WATER HEATER IS SUPPLIED WITH COLD WATER THAT PASSES THROUGH A CHECK VALVE, PRESSURE REDUCING VALVE OR BACKFLOW PREVENTER, A THERMAL EXPANSION CONTROL DEVICE SHALL BE CONNECTED TO THE WATER HEATER COLD WATER SUPPLY PIPE AT A POINT THAT IS DOWNSTREAM OF ALL CHECK VALVES, PRESSURE REDUCING VALVES AND BACKFLOW PREVENTERS. THERMAL EXPANSION CONTROL DEVICES SHALL BE SIZED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SHALL BE SIZED SUCH THAT THE PRESSURE IN THE WATER DISTRIBUTION SYSTEM SHALL NOT EXCEED THAT REQUIRED BY SECTION 604.8.

PER-504.2 VACUUM RELIEF VALVE
BOTTOM FED WATER HEATERS AND BOTTOM FED TANKS CONNECTED TO WATER HEATERS SHALL HAVE A VACUUM RELIEF VALVE INSTALLED. THE VACUUM RELIEF VALVE SHALL COMPLY WITH ANSI Z21.22.

PER- 1003.3.4.2 RATE OF FLOW CONTROLS
GREASE INTERCEPTORS SHALL BE EQUIPPED WITH DEVICES TO CONTROL THE RATE OF WATER FLOW SO THAT THE WATER FLOW DOES NOT EXCEED THE RATED FLOW. THE FLOW-CONTROL DEVICE SHALL BE VENTED AND TERMINATE NOT LESS THAN 6 INCHES (152 MM) ABOVE THE FLOOD RIM LEVEL OR BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

PER SEC. 702.5
WHERE THE WASTE WATER TEMPERATURE WILL BE GREATER THAN 140°F (60°C), THE SANITARY DRAINAGE PIPING MATERIAL SHALL BE RATED FOR THE HIGHEST TEMPERATURE OF THE WASTE WATER

PER-604.3 WATER DISTRIBUTION SYSTEM DESIGN CRITERIA.
THE WATER DISTRIBUTION SYSTEM SHALL BE DESIGNED, AND PIPE SIZES SHALL BE SELECTED SUCH THAT UNDER CONDITIONS OF PEAK DEMAND, THE CAPACITIES AT THE FIXTURE SUPPLY PIPE OUTLETS SHALL BENOT LESS THAN SHOWN IN TABLE 604.3. THE MINIMUM FLOW RATE AND FLOW PRESSURE PROVIDED TO FIXTURES AND APPLIANCES NOT LISTED IN TABLE 604.3 SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

PER-503.1 COLD WATER BRANCH LINE TO WATER HEATER
SHALL BE PROVIDED WITH A VALVE, LOCATED NEAR THE EQUIPMENT AND SERVING ONLY THE HOT WATER HEATER. THE VALVE SHALL NOT INTERFERE OR CAUSE ADISRUPTION OF THE COLD WATER SUPPLY TO THE REMAINDER OF THE COLD WATER SYSTEM.

608.2 PLUMBING FIXTURES.
THE SUPPLY LINES AND FITTINGS FOR PLUMBING FIXTURES SHALL BE INSTALLED SO AS TO
PREVENT BACK FLOW. PLUMBING FIXTURE FITTINGS SHALL PROVIDE BACK FLOW PROTECTION IN ACCORDANCE WITH ASME A112.18.1/CSA B125.1.

PER-905.4 VERTICAL RISE OF VENT.
EVERY DRY VENT SHALL RISE
VERTICALLY TO A POINT NOT LESS THAN 6 INCHES (152 MM) ABOVE THE FLOOD LEVEL RIM OF THE HIGHEST TRAP OR TRAPPED FIXTURE BEING VENTED.
EXCEPTION: VENTS FOR INTERCEPTORS LOCATED OUTDOORS.

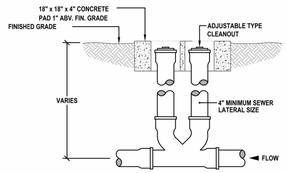
PER-905.3 VENT CONNECTION TO DRAINAGE SYSTEM.
EVERY DRY VENT CONNECTING TO A HORIZONTAL DRAIN SHALL CONNECT ABOVE THE CENTERLINE OF THE HORIZONTAL DRAIN PIPE.

PER-1003.3.5.2 RATE OF FLOW CONTROLS.
GREASE INTERCEPTORS SHALL BE EQUIPPED WITH DEVICES TO CONTROL THE RATE OF WATER FLOW SO THAT THE WATER FLOW DOES NOT EXCEED THE RATED FLOW. THE FLOW-CONTROL DEVICE SHALL BE VENTED AND TERMINATE NOT LESS THAN 6 INCHES (152 MM) ABOVE THE FLOOD RIM LEVEL OR BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

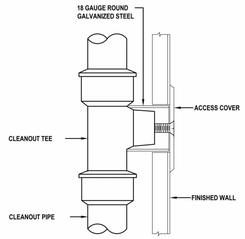
PER-SECTION 901.2.1 VENTING REQUIRED.
TRAPS AND TRAPPED FIXTURES SHALL BE VENTED

312.1.1 NEW, ALTERED, EXTENDED OR REPAIRED SYSTEMS.
NEW PLUMBING SYSTEMS AND PARTS OF EXISTING SYSTEMS THAT HAVE BEEN ALTERED,
EXTENDED, OR REPAIRED SHALL BE TESTED AS PRESCRIBED HEREIN TO DISCLOSE LEAKS AND DEFECTS, EXCEPT THAT TESTING IS NOT REQUIRED IN THE FOLLOWING CASES:

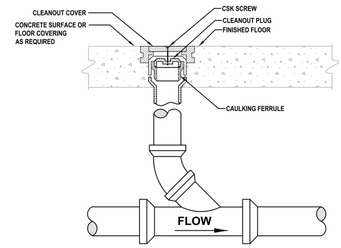
PER-901.3 CHEMICAL WASTE VENT SYSTEMS
THE VENT SYSTEM FOR A CHEMICAL WASTE SYSTEM SHALL BE INDEPENDENT OF THE SANITARY VENT SYSTEM AND SHALL TERMINATE SEPARATELY THROUGH THE ROOF TO THE OUTDOORS OR TO AN AIR ADMITTANCE VALVE THAT COMPLIES WITH ASSE 1049. AIR ADMITTANCE VALVES FOR CHEMICAL WASTE SYSTEMS ARE TO COMPLY WITH SECTION 918 INCLUDING SECTION 918.8, ARE TO BE CONSTRUCTED OF MATERIALS APPROVED IN ACCORDANCE WITH SECTION 702.6, AND ARE TO BE TESTED FOR CHEMICAL RESISTANCE IN ACCORDANCE WITH ASTM F1412.



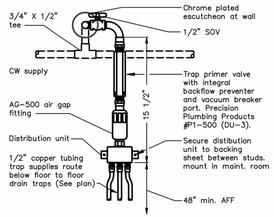
TYPICAL DOUBLE CLEANOUT
SCALE: NTS



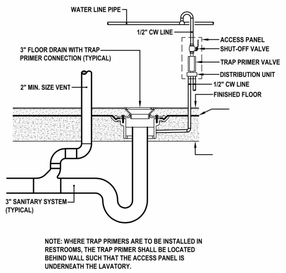
TYPICAL WALL CLEANOUT DETAIL
SCALE: NTS



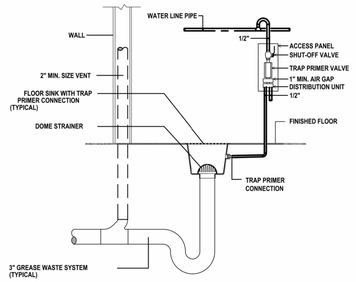
TYPICAL FLOOR CLEANOUT DETAIL
SCALE: NTS



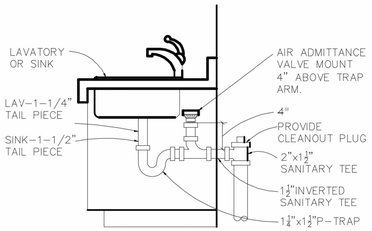
TYPICAL TRAP PRIMER DETAIL
SCALE: NONE



TYPICAL FLOOR DRAIN DETAIL
SCALE: NTS



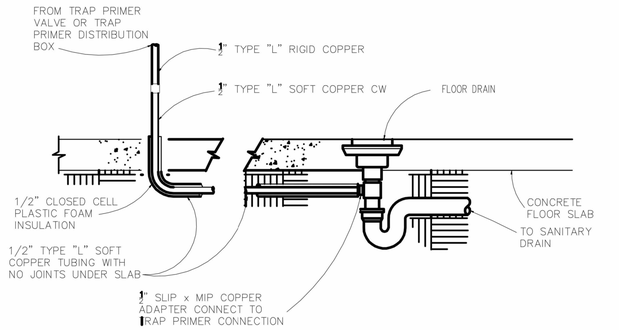
TYPICAL FLOOR SINK DRAIN DETAIL
SCALE: NTS



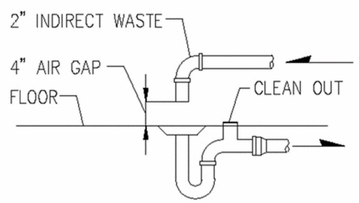
AIR ADMITTANCE VALVE DETAIL
NO SCALE

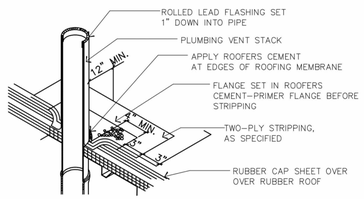
GENERAL NOTE:

CONTRACTOR HAS OPTION TO USE AIR ADMITTANCE VALVE ON LAVATORY AND SINK WHERE NOTED ON DRAWINGS.



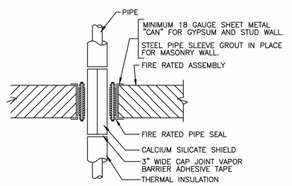
DETAIL – TRAP PRIMER FOR FLOOR DRAIN
NO SCALE





1. SHEET LEAD MINIMUM OF 2–1/2 LB PER SQUARE FOOT.

ROOF VENT DETAIL
N.T.S.



PIPE SLEEVE THRU FIRE RATED WALL DETAIL
NTS.

NOTE
UNINSULATED PIPE DETAIL SIMILAR, EXCEPT DELETE CALCIUM SILICATE SHIELD

PRO ARCHITECT
EMAIL: PROARCHITECT2025@GAMIL.COM
Tel: 313-775-1777

125 S Main St
Rochester, MI 48307

TENANT IMPROVEMENT
SANITARY SPEC.

PROJECT NUMBER:
DATE: 2029
05/3/2025
DRAWN BY:
ABDULRAHMAN ALQADHI

P103

SCALE
24"X36" SHEET

STATE OF MICHIGAN
ARTHUR E. KALAJIAN
LICENSE No. 1301027775
REGISTERED ARCHITECT

MAY 2025 PARKING STUDY # OF OCCUPIED SPACES

WEST PARKING DECK (297) 401 S MAIN & 313 S MAIN

	5/12/2025	5/14/2025	5/16/2025	5/17/2025	5/19/2025	5/21/2025	5/23/2025	5/24/2025
11AM	78	99	112	62	103	90	87	57
4PM	77	98	147	90	86	110	94	74
8PM	33	194	252*	188	60	67	168	177

LOT #5 (29)313 S MAIN

	5/12/2025	5/14/2025	5/16/2025	5/17/2025	5/19/2025	5/21/2025	5/23/2025	5/24/2025
11AM	15	17	28	29	14	23	21	25
4PM	11	22	29	26	18	27	23	15
8PM	19	27	29	29	16	26	29	26

LOT # 4 (97) 313 S MAIN

	5/12/2025	5/14/2025	5/16/2025	5/17/2025	5/19/2025	5/21/2025	5/23/2025	5/24/2025
11AM	25	25	33	72	14	21	39	46
4PM	0	10	19	23	2	10	11	11
8PM	5	62	94	52	4	15	70	93

LOT # 9 (39) 175 S MAIN

	5/12/2025	5/14/2025	5/16/2025	5/17/2025	5/19/2025	5/21/2025	5/23/2025	5/24/2025
11AM	15	8	9	10	14	10	11	8
4PM	13	15	12	20	10	19	14	10
8PM	10	25	39	22	3	27	33	28

EAST DECK (235) 406 S MAIN

	5/12/2025	5/14/2025	5/16/2025	5/17/2025	5/19/2025	5/21/2025	5/23/2025	5/24/2025
11AM	67	85	86	91	70	101	80	83
4PM	31	81	76	45	53	76	64	33
8PM	26	67	84	47	23	38	82	44

* The Roxy held a special event and bought 70 validations for their patrons