ALLENDALE CHARTER TOWNSHIP
PLANNING COMMISSION MEETING

May 18, 2026
7:00 p.m.
Allendale Township Public Meeting Room

1. Call the Meeting to Order
2. Roll Call
3. Communications and Correspondence:
4. Approval of the Agenda
5. Approval of the May 4, 2026 Planning Commission minutes
6. Public Comments for *non-public hearing items*

7. Public Hearings:
    A. Zoning Text Amendments
        i. Section 470-3.14O3 – Condominium Project Approval
        ii. Section 470-4.01M – Zoning Districts
        iii. Section 470-4.01N – Zoning Districts
        iv. Section 470-5.03U, V, W, and X – Uses Requiring Special Approval
        v. Section 470-7.03G – Uses Requiring Special Approval
        vi. Section 470-12.05D – Development Requirements for All PUD's, Sidewalks
        vii. Section 470-12.11 – Existing Approved PUD's
        viii. Section 470-14.03S – Uses Requiring Special Approval
        ix. Section 470-16.03T - Uses Requiring Special Approval
        x. Article 17 – TC Town Center Overlay District
        xi. Section 470-23.12(A)(9) – General Provisions
        xii. Section 470-23.12(C) – AG Agricultural and Rural Zoning District
        xiii. Section 470-23.26 – Tiny Home Developments
    B. Zoning Map Amendment
        i. TC Town Center Overlay District
    C. Subdivision Text Amendments
        i. Section 405-23A(14) – Required Improvements
    D. Wesco – Seeking 5,970 square foot gas station and retail store with drive up window

8. Site Plan Review:
    A. 4900 Allen Park Drive – Seeking 20,966 square foot industrial incubator building

9. New Business:

10. Old Business:

11. Public Comments

12. Township Board Reports

13. Commissioner and Staff Comments

14. Adjourn

<u>Next meeting: June 1, 2026 at 7:00 p.m.</u>

ALLENDALE CHARTER TOWNSHIP
PLANNING COMMISSION MEETING

May 4, 2026
7:00 p.m.
Allendale Township Public Meeting Room

1. Call the Meeting to Order: 7:00 PM
2. Roll Call:
   Present: Mark Adams, Rick Westerling, Todd Bronson, Ray Nadda, Joe Jacquot, Bruce Zeinstra and Tom Zuniga
   Absent: None
   Staff and Guests Present: Greg Ransford
3. Communications and Correspondence: Traders Creek map
4. Approval of the Agenda. Motion to approve agenda as is by Mark Adams, Seconded by Tom Zuniga, **Approved 7-0**
5. Motion to Amend April 20, 2026 Planning Commission minutes by Todd Bronson, Seconded by Tom Zuniga, **Approved 7-0**
6. Motion to Approve April 27, 2026 Joint meeting with the Board and DDA minutes by Joe Jacquot, Seconded by Rick Westerling, **Approved 7-0**
7. Public Comments for *non-public hearing item*: Mike Rodibaugh presented the Planning Commission with a map of land, approximately 30-50 acres, he would consider selling to the township for a park.
8. Public Hearings: None
9. Site Plan Review: None
10. New Business:
    A. Text Amendment Discussion – Outdoor Wood Boilers in the Industrial and Commercial Districts

       The PC had conversation surrounding the possibility of amending the ordinance. Strike the "prohibited on commercial or industrial use" from 470-23.22. The wording between articles D, E, and F were thoroughly examined and could be combined. Minimum setback will be 100' from every property line and chimney height should be 15' from the ground. Public hearing will be needed. Mr. Ransford to draft text amendment and public hearing notice.
11. Old Business:
    A. Section 12.11 – Existing Approved PUD's

       The question was asked. "Is the township going to be the one implementing the change? Is the township paying the dollar for the amendment?" This is being pursued by the township, not the developer. Township-driven. Mr. Ransford to draft the notice, get attorney's approval and to schedule a hearing.
12. Public Comment: None
13. Township Board Reports: Approved Emerald Springs Phase 2 Final Plat as well as the first reading of Water System Ordinance
14. Commissioner and Staff Comments: Concerns about follow-up from Tommy's Car Wash public comments. Bruce Zeinstra to mention the park offer to the Township Board.
15. Adjourn: 7:31 PM

DRAFT

Next meeting May 18, 2026 at 7:00 p.m.

Minutes respectfully submitted by Katie Glynn

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DRAFT

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MEMORANDUM

To: Allendale Charter Township Planning Commission
From: Gregory L. Ransford, MPA
Date: May 13, 2026
Re: Various Text Amendments and Map Amendment – Public Hearing

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Pursuant to your recent direction, attached is a Zoning Text Amendment Ordinance to revise the Allendale Charter Township Zoning Ordinance to amend various sections to manage clear sidewalks, include certain uses as a special use, permit tiny home developments, allow for the expansion of existing PUDs not subject to certain requirements depending on their approval date, and create Article 17 for the Town Center Overlay District. As a result of these amendments, the proposed Zoning Text Amendment Ordinance includes revision to Section 470-4.01N to include the new Town Center Overlay District within the list of districts. Related, we found that the Industrial District within Section 470-4.01M was not updated to eliminate "light," when the Township consolidated its two past industrial zoning districts. Given this, we took the liberty to schedule the correction for public hearing as well.

In addition, the related Zoning Map Amendment Ordinance to create the Town Center Overlay District is attached.

Finally, attached is a Subdivision Text Amendment Ordinance to revise the Allendale Charter Township Subdivision of Land Ordinance (previously Subdivision Ordinance) regarding the management of clear sidewalks.

The Zoning Text Amendment Ordinances and the Zoning Map Amendment Ordinance have been scheduled for a public hearing at your May 18, 2026, meeting. If you have any questions, please let us know.

GLR
Planner

Attachments

cc: Adam Elenbaas, Supervisor

ORDINANCE NO. _____

ZONING TEXT AMENDMENT ORDINANCE

AN ORDINANCE TO AMEND THE ZONING ORDINANCE, CHAPTER 470 OF THE CODE OF ORDINANCES, OF ALLENDALE CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN BY ADDING 470-3.14O3 – CONDOMINIUM PROJECT APPROVAL; AMENDING SECTION 470-4.01M – ZONING DISTRICTS; AMENDING SECTION 470-4.01N – ZONING DISTRICTS; AMENDING SECTION 470-5.03U – USES REQUIRING SPECIAL APPROVAL AND ADDING SECTION 470-5.03V, W, AND X; ADDING SECTION 470-7.03G – USES REQUIRING SPECIAL APPROVAL; ADDING SECTION 470-12.05D – DEVELOPMENT REQUIREMENTS FOR ALL PUD'S; AMENDING SECTION 470-12.11 – EXISTING APPROVED PUD'S; ADDING SECTION 470-14.03S – USES REQUIRING SPECIAL APPROVAL; ADDING SECTION 470-16.03T – USES REQUIRING SPECIAL APPROVAL; ADDING ARTICLE 17 – TC TOWN CENTER OVERLAY DISTRICT; AMENDING SECTION 470-23.12(A)(9) – GENERAL PROVISIONS; AMENDING SECTION 470-23.12(C) – AG AGRICULTURAL AND RURAL ZONING DISTRICT; ADDING SECTION 470-23.26 – TINY HOME DEVELOPMENTS; AND PROVIDING FOR REPEAL, SEVERABILITY PROVISIONS, AND THE EFFECTIVE DATE OF THIS ORDINANCE.

THE CHARTER TOWNSHIP OF ALLENDALE, COUNTY OF OTTAWA, AND STATE OF MICHIGAN ORDAINS:

Section 1. Condominium Project Approval. Section 470-3.14O3 of Chapter 470 of the Code of Ordinances shall be added to state in its entirety as follows.

Section 470-3.14O3 – Condominium Project Approval

The developer shall demonstrate that all sidewalks, pathways, and other dedicated pedestrian areas within the site condominium project will be generally free of any obstruction, including parked vehicles, that would impede natural pedestrian movement within the sidewalk, pathway, or other dedicated pedestrian area.

Section 2. Zoning Districts. Section 470-4.01M of Chapter 470 of the Code of Ordinances shall be amended to state in its entirety as follows.

Section 470-4.01M

Industrial District Regulations

Section 3. Zoning Districts. Section 470-4.01N of Chapter 470 of the Code of Ordinances shall be amended to state in its entirety as follows.

Section 470-4.01N

TC – Town Center Overlay District Regulations

Section 4. Uses Requiring Special Approval. Section 470-5.03U, V, W, and X of Chapter 470 of the Code of Ordinances shall be amended and added to state in their entireties as follows.

Section 470-5.03 – Uses Requiring Special Approval

U. Outdoor Venues
V. Bed and Breakfast Establishments
W. Tiny Home Developments
X. Any use that is found by the Planning Commission to be similar to any special use listed under Section 470-5.03, provided that such use to be approved is not permitted by right or by special use in any Zoning District.

Section 5. Uses Requiring Special Approval. Section 470-7.03G of Chapter 470 of the Code of Ordinances shall be added to state in its entirety as follows.

Section 470-7.03G – Uses Requiring Special Approval

Bed and Breakfast Establishments

Section 6. Development Requirements for All PUD's, Sidewalks. Section 470-12.05D of Chapter 470 of the Code of Ordinances shall be added to state in its entirety as follows.

Section 470-12.05D – Development Requirements for All PUD's, Sidewalks

The PUD shall demonstrate that all sidewalks, pathways, and other dedicated pedestrian areas within the development will be generally free of any obstruction, including parked vehicles, that would impede natural pedestrian movement within the sidewalk, pathway, or other dedicated pedestrian area.

Section 7. Existing Approved PUD's. Section 470-12.11 of Chapter 470 of the Code of Ordinances shall be amended to state in its entirety as follows.

Section 470-12.11 – Existing Approved PUD's

A. Planned Unit Developments that were given either Preliminary or Final PUD Site Plan approval prior to January 23, 2012 and which all or only part of the PUD existed as of the effective date of this Chapter shall be considered to be

conforming uses and shall continue to be regulated by the conditions and the site plan, whether Preliminary or Final, which were previously approved for the particular PUD.

B. If the Ordinance or resolution approving such PUD does not contain zoning regulations or development standards which would otherwise normally apply to the land uses proposed in the PUD then the Township Board, following a recommendation, from the Planning Commission, may apply the normal zoning regulations or development standards or may modify them as requested by the applicant in accordance with Section 470-12.06 herein.

C. A major or minor change to an existing PUD shall be subject to the procedures and requirements as set forth in Section 470-12.11 except that for a major change, the number of dwelling units and amount of open space shall remain as approved for the Preliminary PUD Site Plan. All other requirements and procedures for this Article as amended by Ordinance No. 2012-1, shall apply to the major change.

D. If an existing PUD is proposed to be expanded to include additional property outside the boundaries of the existing PUD then such enlargement shall be subject to all the requirements and procedures of this Article except when required or requested by the Township, Ottawa County, or other State or Federal regulatory agency in order to conform to other laws or regulations or for the purpose of public safety, public utilities, or other public health and welfare elements. The Township Board shall determine the extent of boundary enlargement exempt from this Article when applicable to achieving the related purposes of public good.

Section 8. Uses Requiring Special Approval. Section 470-14.03S of Chapter 470 of the Code of Ordinances shall be added to state in its entirety as follows.

Section 470-14.03S – Uses Requiring Special Approval

Outdoor Venues

Section 9. Uses Requiring Special Approval. Section 470-16.03T of Chapter 470 of the Code of Ordinances shall be amended to state in its entirety as follows.

Section 470-16.03T – Uses Requiring Special Approval

Outdoor Venues

Section 10. Article 17 – Town Center Overlay District. Article 17 of Chapter 470 of the Code of Ordinances shall be added to state in its entirety as follows.

ARTICLE 17
TC TOWN CENTER OVERLAY DISTRICT

SECTION 470-17.01 DESCRIPTION AND PURPOSE. The Town Center Overlay District is intended to create a centralized mix of commercial and residential uses built as a traditional downtown settling serving the local needs of the community and the region. These regulations are intended to promote development of a pedestrian-accessible mixed-use district consisting of a variety of residential, retail, office, and service uses as well as vibrant social public amenities. Special attention must be focused on site layout, building design, vehicular circulation, pedestrian access, and coordination of site features and structures between adjoining sites. Permitted uses should be compatible with surrounding uses to ensure there are no external impacts that are detrimental in any way to other uses in the district or properties in adjoining districts. Any building, use, or improvement above grade level requires site plan review and approval by the Allendale Charter Township Planning Commission, unless otherwise specified in this Chapter. This overlay district is based upon careful evaluation and study as part of a master planning effort by the Allendale Charter Township Planning Commission. Objectives for the overlay district are as follows:

Specifically, the Town Center Overlay District is intended to:

A. Promote development consistent with the goals and recommendations detailed in the Town Center chapter of the Allendale Charter Township Master Plan.
B. Accommodate a variety of uses permitted by the underlying zoning districts and ensure such uses are designed to achieve an attractive built and natural environment.
C. Facilitate high-quality development and redevelopment of commercial and residential uses through quality architecture, efficient site design, landscaping, parking, and access.
D. Achieve well-managed, safe, and efficient flow of motorized and non-motorized traffic, including accessibility and connectivity.
E. Foster a more pedestrian-friendly environment that contributes to the Township's sustainability as a vital, attractive, economic, and healthy place to live.
F. Maximize the capacity of Lake Michigan Drive and 60th Avenue by limiting and controlling the number and location of entry points and requiring alternate means of access through internal streets, shared driveways, and service drives or alleys.

SECTION 470-17.02 APPLICABILITY. As an overlay district, the Town Center Overlay District does not replace the range of uses allowed in the underlying districts but

provides additional development standards which must be met for any commercial or residential use on a lot within the district. Property in the Town Center Overlay District may continue to be used as permitted by the underlying zoning district and all other legal nonconformities are permitted to continue; however, any new activity that requires site plan approval in accordance with the requirements of this Chapter 470, Zoning, shall also comply with the requirements of the Town Center Overlay District contained in this Article. In the event there are conflicts between the requirements of the underlying zoning district and the Town Center Overlay District, the requirements of the Town Center Overlay District shall control.

A. Dimensional requirements specifically identified within Section 470-14.02 for any use may be reduced or eliminated by the Planning Commission during site plan review.
B. Special uses within the underlying General Commercial Zoning District are prohibited except those uses within Section 470-14.03J.
C. Drive-throughs are prohibited.

SECTION 470-17.03 DEFINITIONS. For the purposes of this Article, the following words, terms, and phrases shall have the following meanings:

A. Block – A mass of buildings collectively as more than one structure typically delimited from a street or road right-of-way to another street or road right-of-way, alley, or yard abutting a property outside of the Town Center Overlay.
B. Alley – A narrow passageway behind or between buildings intended for pedestrian and limited vehicular traffic.
C. Courtyard – A narrow passageway behind or between buildings intended for only pedestrians.

SECTION 470-17.04 SITE DEVELOPMENT STANDARDS. All development shall include the following design elements. For the purposes of illustration, design elements as described within this section should be similar to the images herein.

A. Single story buildings are prohibited. Buildings shall be no less than two (2) stories or have the appearance to contain no less than two (2) stories from the exterior. No building shall be taller than three (3) stories unless additional height is granted by Section 470-17.04C1 of this Chapter.
B. All buildings, structures, or additions thereto shall comply with the following requirements:
    1. Front Yard.
        (i) Eighty percent (80%) of the front building facade shall be at a zero foot setback. The Planning Commission may authorize a greater setback to accommodate an outdoor pedestrian space for dining, respite, or similar use. The Planning

Commission may authorize a greater setback for buildings located on a corner or curved street to accommodate an outdoor pedestrian space for dining, respite, a playground, street performances, or similar use.

(ii) Impediments. Entrance stairs, support structures to the upper floor or floors of a building, or other permanent building elements may be located within the sidewalk when such structures do not impede the orderly and safe movement of pedestrians. No more than twenty percent (20%) of the building mass within a Block shall contain impediments.

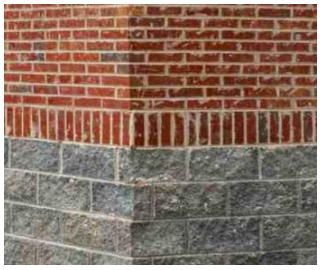
2. Side Yard. All buildings shall abut each other except where an Alley or Courtyard is present. Where a building is adjacent to a commercially zoned property outside of the Town Center Overlay, the side yard may be zero when the proposed building will abut a building on the adjacent property. Otherwise, where a building is adjacent to a commercially zoned property the side yard shall be the minimum necessary to accommodate the required sidewalk pursuant to Section 470-17.04N1. Where a building is adjacent to a residential district outside of the Town Center Overlay, the side yard setback of the underlying district applies.
3. Rear Yard. Where a building is adjacent to a commercially zoned property outside of the Town Center Overlay, the rear yard may be zero when the proposed building will abut a building on the adjacent property. Otherwise, where a building is adjacent to a commercially zoned property the rear yard shall be the minimum necessary to accommodate the required sidewalk pursuant to Section 470-17.04N1. Where a building is adjacent to a residential district outside of the Town Center Overlay, the rear yard setback of the underlying district applies.
4. Building facades containing external lighting shall be decorative and attached to the building. The lighting shall be directed down toward the ground or building or both and provide safe illumination from the building to the street right-of-way, alley, sidewalk, or parking.
5. All building facades shall be of a downtown-type character with accents and elements such as a canvas awning, modern metal canopy, a decorative cornice for flat roofs, sign band, gable roof, turrets, and etcetera. The front or main entry façade of the first story shall contain a see-through windowed storefront of at least thirty-five percent (35%) glass but no more than eighty percent (80%) glass. The first story of the secondary or non-entry façades shall contain no less than ten percent (10%) glass. The façade of the second story and any higher story shall contain ten percent (10%) to twenty-five percent (25%) glass. The remaining exterior building

materials on all elevations shall be finished primarily with wood, stucco, brick, architectural masonry block, stone, or a composite material of the same appearance as wood, stucco, brick, architectural masonry block, stone, or a combination of these materials, with contrasting colors.

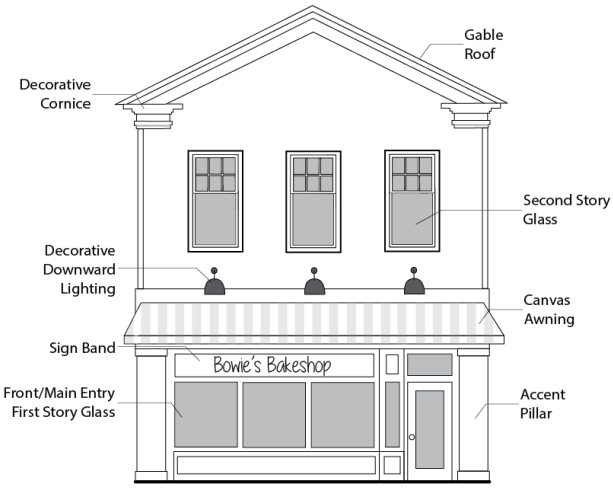
Stone

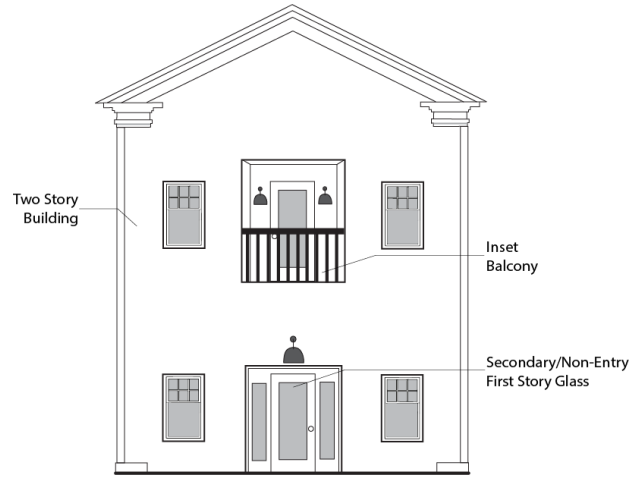
Wood / Wood Appearance

Stucco



Brick / Architectural Masonry Block





6. Building balconies shall be inset and shall not extend beyond the building walls, unless the balcony is located on the rear of the building. Balconies located on the rear of the building shall not extend over parking, drives, or right-of-ways.
7. Site structures shall provide the same architectural character and material as that of the building façade. Awnings shall have no less than three solid sides and shall be constructed with permanent stationary framing, without support posts, and be structurally sound to withstand all weather conditions.

C. Public Amenity. Each commercial building or Block or combination thereof shall provide for an outdoor or indoor public amenity. A public amenity shall not include outdoor dining, seating, or other space intended for the residential and or commercial use therein. A public amenity could include a water bottle filling station, pocket park, benches or other seating within the sidewalk, a

playground, courtyard, indoor or outdoor sculptures or other art, decorative water fountain, indoor green space, or other feature that promotes public gathering and interaction. Every public amenity shall be accessible during all hours of the day and night.

1. Buildings that abut and provide pedestrian access to the primary road may be increased in building height beyond that permitted by the underlying zoning district. Increased height may be allowed by the Planning Commission during site plan review when public amenities are provided in addition to those required by Section 470-17.04C of this Chapter, or other public improvements are provided, within the development. For each building granted increased height, no less than five percent (5%) of the footprint of the building shall be dedicated to a public amenity, whether located inside, outside, or both and shall be no less than 100 square feet in area.
2. Where practicable, outdoor public spaces shall be designed with connectivity.

D. First Floor Prohibitions. Offices and residential uses are prohibited on the first floor of any building but may be located above the first floor of a building.

E. Signage.

1. Only wall signage, mounted flat against or perpendicular to the wall, shall be permitted as a permanent sign.
    (i) No building shall contain more than one (1) wall sign.
    (ii) The total area of the wall sign shall not exceed five percent (5%) of the area of the wall on which the sign is affixed, including windows and doors, or twenty-five (25) square feet, whichever is smaller.
    (iii) Sign lighting shall be designed to direct the light downward and toward the building on which the sign is located so as to prevent glare onto adjacent properties or right-of-ways.
    (iv) No sign lighting shall include an electronic reader board nor shall any sign have any flashing, blinking, scrolling, alternating, sequentially lighted, animated, rolling, shimmering, sparkling, bursting, dissolving, twinkling, fade-in/fade-out, oscillating, moving text or images, or simulated movement of text or images.
2. Only sandwich boards are permitted as a temporary sign, subject to the following requirements:
    (i) Shall be no greater than six (6) square feet in area, forty-two (42) inches in height, and thirty (30) inches in width.
    (ii) Shall be located not more than twenty-four (24) inches from the storefront or building entrance for the use to which it serves.
    (iii) Shall not block pedestrian access.
    (iv) Shall be stored indoors outside of business hours of operation.

(v) Shall be constructed of durable materials and be clearly portable in terms of size, weight, and placements.

F. Landscaping. Landscaping shall be planted insofar as practicable pursuant to Article 21-A of this Chapter. Where compliance with Article 21-A in required yards is not possible, the number of required plantings within those required yards shall be integrated into outdoor public spaces, insofar as practicable.

G. Outdoor Storage. For any use established after the adoption of the Town Center Overlay, there shall be no outside processing of any goods or display of inventory within the Town Center Overlay District, except for events that occur only during hours of operation, such as sidewalk sales. All storage and equipment shall be contained within a wholly enclosed building.

H. Parking.
   1. Front Yard parking is prohibited. Parking shall only be located within the street or road right-of-way or within a yard screened by buildings, landscaping, and or other elements to reduce the impact of the view of vehicles. At a minimum, parking lot landscaping shall comply with Section 470-21A.04G of this Chapter.
   2. Minimum required parking shall be determined during site plan review based on sufficient evidence provided by the applicant and found satisfactory to the Planning Commission that the parking to accompany the proposed use will adequately serve the site. The Planning Commission may require additional parking where the Institute of Transportation Engineers Parking Generation Manual recommends more parking than that proposed by the applicant.
   3. Parking garages shall be located in the rear of the building and shall only be accessed from the rear of the building. Parking garages shall be constructed of the same materials required by Section 470-17.04B5. Ramps serving a parking area shall be adequately screened by landscaping and or other elements to reduce its exposure to adjacent pedestrian areas and the right-of-way from which it connects. When a parking garage serves as an anchor to a pedestrian bridge that spans across Lake Michigan Drive, the Planning Commission may authorize its location in any yard.

I. Alleys or Courtyards.
   1. No Alley shall be within the required setback of the underlying zoning district for the applicable yard in which it is located when it abuts any property outside of the Town Center Overlay District.
   2. Where a building Block exceeds 330 feet in length, an Alley or Courtyard shall be constructed to break up the mass of the building and provide ease of access for pedestrians throughout the Town Center Overlay District.
   3. Property or building owners shall provide the necessary easement document for the Alley or Courtyard for public use and shall record a maintenance agreement defining the maintenance responsibilities of

each property or building owner for any Alley or Courtyard required pursuant to this subsection.

J. Block.
    1. No Block shall contain buildings that are uniform in character. Building architectural elements such as materials, height, cornices, insets, awnings, and the like shall vary throughout the Block.
    2. No more than one (1) Alley may be allowed within a Block.

K. Waste Disposal Facilities. No solid waste disposal facility shall be located within the required setback of the underlying zoning district for the applicable yard in which it is located when it abuts any property outside of the Town Center Overlay District.

L. Street or Road Right-of-Way, Walkway, and Building Extensions. Any street or road right-of-way, walkway, or building within the Town Center Overlay shall be designed and built to allow for the future interconnection of the street or road right-of-way, walkway, or building within the Town Center Overlay, unless the building is located at the end of a Block. Any street or road right-of-way, or walkway within the Town Center Overlay that may terminate adjacent to property outside of the Town Center Overlay may be required to be designed and built to allow for the future interconnection of the street or road right-of-way or walkway, as determined by the Planning Commission.

M. Utilities. Connection shall be made to any public water and sanitary sewer system for any development. All new utility (e.g. power, cable, phone, internet, etcetera) services shall be located underground.

N. Public Improvements. Pursuant to the Description and Purpose of this Article, it is intended that public improvements within the Town Center Overlay possess certain physical form. The following public improvements shall be established within the Town Center Overlay.
    1. All commercial buildings shall include a public space of pedestrian walkway (sidewalk/pathway) of at least sixteen (16) feet in width adjoining all of the establishment's walls and running the length of each wall and interconnected to the pedestrian walkway(s) along public or private primary roads and Alleys. The pedestrian walkway may include benches, trees, bike racks, and other public amenities within the same eight (8) feet of depth so that the opposite eight (8) feet is unobstructed. All commercial buildings shall include a public space of pedestrian walkway (sidewalk/pathway) of at least eight (8) feet in width adjoining all of the establishment's walls and running the length of each wall and interconnected to the pedestrian walkway(s) along driveways and secondary roads. Where a commercial building is internal to the Block, the walkway shall not be required adjoining any wall positioned to abut a future building.
    2. Street lighting shall be installed, as necessary, to achieve appropriate industry light spacing and illumination.

3. All streets shall be lined with deciduous and ornamental trees planted no less than one (1) tree for every fifty (50) feet of road frontage.
4. On street parking shall be provided as parallel parking, angled parking, or reverse angled parking, subject to the width of the right-of-way. Reverse angled parking is preferred to accommodate a greater number of parking spaces.
5. Where a right-of-way contains a boulevard, the boulevard shall be no less than 100 feet in width but no greater than 135 feet in width and shall be designed to accommodate pedestrian interaction through civic elements such as but not necessarily limited to benches, sidewalks, art, a water fountain, and green spaces such as grass. The pedestrian area within the boulevard shall be no less than eighteen (18) feet in width but no greater than twenty (20) feet in width.
6. All streets shall contain raised concrete curbing.
7. A centrally located or focal point containing space large enough to accommodate a farm market, park, restrooms, or other similar public amenities.

Section 11. General Provisions. Section 470-23.12(A)(9) of Chapter 470 of the Code of Ordinances shall be amended to state in its entirety as follows.

Section 470-23.12(A)(9) – General Provisions

Public water service shall be provided to all lots which are accessed by a private road, according to the requirements of Section 405-23A(7) of Chapter 405, Subdivision of Land of the Allendale Charter Township Code, as amended, except for lots which are accessed by a private road with an average area of one and one-half (1 ½) acres or more.

Section 12. AG Agricultural and Rural Zoning District. Section 470-23.12(C) of Chapter 470 of the Code of Ordinances shall be amended to state in its entirety as follows.

Section 470-23.12(C) – AG Agricultural and Rural Zoning District

AG Agricultural and Rural Zoning District. In order to maintain the rural atmosphere established within Section 470-5.01 of this chapter, private roads in the AG Agricultural and Rural Zoning District shall be constructed in accordance with Section 470-23.12B or as provided herein.

(1) A private road shall be located within a private road easement of not less than thirty (30) feet in width.
    a. For private roads servicing no more than six (6) dwellings, the private road shall be constructed with a sand and gravel base of not less than

eighteen (18) inches in depth of which not less than six (6) inches in depth shall be only gravel. The private road shall have a road bed of not less than twenty (20) feet in width for its entire length. The private road may be paved in accordance to Section 470-23.12B of this Chapter.

b. For private roads servicing at least seven (7) dwellings but not more than ten (10) dwellings, the private road shall be constructed pursuant to Section 470-23.12.C1a and contain a paved surface of at least three (3) inches of asphalt that shall be at least twelve (12) feet in width and shall contain gravel shoulders of at least four (4) feet in width.

c. For private roads servicing at least eleven (11) dwellings but not more than nineteen (19) dwellings, the private road shall be constructed pursuant to Section 470-23.12.C1a and contain a paved surface of at least three (3) inches of asphalt that shall be at least 20 feet in width and shall contain gravel shoulders of at least one (1) foot in width.

d. For private roads servicing twenty (20) or more dwellings the private road shall be constructed pursuant to Section 470-23.12.C1a and contain a paved surface of at least three (3) inches of asphalt that shall be at least twenty-four (24) feet in width and shall contain concrete curb and gutter shoulders.

e. The Planning Commission may require additional thickness, stronger materials or other necessary road improvements to adequately accommodate local surface and subsurface conditions.

(2) Where a private road terminates in a dead end, a cul-de-sac shall be required by the Planning Commission. The road easement shall widen to a minimum diameter of at least one-hundred (100) feet to accommodate the cul-de-sac with a minimum diameter road bed surface of at least eighty (80) feet. Alternatively, the Planning Commission may approve a dead end that complies with the International Fire Code and is approved by the Allendale Charter Township Fire Department. This may include a cul-de-sac of no less than 96 feet in diameter when the private road exceeds 150 feet In length.

(3) The private road shall comply with the provisions of Section 470-23.12B(4), Sections 470-23.12B(5), and 470-23.12B(6) above and shall comply with the least restrictive provisions of Sections 470-23.12B(1), 470-23.12B(2), and 470-23.12B(3) where conflicts exist with this Section C.

Section 13. Tiny Home Developments. Section 470-23.26 of Chapter 470 of the Code of Ordinances shall be added to state in its entirety as follows.

Section 470-23.26 – Tiny Home Developments

A. Tiny home developments are subject to the provisions of Section 470-12.03, Section 470-12.06, and Section 470-12.08 of this Chapter and are only permitted as a special use within the Agricultural and Rural Zoning District. Tiny homes are prohibited outside of the Agricultural and Rural Zoning District.
B. Tiny homes are the only permitted dwelling units within the development.
C. Area Regulations.
    1. The minimum lot area shall be four thousand six hundred (4,600) square feet and a minimum width of forty (40) feet at the front setback line.
    2. Front Yard. There shall be a front yard of not less than twenty-five (25) feet.
    3. Rear Yard. There shall be a rear yard of not less than twenty-five (25) feet.
    4. Side Yard. There shall be side yards of not less than eight (8) feet.
    5. Floor Area. Tiny homes shall have a minimum finished habitable floor area, above exterior finished grade, of two hundred forty (240) square feet. In no instance shall the total floor area, habitable or non-habitable, exceed five hundred (500) square feet.
    6. Building Height. No building shall exceed twenty (20) feet to the roof peak.
D. No minimum width, no minimum length, and no attached garage shall be required for a tiny home.
E. Detached accessory structures.
    1. Shall be limited to one (1) per developed lot.
    2. Shall be limited to one hundred twenty (120) square feet or smaller.
    3. Shall be built in the same manner as the dwelling and match in appearance to the dwelling.
    4. Shall be at least six (6) feet from dwelling and at least three (3) feet from side or rear property line.
F. Each lot within the development must have a deed restriction that the dwelling unit upon the lot must be owner occupied.
G. Rentals are prohibited. Further this requirement must be described within any homeowners association document.
H. Tiny homes, which may include shipping containers, shall be built in accordance with the Michigan Residential Building Code.
I. Tiny homes on wheels and approved under the Michigan Vehicle Code are prohibited.
J. Tiny homes shall be connected to public water.

Section 14. Repeal. All ordinances or parts of ordinances in conflict with this Ordinance are hereby expressly repealed.

Section 15. Severable Provisions. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of

competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions thereof.

Section 16. Effective Date. This amendment to Chapter 470 of the Code of Ordinances of Allendale Charter Township was approved and adopted by the Township Board of Allendale Charter Township, Ottawa County, Michigan on _____, 20___, after a public hearing as required pursuant to Michigan Act 110 of 2006, as amended; after introduction and a first reading on _____, 20___, and after posting and publication following such first reading as required by Michigan Act 359 of 1947, as amended. This Ordinance shall be effective on _____, 20___, which date is the eighth day after publication of a Notice of Adoption and Posting of the Zoning Text Amendment Ordinance in the _____ as required by Section 401 of Act 110, as amended. However, this effective date shall be extended as necessary to comply with the requirements of Section 402 of Act 110, as amended.

_____ _____

Adam Elenbaas, Township Supervisor Jody Hansen, Township Clerk

CERTIFICATE

I, Jody Hansen, the Clerk for the Charter Township of Allendale, Ottawa County, Michigan, certify that the foregoing Allendale Charter Township Zoning Text Amendment Ordinance was adopted at a regular meeting of the Township Board held on _____, 20___. The following members of the Township Board were present at that meeting: _____ _____. The following members of the Township Board were absent: _____. The Ordinance was adopted by the Township Board with members of the Board _____ _____ voting in favor and members of the Board _____ _____ voting in opposition. Notice of Adoption of the Ordinance was published in the _____ on _____, 20___.

_____
Jody Hansen, Clerk
Allendale Charter Township

AFFIDAVIT OF POSTING

(Zoning Text Amendment Ordinance)

STATE OF MICHIGAN)
)ss
COUNTY OF OTTAWA)

The undersigned, Jody Hansen, the Allendale Charter Township Clerk, being first duly sworn, deposes and says as follows:

1. That she posted a proposed Zoning Text Amendment Ordinance for Allendale Charter Township, after its first reading at a meeting of the Allendale Charter Township Board held on _____, 20___ and its second reading at a meeting of the Allendale Charter Township Board held on _____, 20___, in the Township Clerk's office and on the Township's website at www.allendalemi.gov on _____, 20___.

_____
Jody Hansen, Clerk
Allendale Charter Township

Subscribed and sworn to before this
_____ day of _____, 20___.

_____

Notary Public, Ottawa County, Michigan
Acting in Ottawa County, Michigan
My commission expires: _____

ORDINANCE NO. _____

ZONING MAP AMENDMENT ORDINANCE

AN ORDINANCE TO AMEND THE ALLENDALE CHARTER TOWNSHIP ZONING ORDINANCE, CHAPTER 470 OF THE CODE OF ORDINANCES, BY ZONING CERTAIN LAND TO INCLUDE THE TC TOWN CENTER OVERLAY DISTRICT, TO PROIVDE FOR SEVERABILITY, TO PROVIDE FOR REPEAL AND, TO ESTABLISH AN EFFECTIVE DATE.

THE CHARTER TOWNSHIP OF ALLENDALE, COUNTY OF OTTAWA, AND STATE OF MICHIGAN, ORDAINS:

Section 1. Amendment. The Zoning Ordinance and Map of the Charter Township of Allendale, Ottawa County, Michigan, the map being incorporated by reference in Chapter 470 of the Code of Ordinances for the Charter Township of Allendale pursuant to Article 4, shall be amended so the following land shall be zoned to include the TC Town Center Overlay District. The land is in the Charter Township of Allendale, Ottawa County, Michigan, and is described as follows:

PART OF NW 1/4 COM N 1/4 COR, TH N 89D 01M 48S W 1323 FT & S 1D 02M 23S E 217.05 FT TO PT OF BEG, TH S 88D 49M 12S E 120 FT, N 1D 02M 13S W 121.38 FT, S 89D 03M 29S E 406.11 FT, S 0D 56M 33S W 2.48 FT, S 89D 03M 27S E 28.69 FT, S 0D 52M E 294.95 FT, S 88D 54M 56S E 150 FT, S 0D 52M E 814.63 FT, S 89D 01M 05S E 618 FT, S 0D 52M E 66 FT, N 89D 01M 05S W 200.1 FT, S 0D 52M E 75.89 FT, N 89D 59M 53S W 700.44 FT, N 1D 02M 23S W 703.16 FT, N 89D 11M 20S W 418.02 FT, TH N 1D 02M 23S W 443.15 FT TO BEG. SEC 26 T7N R14W. 14 AC. 70-09-26-100-092

AND;

E 618 FT OF N 1208.38 FT OF NE 1/4 OF NW 1/4, EXC M-45 R/W. SEC 26 T7N R14W. 70-09-26-100-073

AND;

PART OF E 1/2 OF NW 1/4 COM 618 FT W OF N 1/4 COR, TH W ALG N SEC LI 150 FT, S 393.45 FT, TH E'LY 150 FT TO PT 393.75 FT S OF N SEC LI TH N TO BEG, EXC M-45 R/W. SEC 26 T7N R14W. 70-09-26-100-072

Section 2. Severable Provisions. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions thereof.

Section 3. Repeal. All ordinances or parts of ordinances in conflict with this Ordinance are hereby expressly repealed.

Section 4. Effective Date. This amendment to Chapter 470 of the Code of Ordinances of Allendale Charter Township was approved and adopted by the Township Board of Allendale Charter Township, Ottawa County, Michigan on _____, 2026, after a public hearing as required pursuant to Michigan Act 110 of 2006, as amended; after introduction and a first reading on _____, 2026, and after posting and publication following such first reading as required by Michigan Act 359 of 1947, as amended. This Ordinance shall be effective on _____, 2026, which date is the eighth day after publication of a Notice of Adoption and Posting of the Zoning Map Amendment Ordinance in the _____ as required by Section 401 of Act 110, as amended. However, this effective date shall be extended as necessary to comply with the requirements of Section 402 of Act 110, as amended.

_____	_____
Adam Elenbaas	Jody Hansen
Township Supervisor	Township Clerk

CERTIFICATE

I, Jody Hansen, the Clerk for the Charter Township of Allendale, Ottawa County, Michigan, certify that the foregoing Allendale Charter Township Zoning Map Amendment Ordinance was adopted at a regular meeting of the Township Board held on _____, 2026. The following members of the Township Board were present at that meeting: _____ _____. The following members of the Township Board were absent: _____.

The Ordinance was adopted by the Township Board with members of the Board _____ _____ voting in favor and members of the Board _____ _____ voting in opposition. Notice of Adoption of the Ordinance was published in the _____ on _____, 2026.

_____
Jody Hansen, Clerk
Allendale Charter Township

Allendale Charter Township
Ottawa County, Michigan
OFFICIAL ZONING MAP
Latest Revision April, 2026

NORTH
0 1200 2400
SCALE IN FEET

ZONING DISTRICT LEGEND

AG	AGRICULTURAL AND RURAL	PUD	PLANNED UNIT DEVELOPMENT
RE	RURAL ESTATE	O	OFFICE
R-1	LOW DENSITY ONE-FAMILY RESIDENTIAL	G-C	GENERAL COMMERCIAL
R-2	MEDIUM DENSITY ONE-FAMILY RESIDENTIAL	C-3	SERVICE COMMERCIAL
R-3	LOW DENSITY MULTIPLE FAMILY RESIDENTIAL	I	INDUSTRIAL
R-4	MEDIUM DENSITY MULTIPLE FAMILY RESIDENTIAL/OFFICE		TOWN CENTER OVERLAY DISTRICT
R-5	MOBILE HOME PARK		SCHOOL
	GROUP HOUSING OVERLAY ZONE (SEE SECTION 3.15)		

FLEIS&VANDENBRINK

THIS MAP IS INTENDED FOR REFERENCE ONLY. ALLENDALE TOWNSHIP AND FLEIS & VANDENBRINK ARE NOT LIABLE FOR ERRORS OR OMISSIONS.

FLOOD PLAIN SHOWN IS APPROXIMATE BASED ON GIS DATA FROM OTTAWA COUNTY AND IS FOR REFERENCE ONLY

* DEERFIELD MANOR DEVELOPMENT WAS ALLOWED UNDER COURT ORDER DATED MAY 11, 1999

** CONDITIONAL REZONING ORD. No. 2012-9

*** CONSENT JUDGMENT DATED APRIL 17, 2013 ALLOWED APARTMENT USE OF THIS PARCEL BUT THE ZONING REMAINS INDUSTRIAL.

DRAFT

PUD LEGEND

1	PLACID WATERS	21	BROOKLAND ESTATES II	41	ALLENDALE BUSINESS PARK
2	DANENBERG ESTATES	22	ALLENDALE PROFESSIONAL PARK	42	MACKADE PUD
3	HIDDEN FOREST	23	EDGEWATER BUSINESS PARK	43	CADENCE PLACE
4	HIDDEN SHORES	24	WESTSHORE COMMUNICATIONS	44	MARK WOOD/ A LOT OF CARS
5	BITTERSWEET ESTATES	25	CAMPUS WEST	45	WEST WIND
6	BRUMMEL PUD	26	MAPLE POND PUD	46	THE GRAND VILLAGES
7	WALGREENS PUD	27	SPRINGFIELDS OF ALLENDALE	47	PIERCE PLACE
8	COMPLIMENTS	28	MYSTIC WOODS	48	HIDDEN SHORES WEST
9	FUNERAL HOME	29	SUMMER BOOK PUD	49	HIDDEN FOREST ESTATES
10	DEWPOINT WEST	30	ALLENDALE CROSSINGS	50	KENNEDY LAKE
11	THE DALES	31	WINDING CREEK CROSSINGS	51	TRADER'S VIEW
12	VILLAGE CONDOS	32	SUTTERS MILL PUD	52	SPRINGFIELDS WEST
13	STONEBRIDGE PUD	33	WINDING CREEK CIRCLE	53	ALLENDALE BAPTIST CHURCH
14	HERITAGE TOWNE SQUARE	34	COPPER BEECH TOWNHOMES	54	6138 LAKE MICHIGAN DRIVE
15	ALLENDALE LANDINGS	35	MEADOWS CROSSING	55	5500 LAKE MICHIGAN DRIVE
16	FAMILY FARE PUD	36	48 WEST		
17	TRADERS CREEK LANDING	37	MAJOR BRAND OIL PUD		
18	CHRISTIANSON ESTATES	38	ALLENDALE MEADOWS PUD		
19	LONE PINE ESTATES	39	UNIVERSITY PARK PUD		
20	RANDALL ESTATES	40	CAMPUS TOWNE CENTER PUD		

Allendale Zoning Map Town Center \graham.gould 042726

ORDINANCE NO. _____

AN ORDINANCE TO AMEND THE SUBDIVISION OF LAND ORDINANCE, CHAPTER 405 OF THE CODE OF ORDINANCES OF ALLENDALE CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN, TO PROVIDE FOR REPEAL, SEVERABILITY, AND THE EFFECTIVE DATE OF THIS ORDINANCE

THE CHARTER TOWNSHIP OF ALLENDALE, COUNTY OF OTTAWA, AND STATE OF MICHIGAN ORDAINS:

Section 1. Required Improvements. Section 405-23A(14) of Charter 405 of the Allendale Charter Township Code of Ordinances shall be added to state in its entirety as follows.

> The sub-divider shall demonstrate that all sidewalks, pathways, and other dedicated pedestrian areas within the plat will be generally free of any obstruction, including parked vehicles, that would impede natural pedestrian movement within the sidewalk, pathway, or other dedicated pedestrian area.

Section 2. Repeal. All ordinances or parts of ordinances in conflict with this Ordinance are hereby expressly repealed.

Section 3. Severability. This Ordinance and its various parts are hereby declared to be severable. If any portion of this Ordinance is declared to be invalid such declaration shall not affect the validity of the remainder of this Ordinance.

Section 4. Effective Date. This Ordinance was approved and adopted by the Township Board of the Charter Township of Allendale, Ottawa County, Michigan, on _____, 2018 after introduction and a first reading on _____, 2026 and publication after such first reading as required by Michigan Act 359 of 1947, as amended. This Ordinance shall be effective on _____, 2026, which date is at least 30 days after publication of the Ordinance.

_____ _____

Adam Elenbaas, Township Supervisor Jody Hansen, Township Clerk

CERTIFICATE

I, Jody Hansen, the Clerk for the Charter Township of Allendale, Ottawa County, Michigan, certify that the foregoing Ordinance was adopted at a regular meeting of the Township Board held on _____, 2026. The following members of the Township Board were present at that meeting:

_____

_____. The following members of the Township Board were absent:

_____.

The Ordinance was adopted by the Township Board with members of the Board _____

_____

voting in favor and members of the Board _____

_____ voting in opposition. Notice of Adoption of the Ordinance was published in the _____ on _____, 2026.

_____
Jody Hansen, Clerk
Allendale Charter Township

AFFIDAVIT OF POSTING

(Amendment Chapter 405)

STATE OF MICHIGAN)
)ss
COUNTY OF OTTAWA)

The undersigned, Jody Hansen, the Allendale Charter Township Clerk, being first duly sworn, deposes and says as follows:

1. That she posted a proposed amendment to Chapter 405 of the Code of Ordinances for Allendale Charter Township, after its first reading at a meeting of the Allendale Charter Township Board held on _____, 2026 and its second reading at a meeting of the Allendale Charter Township Board held on _____, 2026, in the Township Clerk's office and on the Township's website at www.allendalemi.gov on _____, 2026.

_____
Jody Hansen, Clerk
Allendale Charter Township

Subscribed and sworn to before this
_____ day of _____, 2026

_____

Notary Public, Ottawa County, Michigan
Acting in Ottawa County, Michigan
My commission expires: _____

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

BENCHMARK #1 ELEV. = 667.50' TOP OF NORTHWEST FLANGE BOLT ON HYDRANT 515' SOUTH OF THE CENTERLINE OF LAKE MICHIGAN DRIVE AND 47' WEST OF THE CENTERLINE OF 48TH AVE.
(NAVD 88 DATUM)

BENCHMARK #2 ELEV. = 663.60' TOP OF NORTHWEST FLANGE BOLT ON HYDRANT 930' SOUTH OF THE CENTERLINE OF LAKE MICHIGAN DRIVE AND 45' WEST OF THE CENTERLINE OF 48TH AVE.
(NAVD 88 DATUM)

OWNER OF RECORD:
CHATEAU VILLAGE, LLC
JULIE BOTSMA
547 BALDWIN DR.
JENISON, MI 49428
(616) 481-8255

DEVELOPER:
WESCO, INC.
STACEY WHALEN
1460 WHITEHALL ROAD,
MUSKEGON, MI 49445
(231) 719-4371

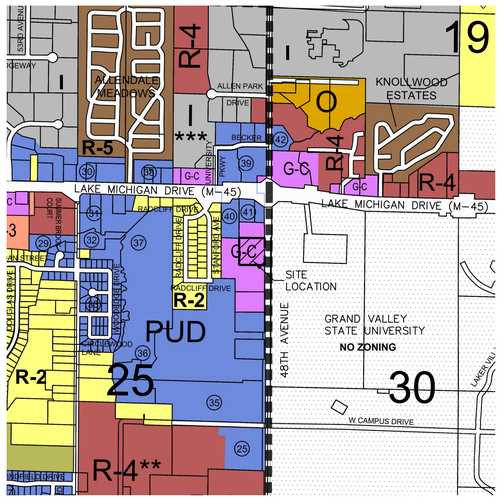
GENERAL CONTRACTOR:
TBD

CIVIL ENGINEER:
ROOSIEN & ASSOCIATES
MATT COLE
5055 PLAINFIELD AVENUE NE,
GRAND RAPIDS, MI 49525
(616) 361-7220

WESCO INC.
WESCO STORE #32 ALLENDALE

11125 48TH AVENUE

ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN



LOCATION MAP
SCALE: 1" = 1000'

INDEX OF SHEETS

C-100	TITLE SHEET
C-101	EXISTING CONDITIONS & REMOVALS PLAN
C-102	SITE LAYOUT
C-103	SITE UTILITY PLAN
C-104	SITE GRADING AND SESC PLAN
C-501	DETAIL PLAN
C-502	DETAIL PLAN
L-101	LANDSCAPE PLAN

STATE OF MICHIGAN
MATTHEW D COLE
ENGINEER
No. 6201048571
LICENSED PROFESSIONAL ENGINEER

REVISIONS:
APRIL 21, 2026 - PER PLANNING COMMISSION
APRIL 28, 2026 - PER REVIEW COMMENTS

DRAWN BY: YS
APPROVED BY: MDC
DATE: JANUARY 9, 2026
REVISIONS:
FEBRUARY 10, 2026 - PER REVIEW COMMENTS
MARCH 19, 2026 - PER REVIEW COMMENTS
MARCH 30, 2026 - PER REVIEW COMMENTS

Roosien & Associates
SURVEYING AND ENGINEERING
5055 PLAINFIELD AVE. NE MATT@ROOSIEN-ASSOC.COM
GRAND RAPIDS, MI 49525 TELE: (616) 361-7220

SITE ANALYSIS PLAN
WESCO STORE #32
SECTION 25, T7N, R14W
ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

CLIENT:
STACEY WHALEN
WESCO INC.
1460 WHITEHALL RD.
MUSKEGON, MI 49445

PROJECT NO.
251107

C-100

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

UTILITIES SHOWN ARE FROM FIELD MEASUREMENTS OF VISIBLE EVIDENCE OR AVAILABLE RECORDS. THIS INFORMATION SHOULD NOT BE CONSTRUED TO BE A GUARANTEE OF COMPLETENESS OR ACCURACY. ROOSIEN AND ASSOCIATES TAKES NO RESPONSIBILITY FOR INACCURACIES IN UTILITY MARKINGS OR IN THE INTERPRETATION OF PLANS PROVIDED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITY LINES WHERE THE GRADE IS TO BE LOWERED OR THE EXISTING UTILITIES CROSS PROPOSED UTILITY LINES. NOTIFY THE DESIGN PROFESSIONAL OF ANY CONFLICTS PRIOR TO CONSTRUCTION.

LEGAL DESCRIPTION FROM: Light House Title Commitment No.CCU25-10340879

Part of the Northeast 1/4, Section 25, T7N, R14W, Allendale Township, Ottawa County, Michigan, described as: Commencing at the Northeast corner of Section 25; thence S00°00'00"W 606.26 feet along the East line of said Northeast 1/4' thence S90°00'00"W 50.00 feet to the West line of 48th Avenue and the PLACE OF BEGINNING of this description; thence S00°00'00"W 377.14 feet along the West line of 48th Avenue; thence S90°00'00"W 359.68 feet; thence N00°00'00"E 377.14 feet; thence N90°00'00"E 359.68 feet to the Place of Beginning.

EXCEPTIONS:
9. Easement granted to Consumers Power Company disclosed by instrument recorded in Liber 260, Page 200, Ottawa County Records. (NOTHING TO SHOW BLANKET IN NATURE.)
10. Terms, Covenants, restrictions, conditions, and other provisions as contained in the Right of Way and Conveyance Agreement recorded in Liber 611, Page 19, Ottawa County Records. (DOES NOT AFFECT.)
11. Terms, covenants, restrictions, conditions, and other provisions as contained in the Utility Easement recorded in Liber 1206, Page 321, Ottawa County Records. (SHOWN.)
12. Terms, covenants, restrictions, conditions, and other provisions as contained in the Utility Easement recorded in Liber 1212, Page 399, Ottawa County Records. (SHOWN.)
13. Terms, covenants, restrictions, conditions, and other provisions as contained in the Easement for Electric Line recorded in Liber 1296, Page 27, Ottawa County Records. (DOES NOT AFFECT.)
14. Terms, covenants, restrictions, conditions, and other provisions as contained in the easement Agreement recorded in Liber 3202, Page 23 as amended in Liber 3401, Page 848, Ottawa County Records. (DOES NOT AFFECT.)
15. Terms, covenants restrictions, conditions, and other provisions as contained in the Grant of Signage Easement recorded in Liber 3845, Page 662, Ottawa County Records. (DOES NOT AFFECT.)
16. Building and Use restrictions and other covenants and conditions, but deleting any covenant, condition or restriction, indicating a preference, limitation or discrimination based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, ancestry, national origin or source of income to the extent such covenants, conditions, or restrictions violate 42 USC 3604(c), disclosed in instrument recorded in Liber 3845, Page 667, Ottawa County Records. (DOES NOT AFFECT.)
17. Terms, covenants, restrictions, conditions, and other provisions as contained in the Public Highway Easement recorded in Liber Document, Page 2015-0048427, Ottawa County Records. (SHOWN.)

DEMOLITION NOTES:

ALL MATERIAL THAT IS NOT SUITABLE AS BACKFILL AND MATERIALS THAT ARE EXCESS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

ALL AREAS OF UNDERGROUND DEMOLITION; UTILITY LINE REMOVAL; AND UNDERGROUND TREE, STUMP, AND VEGETATION REMOVAL SHALL BE BACKFILLED.

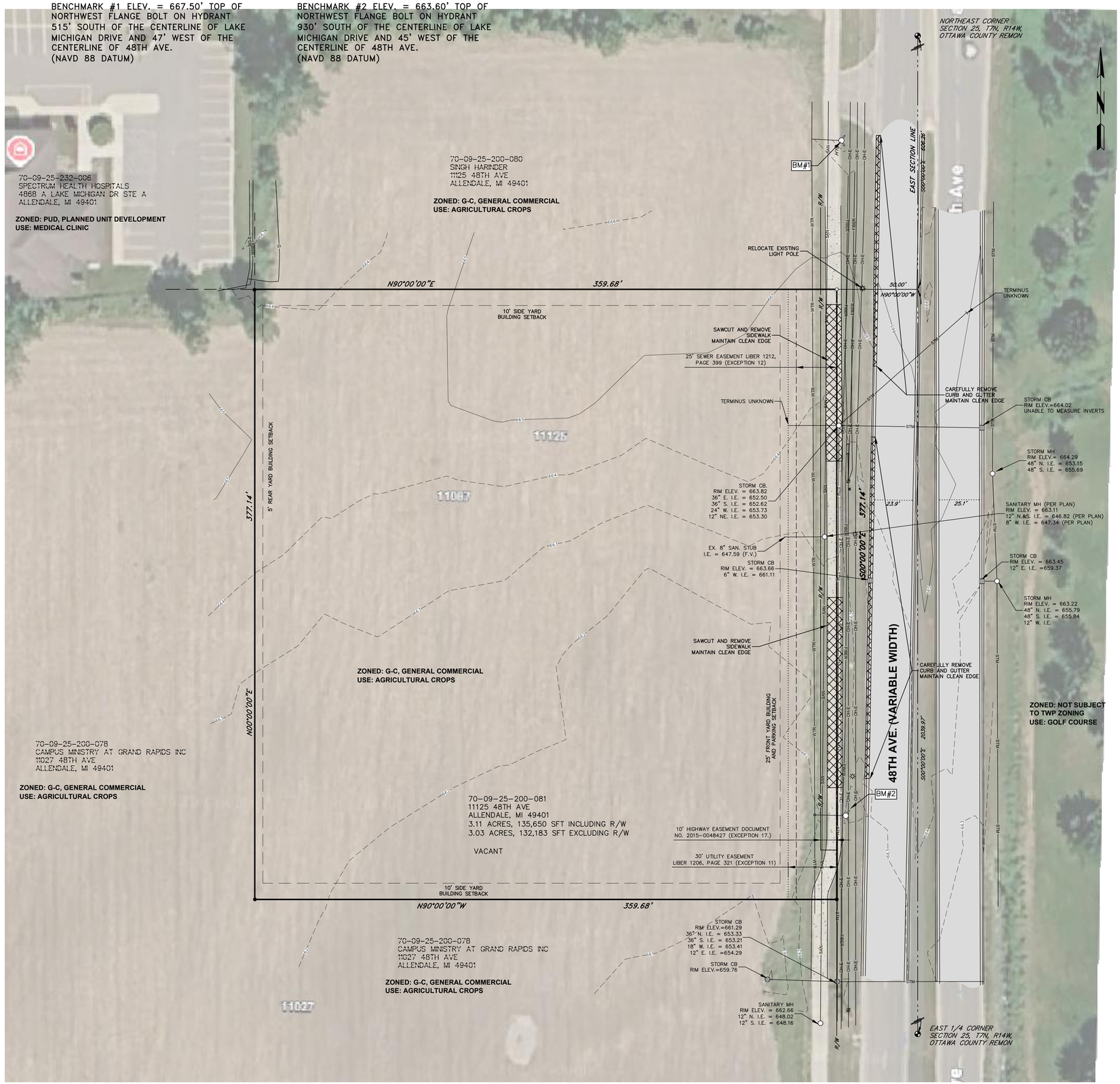
BACKFILLING SHALL PROMPTLY FOLLOW UNDERGROUND DEMOLITION OR REMOVAL WORK AND SHALL CONTINUE AS THE DEMOLITION PROGRESSES.

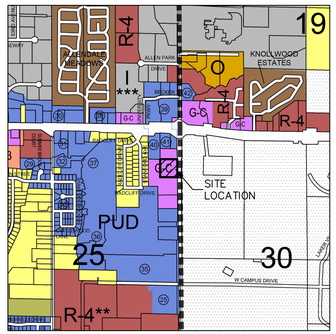
NOTIFY ARCHITECT/ENGINEER OF ANY OTHER UNDERGROUND MATERIALS OR EQUIPMENT ENCOUNTERED DURING EXCAVATION NOT SPECIFICALLY NOTED ON THE DRAWING(S).

WHERE CURBING OR PAVEMENT IS INDICATED TO BE REMOVED, IT SHALL BE SAWCUT FULL DEPTH. REMOVE TO THE NEAREST JOINT, IF THE JOINT IS WITHIN 3 FEET OF THE REMOVAL LINE. VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO BEGINNING WORK.

BENCHMARK #1 ELEV. = 667.50' TOP OF NORTHWEST FLANGE BOLT ON HYDRANT 515' SOUTH OF THE CENTERLINE OF LAKE MICHIGAN DRIVE AND 47' WEST OF THE CENTERLINE OF 48TH AVE. (NAVD 88 DATUM)

BENCHMARK #2 ELEV. = 663.60' TOP OF NORTHWEST FLANGE BOLT ON HYDRANT 930' SOUTH OF THE CENTERLINE OF LAKE MICHIGAN DRIVE AND 45' WEST OF THE CENTERLINE OF 48TH AVE. (NAVD 88 DATUM)





LOCATION MAP
SCALE: 1"=1,500'

GRAPHIC SCALE
30' 0 15' 30'
(IN FEET)
1 inch = 30 ft.

EXISTING LEGEND

SURVEY
- SECTION CORNER
- PROPERTY IRON FOUND
- PROPERTY IRON SET
- BM# BENCHMARK

TREES
- CONIFEROUS TREE
- DECIDUOUS TREE

WATER
- MANHOLE
- VALVE
- HYDRANT

ELECTRICAL
- UTILITY POLE
- GUY WIRE
- LIGHT POLE
- UTILITY RISER/METER

SANITARY SEWER
- MANHOLE
- CLEANOUT

STORM SEWER
- CURB CATCH BASIN
- ROUND CATCH BASIN
- FLARED END SECTION

MISC
- MAILBOX
- SIGN

- CONCRETE
- BITUMINOUS
- EXIST. CONC. REMOVAL
- CENTER LINE
- PROPERTY LINE
- 665 CONTOUR LINE (MAJOR)
- 664 CONTOUR LINE (MINOR)
- WTR WATER MAIN
- SAN SANITARY SEWER
- STM STORM SEWER
- G NATURAL GAS
- FIBER FIBER OPTIC
- OH-E OVERHEAD ELECTRIC
- UG-T UNDERGROUND TELEPHONE

REVISIONS:
APRIL 21, 2026 - PER PLANNING COMMISSION
APRIL 28, 2026 - PER REVIEW COMMENTS

DRAWN BY: VS
APPROVED BY: MDC
DATE: JANUARY 9, 2026
REVISIONS:
FEBRUARY 10, 2026 - PER REVIEW COMMENTS
MARCH 19, 2026 - PER REVIEW COMMENTS
MARCH 30, 2026 - PER REVIEW COMMENTS

Roosien & Associates
SURVEYING AND ENGINEERING
5505 PLAINFIELD AVE. NE MATTM@ROOSIEN-ASSOC.COM
GRAND RAPIDS, MI 49525 TELE: (616) 361-2220

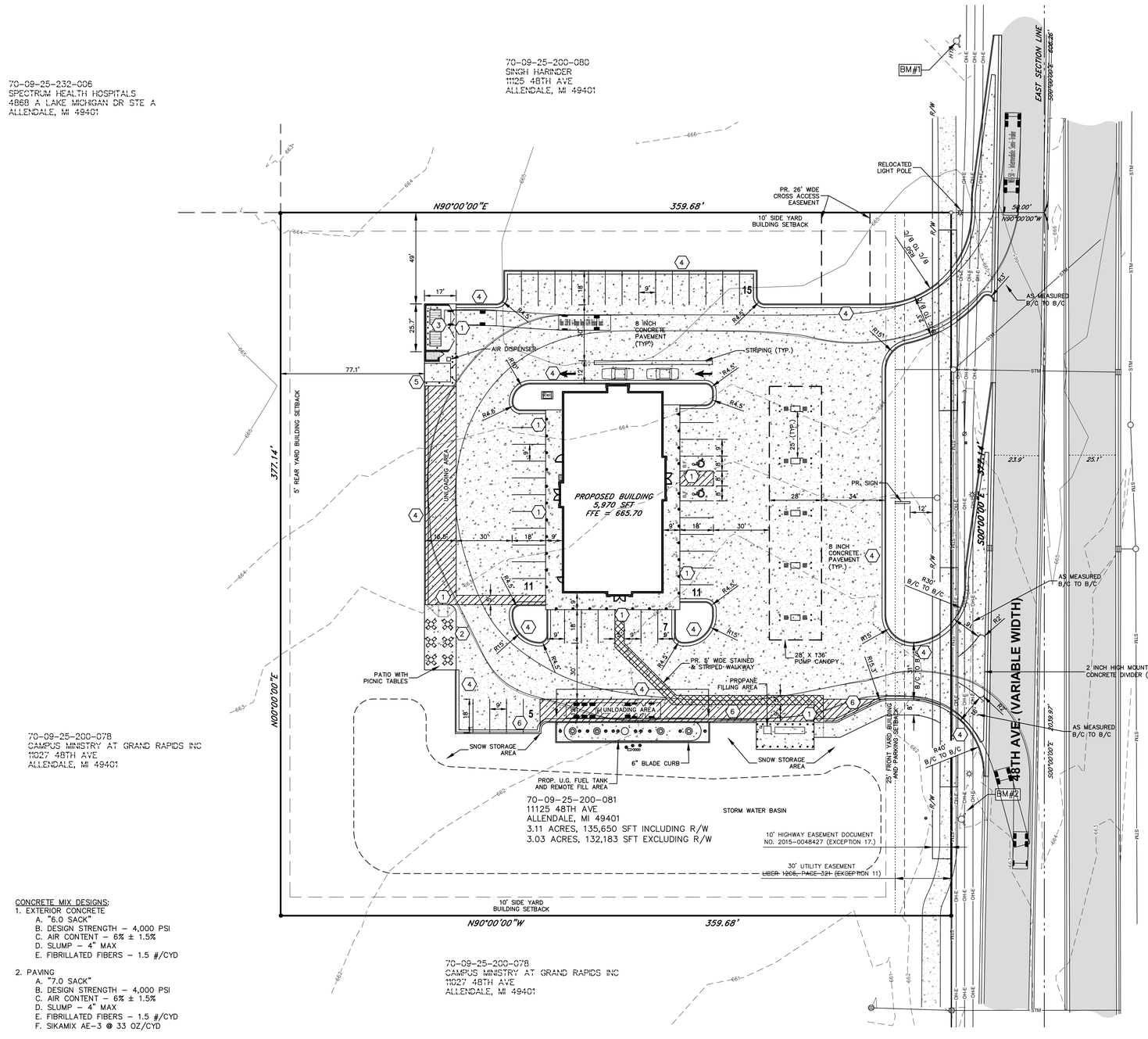
EXISTING CONDITIONS AND REMOVALS PLAN
WESCO STORE #32
SECTION 25, T7N, R14W
ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

CLIENT:
STACEY WHALEN
WESCO INC.
1460 WHITEHALL RD.
MUSKEGON, MI 49445

STATE OF MICHIGAN
MATTHEW D COLE
ENGINEER
No. 62010485
PROFESSIONAL ENGINEER

PROJECT NO.
251107

C-101



GRAPHIC SCALE

30' 0 15' 30'

(IN FEET)

1 inch = 30 ft.

SITE DATA:

SITE:	3.03 ACRES (EXCLUDING R.O.W.)	
ZONED:	G-C, GENERAL COMMERCIAL	
USE:	GAS STATION WITH RETAIL, WITH PROPANE DISPENSER, AND WITH PICK-UP WINDOW SPECIAL USE PERMIT REQUIRED	
EMPLOYEES:	12 ON MAX SHIFT	
	REQUIRED	PROVIDED
MAXIMUM BUILDING HEIGHT:	35'	SEE ARCH.
MAXIMUM CANOPY HEIGHT:	18'	18' (SEE ARCH.)
MAXIMUM CANOPY CLEARANCE:	14'	14' (SEE ARCH.)
FRONT BUILDING SETBACK:	20'	152.5' TO EAST
SIDE BUILDING SETBACK:	10'	76' TO NORTH
REAR BUILDING SETBACK:	10'	149.2' TO WEST
IMPERVIOUS SURFACE:	N/A	45%

PARKING DATA:

MIN. REQUIRED PARKING: 42 SPACES
(1 SPACES PER 200 SFT OF RETAIL SPACE + 1 PER EMPLOYEE)
(5970 / 200) + 12 = 41.9

PROPOSED PARKING: 49 SPACES
(INCLUDES 2 BARRIER FREE SPACES)
STACKING FROM WINDOW: 6 SPACES

PARKING SPACE:		9' x 18'	9' x 18' MIN.
DRIVE AISLE WIDTH	(TWO WAY):	26'	30' MIN.

PROPOSED UNLOADING ZONES ILLUSTRATED

NOTES

A) ALL DIMENSIONS SHOWN TO THE CONCRETE CURB AND GUTTER ARE TO THE FACE OF THE CURB (6 INCHES FROM THE BACK OF THE CURB) UNLESS NOTED OTHERWISE.
B) THE CONCRETE GUTTER PAN IS TO TIP IN THE SAME DIRECTION AS THE ADJACENT PAVEMENT. THE GUTTER PAN IN THE BARRIER FREE SPACES SHALL BE PLACED FLAT.
C) THE LAST 3 FEET OF ALL OF THE CURB SHALL BE DUBBED DOWN UNLESS NOTED OTHERWISE.
D) REFER TO ARCHITECTURAL PLANS FOR DETAILS OF CONCRETE DOOR STOOPS, DUMPSTER ENCLOSURE, DETAIL OF BUILDING, EXACT BUILDING DIMENSIONS, CANOPY DETAILS, FUEL ISLAND DETAILS AND DIMENSIONS, SHED DETAILS, AIR FILL DETAILS, AND PROPANE TANK AND DISPENSER DETAILS.
E) ALL BARRIER FREE SPACES AND SIDEWALKS SHALL MEET A.D.A. REQUIREMENTS.
F) ALL SIGNAGE SHALL CONFORM TO ALLENDALE TOWNSHIP STANDARDS.

SITE PLAN KEY NOTES

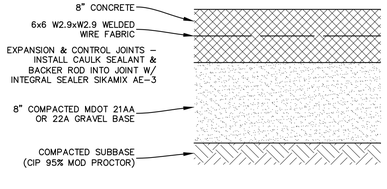
1. FLUSH SLAB EDGE AND BARRIER FREE RAMP
2. RAISED CONCRETE SIDEWALK (SEE SHEET C-501)
3. DUMPSTER ENCLOSURE AND PAD (SEE SHEET C-502)
4. MDOT F-4 CURB AND GUTTER
5. SHEDS (SEE SHEET C-502)
6. 4" ROLLED CURB AND GUTTER

LEGEND

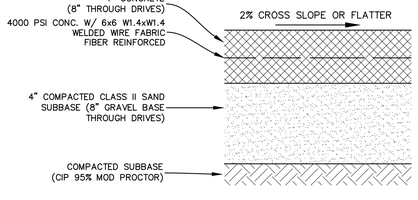
- 665 — EXISTING MAJOR CONTOUR
- 664 — EXISTING MINOR CONTOUR
- PROPOSED CONC.
- BP BUMP POST
- PROPOSED LIGHT POLE

CONCRETE MIX DESIGNS:

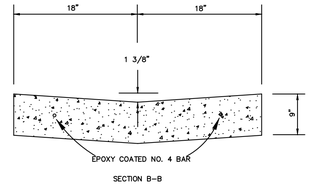
1. EXTERIOR CONCRETE
   - A. "6.0 SACK"
   - B. DESIGN STRENGTH – 4,000 PSI
   - C. AIR CONTENT – 6% ± 1.5%
   - D. SLUMP – 4" MAX
   - E. FIBRILLATED FIBERS – 1.5 #/CYD
2. PAVING
   - A. "7.0 SACK"
   - B. DESIGN STRENGTH – 4,000 PSI
   - C. AIR CONTENT – 6% ± 1.5%
   - D. SLUMP – 4" MAX
   - E. FIBRILLATED FIBERS – 1.5 #/CYD
   - F. SIKAMIX AE-3 @ 33 OZ/CYD



CONCRETE PAVEMENT
NOT TO SCALE

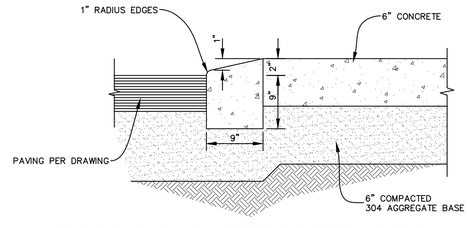


CONCRETE SIDEWALK
NOT TO SCALE

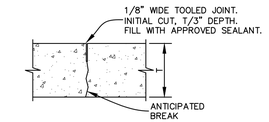


SECTION B-B

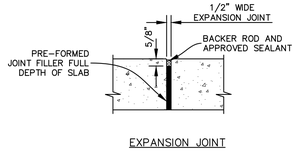
GUTTER PAN
NOT TO SCALE



MOUNTABLE CONCRETE DIVIDER SECTION
NOT TO SCALE

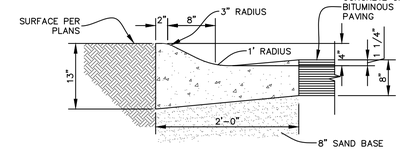


CONTROL JOINT



EXPANSION JOINT

CONCRETE JOINTS
NOT TO SCALE



ROLLED CURB AND GUTTER
NOT TO SCALE

REVISIONS:
APRIL 21, 2026 – PER PLANNING COMMISSION
APRIL 28, 2026 – PER REVIEW COMMENTS

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APPROVED BY: MDC
DATE: JANUARY 9, 2026
REVISIONS:
FEBRUARY 10, 2026 – PER REVIEW COMMENTS
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Roosien & Associates
SURVEYING AND ENGINEERING
5505 PLAINFIELD AVE. NE MATTE@ROOSIEN-ASSOC.COM
GRAND RAPIDS, MI 49525 TELE: (616) 361-7220

SITE LAYOUT PLAN
WESCO STORE #32
SECTION 25, T7N, R14W
ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

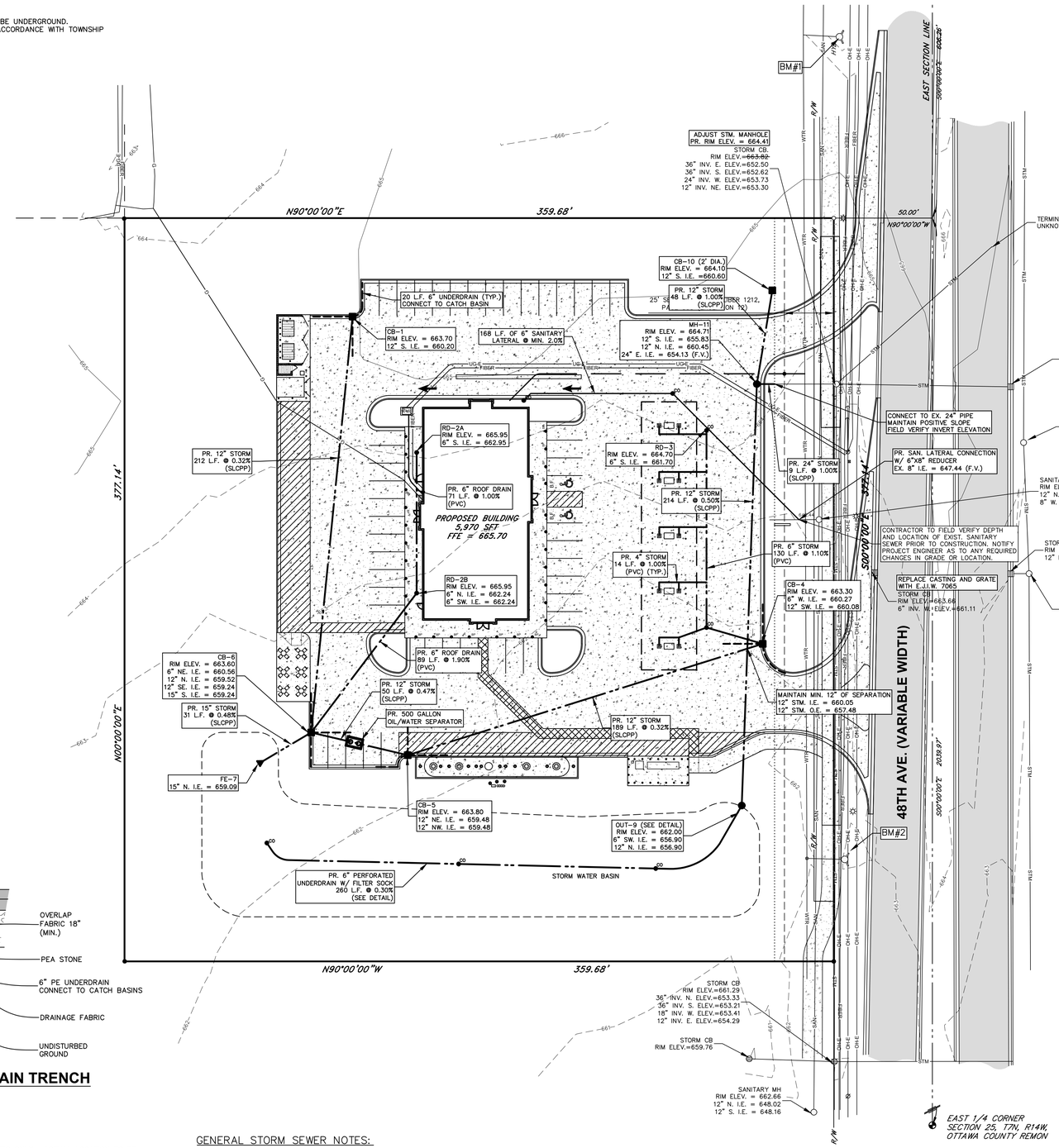
CLIENT:
STACEY WHALEN
WESCO INC.
1460 WHITEHALL RD.
MUSKEGON, MI 49445

PROJECT NO.
251107

C-102

NOTE:
NEW ELECTRIC AND TELEPHONE DISTRIBUTION LINES SHALL BE UNDERGROUND. CONNECTION TO PUBLIC SEWER AND WATER FACILITIES IN ACCORDANCE WITH TOWNSHIP STANDARDS SHALL BE PROVIDED WHERE AVAILABLE.

SEE SITE PLUMBING PLANS FOR ROUTING OF ALL FUEL LINES



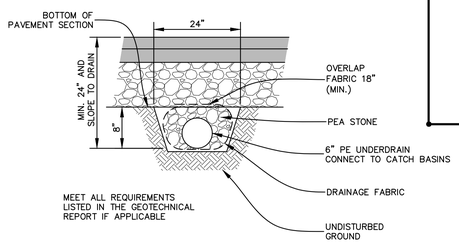
GRAPHIC SCALE
30' 0 15' 30'
(IN FEET)
1 inch = 30 ft.

LEGEND

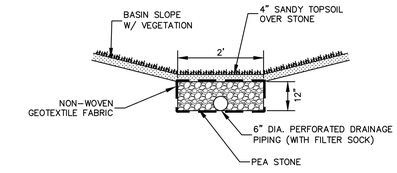
- 665 — EXISTING MAJOR CONTOUR
- 664 — EXISTING MINOR CONTOUR
- PROPOSED CONC.
- PROPOSED STORM SEWER
- PROPOSED SANITARY LINE
- PROPOSED WATER LINE
- UGE — UNDERGROUND ELECTRIC
- UGT — UNDERGROUND TELEPHONE
- G — NATURAL GAS

STORM SEWER PIPE TABLE	
STRUCTURE	STORM SEWER PIPE
CB–1 CB–6	PR. 12" STORM 212 L.F. @ 0.32% (SLCPP)
RD–2A RD–2B	PR. 6" ROOF DRAIN 71 L.F. @ 1.00% (PVC)
RD–2B CB–6	PR. 6" ROOF DRAIN 89 L.F. @ 1.90% (PVC)
RD–3 CB–4	PR. 6" ROOF DRAIN 130 L.F. @ 1.10% (PVC)
CB–4 CB–5	PR. 12" STORM 189 L.F. @ 0.32% (SLCPP)
CB–5 CB–6	PR. 12" STORM 50 L.F. @ 0.47% (SLCPP)
CB–6 FE–7	PR. 15" STORM 31 L.F. @ 0.47% (SLCPP)
UD–8 OUT–9	PR. 6" STORM 260 L.F. @ 0.30% (SLCPP)
OUT–9 MH–11	PR. 12" STORM 214 L.F. @ 0.50% (SLCPP)
CB–10 MH–11	PR. 12" STORM 48 L.F. @ 1.00% (SLCPP)

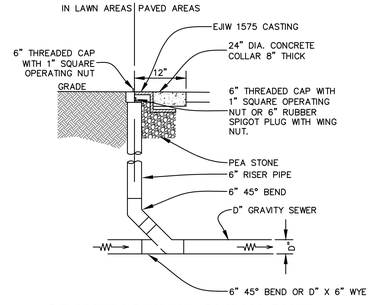
STORM SEWER STRUCTURE TABLE		
STRUCTURE	RIM ELEV.	INVERT ELEV.
CB–1	663.70	12" S. I.E. = 660.20
RD–2A	665.95	6" S. I.E. = 662.95
RD–2B	665.95	6" N. I.E. = 662.24
RD–3	664.70	6" S. I.E. = 661.70
CB–4	663.30	6" W. I.E. = 660.27 12" SW. I.E. = 660.08
CB–5	663.80	12" NE.&NW. I.E. = 659.48
CB–6	663.60	6" NE. I.E. = 660.56 12" N. I.E. = 659.52 12" SE. I.E. = 659.24 15" S. I.E. = 659.24
FE–7	N/A	15" N. I.E. = 659.09
UD–8	N/A	12" E. I.E. = 657.68
OUT–9	662.00	6" SW. I.E. = 656.90 12" N. I.E. = 656.90
CB–10	664.10	12" S. I.E. = 660.60
MH–11	664.71	12" S. I.E. = 655.83 12" N. I.E. = 660.45 24" E. I.E. = 654.13 (F.V.)



PAVEMENT UNDERDRAIN TRENCH
NOT TO SCALE



BASIN UNDERDRAIN TRENCH
NOT TO SCALE



GRAVITY SEWER CLEAN OUT
NOT TO SCALE

GENERAL PRIVATE UTILITY NOTES:

PROPOSED PRIVATE UTILITY SERVICE AS SHOWN IS SCHEMATIC ONLY. ACTUAL LOCATION TO BE COORDINATED WITH INDIVIDUAL UTILITY COMPANY AND APPROVED BY OWNER.

CONTRACTOR SHALL COORDINATE LOCATION OF ALL PRIVATE UTILITIES (GAS, ELECTRIC, PHONE, CABLE, ETC.) WITH THE LOCAL UTILITY COMPANIES AND THE MECHANICAL DRAWINGS. COORDINATE ALL PRIVATE UTILITY LOCATIONS WITH ALL SUB–SURFACE SITE UTILITIES SHOWN ON THIS PLAN.

GENERAL SANITARY SEWER NOTES:

SITE CONTRACTOR TO END SANITARY LATERAL 5' FROM BUILDING WITH A CLEAN–OUT AND TEMPORARY CAP. COORDINATE CONNECTION WITH BUILDING PLUMBING CONTRACTOR.

SANITARY SEWER LATERALS AND FITTINGS SHALL BE PVC PER ASTM D3034, SDR 35. JOINTS TO BE ELASTOMERIC SEALS IN ACCORDANCE WITH ASTM D3212.

MATERIALS, INSTALLATION, AND TESTING OF SANITARY SEWER SHALL CONFORM TO THE ALLENDALE TOWNSHIP STANDARDS.

MINIMUM COVER OVER SANITARY LATERAL SHALL BE 3.5'.

GENERAL STORM SEWER NOTES:

SITE CONTRACTOR TO END STORM CONNECTION 5' FROM BUILDING WITH A CLEAN–OUT AND TEMPORARY CAP, COORDINATE CONNECTION WITH BUILDING PLUMBING CONTRACTOR.

UNLESS NOTED OTHERWISE ON THE PLAN, STORM SEWER PIPE SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE PER AASHTO M294 TYPE S. JOINTS SHALL BE WATER TIGHT IN ACCORDANCE WITH ASTM F477.

ROOF DRAIN PIPE OR PIPE INDICATED TO BE PVC SHALL MEET THE REQUIREMENTS OF ASTM D3034, SDR 35. JOINTS TO BE ELASTOMERIC SEALS IN ACCORDANCE WITH ASTM F477.

UNDERDRAIN AND FOOTING DRAIN (4"–10") SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE TYPE S, PER AASHTO M252 AND PRE–WRAPPED WITH A GEOTEXTILE FILTER SOCK. PAVEMENT SUBGRADE TO BE GRADED TO SLOPE TOWARDS THE PROPOSED UNDERDRAIN TRENCHES THROUGHOUT THE SITE.

ALL PIPES SHALLOWER THAN 42 INCHES OF DEPTH MUST BE INSULATED WITH 2" RIGID FOAM PER OWNER.

MATERIALS, INSTALLATION, AND TESTING OF THE STORM SEWER SYSTEM SHALL CONFORM TO ALLENDALE TOWNSHIP STANDARDS.

GENERAL WATER SERVICE NOTES:

SITE CONTRACTOR TO END WATER SERVICES 5' FROM THE BUILDING WITH A TEMPORARY CAP. COORDINATE CONNECTION WITH BUILDING PLUMBING CONTRACTOR.

IRRIGATION WATER SERVICE TO BE TAPPED OFF WATER SERVICE INSIDE BUILDING UTILITY ROOM. COORDINATE WITH LANDSCAPER AND BUILDING PLUMBER.

DOMESTIC SERVICE SHALL BE COPPER, TYPE K, ANNEALED AND SOFT TEMPER PER ASTM B–88. FITTINGS SHALL CONFORM TO ASTM B–88. PLUMBING CONTRACTOR TO VERIFY REQUIRED SIZE OF WATER SERVICE LINE.

MINIMUM COVER OVER PIPE SHALL BE 5.5'.

MATERIALS, INSTALLATION, AND TESTING OF WATER SERVICE LINES SHALL CONFORM TO ALLENDALE TOWNSHIP STANDARDS AND THE STATE PLUMBING CODE.

REVISIONS:
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REVISIONS:
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SITE UTILITY PLAN
WESCO STORE #32
SECTION 25, T7N, R14W
ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

CLIENT:
STACEY WHALEN
WESCO INC.
1460 WHITEHALL RD.
MUSKEGON, MI 49445

PROJECT NO.
251107

C–103

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

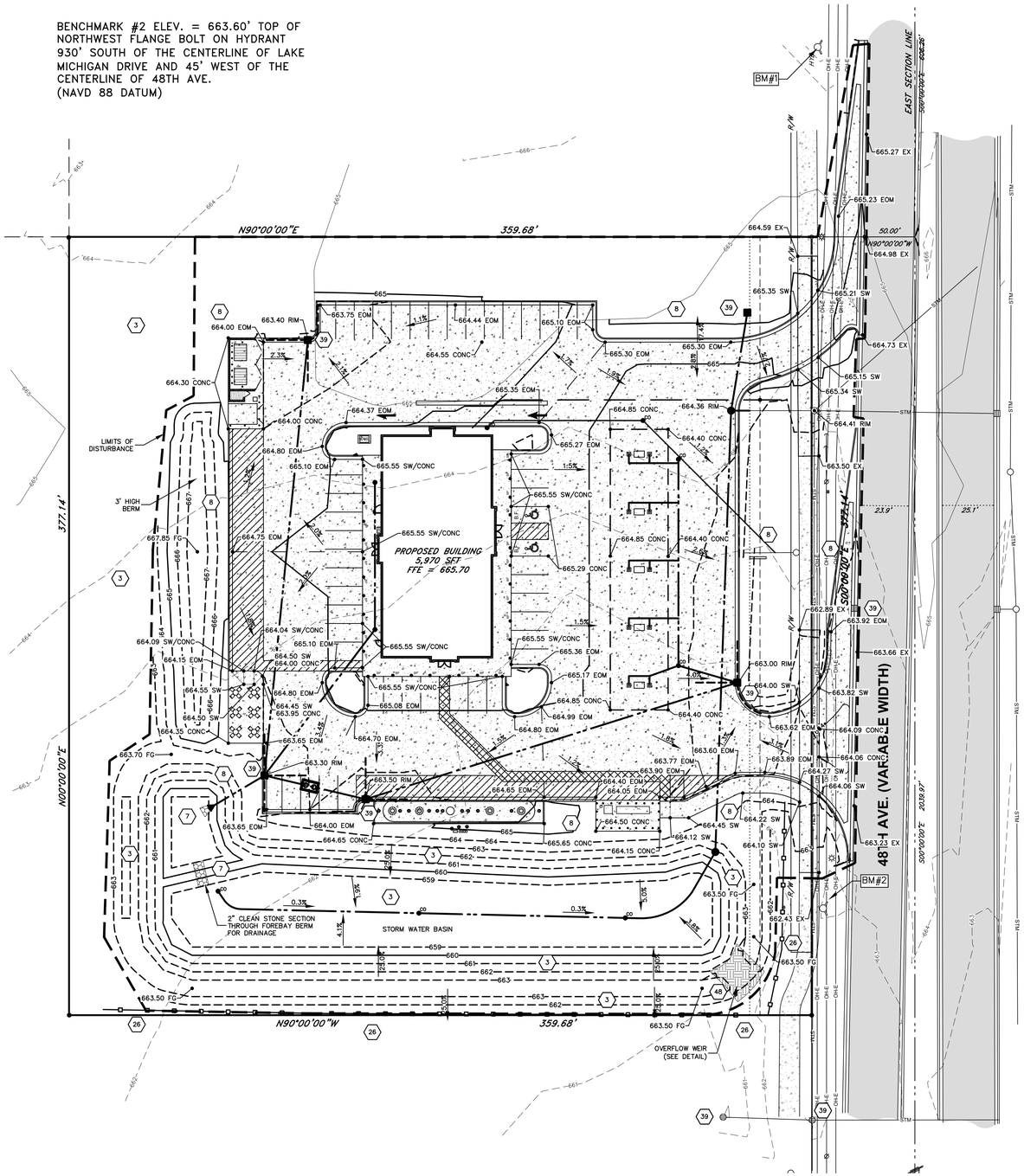
BENCHMARK #1 ELEV. = 667.50' TOP OF NORTHWEST FLANGE BOLT ON HYDRANT 515' SOUTH OF THE CENTERLINE OF LAKE MICHIGAN DRIVE AND 47' WEST OF THE CENTERLINE OF 48TH AVE.
(NAVD 88 DATUM)

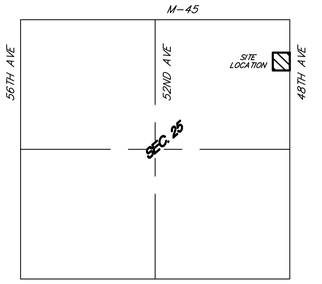
BENCHMARK #2 ELEV. = 663.60' TOP OF NORTHWEST FLANGE BOLT ON HYDRANT 930' SOUTH OF THE CENTERLINE OF LAKE MICHIGAN DRIVE AND 45' WEST OF THE CENTERLINE OF 48TH AVE.
(NAVD 88 DATUM)

LEGAL DESCRIPTION FROM: Light House Title Commitment No.CCU25-10340879

Part of the Northeast 1/4, Section 25, T7N, R14W, Allendale Township, Ottawa County, Michigan, described as: Commencing at the Northeast corner of Section 25; thence S00°00'00"W 606.26 feet along the East line of said Northeast 1/4' thence S90°00'00"W 50.00 feet to the West line of 48th Avenue and the PLACE OF BEGINNING of this description; thence S00°00'00"W 377.14 feet along the West line of 48th Avenue; thence S90°00'00"W 359.68 feet; thence N00°00'00"E 377.14 feet; thence N90°00'00"E 359.68 feet to the Place of Beginning.

EXCEPTIONS:
9. Easement granted to Consumers Power Company disclosed by instrument recorded in Liber 280, Page 200, Ottawa County Records. (NOTHING TO SHOW BLANKET IN NATURE.)
10. Terms, Covenants, restrictions, conditions, and other provisions as contained in the Right of Way and Conveyance Agreement recorded in Liber 611, Page 19, Ottawa County Records. (DOES NOT AFFECT.)
11. Terms, covenants, restrictions, conditions, and other provisions as contained in the Utility Easement recorded in Liber 1206, Page 321, Ottawa County Records. (SHOWN.)
12. Terms, covenants, restrictions, conditions, and other provisions as contained in the Utility Easement recorded in Liber 1212, Page 399, Ottawa County Records. (SHOWN.)
13. Terms, covenants, restrictions, conditions, and other provisions as contained in the Easement for Electric Line recorded in Liber 1296, Page 27, Ottawa County Records. (DOES NOT AFFECT.)
14. Terms, covenants, restrictions, conditions, and other provisions as contained in the easement Agreement recorded in Liber 3202, Page 23 as amended in Liber 3401, Page 848, Ottawa County Records. (DOES NOT AFFECT.)
15. Terms, covenants restrictions, conditions, and other provisions as contained in the Grant of Signage Easement recorded in Liber 3845, Page 662, Ottawa County Records. (DOES NOT AFFECT.)
16. Building and Use restrictions and other covenants and conditions, but deleting any covenant, condition or restriction, indicating a preference, limitation or discrimination based on race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, ancestry, national origin or source of income to the extent such covenants, conditions, or restrictions violate 42 USC 3604(c), disclosed in instrument recorded in Liber 3845, Page 667, Ottawa County Records. (DOES NOT AFFECT.)
17. Terms, covenants, restrictions, conditions, and other provisions as contained in the Public Highway Easement recorded in Liber Document, Page 2015-0048427, Ottawa County Records. (SHOWN.)





LOCATION MAP
NOT TO SCALE

ADDRESS: 11125 48TH AVENUE,
ALLENDALE, MI 49401

GRAPHIC SCALE
30' 0 15' 30'
(IN FEET)
1 inch = 30 ft.

SOIL EROSION CONTROL KEY

3	PERMANENT/TEMPORARY SEEDING
7	STONE RIP RAP
8	SOD
26	GEOTEXTILE SILT FENCE
39	INLET PROTECTION WITH GEOTEXTILE AND STONE
48	SOIL EROSION CONTROL BLANKET (N.A.G. S-150 OR EQUAL)

LEGEND

665	EXISTING MAJOR CONTOUR
664	EXISTING MINOR CONTOUR
665	PROPOSED MAJOR CONTOUR
664	PROPOSED MINOR CONTOUR
	GRADE BREAK LINE
	PROPOSED BIT. PAVEMENT
	PROPOSED CONC.
	PROPOSED STORM SEWER
665.50	PROPOSED SPOT ELEVATION
	SIDEWALK RAMP W/ LANDINGS AT EACH END
	LIMITS OF DISTURBANCE

FG	FINISHED GROUND	EOM	EDGE OF METAL GRADE
FL	FLOW LINE GRADE	SW	SIDEWALK GRADE
RIM	STRUCTURE RIM ELEVATION	CONC	CONCRETE GRADE
EX	MATCH EXISTING ELEVATION	BIT	BITUMINOUS GRADE

STORM WATER MANAGEMENT SYSTEM MAINTENANCE

THE STORM SEWER AND DETENTION SYSTEMS MUST BE INSPECTED AND MAINTAINED ON A REGULAR BASIS FOR OPTIMAL PERFORMANCE. SEE CHART BELOW FOR SUGGESTED INTERVALS.

TASKS (PROPERTY OWNER IS RESPONSIBLE FOR MAINTENANCE OF SYSTEM)	COMPONENTS	BASIN SIDE SLOPES	BASIN BOTTOM	BASIN INLETS	CATCH BASIN INLETS	CATCH BASIN SUMPS	STORM SEWER SYSTEM	SCHEDULE
INSPECT FOR ACCUMULATION		●	●	●	●	●		ANNUALLY
REMOVE SEDIMENT ACCUMULATION		●	●	●	●	●		EVERY 5-10 YEARS AS NEEDED
INSPECT FOR DEBRIS (DEAD VEGETATION AND TRASH)	●	●	●	●	●	●		EARLY SPRING, FALL AND AFTER MAJOR STORMS
CLEAN DEBRIS	●	●	●	●	●	●		AS NEEDED
INSPECT FOR EROSION ON BANKS AND BOTTOM	●	●	●					EARLY SPRING, FALL AND AFTER MAJOR STORMS
REESTABLISH PERMANENT VEGETATION ON ERODED SLOPES	●	●						AS NEEDED
RAKE OUT DEAD VEGETATION			●					ANNUALLY-EARLY SPRINGS
REPLACE STONE RIP-RAP			●					AS NEEDED
MOWING	●	●						AS NEEDED (MIN. ANNUALLY)

CONSTRUCTION SEQUENCE (2027)	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	REMARKS
INSTALL SILT FENCING AND INLET PROTECTION													REQUIRED
CLEAR VEGETATION AND STRIP AND STOCKPILE TOPSOIL													
ROUGH GRADE SITE													
CONSTRUCT BUILDING													
INSTALL UTILITIES													
INSTALL CURBING AND PAVEMENT													
FINISH GRADE, PLACE PLANTINGS, TOPSOIL AND SEED, AND MULCH BLANKETS													
CLEAN PAVEMENTS AND STORM SEWER													
REMOVE TEMPORARY EROSION CONTROL													

NOTE:
- REFER TO MDOT SOIL EROSION & SEDIMENTATION CONTROL MANUAL.
- CONTRACTOR SHALL PLACE NA-GREEN S-150 (OR APPROVED EQUAL) EROSION CONTROL BLANKET ON ALL SLOPES 1 ON 3 OR STEEPER AND IN THE BOTTOM ONE FOOT OF THE DRAINAGE SWALES.
- SITE SOILS CONSIST OF CLAY LOAM PER USDA NRCS MAPS.
- TOTAL DISTURBED AREA IS 2.66 ACRES.
- JACOBS DRAIN IS LOCATED 144 FEET EAST OF THE SITE. OTTAWA CREEK DRAIN IS LOCATED 250 FEET WEST OF THE SITE.
- CONTRACTOR SHALL SWEEP THE STREET OF ANY DIRT TRACKED ONTO IT BY THE CONSTRUCTION OPERATION AS NEEDED AND AS DIRECTED BY COUNTY SESC AGENT.
- THESE MEASURES ARE MINIMUM REQUIRED. CONTRACTOR MAY NEED ADDITIONAL MEASURES DEPENDING ON WEATHER, TIMING, ETC.

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SITE GRADING AND SESC PLAN
WESCO STORE #32
SECTION 25, T7N, R14W
ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

CLIENT:
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PROJECT NO.
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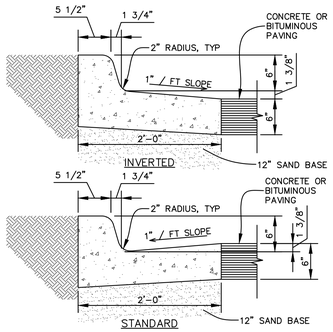
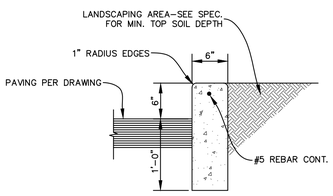
C-104



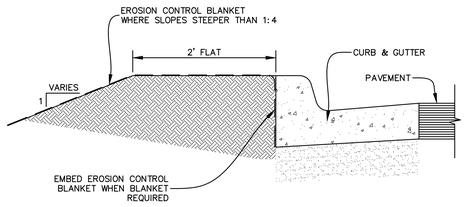
MDOT F-4 CURB AND GUTTER

NOT TO SCALE



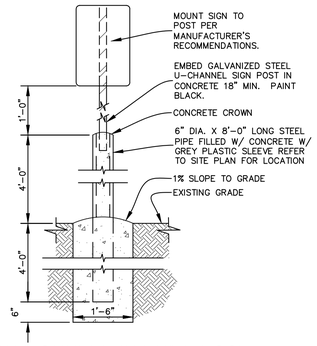
6" BLADE CURB

NOT TO SCALE



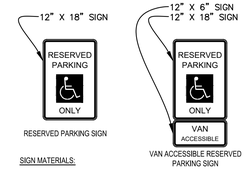
SLOPE BEHIND CURB IN FILL SECTION

NOT TO SCALE



SIGN MOUNTED IN BUMP POST

NOT TO SCALE



SIGN MATERIALS:

GENERAL: SIGNS SHALL CONFORM WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

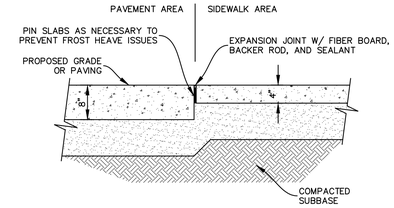
MOUNTING HARDWARE: STAINLESS STEEL.

PANEL MATERIAL: ALUMINUM SHEET.

SIGN FACE: REFLECTORIZED BACKGROUND, REFLECTORIZED LEGEND.

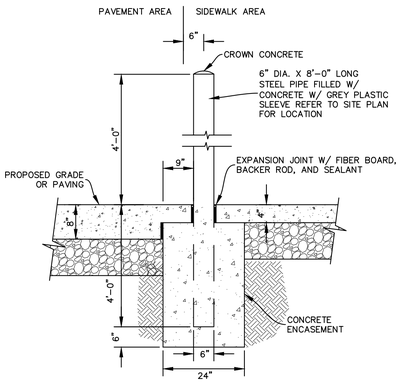
BARRIER FREE SIGNS

NOT TO SCALE



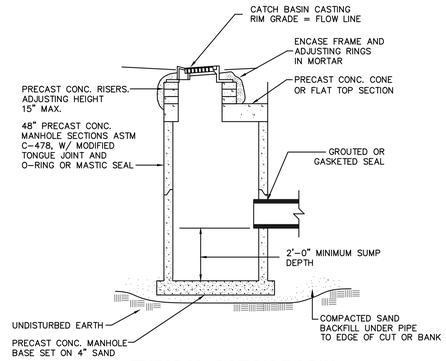
FLUSH SIDEWALK EDGE

NOT TO SCALE



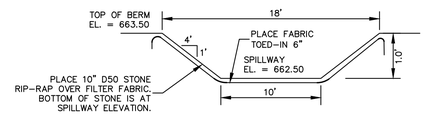
6" BUMP POST

NOT TO SCALE



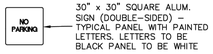
TYPICAL CATCH BASIN

NOT TO SCALE



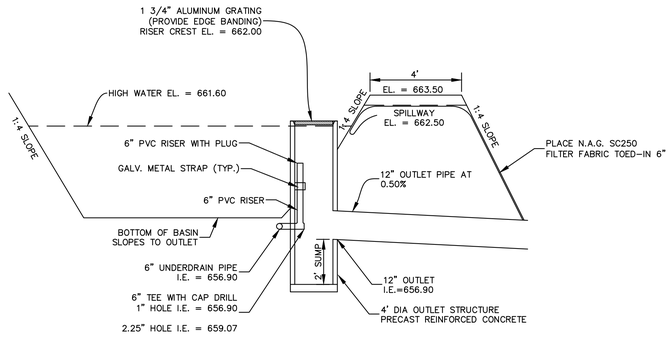
BASIN OVERFLOW SPILLWAY

NOT TO SCALE



NO PARKING SIGN

NOT TO SCALE



BASIN OUTLET STRUCTURE (OUT-9)

NOT TO SCALE

PROJECT NOTES AND SPECIFICATIONS

GENERAL NOTES

A) ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES, RULES AND REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED BY STATE AND LOCAL AGENCIES RELATED TO SOIL EROSION AND SEDIMENTATION.

B) ALL ITEMS OF WORK NOT COVERED BY THESE SPECIFICATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE ALLENDALE TOWNSHIP SPECIFICATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE MOST STRINGENT REQUIREMENTS AS LISTED IN THE GEOTECHNICAL REPORT, PLANS AND SPECIFICATIONS SHALL APPLY.

C) ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE BEGINNING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISS DIG AT 811/482-7171 AT LEAST 3 WORKING DAYS PRIOR TO ANY UNDERGROUND CONSTRUCTION.

D) CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER 48 HOURS BEFORE WORK BEGINS.

E) ROOSIEN AND ASSOCIATES AS THE DESIGN PROFESSIONAL SHALL NOT BE RESPONSIBLE OR LIABLE FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE DRAWINGS, SPECIFICATIONS AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH RISE FROM OTHERS' FAILURE TO OBTAIN AND FOLLOW THE DESIGN PROFESSIONAL'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

F) CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY, CONSTRUCTION MEANS, CONTROLS, TECHNIQUES, SEQUENCES AND PROCEDURES.

GENERAL SPECIFICATIONS

A) ALL CONSTRUCTION AREAS SHALL BE CLEARED OF ALL TREES, BRUSH, WEEDS, ETC. ALL SPOIL MATERIAL IS TO BE DISPOSED OF IN AREAS DESIGNATED BY THE OWNER AND IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.

B) STRIP ALL TOPSOIL AND ORGANIC MATERIAL ON SITE WITHIN THE CONSTRUCTION LIMITS OF THE PROJECT WHERE GRADES ARE TO BE CHANGED, OR IN AREAS TO BE IMPROVED. IF MATERIAL IS FREE OF ROOTS, ROCKS AND DEBRIS, AND IS APPROVED BY THE ENGINEER, IT SHALL BE TEMPORARILY STOCKPILED ON SITE FOR LATER USE.

C) CONSTRUCTION ACCESS AND MATERIAL STORAGE IS LIMITED TO THE AREAS DESIGNATED ON THE DRAWINGS OR AS APPROVED BY THE OWNER.

D) WHERE IT IS NECESSARY TO WORK OUTSIDE THE PROPERTY CONTROLLED BY THE OWNER, THE CONTRACTOR SHALL OBTAIN LEGAL AUTHORITY FROM ADJACENT PROPERTY OWNERS TO COMPLETE THE WORK AS OUTLINED IN THESE DOCUMENTS.

E) ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE BROUGHT TO FINISH GRADES AS SHOWN ON THE DRAWINGS. ALL AREAS DISTURBED SHALL BE RESTORED WITH A MINIMUM OF 4" OF TOPSOIL, SEEDED AND MULCHED.

F) THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION ON THE NEED FOR IMPORTED OR EXPORTED MATERIAL. THE PROPOSED GRADING PLAN MAY NOT PROVIDE FOR A "BALANCED" SITE.

G) ALL AREAS DISTURBED DUE TO SITE ACCESS SHALL BE RESTORED TO THE PRECONSTRUCTION CONDITION OR BETTER.

H) BACKFILL AND COMPACTION: ALL BACKFILL SHALL BE CLEAN, FREE OF LARGE ROCKS, DEBRIS AND ORGANIC MATERIAL. COMPACT ALL BACKFILL TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST, ASTM D-1557. BACKFILL SHALL BE PLACED IN A MAXIMUM OF 12" LIFTS.

I) STORM SEWER CATCH BASINS AND OUTLET STRUCTURES TO BE 4' DIA., UNLESS OTHERWISE NOTED. ALL CATCH BASINS SHALL HAVE A 2' DEEP SUMP. CATCH BASIN GRATE SHALL BE E.J.I.W. #7045 TYPE M1 IN CURB AND GUTTER AREAS AND E.J.I.W. #1040 TYPE O2 IN YARD AREAS. STORM MANHOLE COVER SHALL BE E.J.I.W. #1040 TYPE B.

SITE CONCRETE FLATWORK

A) MATERIALS: READY MIXED CONCRETE: ASTM C94. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 4,000 PSI FOR ALL EXTERIOR CONCRETE. 1. SLUMP RANGE: 2 INCHES TO 4 INCHES. 2. AIR CONTENT: 4.5 PERCENT TO 7.5 PERCENT. 3. LIMESTONE AGGREGATE SHALL BE USED. 4. 1.5 #/CYD OF FIBRILLATED FIBERS.

B) CURING MATERIAL: ASTM C171 WHITE, OPAQUE POLYETHYLENE FILM TYPE.

C) EXPANSION JOINT FILLERS: SHALL BE ASTM D1751 PREFORMED, BITUMINOUS FIBER TYPE WITH EXPANSION BOARD CAP AND REMOVABLE TOP CAP SECTION. FILL WITH TRAFFIC SEALANT.

D) CONCRETE SEALER: SEALER TO BE SIKAMIX AE-3 PER OWNER.

E) CONSTRUCTION JOINTS FLATWORK 1) MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS 100 FEET, UNLESS OTHERWISE SHOWN. SCORE CONTROL JOINTS EQUAL TO THE WIDTH OF THE WALK, OR DRIVE BUT NOT TO EXCEED THE LESSER OF 12 FEET OR 24 TIMES THE THICKNESS. 2) INSTALL EXPANSION JOINTS MATERIAL AT ABUTMENT TO CURBS AND ADJACENT STRUCTURES, UNLESS OTHERWISE SHOWN.

F) CONSTRUCTION JOINTS CURBS AND GUTTERS 1) MAXIMUM CONSTRUCTION BETWEEN EXPANSION JOINTS 20 FEET, STRAIGHT CURB 10 FEET.

G) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAIL SHOWN IN THESE PLANS.

H) PRIOR TO PLACEMENT OF GRAVEL OR CONCRETE, THE SAND SUBBASE SHALL BE ROLLED TO OBTAIN A MINIMUM OF 98% OF MAXIMUM DENSITY PER THE MODIFIED PROCTOR TEST, ASTMD-1557

I) PRIOR TO PLACEMENT OF ASPHALT, THE GRAVEL SHALL BE PROOF ROLLED AND COMPACTED TO 98% OF MAXIMUM UNIT DENSITY PER THE MODIFIED PROCTOR TEST, ASTMD-1557

STRIPING

A) PARKING LOT STRIPING SHOULD FOLLOW THE BELOW COLOR SCHEDULE.
- PARKING AND STORAGE LOT STALLS SHOULD BE STRIPED IN YELLOW PAINT.
- BARRIER-FREE STALLS SHOULD BE STRIPED IN BLUE PLAINT

B) FOR UNCURED SURFACES USE SETFAST WATERBORNE TRAFFIC MARKING PAINT.

REVISIONS:
APRIL 21, 2026 - PER PLANNING COMMISSION
APRIL 28, 2026 - PER REVIEW COMMENTS

DRAWN BY: VS
APPROVED BY: MDC
DATE: JANUARY 8, 2026
REVISIONS:
FEBRUARY 10, 2026 - PER REVIEW COMMENTS
MARCH 19, 2026 - PER REVIEW COMMENTS
MARCH 30, 2026 - PER REVIEW COMMENTS

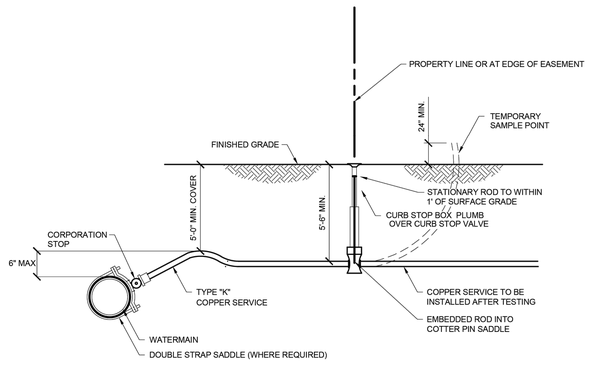
Roosien & Associates
SURVEYING AND ENGINEERING
5505 PLAINFIELD AVE. NE MATTAWOSEN-ASSOC.COM
GRAND RAPIDS, MI 49525 TELE: (616) 361-2220

DETAIL PLAN
WESCO STORE #32
SECTION 25, T7N, R14W
ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

CLIENT:
STACEY WHALEN
WESCO INC.
1460 WHITEHALL RD.
MUSKEGON, MI 49445

PROJECT NO.
251107

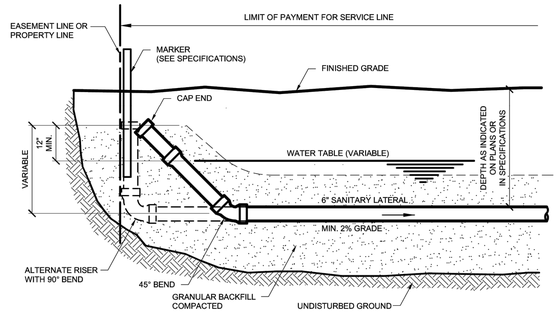
C-501



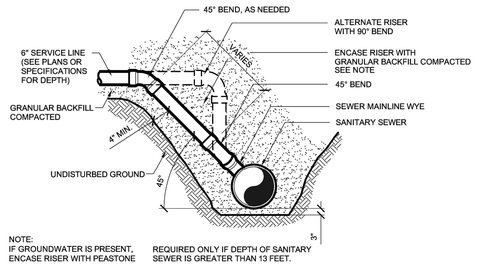
NOTES:

1. SAMPLE POINT TO BE USED FOR FUTURE SERVICE LEAD.
2. NO TAP SHALL BE MADE CLOSER THAN 18" TO ANY COUPLING OR JOINT IN THE PIPE.

COPPER SERVICE LEAD CONNECTION/SAMPLE POINT



PROPERTY LINE RISER



NOTE:
IF GROUNDWATER IS PRESENT, ENCASE RISER WITH PEASTONE

REQUIRED ONLY IF DEPTH OF SANITARY SEWER IS GREATER THAN 13 FEET.

MAINLINE RISER

STANDARD RISER DETAILS

333100_RISER
05/25

REVISIONS:
APRIL 21, 2026 – PER PLANNING COMMISSION
APRIL 28, 2026 – PER REVIEW COMMENTS

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FEBRUARY 10, 2026 – PER REVIEW COMMENTS
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DRAWN BY: VS
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DATE: JANUARY 8, 2026

Roosien & Associates
SURVEYING AND ENGINEERING
5505 PLAINFIELD AVE. NE MATT@ROOSIEN-ASSOC.COM
GRAND RAPIDS, MI 49525 TELE: (616) 361-7220

DETAIL PLAN
WESCO STORE #32
SECTION 25, T7N, R14W
ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

CLIENT:
STACEY WHALEN
WESCO INC.
1460 WHITEHALL RD.
MUSKEGON, MI 49445

PROJECT NO.
251107

C–502

Mailing: P.O. Box 1286 ■ Holland, MI 49422
Shipping: 12480 Superior Ct., Suite 1 ■ Holland, MI 49424
616 355-2970 ■ Fax 616 355-2972 ■ www.dri-design.com

LETTER OF TRANSMITTAL

TRANSMITTAL # 24187-1

DATE: 5/1/24	Job Name:
ATTENTION: Mike Murphy	
RE: Wesco Grand Haven	

TO: Custom Exteriors
1139 Parkway
Muskegon, MI 49442
231-206-1864

WE ARE SENDING YOU: X ATTACHED ☐ UNDER SEPARATE COVER VIA_____THE FOLLOWING ITEMS:

☐ SHOP DRAWINGS ☐ PRINTS ☐ COPY OF LETTER X SAMPLES ☐ SPECIFICATIONS

☐ DETAILS ☐ PLANS ☐ _____

COPIES	DATE	NO.	DESCRIPTION
		1	Dri-Design brochure
		1	Dri-Design color charts
		1	Check list before start of project
		1	Dri-Design sample 1-year limited warranty
		1	Crystal Finishing 10-year limited warranty
		1	Dri-Design crazing characteristics
		1	Dri-Design cleaning and maintenance instructions
		1	Dri-Design warranty request form

REASON FOR TRANSMITTAL CHECKED BELOW:

☐ FOR APPROVAL ☐ APPROVED AS SUBMITTED ☐ RETURN _____SAMPLE AFTER USE

X FOR YOUR USE ☐ RETURNED FOR CORRECTIONS ☐ RETURN ___APPROVAL COLOR SAMPLE(S)

☐ AS REQUESTED ☐ FOR REVIEW AND COMMENT ☐ RETURN _____ CORRECTED PRINT'S

☐ APPROVED AS NOTED ☐ _____

REMARKS

COPY TO: Dale Bauer SIGNED : Michelle Maginnis

PLEASE NOTIFY US AT ONCE IF ENCLOSURES ARE NOT AS NOTED.

dri-design®

WALL PANEL SYSTEM

Table of Contents

4 **Introduction**

6 **Environmental Footprint**

8 **Painted Aluminum**

10 **Anodized Aluminum**

11 **Copper Anodized**

12 **Inspire Series**

14 **VMZINC®**

16 **Other Metals**

18 **Shadow**

20 **Tapered**

22 **Perforated Imaging**

24 **Dri-Design Custom**

26 **Perforated**

27 **Aluvium**

28 **Embossed**

29 **Textured**

30 **EN-V®**

32 **Details**

33 **Outside Corner and Column Size Parameters**

34 **Continuous Insulation System**

36 **Panel Size Parameters**

38 **Testing**

University of Texas - Tyler

Tyler, TX
Smithgroup JJR

Nearly 20 years ago,
the Dri-Design Metal Wall Panel began its existence, humbly, in the back of a small shop, being manufactured by hand.

Dri-Design was not created by a large panel manufacturer as a way to grab more market share, but rather by a single small business as a way to address significant shortfalls we saw in the metal panel systems we had been using for decades. A system invented from research and development based on real life experience of over 30 years, selling and installing many other systems. Our timeline also provided a history long enough to watch and see how the existing systems aged and performed, long term. During that time, experiences with other panel systems included delamination, staining due to the effects of weather on joint sealants and gaskets, rising costs of production, inefficient installation practices, and a general lack of color, texture and design options.

There had to be a better way...

So, with new ideals in mind, we began developing Dri-Design in the mid-90s. We were folding metal in our shop, origami style, to try and create a system that would not be burdened with the same flaws of previous metal panels. We were working to combine beautifully simple design with new objectives about the way a system could perform, both at the time of installation and for decades later.

Health Partners Neuroscience

Minneapolis, MN
BWBR

Cover
Aloft/Element Hotel – Austin, TX
HKS, Inc.

Every Dri-Design panel is carefully manufactured - created without ACM, MCM, or any composite materials. Each Dri-Design product is a single-skin, non-combustible metal panel. NFPA 285 compliant.

The result of our meticulous engineering was a type of metal wall panel system that had not existed previously. It was, and is, a 100% recyclable, pressure equalized rain-screen, architectural metal wall system that attaches to nearly any substrate without the use of clips or extrusions. It is not laminated, nor a composite material, so panels will never delaminate. It doesn't require joint sealants, gaskets, or butyl tape, and therefore eliminates the staining and maintenance associated with them. It is manufactured efficiently and installs faster than any comparable product, saving time and money. Additionally, Dri-Design's patented design has passed the most stringent air, water and structural testing requirements in the industry, including the AAMA 508-07 test for pressure equalized rain-screens, as well as Miami-Dade County hurricane testing. And, as a non-combustible panel, it has been tested as a part of several NFPA-285 compliant assemblies."

All of this in a system that provides nearly endless design possibilities, with an unlimited palate of colors, finishes, materials, textures, and custom perforations, including imaging.

Please enjoy the following examples of Dri-Design projects.

Dri-Design hits the mark where both form and function meet.

Ryerson University
Student Learning Centre

Toronto, ON, Canada
Zeidler Partnership Architects

At Dri-Design, we strive to continually improve our sustainability practices and products through innovation. We are dedicated to developing sustainable products while looking at all aspects of our environmental impact.

Dri-Design environmental footprint

MADE LOCAL

Dri-Design purchases aluminum from domestic mills, which saves transportation costs and energy.

NO SILICONE SEALANTS

Dri-Design uses no joint sealants or gaskets, which are made with petroleum, saving fossil fuels and future maintenance costs.

RECYCLED AND RECYCLABLE

Dri-Design wall panels are made with recycled metal, are 100% recyclable and can be repurposed.

EFFICIENT MANUFACTURING

Dri-Design panels are made quickly with highly automated equipment...saving energy costs.

QUICK INSTALL

Dri-Design wall panels install fast, which helps save energy as well.

NO VOCs

Our paint providers are environmentally-conscious finishers. They use a 100% air capture system and destroy the VOCs with a regenerative thermal oxidizer, so there is no adverse environmental impact.

Key Advantages of Dri-Design:

- No sealants, gaskets or butyl tape in the panel joints - which means no dirty streaks or a legacy of maintenance for the building owner.
- Panels are not laminated nor a composite, so they will never delaminate.
- Dedicated to developing sustainable products.
- Fully tested to exceed ASTM standards and the latest AAMA 508-07 for pressure equalized rain-screens. Miami Dade approved.
- Interlocking panel design makes installation quick and easy.
- Each Dri-Design product is a single-skin, non-combustible metal panel.

Painted Aluminum

Available in any color, with the ability to match colors of your choice without expensive up charges – Dri-Design Painted Aluminum Panels offer the ultimate design flexibility for exterior and interior applications. Panels are painted using industry leading Fluoropolymer based paints for long lasting finish durability, while our finishers use a 100% air capture system to destroy the VOCs produced, so there is no adverse environmental impact.

Technical Information

System Depth - 1 ¼" nominal

Material - Aluminum

Material Thickness - .080" standard (other gauges available)

Panel Joints - ½" nominal standard (1/8" – 1" available)

Finish - Fluoropolymer, unlimited color palette

Finish Warranty - 20 year standard

Weight - Less than 2 pounds per square foot

Sizes:

Please refer to panel sizes group A on page 37.

Pittsburg State University
Bicknell Family Center for the Arts

Pittsburg, KS
ACI Frangkiser Hutchens

Anodized Aluminum

Anodizing successfully combines science with nature to create one of the world's best metal finishes. It takes the natural oxidation process and helps it along by adding electricity and chemicals to produce a dense surface that is integral with the aluminum. This process brings out the natural variation in the aluminum (color variation can be expected). This durable and beautiful finish is available in many shades and is a perfect complement to the Dri-Design system.

Technical Information

System Depth - 1 ¼" nominal

Material - Aluminum

Material Thickness - .080" standard (other gauges available)

Panel Joints - ½" nominal standard (1/8" – 1" available)

Finish - Clear, Bronze, Black, Champagne and Bordeaux Anodized

Finish Warranty - 5 year standard (10 year available)

Weight - Less than 2 pounds per square foot

Sizes:

Please refer to panel sizes group A on page 37.

Maple Grove Public Works

Maple Grove, MN
Oertel Architects

Copper Anodized

Capture the warm glow of natural copper, along with the long lasting durability of an anodized finish. Our Copper Anodized Series will add depth and character to your design with subtle variations of copper penny color from panel to panel.

UMASS Amherst

Amherst, MA
Leers Weinzapfel Associates Architects, Inc.

Technical Information

System Depth - 1 ¼" nominal

Material - Aluminum

Material Thickness - .080" standard (other gauges available)

Panel Joints - ½" nominal standard (1/8" – 1" available)

Finish - Copper Anodized

Finish Warranty - 5 year standard (10 year available)

Weight - Less than 2 pounds per square foot

Sizes:

Please refer to panel sizes group A on page 37.

Photo credit© Albert Vecerka / Esto

University of Texas – Tyler

Tyler, TX
Smithgroup JJR

Inspire Series

Inspire by Dri-Design offers the long-life durability of aluminum with unique and customizable finishes that are equally suitable for use on interior and exterior applications. The Inspire Series employs an advanced PVDF finishing technique to provide a patterned finish with superior weatherability and longevity. Available in finishes inspired by wood, weathering steel, stone, etc., this system has many applications. If you are looking for something truly one of a kind, we can even help design a custom pattern for your project.

Technical Information

System Depth - 1 ¼" nominal

Material - Aluminum

Material Thickness - .080" standard (other gauges available)

Panel Joints - ½" nominal standard (1/8" – 1" available)

Finish - Fluoropolymer, wood grains, weathering steel, stone and many other patterns. Custom patterns available.

Finish Warranty - 20 year standard

Weight - Less than 2 pounds per square foot

Sizes:

Please refer to panel sizes group A on page 37.

VMZINC®

VMZINC® Series Panels take inspiration from the distinctive tones and textures of nature to create an exclusive, refined and unforgettable visual experience. Our Dri-Design Panels made with VMZINC® are available in QUARTZ-ZINC®, ANTHRA-ZINC®, AZENGAR® and PIGMENTO® Series colors.

Adobe Utah Campus

Lehi, UT
WRNS Studio

Technical Information

System Depth - 1 ¼" nominal

Material - VMZINC®

Material Thickness - 1 mm, 1.5 mm

Panel Joints - ½" nominal standard (1/8" – 1" available)

Finish - QUARTZ-ZINC®, ANTHRA-ZINC®, AZENGAR® and PIGMENTO® Series

Weight - Less than 3 pounds per square foot

1 mm
ANTHRA-ZINC®, QUARTZ-ZINC®, PIGMENTO® AND AZENGAR®

Please refer to panel sizes group C on page 37.

1.5 mm
ANTHRA-ZINC®, QUARTZ-ZINC®, PIGMENTO® AND AZENGAR®

Please refer to panel sizes group B on page 37.

ANTHRA-ZINC®

QUARTZ-ZINC®

PIGMENTO® Green

PIGMENTO® Blue

PIGMENTO® Red

PIGMENTO® Brown

AZENGAR®

Colors shown are representational only.

Other Metals

Virtually any flat or slightly embossed metal can be used in Dri-Design Panel Systems. Select a metal that conveys your vision, and we will manufacture a panel that completes your design.

Technical Information

System Depth - 1 ¼" nominal

Materials - Copper, Stainless Steel, Titanium, Weathering Steel, Embossed Stainless and others

Material Thickness - Varies based on material type

Panel Joints - ½" nominal standard (1/8" – 1" available)

Finish - Varies based on material type

Weight - Varies based on material type

Sizes:

Panel sizes will vary with each individual scenario based on the material specified. Please contact a Dri-Design representative to discuss your specific requirements.

901 East 6th Street

Austin, TX
Thoughtbarn + Delineate Studio
Material: Weathering Steel

Shadow

Gone are the days of flat and featureless facades. Our Shadow Series panels let you add depth and definition to any architectural design. Individual panels can be extended at varying depths to create texture or a dynamic variation in patterns, all while keeping the substrate and weather barrier in the same plane.

Technical Information:

System Depth - 1 ¼" – 4" for aluminum and 1 ¼" – 3" for VMZINC®

Material - Aluminum and VMZINC®

Material Thickness - .080" for aluminum, 1 mm and 1.5 mm for VMZINC®

Panel Joints - ½" nominal

Finish - Available in all Dri-Design finishes and colors

Weight - Varies based on material type

.080"
Aluminum

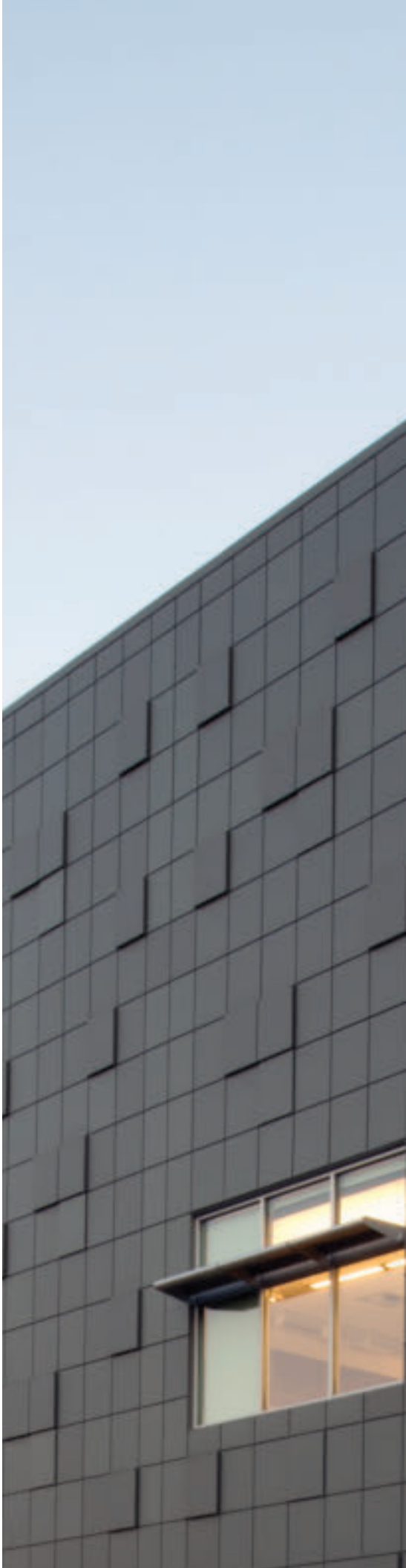
Please refer to panel sizes group A on page 37.

1 mm
VMZINC®

Please refer to panel sizes group C on page 37.

1.5 mm
VMZINC®

Please refer to panel sizes group B on page 37.



Salt Lake Community College

Salt Lake City, UT
GSBS Architects

Tapered

Tapered Series Panels can be angled in any direction with varying depths and degree of slope. This freedom to design each specific panel gives you an unlimited capacity to create a dynamic, one-of-a-kind surface on nearly any facade, without the need to modify the substrate or weather barrier.

Sizes:

Please refer to panel sizes group A on page 37.

Technical Information:

System Depth - Minimum Depth: 1 ¼" nominal, Maximum Depth: 4" nominal

Taper Direction - Right to left, left to right, bottom to top and top to bottom

Material - Aluminum and VMZINC®

Material Thickness - .080" for aluminum, 1 mm and 1.5 mm for VMZINC®

Panel Joints - ½" nominal

Finish - Available in all Dri-Design finishes and colors

Weight - Varies based on material type

Mill Woods Library, Seniors and Multicultural Centre

Edmonton, AB, Canada
Dub Architects and HCMA Architecture + Design

Perforated Imaging

Dri-Design with Perforated Imaging uses advanced computer based manufacturing to create complex images using perforations. By varying the size, location and density of the perforations, areas of light, dark and shades in between are created to form an image. These perforations also allow the panel to provide needed airflow and/or shade to a structure. Since the images can be created from any digital picture, you are only limited by your imagination.

Technical Information:

System Depth - 1 ¼" – 4" nominal, including Tapered and Shadow

Material - Aluminum, VMZINC®, Copper and Stainless Steel

Panel Joints - ½" nominal standard (1/8" – 1" available)

Image - Any image of your choice

Perforations - Most sizes and shapes. Density and location will vary depending on the image and specific needs of the project. Please speak with a Dri-Design representative about specific requests.

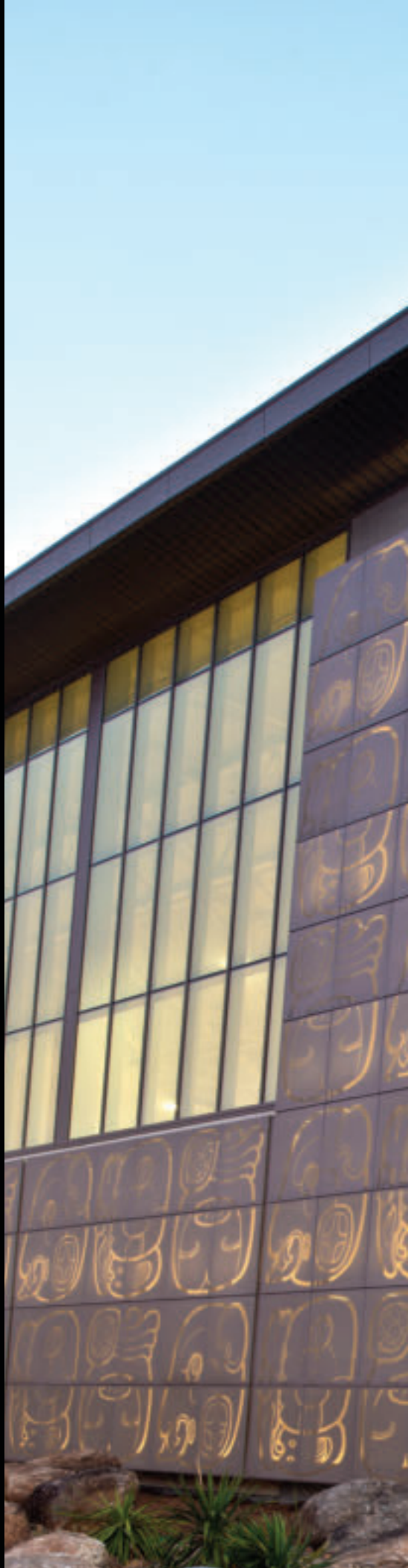
Secondary Material - A second layer of material can be added behind the perforations when needed for water management or to achieve a specific aesthetic. A variety of finishes are available

Finish - Available in all Dri-Design finishes

Weight - Varies based on material type

Sizes:

Please refer to panel sizes group A on page 37.



The Wellness & Aquatic Center at Southwestern College

Chula Vista, CA
Tucker Sadler Architects

Dri-Design Custom

Dri-Design has always made design flexibility a high priority. With our unlimited color palette, variety of materials, sizes, textures, shapes and perforation, we want you to feel empowered, not restricted, by our capabilities. There are even times where your vision takes our panel design to a rare, or completely new space. This area of design freedom and invention, which has no barriers, is called Dri-Design Custom. Please contact us about taking your ideas from concept to reality.

The Shops at Clearfork

Fort Worth, TX
Nelsen Partners

A stunning combination of functionality and aesthetics - the Perforated Panel Series provides necessary airflow and/or shade to a structure without sacrificing style or design. Virtually any shape and pattern can be perforated into the panels and used for a myriad of applications.

Sizes:

Please refer to the specific material section of the design guide for the correct size parameters of the material you intend to use.

Technical Information:

System Depth - 1 ¼" – 4" nominal, including Tapered and Shadow

Material - Aluminum, VMZINC®, Copper and Stainless Steel

Panel Joints - ½" nominal standard (1/8" – 1" available)

Perforations - Most sizes, shapes and locations. Please speak with a Dri-Design representative about specific requests.

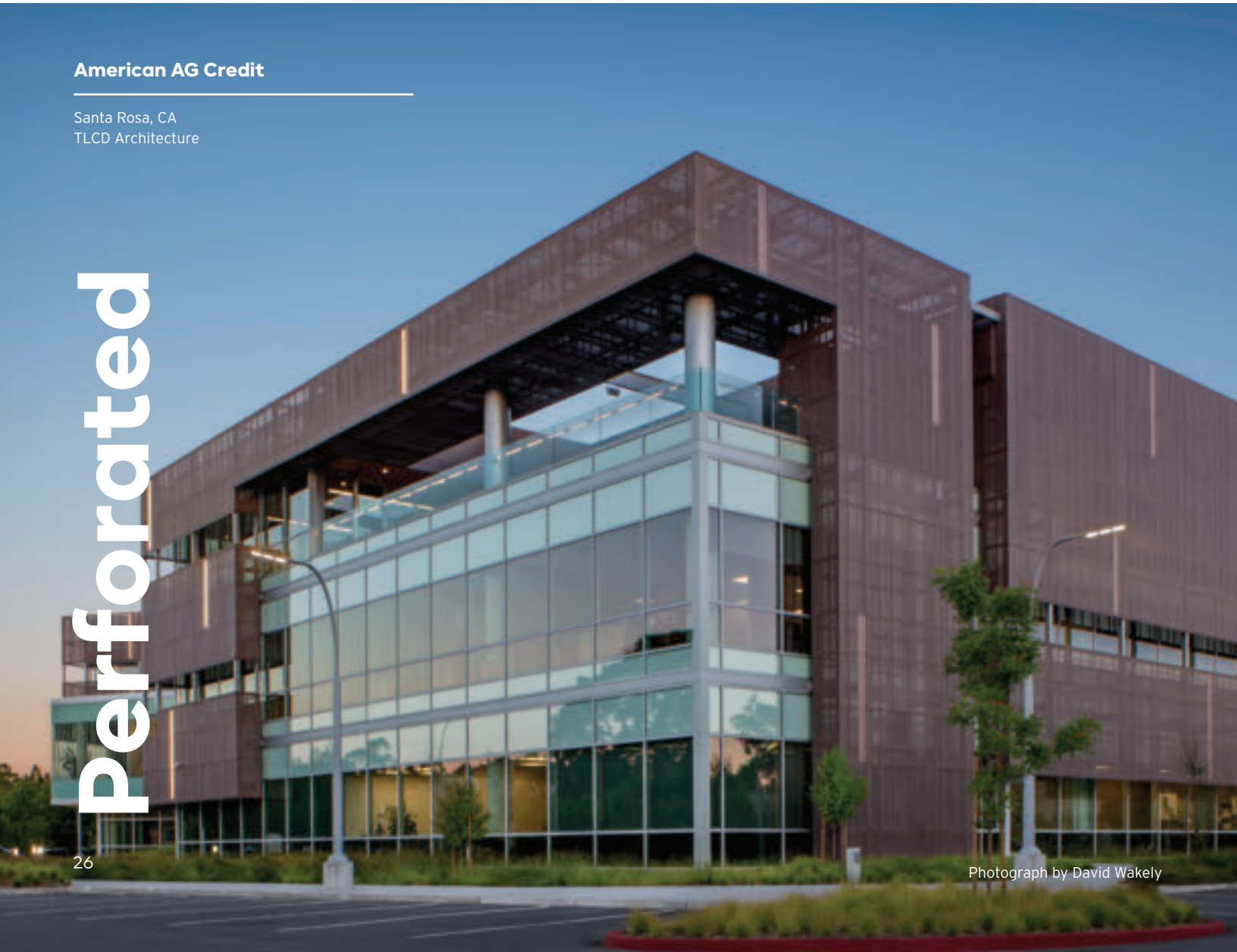
Secondary Material - A second layer of material can be added behind the perforations when needed for water management or to achieve a specific aesthetic. A variety of finishes are available

Finish - Available in all Dri-Design finishes

Weight - Varies based on material type

American AG Credit

Santa Rosa, CA
TLCD Architecture



Perforated

Photograph by David Wakely

DMACC Iowa Culinary Institute

Ankeny, IA
Shive Hattery Architecture

Dri-Design introduces a new paint finish that expresses not only a new look, but also a new feel, in a high quality, PVDF finish. This new paint finish uses a special technique to impart a sand-like texture during the finishing process. Beyond the unique tactile expression, this texture gives the panels a very unique visual appeal, whether experiencing it from close proximity or from far away. Also, because the paint utilizes a 70% PVDF resin package, the finish achieves the highest levels of performance in an exterior environment.

Technical Information:

System Depth - 1 ¼" nominal

Material - Aluminum

Material Thickness - .080" standard (other gauges available)

Panel Joints - ½" nominal standard (1/8" – 1" available)

Finish - Fluoropolymer, unlimited color palette

Finish Warranty - 20 year standard

Weight - Less than 2 pounds per square foot

Sizes:

Please refer to panel sizes group A on page 37.

Alvium

Rock Hill Law Center

Rock Hill, SC
Little Diversified Architectural Consulting

Embossed

With our Embossed Panel, there is essentially no limit to the design possibilities or applications. Almost any shape or feature, convex or concave, can be embossed into the Dri-Design panels to create a distinctive, three dimensional accent.

Sizes:

Please refer to the specific material section of the design guide for the correct size parameters of the material you intend to use.

Technical Information:

System Depth - 1 ¼" – 4" nominal, including Tapered and Shadow

Material - Aluminum, VMZINC®, Copper and Stainless Steel

Material Thickness - Varies based on materials

Panel Joints - ½" nominal standard (1/8" – 1" available)

Embossing - Most sizes, shapes and locations. Please speak with a Dri-Design representative about specific requests.

Finish - Available in all Dri-Design finishes

Weight - Varies based on material type

Create a visual "feel" with our Textured Panel System. Each perforated corrugated panel is affixed to a Dri-Design wall panel, and delivered to the job site ready to install. Pick any pattern, choose a finish – we give you unfettered freedom to dream as you wish.

Technical Information:

System Depth - 6"

Material - Aluminum

Material Thickness - .063" and .080"

Perforated Pattern - Any pattern

Panel Joints - 1/8" nominal

Finish - Available in all Dri-Design finishes

Weight - Less than 5 pound per square foot

Sizes:

Please refer to the specific material section of the design guide for the correct parameters of the material you intend to use.

Manhattan Audi

New York, NY
CR Studio Architects P.C.

Photograph by John Muggenborg

Textured

Powered by Dri-Design®

With EN-V, we aim to restore the true meaning of Value Engineering. We haven't cheapened anything about the EN-V metal panel system, but rather optimized the process to find cost savings without ever sacrificing performance. EN-V is a tested, architectural, dry joint, pressure equalized rainscreen system, which starts at $11.95 per square foot for panels; an uncommonly low price in this sector. Available in a nearly endless palette of custom colors, EN-V doesn't compromise on aesthetics either. Now you can use a system you want at the price point you need.

Quincy High School

Quincy, WA
NAC Architecture

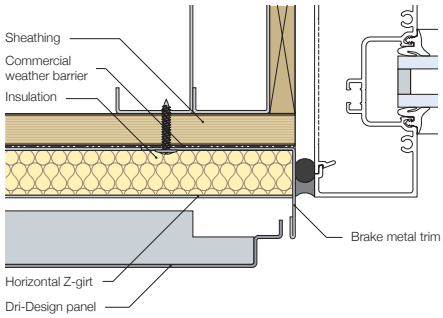
Available Sizes

*dimensions are center line to center line.

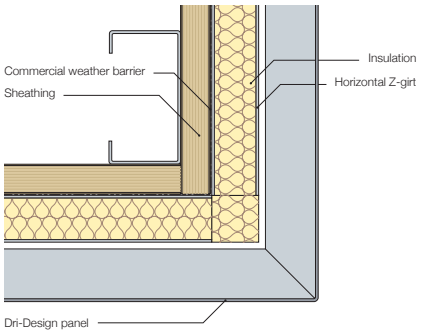
A Width x Height	B Width x Height		C Width x Height	
36” x 36”	24” x 48”	72” x 24”	18” x 48”	72” x 18”
72” x 22”	48” x 22”	96” x 22”	30” x 30”	96” x 18”
120” x 22”	60” x 22”	96” x 24”	48” x 24”	96” x 20”
	60” x 24”	120” x 20”	60” x 20”	120” x 18”
	72” x 20”	120” x 24”		

Architectural Details

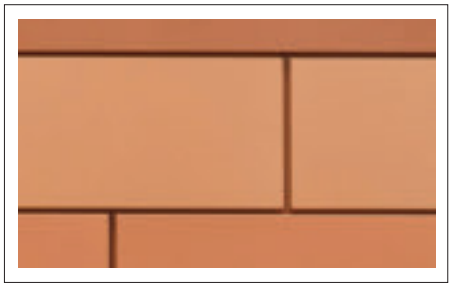
Jamb Detail

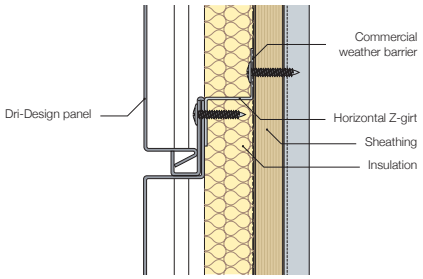


Outside Corner Detail

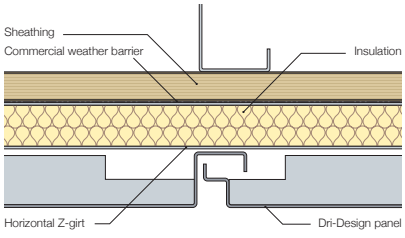


Horizontal Joint Detail





Vertical Joint Detail



There are thousands of details available, please contact us for your job specific requirements.

Formed Outside Corner and Column Size Parameters:

Formed Outside Corner:

Aluminum:

One dimension (either dimension "A" or "B") must not exceed a maximum dimension of 24".

The minimum dimension is 4".

The total unfolded panel length cannot exceed standard aluminum flat panel size parameters.

If you have corner panels that fall outside of these parameters, contact Dri-Design for additional options.

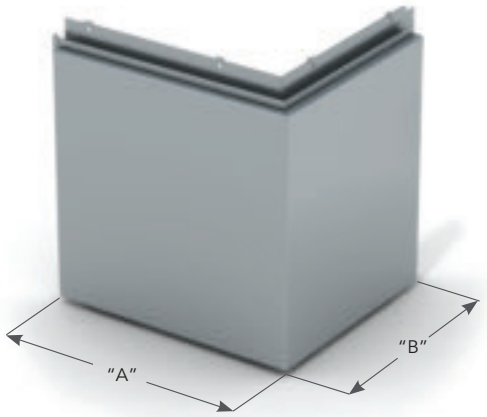
VMZINC®:

One dimension (either dimension "A" or "B") must not exceed a maximum dimension of 18".

The minimum dimension is 4".

The total unfolded panel length cannot exceed 72".

If you have corner panels that fall outside of these parameters, contact Dri-Design for additional options.



Columns:

Aluminum:

The return leg dimensions cannot exceed 80% of the column face (.8x") or a maximum of 24".

The total unfolded panel length cannot exceed standard aluminum flat panel size parameters.

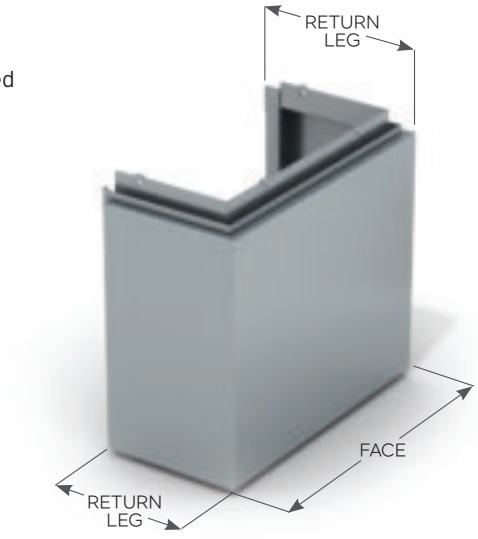
If you have column panels that fall outside of these parameters, contact Dri-Design for additional options.

VMZINC®:

The return leg dimensions cannot exceed 80% of the column face (.8x") or a maximum of 18".

The total unfolded panel length cannot exceed 72".

If you have column panels that fall outside of these parameters, contact Dri-Design for additional options.



Ventura College
Applied Science Center

Ventura, CA
Gensler

Continuous Insulation System

Dri-Design has always held performance at the forefront of everything we do, resulting in one of the highest tested systems on the market. With the Dri-Design Continuous Insulation System, we aim to bring this same mentality to the entire wall assembly and provide a new option when choosing your Dri-Design substrate. Tested as an entire wall assembly, Dri-Design CI is both NFPA-285 and ASHRAE 90.1 approved, giving you both the fire and thermal performance you need in a convenient, single sourced package. Available in both mineral wool and Kooltherm® options, you can choose the solution that's best for your project.

- NFPA 285 Compliant
- ASHRAE 90.1 Approved
- Complete Tested Wall Assembly
- Single Sourced Package

Kooltherm® Wall Assembly

Mineral Wool Assembly

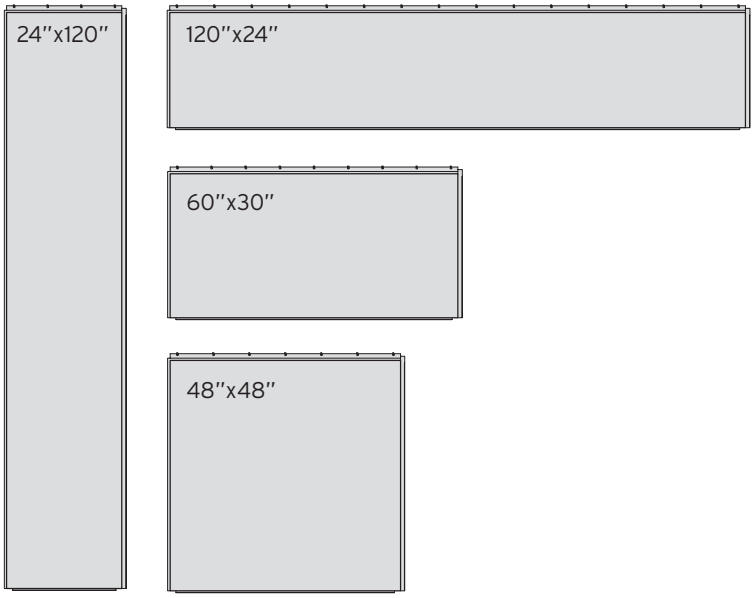
Panel Size Parameters

Lackland Air Force Base

San Antonio, TX
HDR, Inc.

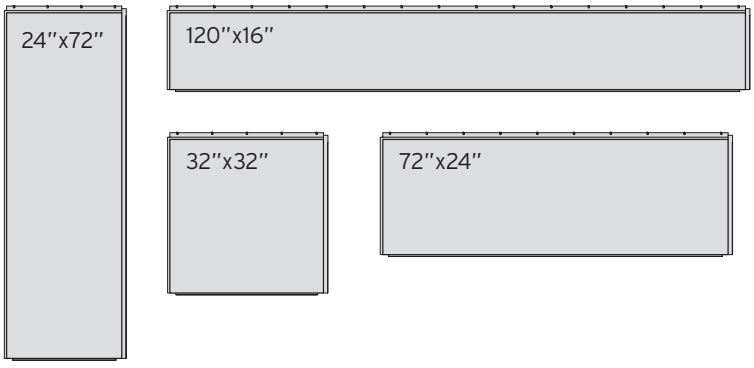
If the panel you would like fits within these guidelines, Dri-Design can easily manufacture it.

Maximum Panel Sizes "A"



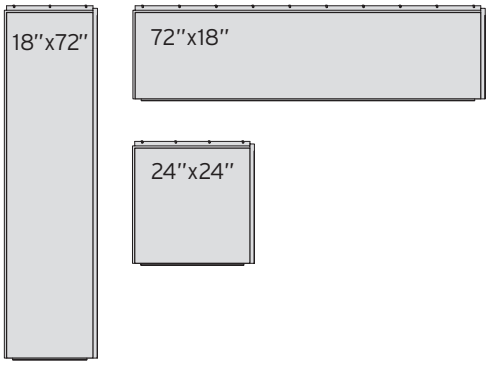
Maximum Panel Sizes "B"

(1.5mm Zinc)



Maximum Panel Sizes "C"

(1mm Zinc)



These are the recommended maximum size panel guides. For larger sizes, please contact a Dri-Design representative to discuss your specific requirements.

Washington Ironworks

Gardena, CA
AC Martin

NFPA 285
Both phenolic form and mineral wool on continuous insulation system

Accreditations
Code Compliance Research Report (CCRR) Intertek

Los Angeles Research Report (LARR)
Florida Product Approval
UL Listed

(616) 355-2970 www.dri-design.com

P.O. Box 1286 | Holland, Michigan 49422

dri-design®
WALL PANEL SYSTEM

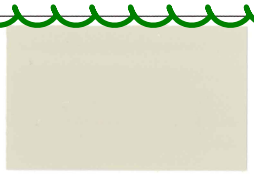
At Dri-Design, we deliver an unlimited color palette – if you can imagine it, we can replicate it. So why the color chart? Inspiration. The following colors represent the most popular in our collection. If none of these shades strike your fancy, send in any color chip and we'll match it free of charge. No worries. No expensive upcharges.

Color to be Crystal Blue #KL3C56376-C

Popular Colors

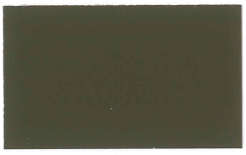
Stone White DRI-001

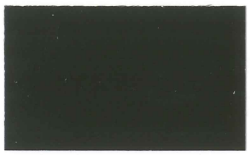
Bone White DRI-002

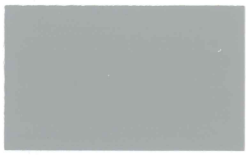

Almond DRI-003

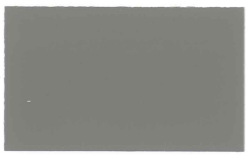
Sandstone DRI-004

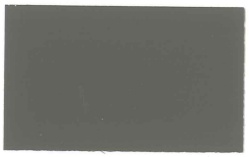
Sierra Tan DRI-005


Medium Bronze DRI-006

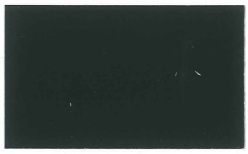

Dark Bronze DRI-007

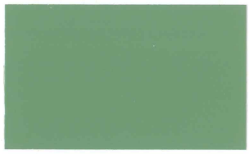

Cityscape DRI-008


Slate Gray DRI-009


Musket Gray DRI-010

Charcoal DRI-011


Matt Black DRI-012


Arcadia Green DRI-013

Hemlock Green DRI-014

Forest Green DRI-015

Hartford Green DRI-016

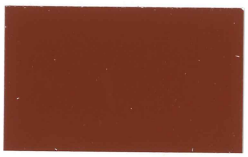
Berkshire Blue DRI-017

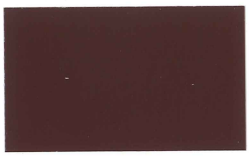
Military Blue DRI-018

Interstate Blue DRI-019

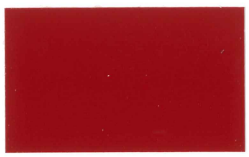
Award Blue DRI-020

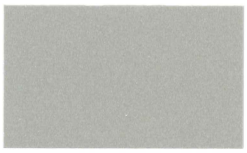
Terra Cotta DRI-021


Colonial Red DRI-022


Burgundy DRI-023

Popular Premium Colors


Cardinal Red DRI-024


Silver DRI-025

Copper Wire DRI-026

Classic Copper DRI-027

Champagne DRI-028

Champagne Pearl DRI-029

Weathered Zinc DRI-030

dri-design®
WALL PANEL SYSTEM

AAMA 2604 Paint Specifications

Color Retention:	5 years: fade ≤ 5 Delta E
Gloss Retention:	5 years: ≤ 30% Retention
Erosion Resistance:	5 years: ≤ 10% loss
Chalk Resistance:	5 years: chalk ≤ 8
Accelerated Salt Spray:	3,000 Hours Minimum
Accelerated Humidity Testing:	3,000 Hours Minimum

AAMA 2605 Paint Specifications

Color Retention:	10 years: fade ≤ 5 Delta E
Gloss Retention:	10 years: ≤ 50% Retention
Erosion Resistance:	10 years: ≤10% loss
Chalk Resistance:	10 years: chalk ≤ 8
Accelerated Salt Spray:	4,000 Hours Minimum
Accelerated Humidity Testing:	4,000 Hours Minimum

20 Year Finish Warranty available upon request.

dri-design®
Wall Panel System
12480 Superior Ct., Holland, MI 49424
www.dri-design.com
Ph: 616-355-2970
Fax: 616-355-2972

Limited Warranty

Sample Warranty

June 6, 2017

Project: **Project Name**

Dri-Design® hereby warrants to the original owner that Dri-Design® Wall Panels will be free of defects of faulty workmanship and/or material for a period of **one year** from **(substantial completion date).**

Any claim made hereunder must be in writing to Dri-Design® during the warranty period and within thirty (30) days after first discovery of the same. Upon inspection and determination of defective materials and/or workmanship, Dri-Design® will repair or furnish replacements within a reasonable period of time, considering the nature of the defect and the liability of Dri-Design® to correct same promptly. Appropriate written notice must also be furnished to the manufacturer as may be required to comply with its warranty. The warranty on any repaired or replaced work shall be the remainder of the original warranty period.

This warranty shall not cover defects resulting from damage not caused by a defect during the warranty period resulting from unreasonable use, or from abuse, accidents, and/or vandalism. This warranty covers only the Dri-Design® material and not any labor or paint finishes. Under no circumstances shall Dri-Design® be liable for incidental or consequential damages.

This warranty gives the Owner specific legal rights which may vary from state to state.

DRI-DESIGN®

Bradley J. Zeeff, President

BZ/pm

SAMPLE

TRINAR® ULTRA 10 Year Limited Warranty for Spray Coaters

ADDENDUM

SAMPLE WARRANTY

Date: 04/11/2018

Coater's Name: Crystal Finishing Systems, Inc

Address: 2608 Ross Ave Schofield, WI 54476 **Phone:** 715.355.5351

PO#: 1111, 1120

Job Name and/or Number: Job Name

Job Address: Job Site address

Paint Color & Code: paint color – CFT5397

Date Coating Applied: 00/00/2016

Warranty Expires: 00/00/2026

dri-design®
A Kingspan Group Company

Crazing characteristic of post formed aluminum flat sheet

Dri-Design does offer pre-painted and pre-anodized flat sheets for post fabrication of trims, flashings, copings, or other needed materials. However, when post forming the trims you should expect crazing at the bend lines. This is a characteristic on all post formed materials and is not a defect.

For the best overall results on formed trims and flashings, it is recommended to have them formed in mill aluminum prior to finishing (post-painted or anodizing) and then post-finished. Should you wish to purchase pre-painted or anodized flat sheet for post forming, it is reasonable to expect some crazing at the bend lines

Please note: Various styles of bending equipment will produce different results.

Should you choose to use post formed trims on your project, Dri-Design suggests that you educate the Architect and / or GC on the characteristics of crazing on post formed aluminum with a painted or anodized finish.

P.O Box 1286 ■ Holland, MI 49422-1286 ■ Phone: 616.355.2970 ■ Fax: 616.355.2972 ■ www.dri-design.com

dri-design®
WALL PANEL SYSTEM

CLEANING AND MAINTAINING YOUR ALUMINUM PAINT AND ANODIZED FINISH

TODAY'S HIGH QUALITY PAINTED AND ANODIZED ARCHITECTURAL FINISHES ARE EXTREMELY DURABLE. However, even the best finish needs a little TLC, and even with the most careful treatment of the facade during installation and daily use, occasional damage will occur.

This article discusses the recommended care of painted or anodized finishes on architectural metal and looks at three levels of concern: Care and Cleaning, Minor Repairs, and More Complex Refinishing.

THE CARE AND CLEANING OF PAINTED MATERIAL: Today's factory applied heat cured painted finishes are durable and very colorfast. The Kynar® and Hylar® PVDF resin=based products that meet the AAMA 2605 specification with trade names such as Duranar® by PPG, Fluropon® by Valspar, Shernar® by Sherwin Williams or Trinar® by Akzo-Nobel are warranted to retain their color and gloss level for many years. However, to assure that they retain their original beauty, even these highly durable finishes should be cleaned occasionally. When selecting a cleaning solution use mild soap solutions that are safe for use with your bare hands such as those products that one would use to wash a car. Avoid the use of strong acid or alkali cleaners as they may damage the finish.

Solvents no stronger than mineral spirits or denatured alcohol may be used to remove grease, sealants or other materials. Never mix cleaners or cleaners and solvents as the resultant mixture can cause harmful or even dangerous results. Do not use abrasive cleaners or materials such as steel wool or abrasive brushes, which can also harm the surface.

Once heavy soil, grease or sealant is removed, the mild soap solution should be applied with a soft cloth, sponge or soft brush. Rinse the surface thoroughly with clean water and dry with a soft cloth.

In coastal areas where the finish is exposed to salt spray or in areas containing heavy industrial pollutants the cleaning should take place on a regular basis. For example, cleaning the painted finish can be scheduled as a part of the regular maintenance program.

CLEANING ANODIZED MATERIAL: Anodized material has an extremely hard surface that is very colorfast and mar resistant. The Class I clear or color anodized finishes applied by a computer automated, high quality commercial anodizer specializing in architectural finishing will provide consistent color and long product life in a variety of applications.

dri-design®
WALL PANEL SYSTEM

Much like painted surfaces, an anodized finish should be cleaned using mild soap solutions to retain its original beauty. Products that are safe for use with bare hands including most commercial cleaning products can be safely used. The cleaning solution should be applied with a soft cloth, sponge or brush. Avoid the use of strong acid or alkali cleaners.

Severely soiled anodized surfaces can be cleaned a little more aggressively than painted surfaces. For example, slight scuffmarks and rub marks on an anodized surface can be removed with a mild abrasive pad such as a Scotch-Brite pad. Use the pad to remove the mark, and then clean the surface using the mild soap solution. Rinse the surface thoroughly with clean water and dry with a soft cloth.

As with painted surfaces, in coastal areas where the finish is exposed to salt spray or in areas containing heavy industrial pollutants the cleaning should take place on a regular maintenance program.

FIELD TOUCH UP: It is almost a given that some damage will occur and touchup work will be required during or after installation. The good news is that both painted and anodized surface damage can be easily repaired if the damage is slight, such as a scratch or rub mark. Minor painted surface damage can be sanded prior to touchup painting with excellent results. For scratches or gouges, use a relatively course grit paper to remove the damage, then use progressively finer paper to remove the sanding marks, finishing with a 180 to 220 grit paper.

Sanding of anodized material that is going to be touched up is not recommended. The anodized surface is aluminum oxide, which is generally harder than the sandpaper. Some rub marks on an anodized surface can be removed with a mild abrasive pad such as the Scotch-Brits pad prior to touch up painting.

Custom finishers usually supply a limited amount of touch-up paint with the project material. Touchup paint is supplied in small aerosol cans or bottles with a built-in brush for easy application and is to be applied very sparingly. It is intended to cover small blemishes or to touchup exposed cut ends on fabricated parts. It is not intended for use on large areas of more than a few square inches. The color will closely match the factory applied painted or anodized finish, however, the finish is not as hard nor performance the same as the baked-on finishes. After cleaning the area to be touched up, wipe the area with denatured alcohol to remove any moisture or cleaning residue and apply the touchup per the finisher's instructions. Use caution as excessive use of touch up paint may void the original finisher's warranty.

dri-design®
WALL PANEL SYSTEM

CORRECTING MORE SEVERE DAMAGE: (Calling in the Pros) At times a window, curtain-wall or storefront frame will become damaged or discolored beyond the point where simple field touchup will correct the problem. Damage can result from a variety of sources including final cleaning of the building facade without proper protection of the aluminum surfaces, environmental impact from sea-coast or corrosive atmosphere exposure, long term neglect, or selection of the wrong finish at the time the material was finished and fabricated. (For example, specifying a baked enamel on framing material or panel exposed to the exterior elements.)

The large full-service finishing companies like Linetec in Wausau, employ field service professionals who are trained in the proper preparation and application of field applied architectural finishes. Coatings that meet AAMA 2605 specifications and which can be field applied are available to these professionals. The highly specialized coatings, known as ADS Systems, can be tinted to match nearly any existing or desired painted or anodized finish color.

Special cleaning and pretreatment procedures are critical to achieve the desired long-term results. The paint must also be formulated to closely match the characteristics of the existing finish, particularly if only a portion of the existing surfaces will be refinished. Specifically, the new coating should be formulated to have approximately the same fade or chalk characteristics as any exposed original finish so that the entire project will have a uniform appearance for many years.

Completion of a field repair can be handled in several ways, but in general, it will begin with initial contact from the field service professional to describe the problem. The scope of a field-refinishing project varies greatly, involving anything from a single door or window to a building elevation or an entire building. Usually, for all but the simplest repairs, the field service professional will recommend a site visit to examine the problem.

Following the site visit, the field service professional will prepare a quotation for the work to be completed and a sample color chip for approval. At times, preparation of an onsite sample for approval will be recommended. Following acceptance of the quotation and samples and preparation of a contract for the work to be completed, the work will begin. Field repairs can generally be performed at temperatures above 50 degrees Fahrenheit. The field service professional will handle all of the details such as permits, sidewalk protection and barricades.

Contracting for the services of a professional who specializes in the refinishing of architectural metals will assure that the work is completed using the correct methods and proper materials, assuring satisfaction with the long-term results guaranteed.

WARRANTY REQUEST FORM

NOTE: Once a warranty has been issued, it can not be revised; therefore please be sure that the dates and information you are providing is accurate.

Dri-Design Customer **Date** _____

Company _____

Name _____

Address _____

City, State, Zip _____

Phone _____

Job Name

Company _____

Name _____

Address _____

City, State, Zip _____

Phone _____

Contractor

Company _____

Name _____

Address _____

City, State, Zip _____

Phone _____

Architectural Firm

Company _____

Name _____

Address _____

City, State, Zip _____

Phone _____

Installing Contractor

Company _____

Name _____

Address _____

City, State, Zip _____

Phone _____

Owner of Job

Company _____

Name _____

Address _____

City, State, Zip _____

Phone _____

Substantial completion date _____ **Number of originals requested** _____

There is No Finish Warranty offered on Stainless Steel, Copper, or Zinc.

Projects must be paid in full before warranty can be issued.

Please allow 3 week for warranties to be issued after receipt of this document

P.O. Box 1286, Holland, MI 49422 Phone: 616-355-2970 Fax: 616-355-2972

Date | Project | Part

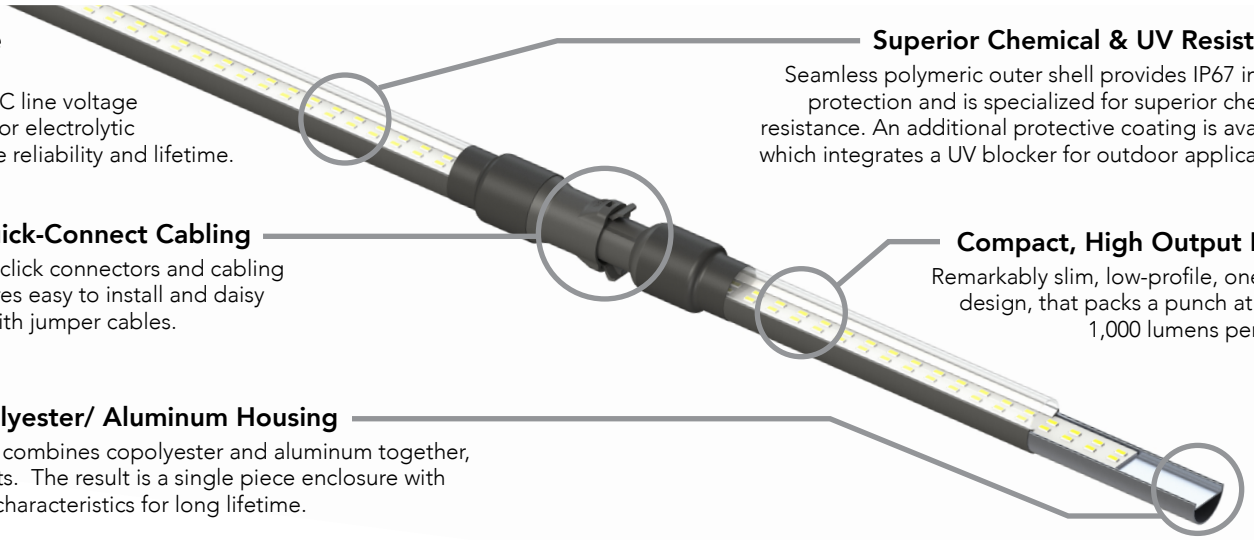
GPX DRIVERLESS LINEAR

G&G INDUSTRIAL LIGHTING

cULus LISTED | DIRECT AC DRIVERLESS | EMI SILENT | IP67 CERTIFIED | NEMA 4X | NSF | BAA BABAA COMPLIANT

Proudly made in America

Low-Profile, Driverless, Linkable IP67 LED Linear Luminaire



Zero-Maintenance Driverless Design

Connects directly to AC line voltage without an LED driver or electrolytic capacitors, for extreme reliability and lifetime.

Superior Chemical & UV Resistance

Seamless polymeric outer shell provides IP67 ingress protection and is specialized for superior chemical resistance. An additional protective coating is available which integrates a UV blocker for outdoor applications.

Easy to Install, Quick-Connect Cabling

Convenient push-and-click connectors and cabling make GPX series fixtures easy to install and daisy chain end-to-end or with jumper cables.

Compact, High Output LEDs

Remarkably slim, low-profile, one-inch design, that packs a punch at up to 1,000 lumens per foot.

Coextruded Copolyester/ Aluminum Housing

Our patented process combines copolyester and aluminum together, with no seals or gaskets. The result is a single piece enclosure with excellent heatsinking characteristics for long lifetime.

PERFORMANCE SUMMARY

Delivered Light Output: Up to 8,000 Lumens

Maximum Run Length: Refer to table on page 2

Efficacy: Up to 130 LPW

CRI: Typical 85 CRI

CCT: 3000K, 4000K & 5000K

Lifetime: 100,000 Hours at 25°C

Warranty: 5 Years

Mounting: Ceiling or wall

Lens: Clear (standard); Diffused (optional)

Protection Class: IP67

Temperature Rating: Operable in temperatures -40°C to 55°C

Voltage: 120 or 277 VAC Input

Power Factor: 0.9 nominal

Surge Protection: Built-in 4KV

Total Harmonic Distortion: < 20%

FIXTURE SPECIFICATIONS

Construction & Materials

- Proudly engineered and manufactured in America:
  - Buy American Act (BAA) compliant
  - Build America, Buy America Act (BABAA) compliant
- Waterproof push-and-click connectors
- Patented coextruded copolyester and aluminum housing
  - Seamless polymeric outer shell
  - Integrated aluminum heat spreader
- Double insulated (cabling and fixture)

Regulatory Qualifications

- cULus Listed
- UL Listed for Wet Locations
- IP67 Certified
- NSF Certified
- NEMA 4X Rated

REV: 1025

ORDERING INFORMATION

Product	Length		Lumen Output		Color Temp.		Lens Diffusion		UV Protection		Through Wired		Voltage
GPX		–		–		–		–		–		–	

Length
- **2** 2-Foot
- **4** 4-Foot
- **6** 6-Foot
- **8** 8-Foot

Lumen Output
- **SO** Standard Output 600 Lumens/Ft
- **HO** High Output 1000 Lumens/Ft

Color Temp.
- **50K** (standard) 5000 Kelvin
- **40K** 4000 Kelvin
- **30K*** 3000 Kelvin

**Available in SO, 120V only*

Lens Diffusion
- **Blank** (standard) Chemical Resistant Clear Lens
- **GC** (glare control) Chemical Resistant Lens with Added Diffusion Sheet

UV Protection
- **Blank** (standard) No Coating, Rated for Indoor Use
- **UVO** Outdoor-Rated with UV-Blocking Coating

Through Wired
- **Blank** (standard) Connectors on Input & Output for ability to Daisy Chain fixtures
- **SE** (Single-Ended) Connector on Input Only, No Daisy Chain, for Standalone Install

Voltage
- **120V** 120 VAC Input
- **277V** 277 VAC Input

FIXTURE DIMENSIONS

Model	Fixture Diameter	Fixture Length		Mounted	
		Thru Wire	Single End	Width	Height
GPX2	1.00″	25.15″	24.00″	1.25″	1.75″
GPX4	1.00″	47.15″	46.00″	1.25″	1.75″
GPX6	1.00″	69.15″	68.00″	1.25″	1.75″
GPX8	1.00″	91.15″	90.00″	1.25″	1.75″

LUMEN & POWER DATA

Length & Output	Lumens	Wattage	Amps @ 120V	Amps @ 277V
GPX2-SO	1,200	9	0.075	0.032
GPX4-SO	2,400	18	0.150	0.065
GPX6-SO	3,600	27	0.225	0.097
GPX8-SO	4,800	36	0.300	0.130
GPX2-HO	2,000	16	0.130	0.060
GPX4-HO	4,000	31 (36 @ 277V)	0.258	0.112
GPX6-HO	6,000	48	0.39	0.172
GPX8-HO	8,000	62 (72 @ 277V)	0.517	0.224

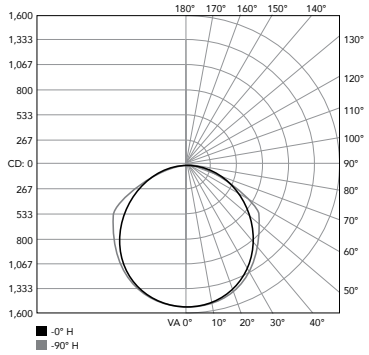
PHOTOMETRY

GPX Series

Based on DTC Report Test #: 14404-T

Fixture photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. IESNA LM-79-08 specifies the entire luminaire as the source resulting in a fixture efficiency of 100%.

Polar Candela Distribution



Zonal Lumen Summary

Zone	Luminaire
0-30	26.2%
0-40	43.2%
0-60	77.4%
0-90	98.5%
0-180	100%

MAXIMUM FIXTURE RUN LENGTH

	Maximum Fixture Run (Per 1 Leader Cable) 120VAC							Maximum Fixture Run (Per 1 Leader Cable) 277VAC						
Cable	GPX2-SO (9W)	GPX2-HO (16W)	GPX4-SO (18W)	GPX4-HO (31W)	GPX6-SO (27W)	GPX8-SO (31W)	GPX8-HO (62W)	GPX2-SO (9W)	GPX2-HO (16W)	GPX4-SO (18W)	GPX4-HO (31W)	GPX6-SO (27W)	GPX8-SO (36W)	GPX8-HO (62W)
JMP1 (1')	66 (198')	47 (146')	37 (185')	23 (115')	26 (182')	20 (180')	12 (108')	157 (471')	120 (337')	89 (445')	58 (290')	63 (441')	20 (180')	30 (270')
JMP2 (2')	59 (236')	41 (170')	34 (204')	21 (126')	24 (192')	19 (190')	12 (120')	141 (564')	104 (398')	83 (498')	55 (330')	59 (472')	19 (190')	30 (300')
JMP4 (4')	50 (300')	34 (211')	31 (248')	19 (152')	22 (220')	17 (204')	10 (120')	119 (714')	85 (498')	73 (584')	48 (384')	54 (540')	17 (204')	27 (324')
JMP8 (8')	40 (400')	27 (275')	26 (312')	16(192')	19 (266')	15 (240')	9 (144')	95 (950')	66 (651')	61 (732')	40 (480')	46 (644')	15 (240')	24 (384')

MOUNTING

G&G will provide the appropriate type (indoor vs. outdoor) and quantity of non-metallic quick latch clip depending on each fixture ordered (two clips per 2′ and 4′ fixtures, or three clips per 6′ and 8′ fixtures).

Part Number	Description
MNT-G1-NM-2015	(1) Non-Metallic Quick Latch Mounting Clip (Indoor)
MNT-G1-NM-2020	(1) Non-Metallic Quick Latch Mounting Clip (UVO Outdoor)
MNT-G1-SS	(1) Stainless Steel Bolt Latch Mounting Clip
MNT-G1-SS-KIT	Kit of (3) Stainless Steel Bolt Latch Mounting Clips
MNT-G1-MAG-NM-2015	(1) Non-Metallic Quick Latch Mounting Clip (Indoor) with Maximum Strength Disc Magnet
MNT-G1-MAG-NM-2020	(1) Non-Metallic Quick Latch Mounting Clip (UVO Outdoor) with Maximum Strength Disc Magnet
MNT-G1-MAG-SS	(1) Stainless Steel Bolt Latch Mounting Clip with Maximum Strength Disc Magnet

Non-Metallic Quick Latch Mounting Clips

Stainless Steel Bolt Latch Mounting Clips

CABLING

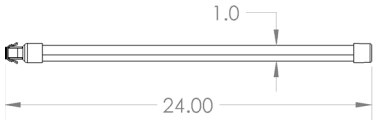
No jumper cable is required on end-to-end connections. For serviceability and expansion/contraction considerations G&G limits the number of luminaires connected end-to-end (without a jumper cable) to a maximum of 4. **Note: Cable lengths are ± 2 inches*

Cable	Type	Wire	End-to-end Length*	Fixture-to-fixture Length*	Inside Cable Length*
GPX-JMP-1	Jumper	18 AWG SJTW	9.6″	8″	4.375″
GPX-JMP-2	Jumper	18 AWG SJTW	31.4″	29.75″	26.125″
GPX-JMP-4	Jumper	18 AWG SJTW	56″	54.3″	50.7″
GPX-JMP-8	Jumper	18 AWG SJTW	103.5″	101.875″	98.25″
GPX-LDR-10	Leader Cable	18 AWG SJTW	10′	-	-
GPX-LDR-25	Leader Cable	18 AWG SJTW	25′	-	-

GPX Cable Push-and-Click Connector

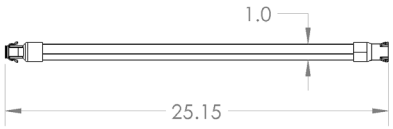
DIMENSIONAL DRAWINGS

GPX2SE

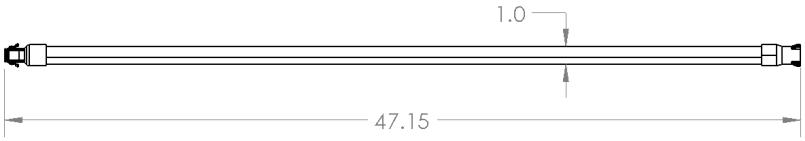


GPX4SE

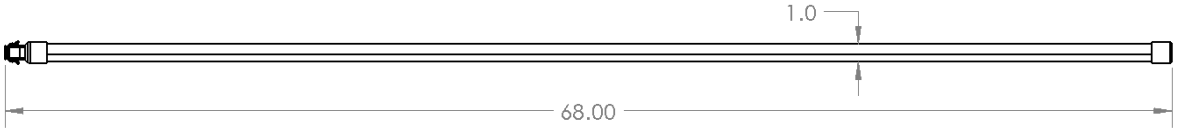
GPX2



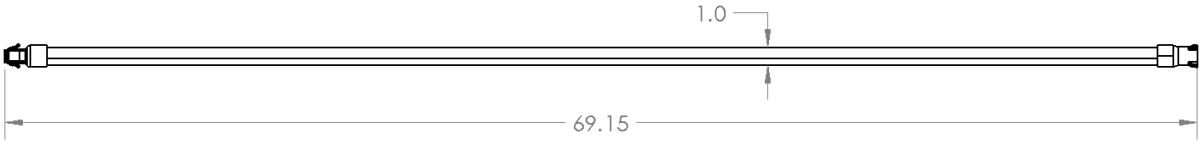
GPX4



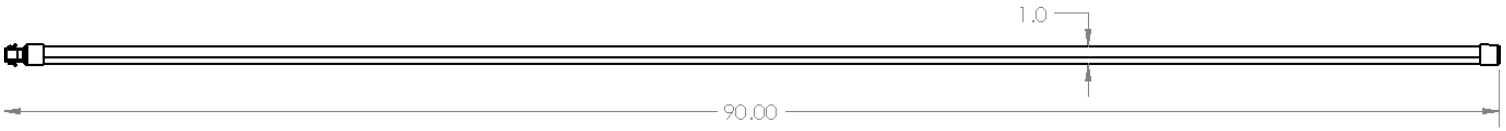
GPX6SE



GPX6



GPX8SE



GPX8

D-Series Size 1
LED Area Luminaire

Catalog Number

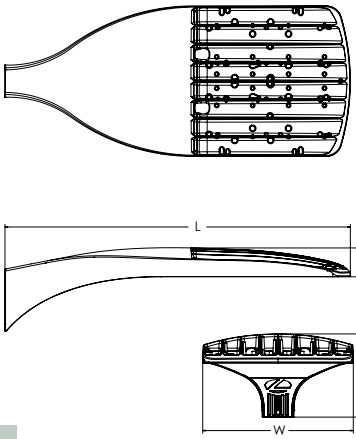
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.69 ft² (0.06 m²)
Length:	32.71" (83.1 cm)
Width:	14.26" (36.2 cm)
Height H1:	7.88" (20.0 cm)
Height H2:	2.73" (6.9 cm)
Weight:	34 lbs (15.4 kg)



Design Select options indicated by this color background.

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

design select

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

Ordering Information

EXAMPLE: DSX1 LED P7 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX1 LED

Series	LEDs	Color temperature[2]	Color Rendering Index[2]	Distribution		Voltage	Mounting
DSX1 LED	**Forward optics** P1 P6 P2 P7 P3 P8 P4 P9 P5 **Rotated optics** P10[1] P12[1] P11[1] P13[1]	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare[3] T4M Type IV medium T4LG Type IV low glare[3] TFTM Forward throw medium	T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control[3] BLC4 Type IV backlight control[3] LCCO Left corner cutoff[3] RCCO Right corner cutoff[3]	MVOLT (120V-277V)[4] HVOLT (347V-480V)[5,6] XVOLT (277V - 480V)[7,8] 120[16,26] 208[16,26] 240[16,26] 277[16,26] 347[16,26] 480[16,26]	**Shipped included** SPA Square pole mounting (#8 drilling) RPA Round pole mounting (#8 drilling) SPA5 Square pole mounting #5 drilling[9] RPA5 Round pole mounting #5 drilling[9] SPA8N Square narrow pole mounting #8 drilling WBA Wall bracket[10] MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

Control options

Shipped installed

NLTAIR2 PIRHN	nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc.[11,12,20,21]
PIR	High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc[13,20,21]
PER	NEMA twist-lock receptacle only (controls ordered separate)[14]
PER5	Five-pin receptacle only (controls ordered separate)[14,21]
PER7	Seven-pin receptacle only (controls ordered separate)[14,21]
FAO	Field adjustable output[15,21]
BL30	Bi-level switched dimming, 30%[16,21]
BL50	Bi-level switched dimming, 50%[16,21]
DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[17]
DS	Dual switching[18,19,21]

Other options

Shipped installed

SPD20KV	20KV surge protection
HS	Houseside shield (black finish standard)[22]
L90	Left rotated optics[1]
R90	Right rotated optics[1]
CCE	Coastal Construction[23]
HA	50°C ambient operation[24]
BAA	Buy America(n) Act and/or Build America Buy America Qualified
SF	Single fuse (120, 277, 347V)[26]
DF	Double fuse (208, 240, 480V)[26]

Shipped separately

EGSR	External Glare Shield (reversible, field install required, matches housing finish)
BSDB	Bird Spikes (field install required)

Finish *(required)*

DDBXD	Dark Bronze
DBLXD	Black
DNAXD	Natural Aluminum
DWHXD	White
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white

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Ordering Information

Accessories

Ordered and shipped separately.

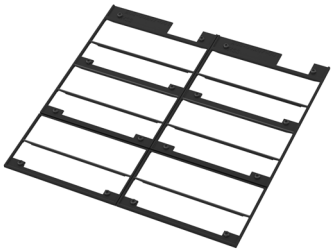
DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [25]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [25]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [25]
DSHORT SBK	Shorting cap [25]
DSX1HS P#	House-side shield (enter package number 1-13 in place of #)
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)
DSXRPA5 (FINISH)	Round pole adapter #5 drilling (specify finish)
DSX1EGSR (FINISH)	External glare shield (specify finish)
DSX1BSDB (FINISH)	Bird spike deterrent bracket (specify finish)

NOTES

1 Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
2 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
3 T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
4 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
5 HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
6 HVOLT not available with package P1 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
7 XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
8 XVOLT not available in packages P1 or P10. XVOLT not available with P1 ,P2, P5, P7, P9, P10, P11 and P13 when combined with option NLTAIR2 PIRHN or PIR. XVOLT not available with fusing (SF or DF).
9 SPA5 and RPA5 for use with #5 drilling only (Not for use with #8 drilling).
10 WBA cannot be combined with Type 5 distributions plus photocell (PER).
11 NLTAIR2 and PIRHN must be ordered together. For more information on nLight AIR2 visit this link
12 NLTAIR2 PIRHN not available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50, DMG and DS. NLTAIR2 PIRHN not available with P1 and P10 using HVOLT.
13 PIR not available with NLTAIR2 PIRHN, PER, PER5, PER7, FAO BL30, BL50, DMG and DS.
14 PER/PER5/PER7 not available with NLTAIR2 PIRHN, PIR, BL30, BL50, FAO, DMG and DS. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
15 FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, DMG and DS.
16 BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO, DMG and DS. BL30 or BL50 must specify 120 or 277V.
17 DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50, FAO and DS.
18 DS not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50, FAO and DMG.
19 DS requires (2) separately switched circuits. DS provides 50/50 fixture operation via (2) different sets of leads using (2) drivers. DS only available with packages P8, P9, P10, P11, P12 and P13.
20 Reference Motion Sensor Default Settings table on page 4 to see functionality.
21 Reference Controls Options table on page 4.
22 HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
23 CCE option not available with option BS and EGSR. Contact Technical Support for availability.
24 Option HA not available with performance packages P4, P5, P7, P8, P9 and P13.
25 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
26 Single fuse (SF) requires 120V, 277V, or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).

Shield Accessories

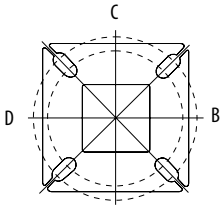
External Glare Shield (EGSR)

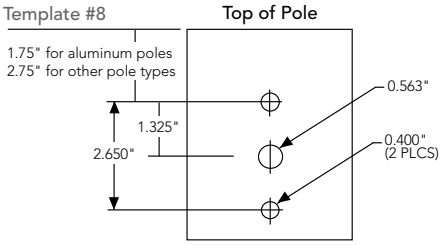


House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION





Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
		Minimum Acceptable Outside Pole Dimension					
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPA5	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX1 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX1 with SPA	0.69	1.38	1.23	1.54	---	1.58
DSX1 with SPA5, SPA8N	0.70	1.40	1.30	1.66	---	1.68
DSX1 with RPA, RPA5	0.70	1.40	1.30	1.66	1.60	1.68
DSX1 with MA	0.83	1.66	1.50	2.09	2.09	2.09

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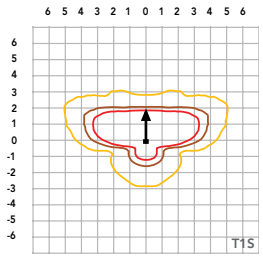
Photometric Diagrams

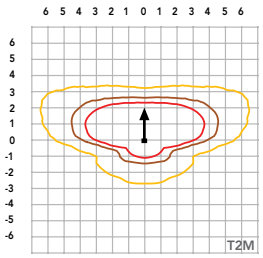
To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's homepage.

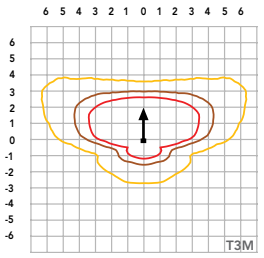
Isofootcandle plots for the DSX1 LED P9 40K 70CRI. Distances are in units of mounting height (25').

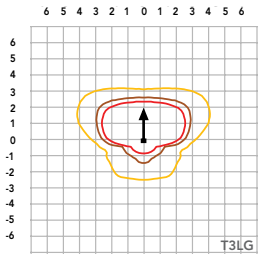
LEGEND

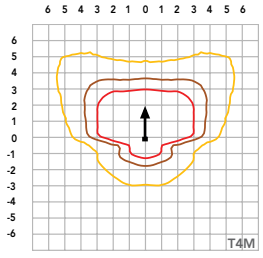
- 0.1 fc
- 0.5 fc
- 1.0 fc

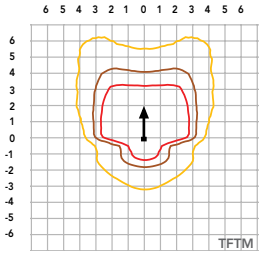


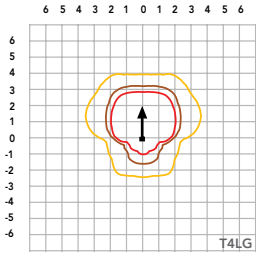


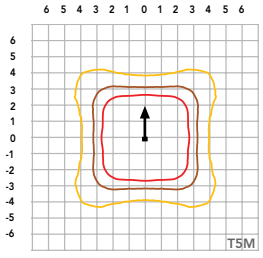


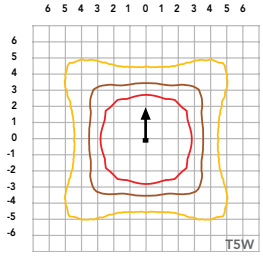


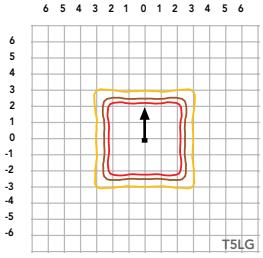


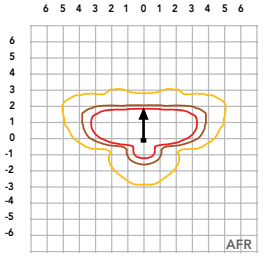


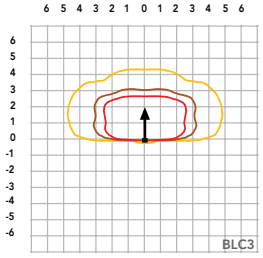


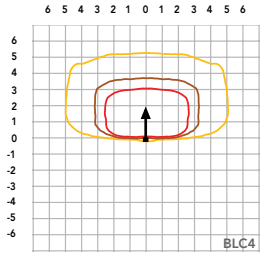


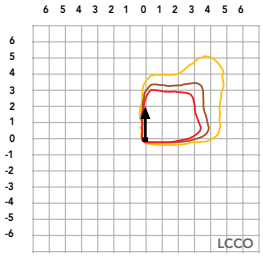


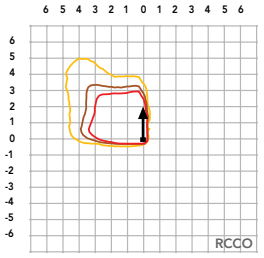












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Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	50°F	1.02
20°C	68°F	1.01
25°C	**77°C**	**1.00**
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.95
50,000	0.90
100,000	0.81

FAO Dimming Settings

FAO Position	% Wattage	% Lumen Output
8	100%	100%
7	93%	95%
6	80%	85%
5	66%	73%
4	54%	61%
3	41%	49%
2	29%	36%
1	15%	20%

*Note: Calculated values are based on original performance package data. When calculating new values for given FAO position, use maximum published values by package listed on specification sheet (input watts and lumens by optic type).

Electrical Load

	Performance Package	LED Count	Drive Current (mA)	Wattage	Current (A) 120V	208V	240V	277V	347V	480V
Forward Optics (Non-Rotated)	P1	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
	P2	30	700	68	0.56	0.33	0.28	0.24	0.20	0.14
	P3	30	1050	104	0.85	0.49	0.43	0.37	0.29	0.21
	P4	30	1250	125	1.03	0.60	0.52	0.45	0.36	0.26
	P5	30	1400	142	1.15	0.66	0.58	0.50	0.40	0.29
	P6	40	1250	167	1.38	0.79	0.69	0.60	0.48	0.34
	P7	40	1400	188	1.54	0.89	0.77	0.67	0.53	0.38
	P8	60	1100	216	1.80	1.04	0.90	0.78	0.62	0.45
	P9	60	1400	279	2.31	1.33	1.15	1.00	0.80	0.58
Rotated Optics (Requires L90 or R90)	P10	60	530	101	0.84	0.49	0.42	0.37	0.29	0.21
	P11	60	700	135	1.12	0.65	0.56	0.49	0.39	0.28
	P12	60	1050	206	1.72	0.99	0.86	0.74	0.59	0.43
	P13	60	1400	279	2.30	1.33	1.15	1.00	0.79	0.57

LED Color Temperature / Color Rendering Multipliers

	70 CRI		80CRI		90CRI	
	Lumen Multiplier	Availability	Lumen Multiplier	Availability	Lumen Multiplier	Availability
5000K	102%	Standard	92%	Extended lead-time	71%	(see note)
4000K	100%	Standard	92%	Extended lead-time	67%	(see note)
3500K	100%	(see note)	90%	Extended lead-time	63%	(see note)
3000K	96%	Standard	87%	Extended lead-time	61%	(see note)
2700K	94%	(see note)	85%	Extended lead-time	57%	(see note)

Note: Some LED types are available as per special request. Contact Technical Support for more information.

Motion Sensor Default Settings

Option	Unoccupied Dimmed Level	High Level (when occupied)	Phototcell Operation	Dwell Time	Ramp-up Time	Dimming Fade Rate
PIR	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min
NLTAIR2 PIRHN	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS (not available on DSX0)	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PER5 or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire. Cannot be used with other controls options that need the 0-10V leads.
PIR	Motion sensor with integral photocell. Sensor suitable for 8' to 40' mounting height.	Luminaires dim when no occupancy is detected.	Acuity Controls rSBG	Cannot be used with other controls options that need the 0-10V leads.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclypse.	nLight Air rSBG	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app. Cannot be used with other controls options that need the 0-10V leads.
BL30 or BL50	Integrated bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output	BLC device provides input to 0-10V dimming leads on all drivers providing either 100% or dimmed (30% or 50%) control by a secondary circuit	BLC UVOLT1	BLC device is powered off the 0-10V dimming leads, thus can be used with any input voltage from 120 to 480V

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	51W	30	530	T1S	7,776	1	0	2	153	8,104	1	0	2	159	8,262	1	0	2	162
				T2M	7,203	1	0	3	142	7,507	2	0	3	147	7,653	2	0	3	150
				T3M	7,287	1	0	3	143	7,594	1	0	3	149	7,742	1	0	3	152
				T3LG	6,509	1	0	1	128	6,783	1	0	1	133	6,916	1	0	1	136
				T4M	7,395	1	0	3	145	7,707	1	0	3	151	7,857	1	0	3	154
				T4LG	6,726	1	0	1	132	7,010	1	0	1	138	7,146	1	0	1	140
				TFTM	7,446	1	0	3	146	7,760	1	0	3	152	7,912	1	0	3	155
				T5M	7,609	3	0	2	149	7,930	3	0	2	156	8,084	3	0	2	159
				T5W	7,732	3	0	2	152	8,058	4	0	2	158	8,215	4	0	2	161
				T5LG	7,631	3	0	1	150	7,953	3	0	1	156	8,108	3	0	1	159
				BLC3	5,300	0	0	2	104	5,524	0	0	2	109	5,631	0	0	2	111
				BLC4	5,474	0	0	3	108	5,705	0	0	3	112	5,816	0	0	3	114
				RCCO	5,348	0	0	2	105	5,573	0	0	2	109	5,682	0	0	2	112
				LCCO	5,348	0	0	2	105	5,573	0	0	2	109	5,682	0	0	2	112
				AFR	7,776	1	0	2	153	8,104	1	0	2	159	8,262	1	0	2	162
P2	68W	30	700	T1S	9,997	1	0	2	147	10,418	1	0	2	154	10,621	1	0	2	157
				T2M	9,260	2	0	3	137	9,651	2	0	3	142	9,839	2	0	3	145
				T3M	9,368	2	0	3	138	9,763	2	0	3	144	9,953	2	0	3	147
				T3LG	8,368	1	0	2	123	8,721	1	0	2	129	8,891	1	0	2	131
				T4M	9,507	2	0	3	140	9,909	2	0	3	146	10,102	2	0	3	149
				T4LG	8,647	1	0	2	128	9,012	1	0	2	133	9,187	1	0	2	136
				TFTM	9,573	2	0	3	141	9,977	2	0	3	147	10,172	2	0	3	150
				T5M	9,782	4	0	2	144	10,195	4	0	2	150	10,393	4	0	2	153
				T5W	9,940	4	0	2	147	10,360	4	0	2	153	10,562	4	0	2	156
				T5LG	9,810	3	0	1	145	10,224	3	0	1	151	10,423	3	0	1	154
				BLC3	6,814	0	0	2	101	7,101	0	0	2	105	7,240	0	0	2	107
				BLC4	7,038	0	0	3	104	7,334	0	0	3	108	7,477	0	0	3	110
				RCCO	6,875	1	0	2	101	7,165	1	0	2	106	7,305	1	0	2	108
				LCCO	6,875	1	0	2	101	7,165	1	0	2	106	7,305	1	0	2	108
				AFR	9,997	1	0	2	147	10,418	1	0	2	154	10,621	1	0	2	157
P3	102W	30	1050	T1S	14,093	2	0	2	138	14,687	2	0	2	144	14,973	2	0	2	147
				T2M	13,055	2	0	3	128	13,605	2	0	3	133	13,871	2	0	3	136
				T3M	13,206	2	0	4	129	13,763	2	0	4	135	14,031	2	0	4	137
				T3LG	11,797	2	0	2	115	12,294	2	0	2	120	12,534	2	0	2	123
				T4M	13,403	2	0	4	131	13,968	2	0	4	137	14,241	2	0	4	139
				T4LG	12,190	2	0	2	119	12,704	2	0	2	124	12,952	2	0	2	127
				TFTM	13,496	2	0	4	132	14,065	2	0	4	138	14,339	2	0	4	140
				T5M	13,790	4	0	2	135	14,371	4	0	2	141	14,652	4	0	2	143
				T5W	14,013	4	0	3	137	14,605	4	0	3	143	14,889	4	0	3	146
				T5LG	13,830	3	0	2	135	14,413	3	0	2	141	14,694	3	0	2	144
				BLC3	9,606	0	0	2	94	10,011	0	0	2	98	10,206	0	0	2	100
				BLC4	9,921	0	0	3	97	10,340	0	0	3	101	10,541	0	0	3	103
				RCCO	9,692	1	0	2	95	10,101	1	0	2	99	10,298	1	0	2	101
				LCCO	9,692	1	0	2	95	10,101	1	0	2	99	10,298	1	0	2	101
				AFR	14,093	2	0	2	138	14,687	2	0	2	144	14,973	2	0	2	147

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Performance Data

Lumen Output

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Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P4	124W	30	1250	T1S	16,416	2	0	3	132	17,109	2	0	3	138	17,442	2	0	3	141
				T2M	15,207	3	0	4	123	15,849	3	0	4	128	16,158	3	0	4	130
				T3M	15,383	2	0	4	124	16,032	2	0	4	129	16,345	2	0	4	132
				T3LG	13,742	2	0	2	111	14,321	2	0	2	116	14,600	2	0	2	118
				T4M	15,613	2	0	4	126	16,272	2	0	4	131	16,589	2	0	4	134
				T4LG	14,200	2	0	2	115	14,799	2	0	2	119	15,087	2	0	2	122
				TFTM	15,721	2	0	4	127	16,384	2	0	4	132	16,703	2	0	4	135
				T5M	16,063	4	0	2	130	16,741	4	0	2	135	17,067	4	0	2	138
				T5W	16,324	5	0	3	132	17,013	5	0	3	137	17,344	5	0	3	140
				T5LG	16,110	3	0	2	130	16,790	4	0	2	135	17,117	4	0	2	138
				BLC3	11,190	0	0	3	90	11,662	0	0	3	94	11,889	0	0	3	96
				BLC4	11,557	0	0	3	93	12,044	0	0	3	97	12,279	0	0	4	99
				RCCO	11,291	1	0	3	91	11,767	1	0	3	95	11,996	1	0	3	97
				LCCO	11,291	1	0	3	91	11,767	1	0	3	95	11,996	1	0	3	97
				AFR	16,416	2	0	3	132	17,109	2	0	3	138	17,442	2	0	3	141
P5	138W	30	1400	T1S	18,052	2	0	3	131	18,814	2	0	3	136	19,180	2	0	3	139
				T2M	16,723	3	0	4	121	17,428	3	0	4	126	17,768	3	0	4	129
				T3M	16,917	3	0	4	122	17,630	3	0	4	128	17,974	3	0	4	130
				T3LG	15,111	2	0	2	109	15,749	2	0	2	114	16,055	2	0	2	116
				T4M	17,169	3	0	5	124	17,893	3	0	5	130	18,242	3	0	5	132
				T4LG	15,615	2	0	2	113	16,274	2	0	2	118	16,591	2	0	2	120
				TFTM	17,288	2	0	4	125	18,017	2	0	5	130	18,368	3	0	5	133
				T5M	17,664	5	0	3	128	18,410	5	0	3	133	18,768	5	0	3	136
				T5W	17,951	5	0	3	130	18,708	5	0	3	135	19,073	5	0	3	138
				T5LG	17,716	4	0	2	128	18,463	4	0	2	134	18,823	4	0	2	136
				BLC3	12,305	0	0	3	89	12,824	0	0	3	93	13,074	0	0	3	95
				BLC4	12,709	0	0	4	92	13,245	0	0	4	96	13,503	0	0	4	98
				RCCO	12,416	1	0	3	90	12,940	1	0	3	94	13,192	1	0	3	95
				LCCO	12,416	1	0	3	90	12,940	1	0	3	94	13,192	1	0	3	95
				AFR	18,052	2	0	3	131	18,814	2	0	3	136	19,180	2	0	3	139
P6	165W	40	1250	T1S	21,031	2	0	3	127	21,918	2	0	3	133	22,345	2	0	3	135
				T2M	19,482	3	0	4	118	20,303	3	0	4	123	20,699	3	0	4	125
				T3M	19,708	3	0	5	119	20,539	3	0	5	124	20,939	3	0	5	127
				T3LG	17,604	2	0	2	107	18,347	2	0	2	111	18,704	2	0	2	113
				T4M	20,001	3	0	5	121	20,845	3	0	5	126	21,251	3	0	5	129
				T4LG	18,191	2	0	2	110	18,959	2	0	2	115	19,328	2	0	2	117
				TFTM	20,140	3	0	5	122	20,989	3	0	5	127	21,398	3	0	5	129
				T5M	20,579	5	0	3	125	21,447	5	0	3	130	21,865	5	0	3	132
				T5W	20,912	5	0	3	127	21,795	5	0	3	132	22,219	5	0	3	134
				T5LG	20,638	4	0	2	125	21,509	4	0	2	130	21,928	4	0	2	133
				BLC3	14,335	0	0	3	87	14,940	0	0	3	90	15,231	0	0	3	92
				BLC4	14,805	0	0	4	90	15,430	0	0	4	93	15,731	0	0	4	95
				RCCO	14,464	1	0	3	88	15,074	1	0	3	91	15,368	1	0	3	93
				LCCO	14,464	1	0	3	88	15,074	1	0	3	91	15,368	1	0	3	93
				AFR	21,031	2	0	3	127	21,918	2	0	3	133	22,345	2	0	3	135

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P7	184W	40	1400	T1S	22,741	2	0	3	123	23,700	2	0	3	129	24,162	3	0	3	131
				T2M	21,066	3	0	4	114	21,955	3	0	4	119	22,383	3	0	4	121
				T3M	21,311	3	0	5	116	22,210	3	0	5	120	22,642	3	0	5	123
				T3LG	19,036	2	0	2	103	19,839	2	0	3	108	20,226	2	0	3	110
				T4M	21,628	3	0	5	117	22,541	3	0	5	122	22,980	3	0	5	125
				T4LG	19,671	2	0	2	107	20,501	2	0	3	111	20,900	2	0	3	113
				TFTM	21,778	3	0	5	118	22,697	3	0	5	123	23,139	3	0	5	125
				T5M	22,252	5	0	3	121	23,191	5	0	3	126	23,643	5	0	3	128
				T5W	22,613	5	0	3	123	23,567	5	0	4	128	24,027	5	0	4	130
				T5LG	22,317	4	0	2	121	23,258	4	0	2	126	23,712	4	0	2	129
				BLC3	15,501	0	0	3	84	16,155	0	0	4	88	16,470	0	0	4	89
				BLC4	16,010	0	0	4	87	16,685	0	0	4	90	17,010	0	0	4	92
				RCCO	15,641	1	0	3	85	16,301	1	0	3	89	16,619	1	0	3	90
				LCCO	15,641	1	0	3	85	16,301	1	0	3	89	16,619	1	0	3	90
				AFR	22,741	2	0	3	123	23,700	2	0	3	129	24,162	3	0	3	131
P8	216W	60	1100	T1S	28,701	3	0	3	133	29,912	3	0	4	139	30,495	3	0	4	141
				T2M	26,587	3	0	5	123	27,709	3	0	5	128	28,249	3	0	5	131
				T3M	26,895	3	0	5	125	28,030	3	0	5	130	28,576	3	0	5	132
				T3LG	24,025	3	0	3	111	25,038	3	0	3	116	25,526	3	0	3	118
				T4M	27,296	3	0	5	127	28,448	3	0	5	132	29,002	3	0	5	134
				T4LG	24,826	3	0	3	115	25,873	3	0	3	120	26,378	3	0	3	122
				TFTM	27,485	3	0	5	127	28,645	3	0	5	133	29,203	3	0	5	135
				T5M	28,084	5	0	4	130	29,269	5	0	4	136	29,839	5	0	4	138
				T5W	28,539	5	0	4	132	29,743	5	0	4	138	30,323	5	0	4	141
				T5LG	28,165	4	0	2	131	29,354	4	0	2	136	29,926	4	0	2	139
				BLC3	19,563	0	0	4	91	20,388	0	0	4	94	20,786	0	0	4	96
				BLC4	20,205	0	0	5	94	21,057	0	0	5	98	21,468	0	0	5	99
				RCCO	19,740	1	0	4	91	20,572	1	0	4	95	20,973	1	0	4	97
				LCCO	19,740	1	0	4	91	20,572	1	0	4	95	20,973	1	0	4	97
				AFR	28,701	3	0	3	133	29,912	3	0	4	139	30,495	3	0	4	141
P9	277W	60	1400	T1S	34,819	3	0	4	126	36,288	3	0	4	131	36,996	3	0	4	134
				T2M	32,255	3	0	5	116	33,616	3	0	5	121	34,271	3	0	5	124
				T3M	32,629	3	0	5	118	34,006	3	0	5	123	34,668	3	0	5	125
				T3LG	29,146	3	0	3	105	30,376	3	0	4	110	30,968	3	0	4	112
				T4M	33,116	3	0	5	120	34,513	3	0	5	125	35,185	3	0	5	127
				T4LG	30,119	3	0	3	109	31,389	3	0	4	113	32,001	3	0	4	116
				TFTM	33,345	3	0	5	120	34,751	3	0	5	125	35,429	3	0	5	128
				T5M	34,071	5	0	4	123	35,509	5	0	4	128	36,201	5	0	4	131
				T5W	34,624	5	0	4	125	36,084	5	0	4	130	36,788	5	0	4	133
				T5LG	34,170	5	0	3	123	35,612	5	0	3	129	36,306	5	0	3	131
				BLC3	23,734	0	0	4	86	24,735	0	0	4	89	25,217	0	0	4	91
				BLC4	24,513	0	0	5	88	25,547	0	0	5	92	26,045	0	0	5	94
				RCCO	23,948	1	0	4	86	24,958	1	0	4	90	25,445	1	0	4	92
				LCCO	23,948	1	0	4	86	24,958	1	0	4	90	25,445	1	0	4	92
				AFR	34,819	3	0	4	126	36,288	3	0	4	131	36,996	3	0	4	134

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Rotated Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P10	101W	60	530	T1S	15,164	3	0	3	150	15,803	3	0	3	156	16,112	3	0	3	159
				T2M	14,047	4	0	4	139	14,640	4	0	4	145	14,925	4	0	4	147
				T3M	14,208	4	0	4	140	14,807	4	0	4	146	15,096	4	0	4	149
				T3LG	12,693	3	0	3	125	13,229	3	0	3	131	13,487	3	0	3	133
				T4M	14,420	4	0	4	142	15,028	4	0	4	148	15,321	4	0	4	151
				T4LG	13,115	3	0	3	129	13,668	3	0	3	135	13,934	3	0	3	138
				TFTM	14,522	4	0	4	143	15,134	4	0	4	149	15,429	4	0	4	152
				T5M	14,836	4	0	2	146	15,462	4	0	2	153	15,763	4	0	2	156
				T5W	15,076	4	0	3	149	15,712	5	0	3	155	16,019	5	0	3	158
				T5LG	14,879	3	0	2	147	15,507	3	0	2	153	15,809	3	0	2	156
				BLC3	10,335	3	0	3	102	10,771	4	0	4	106	10,981	4	0	4	108
				BLC4	10,674	4	0	4	105	11,124	4	0	4	110	11,341	4	0	4	112
				RCCO	10,429	1	0	2	103	10,869	1	0	2	107	11,080	1	0	2	109
				LCCO	10,429	1	0	2	103	10,869	1	0	2	107	11,080	1	0	2	109
				AFR	15,164	3	0	3	150	15,803	3	0	3	156	16,112	3	0	3	159
P11	135W	60	700	T1S	19,437	4	0	4	144	20,257	4	0	4	150	20,651	4	0	4	153
				T2M	18,005	4	0	4	133	18,765	4	0	4	139	19,131	4	0	4	142
				T3M	18,211	4	0	4	135	18,980	4	0	4	141	19,350	4	0	4	143
				T3LG	16,270	3	0	3	121	16,957	3	0	3	126	17,287	4	0	4	128
				T4M	18,483	4	0	4	137	19,263	5	0	5	143	19,638	5	0	5	146
				T4LG	16,810	3	0	3	125	17,519	3	0	3	130	17,861	3	0	3	132
				TFTM	18,614	4	0	4	138	19,399	4	0	4	144	19,777	5	0	5	147
				T5M	19,017	5	0	3	141	19,819	5	0	3	147	20,205	5	0	3	150
				T5W	19,325	5	0	3	143	20,140	5	0	3	149	20,533	5	0	3	152
				T5LG	19,072	4	0	2	141	19,876	4	0	2	147	20,264	4	0	2	150
				BLC3	13,247	4	0	4	98	13,806	4	0	4	102	14,075	4	0	4	104
				BLC4	13,682	4	0	4	101	14,259	4	0	4	106	14,537	4	0	4	108
				RCCO	13,367	1	0	3	99	13,931	1	0	3	103	14,203	1	0	3	105
				LCCO	13,367	1	0	3	99	13,931	1	0	3	103	14,203	1	0	3	105
				AFR	19,437	4	0	4	144	20,257	4	0	4	150	20,651	4	0	4	153
P12	206W	60	1050	T1S	27,457	4	0	4	133	28,616	4	0	4	139	29,174	4	0	4	142
				T2M	25,436	5	0	5	124	26,509	5	0	5	129	27,025	5	0	5	131
				T3M	25,727	5	0	5	125	26,812	5	0	5	130	27,335	5	0	5	133
				T3LG	22,984	4	0	4	112	23,954	4	0	4	116	24,421	4	0	4	119
				T4M	26,110	5	0	5	127	27,212	5	0	5	132	27,742	5	0	5	135
				T4LG	23,747	4	0	4	115	24,749	4	0	4	120	25,231	4	0	4	123
				TFTM	26,295	5	0	5	128	27,404	5	0	5	133	27,938	5	0	5	136
				T5M	26,864	5	0	4	130	27,997	5	0	4	136	28,543	5	0	4	139
				T5W	27,299	5	0	4	133	28,451	5	0	4	138	29,006	5	0	4	141
				T5LG	26,942	4	0	2	131	28,078	4	0	2	136	28,626	4	0	2	139
				BLC3	18,714	4	0	4	91	19,504	4	0	4	95	19,884	4	0	4	97
				BLC4	19,327	5	0	5	94	20,143	5	0	5	98	20,535	5	0	5	100
				RCCO	18,883	1	0	4	92	19,680	1	0	4	96	20,064	1	0	4	97
				LCCO	18,883	1	0	4	92	19,680	1	0	4	96	20,064	1	0	4	97
				AFR	27,457	4	0	4	133	28,616	4	0	4	139	29,174	4	0	4	142
P13	276W	60	1400	T1S	34,436	5	0	5	125	35,889	5	0	5	130	36,588	5	0	5	133
				T2M	31,900	5	0	5	116	33,246	5	0	5	121	33,894	5	0	5	123
				T3M	32,265	5	0	5	117	33,626	5	0	5	122	34,282	5	0	5	124
				T3LG	28,826	4	0	4	105	30,042	4	0	4	109	30,628	4	0	4	111
				T4M	32,746	5	0	5	119	34,128	5	0	5	124	34,793	5	0	5	126
				T4LG	29,782	4	0	4	108	31,039	4	0	4	113	31,644	5	0	4	115
				TFTM	32,978	5	0	5	120	34,369	5	0	5	125	35,039	5	0	5	127
				T5M	33,692	5	0	4	122	35,113	5	0	4	127	35,797	5	0	4	130
				T5W	34,238	5	0	4	124	35,682	5	0	4	129	36,378	5	0	4	132
				T5LG	33,789	5	0	3	122	35,215	5	0	3	128	35,901	5	0	3	130
				BLC3	23,471	5	0	5	85	24,461	5	0	5	89	24,937	5	0	5	90
				BLC4	24,240	5	0	5	88	25,262	5	0	5	92	25,755	5	0	5	93
				RCCO	23,683	1	0	4	86	24,682	1	0	4	89	25,163	1	0	4	91
				LCCO	23,683	1	0	4	86	24,682	1	0	4	89	25,163	1	0	4	91
				AFR	34,436	5	0	5	125	35,889	5	0	5	130	36,588	5	0	5	133

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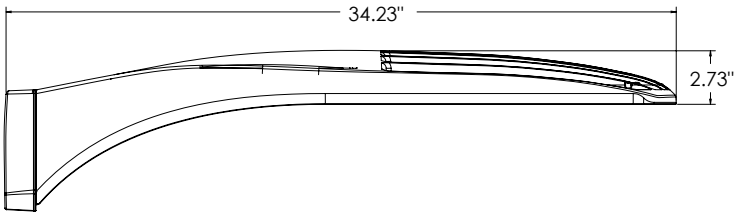
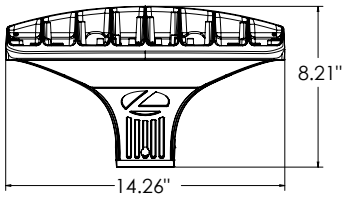
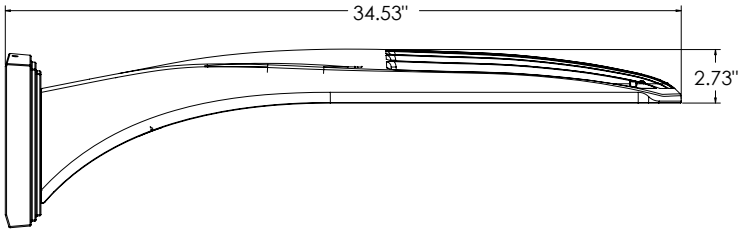
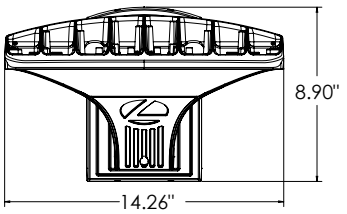
Dimensions



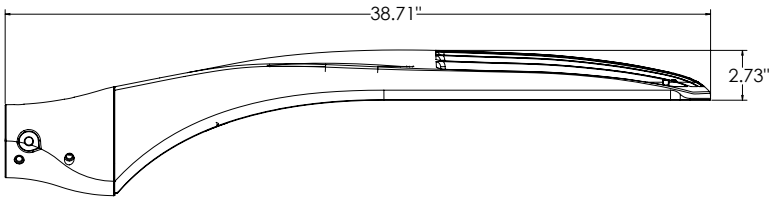


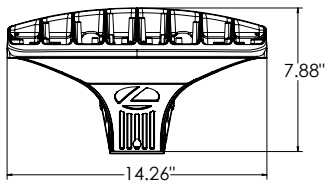
DSX1 with RPA, RPA5, SPA5, SPA8N mount
Weight: 36 lbs





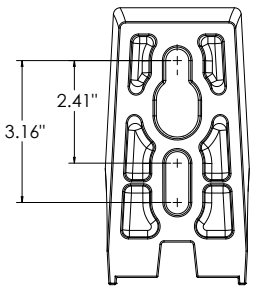
DSX1 with WBA mount
Weight: 38 lbs





DSX1 with MA mount
Weight: 39 lbs

SPA (STANDARD ARM)



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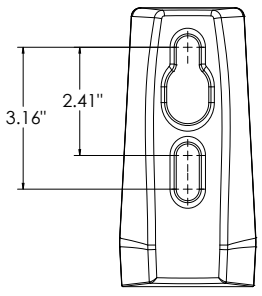
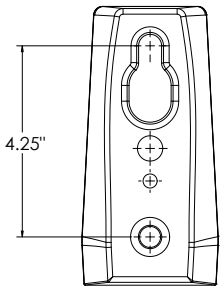


SPA5



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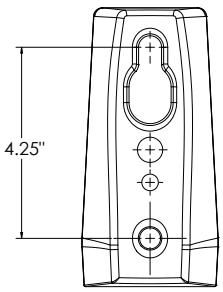

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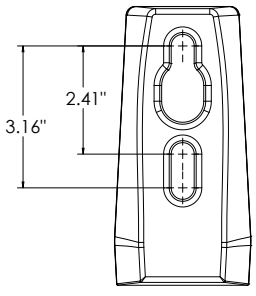

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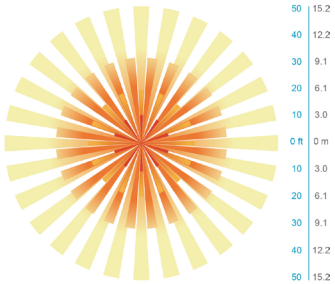
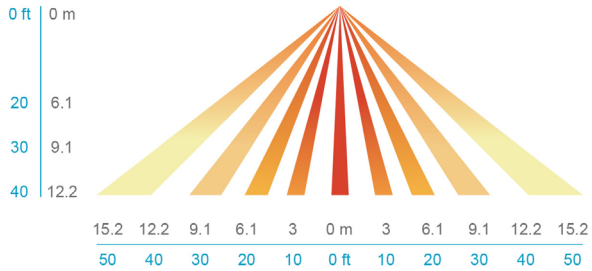
nLight Control - Sensor Coverage and Settings

nLight Sensor Coverage Pattern

NLTAIR2 PIRHN



Top



Side

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED drivers are mounted in direct contact with the casting to promote low operating temperature and long life. Housing driver compartment is completely sealed against moisture and environmental contaminants (IP66). Vibration rated per ANSI C136.31 for 3G for SPA and MA. 1.5G for mountings RPA, RPA5, SPA5 and SPA8N. Low EPA (0.69 ft^2) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

Coastal Construction (CCE)

Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS

Precision-molded proprietary silicone lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in standard 3000 K, 4000 K and 5000 K (70 CRI) configurations. 80CRI configurations are also available. The D-Series Size 1 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L81/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX1 LED area luminaire has a number of control options. DSX Size 1, comes standard with 0-10V dimming drivers. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. Integrated motion sensor with on-board photocells feature field-adjustable programing and are suitable for mounting heights up to 40 feet. Control option BL features a bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output.

nLIGHT AIR CONTROLS

The DSX1 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaries can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclypse. Additional information about nLight Air can be found here.

INSTALLATION

Integral mounting arm allows for fast mounting using Lithonia standard #8 drilling and accommodates pole drilling's from 2.41 to 3.12" on center. The standard "SPA" option for square poles and the "RPA" option for round poles use the #8 drilling. For #5 pole drillings, use SPA5 or RPA5. Additional mountings are available including a wall bracket (WBA) and mast arm (MA) option that allows luminaire attachment to a 2 3/8" horizontal mast arm.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP66 rated. Rated for -40ºC minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

GOVERNMENT PROCUREMENT

BAA – Buy America(n) Act: Product with the BAA option qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product with the BAA option also qualifies as manufactured in the United States under DOT Buy America regulations.
BABA – Build America Buy America: Product with the BAA option also qualifies as produced in the United States under the definitions of the Build America, Buy America Act.
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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XPCNY LED
LED Canopy/Ceiling Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

	XPCNY LED
Width:	15.8"
Height:	9.6"
Depth:	15.8"
Weight:	12.3lbs

Introduction

The XPCNY LED luminaire is designed to provide exceptional energy savings and versatility in one package. Features such as Adjustable Lumen Output, Adjustable CCTs, and forward throw distribution option make the XPCNY one of the most versatile gas station canopies in the market.

With up to 170 LPW the XPCNY LED delivers up to 80% in energy savings when replacing metal halide luminaires. With over 100,000 hour life expectancy (12+ years of 24/7 continuous operation), the XPCNY LED luminaire provides significant maintenance savings over traditional luminaires. XPCNY can be installed in both 12" and 16" Canopies and is fully serviceable from below without removing the fixture.

Ordering Information

Family	Catalog	Lumens	CCT	Lens	Voltage	Wattage	Color	Packaging	Cicode	UPC	Pallet Qty
XPCNY	XPCNY LED ALO2 SWW2 FPCL MVOLT DWHXD M3	13,000-20,000	30K/40K/50K	PC, Flat Clear	120-277	88-134	White	Master Pack 3	2878G4	197590143368	36
XPCNY	XPCNY LED ALO2 50K FTL MVOLT DWHXD M3	13,000-20,000	50K	Forward Throw	120-277	88-134	White	Master Pack 3	2878G7	197590143399	36
XPCNY	XPCNY LED ALO2 57K FPCL MVOLT DWHXD M3	13,000-20,000	57K	PC, Flat Clear	120-277	88-134	White	Master Pack 3	287GW3	197590193066	36
XPCNY	XPCNY LED ALO2 57K FTL MVOLT DWHXD M3	13,000-20,000	57K	Forward Throw	120-277	88-134	White	Master Pack 3	287GW4	197590193073	36
XPCNY	XPCNY LED ALO2 SWW2 FPCL MVOLT DDBXD M3	13,000-20,000	30K/40K/50K	PC, Flat Clear	120-277	88-134	Dark Bronze	Master Pack 3	2890RJ	197590552153	36
XPCNY	XPCNY LED ALO1 SWW2 FPCL MVOLT DWHXD M3	7,300-13,500	30K/40K/50K	PC, Flat Clear	120-277	46-88	White	Master Pack 3	2924TX	198934425263	36
XPCNY[1]	XPCNY LED ALO2 SWW2 FGCL MVOLT SRR DWHXD M3	13,000-20,000	30K/40K/50K	Glass, Flat Clear	120-277	88-134	White	Master Pack 3	29217R	198934345141	24
XPCNY	XPCNY LED ALO2 SWW2 FGCL MVOLT DWHXD M3	13,000-20,000	30K/40K/50K	Glass, Flat Clear	120-277	88-134	White	Master Pack 3	2907P1	197590882281	36
XPCNY[2]	XPCNY LED ALO2 SWW2 FGCL MVOLT DWHXD C1D2 M3	13,000-20,000	30K/40K/50K	Glass, Flat Clear	120-277	88-134	White	Master Pack 3	292H6T	198934523198	36

1. Fixture equipped with twist lock sensor receptacle. TLS sensor ordered separately
2. Class 1 Division 2 Hazardous Certification

Retrofit Accessories

Catalog	Description	Use	Dimensions
FP12SM*	12" Backplate Surface PCNY / SCNY / XPCNY	Covers Existing Hole if Larger than Fixture	11.5" x 24" x 18GA Galv Steel
FP16SM*	16" Backplate Surface PCNY / SCNY / XPCNY	Covers Existing Hole if Larger than Fixture	15.5" x 24" x 18GA Galv Steel
BP26SM*	26" Surface Beautyplate PCNY / SCNY / XPCNY	Covers Existing Footprint of Existing Fixture	26" x 26" x 16GA Aluminum
BP18SM*	18" Surface Beautyplate PCNY / SCNY / XPCNY	Covers Existing Footprint of Existing Fixture	18" x 18" x 16GA Aluminum
RF2SM	Retrofit CREE 304 XPCNY	Retrofits Cree 304 with new Fixture	15"x 15" 18GA Aluminum

*Add "U" to the end of the catalog number for individual unit pack or "J6" for packs of 6 units

Control Accessories - Must be orderd with XPCNY SSR Option

Catalog	Description	Photocell	Occupancy	No Occupancy
TLS ODP WH	Field Installable PIR Sensor, White	Yes	100%	30%
TLS ODP BK	Field Installable PIR Sensor, Black	Yes	100%	30%

FEATURES & SPECIFICATIONS

INTENDED USE
The XPCNY LED is a great choice for both new and retrofit petroleum canopy applications. With its high efficacy, clean look, and versatility makes it suitable for a wide range of applications like retail gas stations, convenience stores, and other canopy applications.

CONSTRUCTION
Die-cast aluminum housing for the light engine is optimized for thermal management. Driver is accessible from below without removing fixture for easy maintenance. The light engine housing is completely sealed against moisture and environmental contaminants (IP66) and is suitable for hose-down application.

ELECTRICAL
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L77/100,000 hours at 25°C). The electronic driver has a power factor of >90% and THD <20%. Standard 6KV surge protection. Operating temperature -40C to 40C.

INSTALLATION
The product can be installed by one person to a 12" or 16" deck panel. The Adjustable Lumen Output (ALO) module in the driver box allows the contractor to customize the lumens (3 levels) based on application needs. In addition to adjustable lumens, switchable CCTs are available with standard lens options.

LISTINGS
UL Listed to U.S. and Canadian safety standards for wet locations IP66.
Tested in accordance with IESNA LM-79 and LM-80 standards. DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. NOM Certified.

WARRANTY
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:
www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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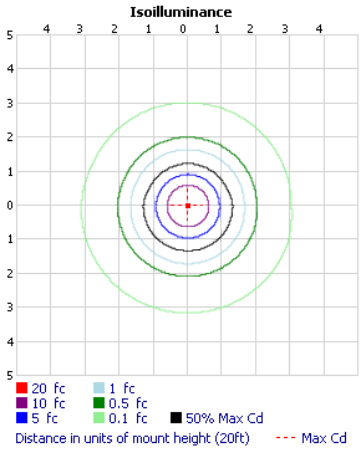
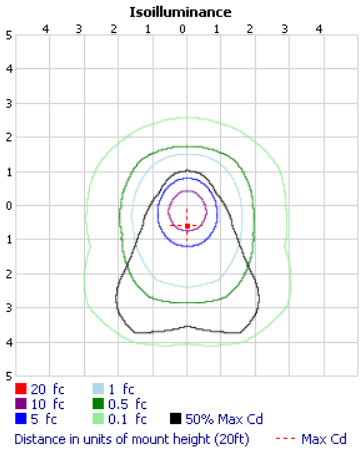
Photometric Diagrams

Full photometric data report available within 2 weeks from request. Contact Acuity Tech Support.



Flat Clear Lens



Forward Throw Lens

Performance Data

Ambient Temp		Lumen Multiplier
0° C	32° F	1.04
10° C	50° F	1.03
20° C	68° F	1.01
25° C	77° F	1.00
30° C	86° F	0.99
40° C	104° F	0.98

Predicted Lumen Maintenance			
0 Hrs	25,000 Hrs	50,000 Hrs	100,000 Hrs
100%	94%	88%	77%

		Current	
Lumen Setting	Watts	120V	277V
AL02-3	134	1.128	0.499
AL02-2	109	0.938	0.423
AL02-1	90	0.763	0.357
AL01-3	85	0.708	0.307
AL01-2	63	0.525	0.227
AL01-1	46	0.383	0.166

Lumen Output Flat Polycarbonate Clear Lens (FPCL)

Performance Package	Setting	System Watts	30K (3000K, 80 CRI)		40K (4000K, 80 CRI)		50K (5000K, 80 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW
AL02	3	134	19,191	143	20,559	153	20,248	151
AL02	2	109	16,496	151	17,511	161	17,296	159
AL02	1	90	13,638	152	14,283	159	14,313	159
AL01	3	85	12,728	150	13,618	160	13,500	159
AL01	2	63	9,705	154	10,259	163	10,283	163
AL01	1	46	7,303	159	7,684	167	7,751	169

Lumen Output Forward Throw Lens (FTL)

Performance Package	Setting	System Watts	30K (3000K, 80 CRI)		40K (4000K, 80 CRI)		50K (5000K, 80 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW
AL02	3	131	NA				21,336	163
AL02	2	109	NA				18,132	166
AL02	1	88	NA				15,061	171

Lumen Output Flat Glass Clear Lens (FGCL)

Performance Package	Setting	System Watts	30K (3000K, 80 CRI)		40K (4000K, 80 CRI)		50K (5000K, 80 CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW
AL02	3	134	19,723	147	21,470	160	21,541	161
AL02	2	104	15,830	152	17,068	164	17,195	165
AL02	1	85	13,030	153	13,954	164	14,146	166

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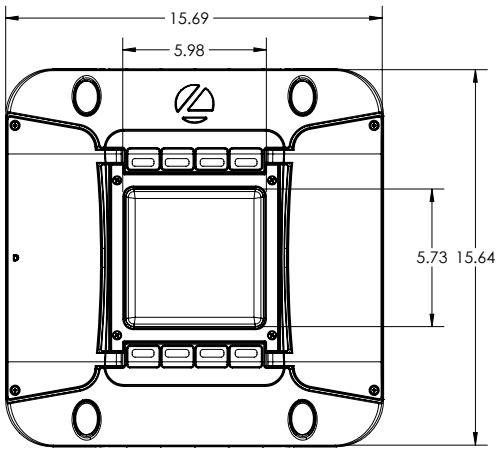
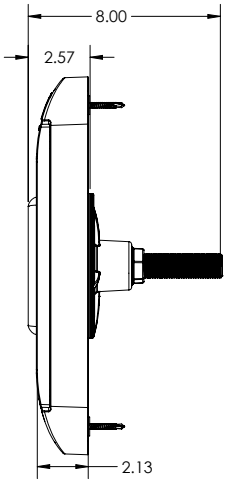
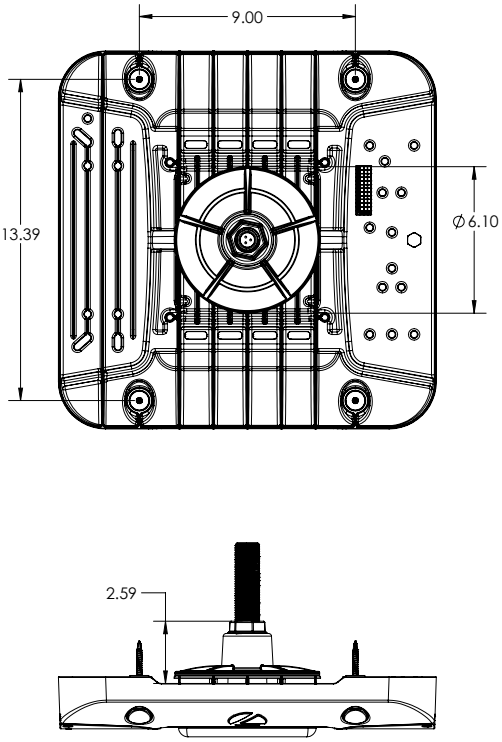
Line Art







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Project		**Catalog #**		**Type**	
Prepared by		**Notes**		**Date**	

Lumark

Crosstour Series

Wall Mount Luminaire

Product Certifications & Features

Interactive Menu

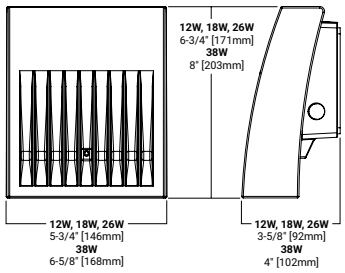
- Ordering Information page 2
- Product Specifications page 2
- Energy and Performance Data page 3

Quick Facts

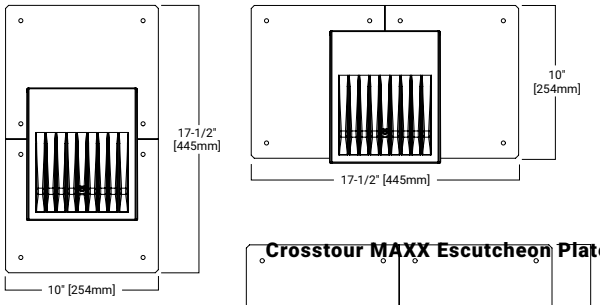
- Available in 12W, 18W, 26, & 38W (900 - 3,100 lumens) models
- Available in 5000K or 4000K (CCT)
- Wall, inverted or pole mount
- Energy and maintenance savings up to 95% compared to HID
- Energy efficient illumination results in up to 177LPW
- Replaces 70W up to 450W HID equivalents
- Optional floodlighting kit converts from wall to floodlight, and pole mount

Dimensional Details

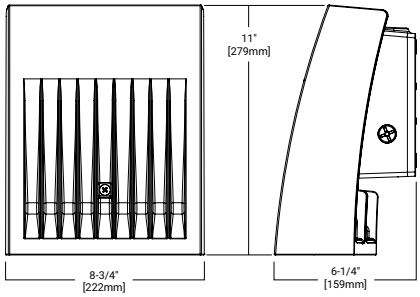
Crosstour Full Cut-off



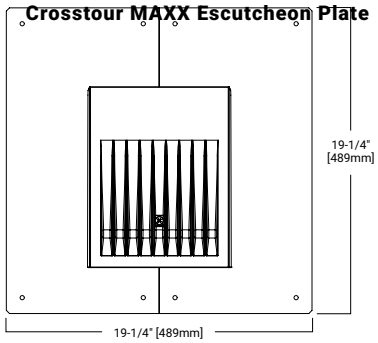
Crosstour Escutcheon Plates



Crosstour MAXX Full Cut-off



Crosstour MAXX Escutcheon Plate



Ordering Information

SAMPLE NUMBER: **XTOR2B-W-WT-PC1**

Domestic Preferences	Series [1]	LED Kelvin Color	Housing Color	Options (Add as Suffix)	Accessories (Order Separately)
[Blank]=Standard **BAA**=Buy American Act [7] **TAA**=Trade Agreements Act [7] **BABA**=Build America Buy America Act [8]	**XTOR1B**=Small Door, 12W **XTOR2B**=Small Door, 18W **XTOR3B**=Small Door, 26W **XTOR4B**=Medium Door, 38W	**[Blank]**=Bright White (Standard), 5000K **W**=Neutral White, 4000K **Y**=Warm White, 3000K	**[Blank]**=Carbon Bronze (Standard) **WT**=Summit White **BK**=Black **BZ**=Bronze **AP**=Grey **GM**=Graphite Metallic **DP**=Dark Platinum	**PC1**=Photocontrol 120V [2] **PC2**=Photocontrol 208-277V [2, 3] **347V**=347V [4] **HA**=50°C High Ambient [4]	**XTORFLD-KNC**=Knuckle Floodlight Kit [6] **XTORFLD-TRN**=Trunnion Floodlight Kit [6] **XTORFLD-KNC-WT**=Knuckle Floodlight Kit, Summit White [6] **XTORFLD-TRN-WT**=Trunnion Floodlight Kit, Summit White [6] **EWP/XTOR**=Escutcheon Wall Plate, Carbon Bronze **EWP/XTOR-WT**=Escutcheon Wall Plate, Summit White
	Full Cutoff **XTOR6B**=MAXX, 58W **XTOR8B**=MAXX, 81W **XTOR12B**=MAXX, 102W **Refractive Lens** **XTOR6BRL**=MAXX, 58W **XTOR8BRL**=MAXX, 81W **XTOR12BRL**=MAXX, 102W			**347V**=347V [9, 10, 11, 12] **480V**=480V [9, 10, 11, 12, 13] **PC1**=Photocontrol 120V 7 **PC2**=Photocontrol 208-277V [14, 15] **PMA**=Pole Mount Arm (C Drilling) with Round Adapter [10, 16] **MS-L20**=Motion Sensor for ON/OFF Operation [9, 10, 17, 18] **MS/DIM-L20**=Motion Sensor for Dimming Operation [9, 10, 17, 18, 19, 20, 21] **CBP**=Cold Weather Battery Pack [9, 10, 22, 23, 24] **HA**=50°C High Ambient [24]	**WG-XTORMX**=Crosstour MAXX Wire Guard **PB120V**=Field Installed 120V Photocontrol PB277V BUTTON PC=Field Installed 208-277V Photocontrol [15] **VA1040-XX**=Single Tenon Adapter for 3-1/2" O.D. Tenon [25] **VA1041-XX**=2@180° Tenon Adapter for 3-1/2" O.D. Tenon [25] **VA1042-XX**=3@120° Tenon Adapter for 3-1/2" O.D. Tenon [25] **VA1043-XX**=4@90° Tenon Adapter for 3-1/2" O.D. Tenon [25] **VA1044-XX**=2@90° Tenon Adapter for 3-1/2" O.D. Tenon [25] **VA1045-XX**=3@90° Tenon Adapter for 3-1/2" O.D. Tenon [25] **VA1046-XX**=2@120° Tenon Adapter for 3-1/2" O.D. Tenon [25] **VA1033-XX**=Single Tenon Adapter for 2-3/8" O.D. Tenon [25] **VA1034-XX**=2@180° Tenon Adapter for 2-3/8" O.D. Tenon [25] **VA1035-XX**=3@120° Tenon Adapter for 2-3/8" O.D. Tenon [25] **VA1036-XX**=4@90° Tenon Adapter for 2-3/8" O.D. Tenon [25] **VA1037-XX**=2@90° Tenon Adapter for 2-3/8" O.D. Tenon [25] **VA1038-XX**=3@90° Tenon Adapter for 2-3/8" O.D. Tenon [25] **VA1039-XX**=2@120° Tenon Adapter for 2-3/8" O.D. Tenon [25] **EWP/XTORMX**=Escutcheon Wall Plate, Carbon Bronze **EWP/XTORMX-WT**=Escutcheon Wall Plate, Summit White **FSIR-100**=Wireless Configuration Tool for Occupancy Sensor [14]

NOTES:

1. DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to designlights.org for details.
2. Photocontrols are factory installed.
3. Order PC2 for 347V models.
4. Thru-branch wiring not available with HA option or with 347V. XTOR3B not available with HA and 347V or 120V combination.
5. Wire guard for wall/surface mount. Not for use with floodlight kit accessory.
6. Floodlight kit accessory supplied with knuckle (KNC) or trunnion (TRN) base, small and large top visors and small and large impact shields.
7. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be seperately analyzed under domestic preference requirements.
8. Only product configurations with these prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or the Build America Buy America Act (BABA). BABA is the minimum Government compliance requirement for the Build America Buy America standards which is part of the Infrastructure and Investment Jobs Act (IIJA). Individual Government Agencies may have more stringent compliance standards. Please refer to the DOMESTIC PREFERENCES website or consult the CLS Domestic Preferences team for more information. Components shipped separately may be separately analyzed under domestic preference requirements.
9. Not available with HA option.
10. Deep back box is standard for 347V, 480V, CBP, PMA, MS-L20 and MS/DIM-L20.
11. Not available with CBP option.
12. Thru-branch wiring not available with HA option or with 347V.
13. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
14. Not available with MS-L20 and MS/DIM-L20 options.
15. Use PC2 with 347V or 480V option for photocontrol. Factory wired to 208-277V lead.
16. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
17. For use in downlight orientation only. Optimal coverage at mounting heights of 9'-20'.
18. 120V thru 277V only.
19. Factory set to 50% power reduction after 15-minutes of inactivity. Dimming driver included.
20. Includes integral photo sensor.
21. The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff, and more. Consult your lighting representative at Eaton for more information.
22. 120V or 277V operation only.
23. Operating temperatures -20°C to 25°C.
24. Not available in XTOR12B or XTOR12BRL models.
25. Replace XX with housing color.

Crosstour Stock Ordering Information

12W Series	18W Series	26W Series	38W Series
XTOR1B=12W, 5000K, Carbon Bronze	**XTOR2B**=18W, 5000K, Carbon Bronze	**XTOR3B**=26W, 5000K, Carbon Bronze	**XTOR4B**=38W, 5000K, Carbon Bronze
XTOR1B-WT=12W, 5000K, Summit White	**XTOR2B-W**=18W, 4000K, Carbon Bronze	**XTOR3B-W**=26W, 4000K, Carbon Bronze	**XTOR4B-W**=38W, 4000K, Carbon Bronze
XTOR1B-PC1=12W, 5000K, 120V PC, Carbon Bronze	**XTOR2B-WT**=18W, 5000K, Summit White	**XTOR3B-WT**=26W, 5000K, Summit White	**XTOR4B-WT**=38W, 5000K, Summit White
XTOR1B-W=12W, 4000K, Carbon Bronze	**XTOR2B-PC1**=18W, 5000K, 120V PC, Carbon Bronze	**XTOR3B-PC1**=26W, 5000K, 120V PC, Carbon Bronze	**XTOR4B-PC1**=38W, 5000K, 120V PC, Carbon Bronze
	XTOR2B-W-PC1=18W, 4000K, 120V PC, Carbon Bronze	**XTOR3B-W-PC1**=26W, 4000K, 120V PC, Carbon Bronze	**XTOR4B-W-PC1**=38W, 4000K, 120V PC, Carbon Bronze
	XTOR2B-347V=18W, 5000K, Carbon Bronze, 347V	**XTOR3B-347V**=26W, 5000K, Carbon Bronze, 347V	**XTOR4B-347V**=38W, 5000K, Carbon Bronze, 347V
	XTOR2B-WT-PC1=18W, 5000K, 120V PC, Summit White	**XTOR3B-PC2**=26W, 5000K, 208-277V PC, Carbon Bronze	

Crosstour MAXX Stock Ordering Information

58W Series	81W Series	102W Series
FULL CUTOFF		
XTOR6B=58W, 5000K, Carbon Bronze	**XTOR8B**=81W, 5000K, Carbon Bronze	**XTOR12B**=102W, 5000K, Carbon Bronze
XTOR6B-PC1=58W, 5000K, 120V PC, Carbon Bronze	**XTOR8B-PC1**=81W, 5000K, 120V PC, Carbon Bronze	
XTOR6B-WT= 58W, 5000K, Summit White	**XTOR8B-WT**=81W, 5000K, Summit White	
XTOR6B-W=58W, 4000K, Carbon Bronze	**XTOR8B-PC2**=81W, 5000K, 208-277V PC, Carbon Bronze	
XTOR6B-PMA= 58W, 5000K, Pole Mount Arm, Carbon Bronze	**XTOR8B-PMA**=81W, 5000K, Pole Mount Arm, Carbon Bronze	
XTOR6B-PC2= 58W, 5000K, 208-277V PC, Carbon Bronze	**XTOR8B-347V**=81W, 5000K, Carbon Bronze, 347V	
REFRACTIVE LENS		
XTOR6BRL=58W, 5000K, Refractive Lens, Carbon Bronze	**XTOR8BRL**=81W, 5000K, Refractive Lens, Carbon Bronze	**XTOR12BRL**=102W, 5000K, Refractive Lens, Carbon Bronze
XTOR6BRL-PC1=58W, 5000K, Refractive Lens, 120V PC, Carbon Bronze	**XTOR8BRL-PC1**=81W, 5000K, Refractive Lens, 120V PC, Carbon Bronze	**XTOR12BRL-W**=102W, 4000K, Refractive Lens, Carbon Bronze
XTOR6BRL-WT=58W, 5000K, Refractive Lens, Summit White	**XTOR8BRL-WT**=81W, 5000K, Refractive Lens, Summit White	**XTOR12RBL-347V**=102W, 5000K, Refractive Lens, Carbon Bronze, 347V
XTOR6BRL-W=58W, 4000K, Refractive Lens, Carbon Bronze	**XTOR8BRL-PC2**=81W, 5000K, Refractive Lens, 208-277V PC, Carbon Bronze	
XTOR6BRL-PMA=58W, 5000K, Refractive Lens, Pole Mount Arm, Carbon Bronze	**XTOR8BRL-PMA**=81W, 5000K, Refractive Lens, Pole Mount Arm, Carbon Bronze	
XTOR6BRL-PC2=58W, 5000K, Refractive Lens, 208-277V PC, Carbon Bronze	**XTOR8BRL-W**=81W, 4000K, Refractive Lens, Carbon Bronze	
XTOR6BRL-347V=58W, 5000K, Refractive Lens, Carbon Bronze, 347V	**XTOR8BRL-347V** = 81W, 5000K, Refractive Lens, Carbon Bronze, 347V	

Product Specifications

Physical Characteristics

- Die-cast aluminum housing
- External back fin design extracts heat from the surface to thermally optimize design for longer luminaire life
- tool-less electrical connections with the supplied push-in connectors.
- supports both the small and medium forms and mounts to standard 3-1/2" to 4" round and octagonal, 4" square, single gang and masonry junction boxes.

Optics

- Dark Sky Approved (Fixed mount, Full cutoff, and 3000K CCT only)
- Silicone-sealed optical LED chamber
- impact-resistant tempered glass and meets IESNA requirements for full cutoff compliance
- Available in seven lumen packages; 5000K, 4000K and 3000K CCT

Electrical

- Standard universal voltage (120-277V, 50/60Hz)
- Driver incorporates 6kV surge protection
- -40°C minimum operating temperature
- 40°C maximum operating temperature
- <20% total harmonic distortion

Mounting

- Knuckle, Trunnion, Escutcheon Wall Plate

Finish

- Five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness

Typical Applications

- Wall Mount, Bullet Flood, Pole Mount, Exterior wall, Walkway

Compliance

- BAA domestic preference option meets BAA requirements. See DOMESTIC PREFERENCES website or consult the CLS Domestic Preferences team for more information
- FHWA and FTA agencies are utilizing their BAA rules for BABA compliance. Cooper's products with a BAA designation are manufactured in the US and utilize a BAA COTS exemption rule for compliance. To verify a configured product with specific accessories and options meet BABA Domestic Preference Requirements; submit this catalog number to Cooper Lighting Quotation team for validation by our Engineering and Manufacturing teams. Please refer to the DOMESTIC PREFERENCES website or consult the CLS Domestic Preferences team for more information. Components shipped separately may be separately analyzed under domestic preference requirements.

Shipping Data

- Small fixture=5 lbs. [2.36 kgs.]
- Small with sensor or CBP=10 lbs. [4.40 kgs.]
- Large fixture=12 lbs. [5.45 kgs.]
- Large with sensor or CBP=17 lbs. [7.73 kgs.]
- Large with sensor & CBP=21 lbs. [9.54 kgs.]

Warranty

- Five year limited warranty, consult website for details. www.cooperlighting.com/legal

Energy and Performance Data

Crosstour Power and Lumens

LED Information	XTOR1B	XTOR1B-W	XTOR1B-Y	XTOR2B	XTOR2B-W	XTOR2B-Y	XTOR3B	XTOR3B-W	XTOR3B-Y	XTOR4B	XTOR4B-W	XTOR4B-Y
Delivered Lumens (Wall Mount)	1,418	1,396	1,327	2,135	2,103	1,997	2,751	2,710	2,575	4,269	4,205	3,995
Delivered Lumens (With Flood Accessory Kit) [1]	1,005	990	940	1,495	1,472	1,399	2,099	2,068	1,965	3,168	3,121	2,965
B.U.G. Rating [2]	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B1-U0-G0	B2-U0-G0	B2-U0-G0	B2-U0-G0
CCT (Kelvin)	5,000	4,000	3,000	5,000	4,000	3,000	5,000	4,000	3,000	5,000	4,000	3,000
CRI (Color Rendering Index)	70	70	70	70	70	70	70	70	70	70	70	70
Power Consumption (Watts)	12W	12W	12W	18W	18W	18W	26W	26W	26W	38W	38W	38W

NOTES: 1 Includes shield and visor. 2 B.U.G. Rating does not apply to floodlighting.

Crosstour MAXX Power and Lumens

LED Information	XTOR6B	XTOR6BRL	XTOR6B-W	XTOR6BRL-W	XTOR6B-Y	XTOR6BRL-Y
Delivered Lumens	6,129	6,225	6,038	6,133	5,611	5,826
B.U.G. Rating	B1-U0-G1	B2-U4-G3	B1-U0-G1	B2-U4-G3	B1-U0-G1	B2-U4-G3
CCT (Kelvin)	5000K	5000K	4000K	4000K	3000K	3000K
CRI (Color Rendering Index)	70	70	70	70	70	70
Power Consumption (Watts)	58W	58W	58W	58W	58W	58W

LED Information	XTOR8B	XTOR8BRL	XTOR8B-W	XTOR8BRL-W	XTOR8B-Y	XTOR8BRL-Y
Delivered Lumens	8,502	8,635	8,373	8,504	7,748	8,079
B.U.G. Rating	B2-U0-G1	B2-U4-G3	B2-U0-G1	B2-U4-G3	B2-U0-G1	B2-U4-G3
CCT (Kelvin)	5000K	5000K	4000K	4000K	3000K	3000K
CRI (Color Rendering Index)	70	70	70	70	70	70
Power Consumption (Watts)	81W	81W	81W	81W	81W	81W

LED Information	XTOR12B	XTOR12BRL	XTOR12B-W	XTOR12BRL-W	XTOR12B-Y	XTOR12BRL-Y
Delivered Lumens	12,728	13,458	12,539	13,258	11,861	12,595
B.U.G. Rating	B2-U0-G1	B2-U4-G3	B2-U0-G1	B2-U4-G3	B2-U0-G1	B2-U4-G3
CCT (Kelvin)	5000K	5000K	4000K	4000K	3000K	3000K
CRI (Color Rendering Index)	70	70	70	70	70	70
Power Consumption (Watts)	102W	102W	102W	102W	102W	102W

Crosstour Lumen Maintenance

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)
XTOR1B Model	
25°C	> 90%
40°C	> 89%
50°C	> 88%
XTOR2B Model	
25°C	> 89%
40°C	> 88%
50°C	> 87%
XTOR3B Model	
25°C	> 89%
40°C	> 88%
50°C	> 87%
XTOR4B Model	
25°C	> 89%
40°C	> 87%
50°C	> 87%

Crosstour MAXX Lumen Maintenance

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)
XTOR6B Model	
25°C	> 90%
40°C	> 88%
50°C	> 88%
XTOR8B Model	
25°C	> 89%
40°C	> 87%
50°C	> 86%
XTOR12B Model	
25°C	> 89%
40°C	> 87%

Power and Lumens (Large + CBP)

Light Engine	XTOR1B	XTOR2B	XTOR3B	XTOR4B
Power (Watts)	12	18	26	38
Input Current @ 120V (A)	0.103A	0.15A	0.22A	0.34A
Input Current @ 208V (A)	0.060A	0.09A	0.13A	0.17A
Input Current @ 240V (A)	0.053A	0.08A	0.11A	0.17A
Input Current @ 277V (A)	0.048A	0.07A	0.10A	0.15A
Input Current @ 347V (A)	0.039A	0.06A	0.082A	0.12A

Note: Power and current based on full power consumption while CBP is charging.
Lumen outputs are while operating in emergency mode only.

Cooper Lighting Solutions
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Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com

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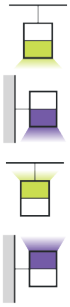
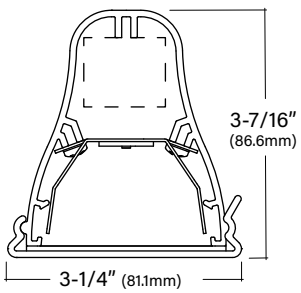
Specifications and dimensions
subject to change without notice.

PINNACLE ARCHITECTURAL LIGHTING®

Project Name _____

Date _____ Type _____





MOFFAT MW

Outdoor Linear Luminaire

Key Features

- 6063-T6 Extruded aluminum housing
- Highly reflective die-formed white painted aluminum reflector
- Die-cast aluminum end caps
- MOFFAT offered with a 5-year limited warranty that covers LED, driver and fixture
- ETL listed conforming to UL 1598 in US and CSA 250 in Canada
- Approved for wet location, IP65 Rated, fully gasketed lens and endcaps
- Maximum fixture weight is 20 lbs per standard 4' fixture
- Fixture head roatation provides asymmetric and general illumination
- Buy American Act compliant

Example Part #: MW-HE-835HO-26'-FL-U-OL2-1-0-W

MW - **HE** - ___ - ___ - ___ - ___ - ___ - ___ - ___ - ___ - ___ - ___ - ___

SHIELDING | *CRI, CCT & OUTPUT* | *LENGTH* | *MOUNTING* | *VOLTAGE* | *DRIVER* | *CIRCUITING* | *BATTERY & EMERGENCY* | *FINISH* | *FIXTURE OPTIONS* | *CONTROLS*

M_	HE	_____	_____
HOUSING	**SHIELDING**	**CRI, CCT & OUTPUT[1]**	**LENGTH[2]**
MW - Moffat Wet **MN** - Moffat Natatorium *(FL mounting only)*	**HE** - High Efficiency Lens **WHE** - Asymmetric Lens *Shielding pg. 2*	**_27_ _** - 2700K **_30_ _** - 3000K **_35_ _** - 3500K **_40_ _** - 4000K **CL_ _ _ _ _ _** - Custom Lumens **CW_ _ _ _ _ _** - Custom Watts *Lumen Output pg. 2*	**_ _** - Individual Fixture **_ .** - Continuous Row *Length pg. 3*

____	____	_____	_
MOUNTING	**VOLTAGE**	**DRIVER**	**CIRCUITING**
FL - Flush Mount **PH_ _ -** Pendant Hub *(specify 12", 18", 24")* **WH_ _ -** Wall Hub *(specify 6", 12", 18", 24")* *Mounting pg. 3*	**U -** Universal *(120 thru 277V)* **1 -** 120V **2 -** 277V **3 -** 347V *Voltage pg. 3*	**PL2 -** Advance Xitanium *(1%, 0-10v)* **OL4 -** Osram 347v *(1%, 0-10v)* **EE1 -** eldoLED ECOdrive *(1%, 0-10v)* **ES1 -** eldoLED SOLOdrive *(0%, 0-10v)* **LH1-** Lutron Hi-lume *(1%, EcoSystem)* **L51-** Lutron 5-Series *(5%, EcoSystem)* **PS1 -** Advance Xitanium *(50%/100%)* **OL2 -** Osram *(1%, 0-10v)* **ND -** Non-Dimming *Driver pg. 3*	**1 -** Single Circuit **M -** Multi Circuit **E -** Emergency *(entire fixture)* **N -** Night Light *(entire fixture)* *Circuiting pg. 4*

___	__	___	__
BATTERY & EMERGENCY[3]	**FINISH**	**FIXTURE OPTIONS**	**CONTROLS**
0 - None **_PLL -** Bodine 10W *(low profile)* **_ILL -** Iota 10W Integral **_E -** Emergency circuit section **_N -** Night Light circuit section **_L -** Life Safety circuit section **_G -** Bodine GTD *Battery and Emergency pg. 4*	**W -** White **S -** Metallic Silver **BL -** Textured Black **BR -** Bronze **GR -** Graphite **CC -** Custom Color *Finish pg. 4*	**V -** Visor *Fixture Options pg. 4*	*Pinnacle is able to accommodate different control solutions from different manufacturers. Consult Factory for more information.*

[1]When specifying CRI, CCT, & OUTPUT the first _ is for specifying either **8** - 80CRI, **9** - 90CRI. The ending _ _ are for specifying output, example **HO** - High Output. See output charts for more information. [2]Individual fixtures come in **2', 3'. 4', 6'** & **8'** lengths. Continuous rows available in 1' increments, starting at 2' [3]Enter quantity for Battery and Emergency, Example 2PL.

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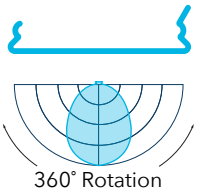
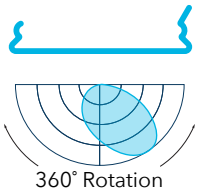
Shielding

- The distributions for each shielding option below are shown in a direct orientation. See Mounting for all rotating head options.

HE	WHE
High Efficiency Lens	Asymmetric Lens
	
360˚ Rotation	360˚ Rotation

CRI, CCT & Output

- Specify either 80 or 90 CRI
- Longer lead-time may apply for 90 CRI. Consult factory
- 80 CRI = R9≥19 and 90 CRI = R9≥61

Custom Output- Lumens OR Wattage

CL_ _ _ _ _	Specify CRI, CCT and desired lumens (i.e. CL835950)	*Specify lumens between standard offering listed below. Lumens are specified per color temp*
CW_ _ _ _ _	Specify CRI, CCT and desired wattage (i.e. CW9409.5)	*Specify watts between standard offering listed below*

80 CRI

	Color	Output	Lumens *per foot*	Shielding **HE** High Efficiency		**WHE** Asymmetric Lens	
				LPW	*Watts/ft*	*LPW*	*Watts/ft*
830LO	3000K	Low	350	122	2.9	103	3.4
830	3000K	Standard	750	126	5.9	109	6.9
830HO	3000K	High	1000	127	7.9	111	9.0
830VHO	3000K	Very High	1250	129	9.7	109	11.4
835LO	3500K	Low	350	125	2.8	106	3.3
835	3500K	Standard	750	128	5.8	111	6.8
835HO	3500K	High	1000	131	7.7	111	9.0
835VHO	3500K	Very High	1250	133	9.4	112	11.1
840LO	4000K	Low	350	127	2.8	108	3.3
840	4000K	Standard	750	130	5.8	112	6.7
840HO	4000K	High	1000	132	7.6	112	8.9
840VHO	4000K	Very High	1250	135	9.3	114	11.0

90 CRI

927LO	2700K	Low	350	101	3.5	88	4.0
927	2700K	Standard	750	107	7.0	91	8.3
927HO	2700K	High	1000	109	9.2	92	10.8
930LO	3000K	Low	350	105	3.3	91	3.9
930	3000K	Standard	750	109	6.9	94	8.0
930HO	3000K	High	1000	109	9.1	96	10.5
935LO	3500K	Low	350	107	3.3	93	3.8
935	3500K	Standard	750	112	6.7	96	7.8
935HO	3500K	High	1000	112	8.9	98	10.2
940LO	4000K	Low	350	106	3.3	92	3.8
940	4000K	Standard	750	111	6.8	95	7.9
940HO	4000K	High	1000	111	9.0	97	10.3

[1]LPW and watts/ft based off 48" fixture size.

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Length

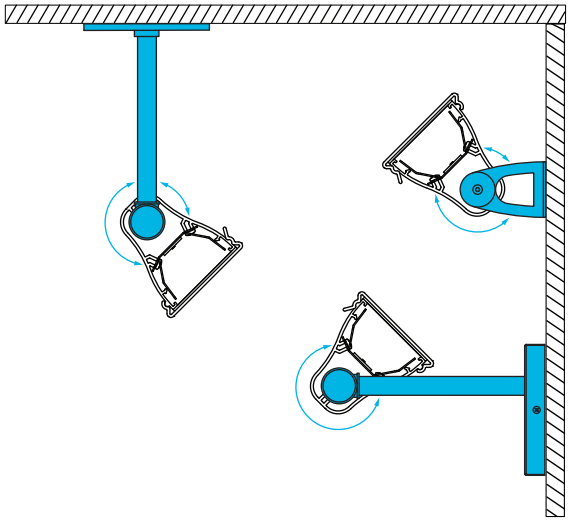
- All individual units cannot be joined
- The PH and WH mounting options have a 1-3/8" hub on each side of the fixture, the FL mounting option has 1/2" hub at each end of the fixture, see installation instuctions for more details and chart.

2	3	4	6	8	_
Indiv. Fixture	Indiv. Fixture	Indiv. Fixture	Indiv. Fixture	Indiv. Fixture	Cont. Run *Specify nominal overall row length to the 1'.*
24-5/8" (610.2mm)					
36-5/8" (930.3mm)					
48-5/8" (1235.1mm)					
72-5/8" (1844.7mm)					
96-5/8" (2454.3mm)					
Specify to the 1'					

Mounting

- Pendant lengths are 12", 18", and 24"
- Wall Hub lengths are 6", 12", 18", and 24"
- End caps and standard white power cord attached at factory
- Canopies, hubs, and pendants match fixture finish, power cords are white, grey, or black depending on fixture finish. See Finish section for additional details
- Approved for wet location, IP65 rated, unless otherwise noted
- Refer to installation instructions during installation at the job site
- Maximum fixture weight is 20 lbs. per 4' fixture
- Fixture head rotation provides asymmetric output
- The PH and WH mounting options have a 1-3/8" hub on each side of the fixture, the FL mounting option has 1/2" hub at each end of the fixture, see installation instuctions for more details and chart.

FL	Flush Mount *(360° rotating head)*
PH_ _	Pendant Hub *(360° rotating head)*
WH_ _	Wall Hub *(360° rotating head)*



Voltage

- Some MOFFAT configurations will not accommodate all voltage options; consult with factory

U	Universal
1	120 volt
2	277 volt
3	347 volt

Driver

- Standard Driver Option = PL2
- Driver Lifetime: 50,000 hours at 25°C ambient operating conditions
- For more driver options see Pinnacle Resource Guide
- Some MOFFAT configurations will not accommodate all driver options; consult with factory

PL2	Advance Xitanium 1% , 0-10v
OL4	Osram Optotronic 347v, 1%, 0-10v (requires 347v)
EE1	eldoLED ECOdrive 1%, 0-10v Logarithmic
EE2	eldoLED ECOdrive 1%, 0-10v Linear
ES1	eldoLED ECOdrive 1%, DALI Logarithmic
ES2	eldoLED SOLOdrive 0%, 0-10v Linear
LH1	Lutron Hi-lume Soft-on, Fade-to-black 1%, EcoSystem, LDE1
L51	Lutron 5-Series 5%, EcoSystem, LDE5
PS1	Advance Xitanium Step Dimming 50%/100%
OL2	Osram Optotronic 1%, 0-10v
ND	Non-Dimming

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How to specify Circuiting, Battery and Emergency

1

- Select fixture circuiting from options below
- Some MOFFAT configurations will not accommodate all circuiting options, consult with factory

Circuiting

1	Single Circuit
M	Multi Circuit
E	Emergency Circuit only
N	Night Light Circuit only

2 + **3**

- Battery and emergency section options are available in addition to fixture circuit
- Select battery and emergency section options below; factory shop drawing required
- Some MOFFAT configurations will not accommodate all circuiting options, consult with factory

Battery and/or Emergency *If Required*

0	No battery or specific emergency section required

Battery

- Select battery section type if required, indicate total QTY. *Example 2PL*
- 90 minute battery runtime; test button is integral to fixture
- For more battery options available, see Pinnacle Resource Guide

0	No battery
_ILL	Iota 10w Integral (self testing)
_PLL	Bodine 10w Integral Lithium Self Testing *(low profile)*

For Approximate Battery Lumen Output

- Multiply battery wattage X fixture LPW shown on Lumen Table
- 92.3 (LPW) x 10 (watts) = 923 battery lumen output

Emergency

- Select emergency section type if required, indicate total QTY. *Example 1E*
- Combine battery and emergency section ordering codes if both options are selected

_E	Emergency circuit section
_N	Night Light circuit section
_L	Life Safety circuit section NO THROUGH WIRE
_G	Bodine GTD, Generator Transfer Device section

Battery OR Emergency Ordering Examples

- Single circuit, 10w Integral Battery — Ordering Code: 1-1PL
- Emergency only, 10w Integral Battery — Ordering Code: E-1PL
- Single circuit, GTD required — Ordering Code: 1-1G

Combination Section Ordering Examples

- Single circuit, (1) 10w battery, (1) emergency section
  Ordering Code: 1-1PL1E
- Multi circuit, (2) 10w battery, (2) emergency sections
  Ordering Code: M-2PL2E
- Single circuit, (1) night light section
  Ordering Code: 1-1N

Finish

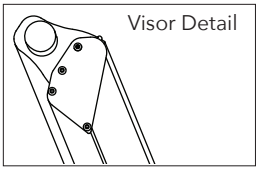
- Standard powder-coat textured white, metallic silver, textured black, graphite or bronze painted finish; consult factory for chip of standard paint finishes
- Selecting a fixture finish other than white may impact lumen output; consult factory for more information

W	White *(white cord/white canopy)*
S	Metallic Silver *(grey cord/silver canopy)*
BL	Textured Black *(black cord/black canopy)*
BR	Bronze *(white cord/bronze canopy)*
GR	Graphite *(white cord/graphite canopy)*
CC	Custom Color *(white cord/color match canopy)*

Fixture Options

- Additional options to enhance the fixture and finish of the product

V	Visor



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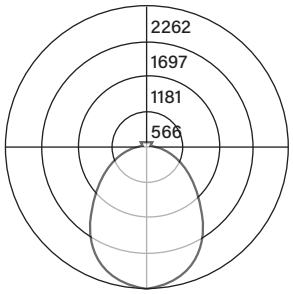
Photometrics

Satine Lens

Test #	ITL91824
Catalog #	MW-HE-840VHO-4
Lumens	5401 lm
Watts	39.1 W
Efficacy	138 LPW



Candela Distribution

Vert Angle	Horizontal Angle				
	0	22.5	45	67.5	90
0	2262	2262	2262	2262	2262
5	2251	2249	2248	2245	2246
10	2216	2207	2204	2196	2192
15	2160	2136	2132	2115	2104
20	2072	2041	2025	1996	1974
25	1959	1921	1894	1846	1819
30	1828	1781	1732	1666	1633
35	1669	1622	1554	1470	1434
40	1497	1445	1362	1269	1232
45	1310	1261	1170	1074	1037
50	1121	1075	985	896	865
55	938	890	809	731	706
60	753	718	648	588	565
65	587	558	502	457	443
70	425	409	372	341	330
75	279	271	252	236	233
80	149	152	148	145	144
85	49	57	68	75	78
90	3	15	32	44	48

Luminance Data (cd/sq.m)

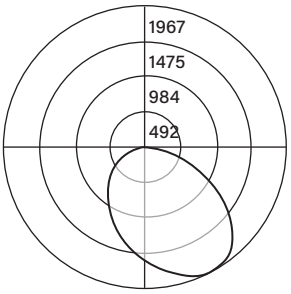
Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	17878	14124	12022
55	15696	11420	9438
65	13212	8855	7254
75	10055	6174	5122
85	4793	2869	2735

Bug Rating

B2-U3-G1

Asymmetric Lens

Test #	ITL92383
Catalog #	MW-HE-840VHO-4
Lumens	4536 lm
Watts	41.2 W
Efficacy	110 LPW



Candela Distribution

Vert Angle	Horizontal Angle				
	0	22.5	45	67.5	90
0	1613	1613	1613	1613	1613
5	1717	1711	1686	1649	1607
10	1813	1797	1744	1668	1586
15	1897	1869	1789	1669	1550
20	1949	1915	1811	1652	1502
25	1967	1929	1809	1617	1434
30	1939	1900	1774	1557	1352
35	1863	1827	1698	1474	1252
40	1736	1705	1591	1368	1141
45	1570	1542	1442	1239	1015
50	1366	1349	1272	1091	880
55	1149	1143	1078	931	749
60	941	927	886	767	611
65	732	726	689	600	479
70	537	532	512	446	353
75	367	361	344	296	233
80	214	211	198	167	124
85	94	92	81	62	40
90	39	35	26	12	1

Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	18201	17407	13852
55	15361	15217	12534
65	11986	12154	10781
75	8068	8428	8397
85	3296	3418	3912

Bug Rating

B2-U3-G1

Fixture tested in direct orientation. Fixture head is rotatable for asymmetric aiming as needed. For all available IES files, please visit our website at pinnacle-ltg.com. Photometry testing in accordance to IESNA-LM-79-08 at an NVLAP accredited testing laboratory. Testing conducted at 25°C ambient conditions

Approvals & Certifications

Construction: 6063-T6 Extruded aluminum housing. Fixtures can be joined to create continuous runs. Standard high reflectance die-formed reflector. Fully gasketed lens and endcaps.

Shielding: Diffuse snap-in acrylic lens, removable for maintenance.

Mounting: Pendant mount, wall mount, and flush mounts available. Fixture head roation provides asymmetric output. Refer to installation instructions for appropriate ceiling detail. Maximum fixture weight is 20 lbs. per 4' fixture.

LED: 25°C test environment. Lumen output/wattage has a margin of +/- 5%. All luminaire configurations tested in accordance with IES LM-79. Diodes tested in accordance with IES LM-80. Lifetime calculated using IES TM-21. Minimum lifetime greater than 60,000 hours. Lifetime Projection: L70 lifetime – 146,500 hours and L90 lifetime – 45,000 hours. MacAdam 3-Step Ellipses. Not all products are Lighting Facts listed. For all available IES files, please visit our website at pinnacle-ltg.com.

CRI, CCT & Lumen Output: Four lumen packages available. Low (LO), Standard, High (HO), and Very High (VHO). Custom outputs are available. Specify custom lumens or watts between standard offering listed on CRI, CCT & Output page. 80 CRI is available for 3000K, 3500K, and 4000K. 90 CRI is available for 2700K, 3000K, 3500K, and 4000K. 80 CRI = R9≥19 and 90 CRI = R9≥61. Fixture performance and photometric data based on 4' configuration. Published lumen or wattage data based on OL1 configuration.

Voltage: Universal (U), 120 volt (1), 277 volt (2) and 347 volt (3) options available. Must specify OL4 in Driver section when 347 volt (3) is selected. Some MOFFAT configurations will not accommodate all voltage options; consult with factory.

Driver: Standard Driver Option is Advance Xitanium 0-10V, 1% = PL2. Electronic driver, Power factor is >0.9 with a THD <20%. Driver Lifetime: 50,000 hours at 25°C ambient operating conditions. Ambient operating range: -4F/-20C to 122F/50C For more driver options, see Pinnacle Resource Guide. Some MOFFAT configurations will not accommodate all driver options.

Circuiting: Select from single circuit (1), Multi circuit (M), Emergency circuit (E), Night Light circuit (N) or Life Safety (L). For emergency circuiting situations that require no through wire or circuit separation, Life Safety Circuit should be selected. This will provide a separate power feed and only the Life Safety Circuit in that section. Some MOFFAT configurations will not accommodate all circuiting options; consult with factory.

Battery & Emergency: Select battery or emergency options if required. If battery or emergency option is not required, enter 0. Battery duration is 90 minutes as standard. Test button is integral to fixture, fixture length increases by 1". For more Battery options, see Pinnacle Resource Guide.

Finish: Standard powder-coat textured white, metallic silver, textured black, graphite or bronze painted finish, consult factory for chip of standard paint finishes. Canopies, hubs, and pendants painted white unless specified differently in the options section of the part number. Contact factory for additional custom color and finish options.

Controls: Pinnacle is able to accommodate different control solutions from different manufacturers. Consult Factory for more information.

Labels: ETL listed conforming to UL1598 abd CSA 250. Approved for Wet location unless otherwise noted. IP65 rated.

Fixture Weight: Maximum fixture weight is 20 lbs (per 4' fixture).

Buy American Act Compliant

Warranty: MOFFAT LED offered with a 5-year limited warranty. Covers LED, driver and fixture.

REAL ESTATE PURCHASE AGREEMENT

THIS REAL ESTATE PURCHASE AGREEMENT (this "Agreement"), made and entered into this 21st day of October, 2025, (the "Effective Date") by and between 3 WEST, LLC, a Michigan limited liability company, whose address is 1460 Whitehall Rd., Muskegon, Michigan 49445 ("Purchaser"), and CHATEAU VILLAGE, LLC, a Michigan limited liability company, whose address is 1860 RW Berends SW, Wyoming, Michigan 49519 ("Seller").

RECITALS:

A. Seller is the owner in fee simple of certain land situated in the Township of Allendale, Ottawa County, Michigan, depicted and described on Exhibit A attached hereto (the "Land"), commonly known part of 11125 48th Avenue, Allendale, Michigan 49401.

B. Seller desires to sell and Purchaser desires to purchase the Land, together with (a) all improvements thereon, (b) all easements, rights-of-way, development and division rights, tenements, hereditaments, appurtenances, licenses and privileges thereto belonging or in any way appertaining thereto, (c) all air, subsurface and mineral rights (if available) relating thereto, (d) those Contracts (as defined below) affecting the Property that Purchaser elects, in writing and in its sole and absolute discretion, to assume on or before the Closing Date, if any ("Assigned Contracts"), (e) all of Seller's right, title and interest, if any, in all intangible assets relating to the Land, including, without limitation, all of Seller's right, title and interest (to the extent transferable), if any, (i) in all warranties, guaranties, licenses, permits, approvals, plans and specifications, drawings, engineering, environmental, inspection and other reports, and (ii) under any express or implied guaranties, warranties, indemnification and all other rights, if any, and to the extent available, which Seller may have against suppliers, laborers, materialmen, contractors or subcontractors arising out of or in connection with the installation, construction and maintenance of the improvements and fixtures on or about the Property, together with the original of all such guaranties, warranties and such similar instruments, and (f) all other rights owned by Seller and transferable appurtenant to the operation of the Land, which are not addressed above (all of the foregoing collectively being herein referred to as the "Property").

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained in this Agreement and of the benefits to be derived herefrom, receipt of which is severally acknowledged, Seller and Purchaser hereby agree as follows:

1. Offer and Acceptance. Purchaser offers and agrees to purchase the Property for the Purchase Price and upon the other terms and conditions set forth in this Agreement. Seller hereby accepts the offer of Purchaser. Such offer and acceptance are subject to and in accordance with the terms and conditions set forth below.

2. Purchase Price. The price for the purchase of the Property hereunder (the "Purchase Price") shall be [redacted] The Purchase Price shall be payable as follows:

(a) Within three (3) business days after the Effective Date, Purchaser shall deposit with Lighthouse Title, Inc., located at 4165 Prairie St. SW, Grandville, Michigan 49418

(the "Escrow Agent", and in its capacity as issuer of the Title Commitment defined below, the "Title Company"), the sum of Ten Thousand and 00/100 Dollars ($10,000.00) (as may be increased by any Extension Deposit pursuant to Section 6(b) below, the "Deposit") to be held by the Escrow Agent for application to the Purchase Price upon consummation of the transaction as set forth herein. In the event this Agreement is terminated prior to the expiration of the Due Diligence Period, then the Deposit shall be promptly returned to Purchaser (but in any event not later than three (3) business days after this Agreement is terminated). Subject to the balance of this subsection (a), in the event this Agreement is terminated after the expiration of the Due Diligence Period, or if after the expiration of the Due Diligence Period the transaction contemplated by this Agreement is not consummated at a Closing (as defined below), then the Deposit shall be promptly delivered to Seller; provided, however, that notwithstanding the foregoing or anything else in this Agreement to the contrary, if a Refund Event (as defined below) occurs at any time, then the Deposit shall be promptly returned to Purchaser within three (3) business days after the Escrow Agent is notified that a Refund Event has occurred. The term "Refund Event" means a termination of this Agreement that occurs in accordance with one of the following Sections of this Agreement: 3, 7, 12 or 13.

(b) On the date established pursuant to Section 15 (the "Closing Date") for delivery of the Deed (defined below) and disbursement of the proceeds of the sale due Seller (the "Closing"), Purchaser shall make payment to Seller of the Purchase Price, adjusted to reflect all prorations made pursuant to this Agreement and the allocation of closing costs pursuant to this Agreement and otherwise as provided in any other Section of this Agreement, less the Deposit (which shall be applied as a credit to the Purchase Price), in cash, by certified or cashier's check, or by wire transfer of immediately available funds.

3. Evidence of Title; Survey

(a) Seller shall, within fifteen (15) days after the Effective Date, furnish or cause to be furnished to Purchaser, a commitment dated subsequent to the date of this Agreement in the amount of the Purchase Price for the issuance of an ALTA fee owner's policy of title insurance without standard exceptions (subject to subsection (b) relative to any standard survey exception) and showing good and marketable title in the Property in the name of Purchaser (the "Title Commitment "). The Title Commitment shall be issued by the Title Company and shall be accompanied by legible copies of all the documents noted as exceptions to title. An ALTA owner's policy of title insurance ("Title Policy") (or a marked-up Title Commitment or proforma Title Policy, in each case signed and effective as of the date of the recording of the Deed) subject only to the Permitted Exceptions (as defined below) shall be delivered to Purchaser at Closing.

(b) Seller shall, within seven (7) days after the Effective Date, furnish or cause to be furnished to Purchaser any existing survey of the Property in Seller's possession. Within thirty-five (35) days after the Effective Date, Purchaser may, at Purchaser's sole cost and expense, obtain a current ALTA survey of the Property or an update of any survey provided by Seller (in either case, the "Updated Survey") certified to Purchaser and the Title Company. If Purchaser requires the removal of any standard survey exception from the owner's policy of title insurance, Purchaser must provide a satisfactory survey to the Title Company. If Purchaser does not obtain the Updated Survey within the thirty-five (35) day period, then Purchaser waives the right to obtain the same.

(c) Within ten (10) days after the later of (i) Purchaser's receipt of the Title Commitment and (ii) Purchaser's receipt of the Updated Survey (if at all), Purchaser shall notify Seller of any objection to the matters shown on the Title Commitment and/or the Updated Survey. Seller shall have five (5) days from the date it is notified in writing of the particular objections claimed either (i) to remove the defect or defects, (ii) to advise Purchaser that it will fully cure the defects prior to Closing to Purchaser's satisfaction (in which case Seller shall be obligated to fully cure such items prior to Closing to Purchaser's satisfaction), or (iii) to advise Purchaser that it is unable or unwilling to fully cure the defects. In the event Seller provides the notice described in subsection (iii) above or otherwise fails to respond within such 5-day period (which will be deemed to be provision of notice under subsection (iii) above), Purchaser shall elect either to (x) waive any objection(s) regarding any defects that the Seller is unwilling or unable to fully cure and proceed with the purchase of the Property as provided hereunder or (y) terminate this Agreement by written notice to Seller within five (5) days of Purchaser's receipt of Seller's notice ("Purchaser Response Date"), in which event Purchaser shall be entitled to a refund of the entire amount of the Deposit, and the parties shall have no further obligation to each other hereunder (other than the provisions of this Agreement that expressly survive termination of this Agreement). If Seller proceeds under subsection (iii) above, and Purchaser does not terminate this Agreement on or before the Purchaser Response Date, Purchaser shall be deemed to have elected to waive such objection(s) and Purchaser shall not be entitled to any refund of the Deposit solely as a result of Seller's failure to cure such objection(s). Notwithstanding the foregoing, Seller shall, in all circumstances, regardless as to whether Purchaser objects to them or has elected to proceed to Closing, be obligated, at Closing, to cause the Title Company to remove any mortgage, assignment of leases and rents, financing statement or the like, any mechanics lien, any unpaid taxes and assessments that have become due and payable or will become due and payable as of the Closing Date or any other lien or encumbrance that can be removed with the payment of money (collectively, the "Monetary Liens"). The provisions of the immediately foregoing sentence shall survive the Closing and/or delivery of the Deed. Exceptions to title shown in the Title Commitment or matters shown on the Updated Survey to which Purchaser has not objected as provided hereunder, or which Purchaser has waived, are herein called "Permitted Exceptions"; provided, however, that in no event shall any Monetary Liens be deemed Permitted Exceptions.

4. Possession. Possession of the Property shall be delivered to Purchaser on the Closing Date free and clear of all tenancies, occupancies and rights of possession.

5. Representations and Warranties.

A. Seller represents and warrants to Purchaser, as of the Effective Date and as of the Closing Date, as follows (as used in this Agreement, the phrase "to Seller's knowledge" or any similar phrase, means the knowledge of Seller and of any members or managers after reasonable due inquiry):

(a) *Authority*. Seller is a limited liability company duly organized, validly existing and in good standing under the Laws (as defined below) of the State of Michigan and has all necessary power to execute this Agreement and to consummate the transactions contemplated hereby without the joinder or consent of any other person or entity and this Agreement constitutes

the binding obligation of Seller. The below named signatories on behalf of Seller have the power to execute and deliver this Agreement on behalf of Seller and to bind Seller in accordance with the terms of this Agreement. No consent of any partner, shareholder, member, creditor or any other person or entity is required, which has not been obtained, to permit Seller to enter into this Agreement and consummate the transactions contemplated hereby.

(b) *Enforceable*. This Agreement is valid and enforceable against Seller in accordance with its terms and each instrument to be executed by Seller pursuant to this Agreement will, when executed and delivered, be enforceable against Seller in accordance with its terms. The execution and delivery of this Agreement by Seller, and the consummation of the transactions contemplated herein, does not conflict with or contravene the provisions of the organizational documents of Seller.

(c) *Title*. Seller has good and marketable fee simple title to the Property and there is no option to purchase, right of first refusal to purchase or agreement for the sale and purchase of all or any portion of the Property to any person or entity other than Purchaser.

(d) *Violation of Laws*. The Property is currently in material compliance with all Laws. The term "Laws" means laws, statutes, ordinances, building codes, rules, regulations, restrictions or the like, including, without limitation, (a) any environmental regulation, ordinance or law applicable to the Property or any portion thereof, (b) the Americans With Disabilities Act, 42 U.S.C. Section 12101 et seq. and the regulations promulgated thereunder, and (c) any other regulation, ordinance or law affecting the Property, including fire, health, building, use, occupancy or zoning law. Seller has not received written notice from any governmental authority of any violation of any Laws respecting the Property.

(e) *Environmental*. Seller has no knowledge of the presence of any hazardous waste or hazardous substance, as defined by any state or federal Law ("Hazardous Substance") in, on, or under the Property, and Seller has not used the Property for any disposal, storage, release, or handling of any Hazardous Substance. Seller has not received a summons, citation, notice, directive, letter or other communication, written or oral, from any federal or state governmental agency or instrumentality with jurisdiction over the Property concerning any intentional or unintentional action or omission by Seller resulting in the releasing, spilling, leaking, pumping, pouring, emitting, emptying, dumping or otherwise disposing of any Hazardous Substance into the environment. To Seller's knowledge, there are no storage tanks located in, on or under the Property.

(f) *No Encroachments*. Seller has no knowledge of (i) any encroachments of structures or improvements located on the Property onto adjoining property, or (ii) any encroachments of buildings, structures or improvements located on adjoining property onto the Property.

(g) *Tax*. To Seller's knowledge, there are no special assessments currently existing with respect to the Property. There are no pending property tax appeals in existence with respect to the Property.

(h) *Contracts*. As of the Effective Date, except as set forth on Exhibit B, there are no service, maintenance, supply or other contracts relating to the Property to which Seller is a party (the "Contracts"). Seller has not received any written notice that it is in default of any of its obligations under any of the Contracts.

(i) *No Foreign Person*. Seller is not a "foreign person" as defined in Section 1445(f)(3) of the IRC, and Seller will furnish to Purchaser, at Closing, an appropriate affidavit to this effect. The term "IRC" shall mean the United States Internal Revenue Code of 1986, as amended, and all regulations from time to time promulgated thereunder.

(j) *No Mechanics Liens*. No work has been performed or is in process or contemplated at the Property by or on behalf of Seller that is (or will be) unpaid as of the Closing, and no materials have been or are to be furnished to the Property on Seller's behalf which are (or will be) unpaid as of the Closing.

(l) *No Conflicts*. None of (i) the execution and delivery of this Agreement and documents referenced herein, (ii) the incurrence of the obligations set forth herein, (iii) the consummation of the transactions herein contemplated or referenced herein, conflicts with or results in the material breach of any terms, conditions or provisions of or constitutes a default under, any contract, bond, note, or other evidence of indebtedness or any contract, lease or other agreements or instruments to which Seller is a party or to which the Property is subject.

(m) *No Proceedings*. There is no pending or, to Seller's knowledge, threatened litigation, complaint, judgment, investigation, condemnation, eminent domain or administrative proceeding, or real estate tax protest, proceeding or assessment against or affecting Seller or all or any portion of the Property or the widening of any streets abutting the Property.

(n) *Bankruptcy*. Seller (i) has not made a general assignment for the benefit of creditors; (ii) has not filed any voluntary petition in bankruptcy or suffered the filing of an involuntary petition in bankruptcy by Seller's creditors; (iii) has not been adjudicated a bankrupt; (iv) is not seeking reorganization or an arrangement with creditors under the Federal bankruptcy Laws or any similar Law or statute of the United States or any jurisdiction; (v) is not in receivership or dissolution; (vi) has not suffered the attachment or other judicial seizure of all, or substantially all, of Seller's assets; or (vii) has not admitted in writing its inability to pay its debts as they come due; and to the best of Seller's knowledge, none of the foregoing statements in items (i) through (vii) above are pending or contemplated.

(o) *Leases*. There are no leases, possession agreements or other agreements relating to the leasing or occupancy of the Property or any portion thereof.

(p) *Utilities*. Seller has not received any written notice that any of the water, sewer, gas, electric, telephone, and drainage facilities or other utilities required by Law are not installed in material compliance with all requirements of Law.

(q) *No Known Material Adverse Conditions*. Seller has no actual knowledge of any material adverse conditions relating to the Property that have not been disclosed to Purchaser in writing.

(r) *No Prohibited Person*. Seller (i) is not a Prohibited Person (as defined below), and (ii) is in full compliance with all applicable orders, rules, regulations and recommendations of the Office of Foreign Assets Control of the U.S. Department of the Treasury. "Prohibited Person" shall mean any person (A) listed in the Annex to, or otherwise subject to the provisions of, Executive Order No. 13224 on Terrorist Financing, effective September 24, 2001, and relating to Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism (the "Executive Order"), (B) that is owned or controlled by, or acting for or on behalf of, any person or entity that is listed in the Annex to, or is otherwise subject to the provisions of, the Executive Order, (C) with whom Purchaser or any affiliate thereof is prohibited from dealing or otherwise engaging in any transaction by any terrorism or money laundering Law, including the Executive Order, (D) who commits, threatens or conspires to commit or supports "terrorism" as defined in the Executive Order and/or the USA Patriot Act (as defined below), (E) that is named as a "specially designated national and blocked person" on the most current list published by the U.S. Treasury Department Office of Foreign Assets Control at its official website ('http://outbind://41/www.ustreas.gov/offices/enforcement/ofac') or at any replacement website or other replacement official publication of such list, or (F) who is an affiliate of or affiliated with a person or entity listed above.

(s) *No Violation of Law By Virtue of Identity*. The execution and performance of this Agreement by Seller shall not violate any Law applicable to Seller by virtue of the identity of Seller, including any applicable provision of the USA Patriot Act. "USA Patriot Act" shall mean the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act, P.L. 107-56, 115 stat. 272 (2001).

(t) *USA Patriot Act*. None of Seller nor any holder of any direct or indirect equitable, legal or beneficial interest in Seller is the subject of any Law blocking or prohibiting transactions with such person, trust or entity, including the USA Patriot Act, and no portion of any distributions of cash or property hereunder to Seller will be used, disbursed or distributed by Seller or any such holder in violation of any Law, including the USA Patriot Act.

B. Purchaser represents and warrants to Seller, as of the Effective Date and as of the Closing Date, as follows:

(a) *Authority*. Purchaser is a limited liability company duly organized, validly existing and in good standing under the Laws of the State of Michigan and has all necessary company power to execute this Agreement and to consummate the transactions contemplated hereby without the joinder or consent of any other person or entity and this Agreement constitutes the binding obligation of Purchaser. The below named signatories on behalf of Purchaser have the power to execute and deliver this Agreement on behalf of Purchaser and to bind Purchaser in accordance with the terms of this Agreement.

(b) *Enforceability*. This Agreement is valid and enforceable against Purchaser in accordance with its terms and each instrument to be executed by Purchaser pursuant to this Agreement will, when executed and delivered, be enforceable in accordance with its terms.

(c) *No Conflicts*. None of (i) the execution and delivery of this Agreement and documents referenced herein, (ii) the incurrence of the obligations set forth herein, (iii) the consummation of the transactions herein contemplated or referenced herein, conflicts with or results in the material breach of any terms, conditions or provisions of or constitutes a default under, any contract, bond, note, or other evidence of indebtedness or any contract, lease or other agreements or instruments to which Purchaser is a party.

The foregoing representations and warranties in this Section 5 shall be continuing and shall be true and correct on and as of the Closing Date with the same force and effect as if made on that date. Subject to Section 13, Seller agrees to defend and indemnify the Purchaser against, and hold it harmless from, any and all claims, demands, liabilities, costs, expenses, penalties, damages and losses, including, but not limited to, reasonable attorneys' fees and disbursements, resulting from any default or breach of any representation and/or warranty made by Seller in this Section 5. Subject to Section 14, Purchaser agrees to defend and indemnify the Seller against, and hold it harmless from, any and all claims, demands, liabilities, costs, expenses, penalties, damages and losses, including, but not limited to, reasonable attorneys' fees and disbursements, resulting from any default or breach of any representation and/or warranty made by Purchaser in this Section 5. All of the representations and warranties in this Section 5 shall survive the Closing and/or delivery of the Deed for a period of two (2) years after the Closing Date.

6. Inspection and Investigation by Purchaser.

(a) Within seven (7) days following the Effective Date, Seller will provide Purchaser with copies of all of the materials described on Exhibit C attached hereto and made a part hereof (collectively, the "Seller's Materials") to the extent such Seller's Materials are in Seller's possession or reasonable control.

(b) Commencing on the day after the Effective Date, and continuing through the date which is one hundred twenty (120) days thereafter (such period is referred to herein as the "Initial Due Diligence Period"), Purchaser and its agents, members, managers, representatives, contractors and consultants shall have the right to inspect and investigate or cause to be inspected or investigated all aspects and conditions of the Property to determine the suitability of the Property for Purchaser's anticipated use, including without limitation, (i) entry on the Property to make and/or conduct such inspections, analyses, evaluations (including, without limitation, compliance evaluations), studies, surveys, appraisals, soil borings, environmental assessments, septic assessments, and other tests, and conduct such other due diligence of the Property as Purchaser may deem necessary or desirable, (ii) the making or taking of inquiries, applications or other actions to determine the feasibility of Purchaser's acquisition of the Property, including, without limitation, obtaining any governmental incentives, benefits entitlements, approvals and/or permits related to Purchaser's anticipated use of the Property, and (iii) all other investigations, inquiries and due diligence as Purchaser deems appropriate to determine whether the acquisition of the Property is acceptable to Purchaser and suitable for its anticipated use. Purchaser shall have the

right to extend the Initial Due Diligence Period for two (2) additional periods of thirty (30) days each (each such additional period is referred to herein as an "Extended Due Diligence Period") (the Initial Due Diligence Period, together with any applicable Extended Due Diligence Periods, are collectively referred to herein as the "Due Diligence Period"). Purchaser may exercise its extension rights as set forth in the immediately preceding sentence by providing written notice of such extension to Seller (A) prior to the expiration of the Initial Due Diligence Period in order to exercise the first Extended Due Diligence Period, or (B) prior to the expiration of the first Extended Due Diligence Period in order to exercise the second Extended Due Diligence Period. If the Purchaser exercises an Extended Due Diligence Period, then Purchaser shall place an additional deposit with the Escrow Agent in the amount of Five Thousand and No/100 Dollars ($5,000.00) (each an "Extension Deposit") within five (5) business days after the Purchaser exercised the Extended Due Diligence Period. Each Extension Deposit shall be added to and deemed to be included within the Deposit for purposes of this Agreement. All testing, inspections and investigations shall be conducted at Purchaser's sole cost and expense, and Purchaser shall use reasonable good faith efforts not to interfere unreasonably with Seller's use of the Property. Purchaser shall restore any physical damage to the Property caused by such tests, except to the extent such damage is caused by the acts or omissions of Seller or its agents, employees and contractors and except for any damage arising from the mere discovery by Purchaser, its agents, employees or contractors of hazardous materials, violations of Laws or other facts, conditions or matters respecting the Property. Notwithstanding the foregoing or anything to the contrary contained in this Agreement, Purchaser shall not be responsible or liable for the mere discovery by Purchaser, its agents, employees or contractors of hazardous materials, violations of Laws or other facts, conditions or matters respecting the Property.

(c) If Purchaser is not satisfied, in Purchaser's sole and absolute discretion, with the results of the inspections and tests or with the suitability of the Property for Purchaser's use, Purchaser may terminate this Agreement by written notice to Seller on or before to 11:59 pm Eastern Standard Time on the expiration date of the Due Diligence Period, in which case the entire amount of the Deposit shall be returned to Purchaser and the parties shall have no further obligation to each other hereunder other than those which expressly survive the termination of this Agreement (other than the provisions of this Agreement that expressly survive termination of this Agreement).

7. Conditions Precedent to Purchaser's Obligation to Close. The obligation of Purchaser to proceed to consummate the transaction contemplated by this Agreement shall be conditioned upon satisfaction of each of the following conditions precedent on or prior to the dates provided below. Each condition may be waived in whole or in part only by written notice of such waiver from Purchaser to Seller.

(a) At Closing, Seller shall convey good and marketable fee simple title to the Property to Purchaser, subject only to Permitted Exceptions, as evidenced by the Title Policy (or a marked-up Title Commitment or proforma Title Policy, in each case signed and effective as of the date of the recording of the Deed) in the amount of the Purchase Price, without standard exceptions (provided, that removal of the standard survey exception shall be conditioned upon Purchaser providing a satisfactory survey to the Title Company), insuring Purchaser with good and marketable title and showing Purchaser as owner of fee simple title to the Property, subject only to Permitted Exceptions.

(b) All of Seller's representations and warranties contained in this Agreement that are qualified as to materiality shall be true and correct and those not so qualified shall be true and correct in all material respects as of this date and as of the Closing Date, and Seller shall not on the Closing Date have failed to satisfy, observe or perform any condition or agreement on its part to be satisfied, observed or performed under the terms and conditions of this Agreement.

(c) There shall be no material adverse change in the condition of the Property on or prior to the Closing Date.

(d) At Closing, Seller shall deliver to Purchaser all of the instruments, documents and other items required to be delivered to Purchaser hereunder, including, without limitation, the documents listed in Section 9 below.

(e) No right of Purchaser to terminate this Agreement shall have occurred and be continuing.

(f) The terms, conditions and provisions of Section 3 shall have been satisfied.

(g) Purchaser shall be satisfied with all of its inspections and investigations respecting the Property as contemplated by Section 6(b) above.

Each party shall use commercially reasonable efforts to promptly commence and proceed diligently and in a commercially reasonable manner to attempt to satisfy each of the contingencies set forth above in this Section 7 which requires such party's performance or efforts to satisfy. The other party agrees to cooperate timely and fully in this endeavor. If one or more of the foregoing conditions above in this Section 7 is not satisfied, and Purchaser is not willing to waive the condition(s), then Purchaser may terminate this Agreement at any time on or before the Closing Date by delivering a written notice to Seller, in which event Purchaser shall be entitled to a refund of the entire amount of the Deposit, and neither Seller nor Purchaser shall have any further obligation to the other under this Agreement (other than the provisions of this Agreement that expressly survive termination of this Agreement).

8. Conditions Precedent to Seller's Obligation to Close. The obligation of Seller to proceed to consummate this transaction shall be conditioned upon satisfaction of each of the following conditions precedent on or prior to the dates provided below. Each condition may be waived in whole or in part only by written notice of such waiver from Seller to Purchaser.

(a) All of Purchaser's representations and warranties contained in this Agreement that are qualified as to materiality shall be true and correct and those not so qualified shall be true and correct in all material respects as of this date and as of the Closing Date, and Purchaser shall not on the Closing Date have failed to satisfy, observe or perform any condition or agreement on its part to be satisfied, observed or performed under the terms and conditions of this Agreement.

(b) At Closing, Purchaser shall deliver to Seller all of the instruments, documents and other items required to be delivered to Seller hereunder, including, without limitation, the documents listed in Section 10 below.

Each party shall use commercially reasonable efforts to promptly commence and proceed diligently and in a commercially reasonable manner to attempt to satisfy each of the contingencies set forth above in this Section 8 which requires such party's performance or efforts to satisfy. The other party agrees to cooperate timely and fully in this endeavor. If one or more of the foregoing conditions above in this Section 8 is not satisfied, and Seller is not willing to waive the condition(s), then Seller may terminate this Agreement at any time on or before the Closing Date by delivering a written notice to Purchaser, in which event Seller shall be entitled to have Escrow Agent deliver the entire amount of the Deposit to Seller, and neither Seller nor Purchaser shall have any further obligation to the other under this Agreement (other than the provisions of this Agreement that expressly survive termination of this Agreement).

9. Documents and Items to be Furnished by Seller on Closing Date. On the Closing Date, Seller shall deliver, or shall cause to be delivered, to Purchaser, at Seller's expense, the following documents and other items, each of which shall be in a form and substance satisfactory to Purchaser and its counsel:

(a) A general warranty deed to the Property in recordable form subject only to the Permitted Exceptions (the "Deed"). If the Land is unplatted, the Deed shall provide that Purchaser shall be entitled to all and/or 100% of the division rights whatsoever that Seller may have under the Land Division Act, Act No. 288 of the Public Acts of 1967, as amended, regarding the Property;

(b) An owner's affidavit executed by Seller in form required by the Title Company to remove standard exceptions from the Title Policy to be issued to Purchaser at Closing;

(c) One or more assignment and assumption agreements to Purchaser of (i) all right, title and interest in each Assigned Contract (if any), (ii) all right, title and interest, if any, in all intangible assets relating to the Property and (iii) all other rights owned by Seller and transferable appurtenant to the Property (collectively items (i) through (iii) are referred to herein as the "Assignment and Assumption Agreements");

(d) All books, records and other documents in the possession or control of Seller which relate to the ownership or operation of the Property, including, without limitation, any permits;

(e) A real estate transfer valuation affidavit executed by Seller in form prescribed by the Ottawa County Register of Deeds for determining the amount of transfer tax payable with respect to the conveyance of the Property to Purchaser hereunder;

(f) A closing statement that reflects payment of the Purchase Price and the applicable prorations and closing costs as provided herein (the "Closing Statement");

(g) An affidavit pursuant to Section 1445(b)(2) of the IRC, and on which Purchaser is entitled to rely, from Seller that it is not a "foreign person" within the meaning of Section 1445(f)(3) of the IRC;

(h) Any funds, documents or instruments that are required to remove any defects that Seller has agreed to remove pursuant to the provisions of Section 3, if any;

(i) A completed 1099-S request for taxpayer identification number and certification;

(j) Such good standing certificates, resolutions and other evidence of Seller's authority to consummate the transactions contemplated by this Agreement and other documents as may be reasonably requested by the Title Company, if any; and

(k) Such other customary documents and instruments as may be required by any other provision of this Agreement or as may reasonably be required to carry out the terms and intent of this Agreement.

10. Documents and Items to be Furnished by Purchaser on Closing Date. On the Closing Date, Purchaser shall deliver or shall cause to be delivered to Seller the following documents:

(a) A Closing Statement;

(b) The Assignment and Assumption Agreements;

(c) A copy of the Purchaser's executed property transfer affidavit;

(d) Such good standing certificates, resolutions and other evidence of Purchaser's authority to consummate the transactions contemplated by this Agreement and other documents as may be reasonably requested by the Title Company, if any; and

(e) Such other customary documents and instruments as may be required by any other provision of this Agreement or as may reasonably be required to carry out the terms and intent of this Agreement.

11. Obligations of Seller Prior to Closing. During the period commencing on the Effective Date and ending on the Closing Date (or the date on which this Agreement is terminated in accordance with its terms), Seller shall:

(a) Operate the Property in the same manner and maintain the Property in substantially the same condition as on the Effective Date.

(b) Pay all costs and expenses and discharge all liabilities, obligations and claims arising out of its ownership and/or operation of the Property.

(c) Except for any action taken by Purchaser in accordance with Section 6(b) above, not seek, suffer or permit any alteration, modification, amendment, termination and/or lapse of any zoning classification, permit or other instrument or document respecting all or any portion of the Property without Purchaser's prior written consent.

(d) Not enter into any contract, agreement, lease, use and occupancy arrangement, easement or other agreement, or amend any existing arrangements, easements or agreements, including without limitation any Contracts, with respect to all or any portion of the Property without Purchaser's prior written consent.

(e) Not create, grant or accept any option to purchase, right of first refusal, installment sale agreement or other agreement for the leasing or sale of all or any portion of the Property without Purchaser's prior written consent.

(f) Not create or suffer any right, claim, lien or encumbrance of any kind whatsoever on all or any portion of the Property which would bind Purchaser as Seller's successor.

(g) Maintain the Property in compliance with all Laws applicable thereto.

(h) Furnish to Purchaser within ten (10) days after receipt by Seller any and all notices of any proposed action under or violation of any Law affecting all or any portion of the Property.

(i) Furnish to Purchaser within two (2) days after receipt by Seller any and all notices under any Contracts.

(j) Prior to the Closing Date, terminate any Contracts that Purchaser elects not to assume.

(k) Pay when due all real estate and other taxes, insurance premiums and other charges applicable to all or any portion of the Property. If the transaction contemplated by this Agreement is consummated at a Closing and, thereafter, Purchaser receives a bill, invoice or similar item for any real estate and other taxes, insurance premiums or other charges applicable to all or any portion of the Property and which relate to periods during which Seller owned the Property, then, within ten (10) days after receiving notice thereof from Purchaser, Seller shall pay to Purchaser the amounts owing under such bill, invoice or similar item. The obligations of Seller under this Section 11(k) shall survive the Closing and/or delivery of the Deed.

(l) Keep in effect public liability and hazard and extended coverage insurance for the Property, which insurance may be in the form of a blanket policy or policies.

(m) Cooperate with Purchaser in obtaining all consents and/or approvals necessary or desirable to consummate or to facilitate consummation of the transactions contemplated by this Agreement, and all other approvals, permits and licenses that are necessary or useful to the Purchaser's anticipated use and operation of the Property. Such cooperation shall

include, without limitation, executing documents when requested by Purchaser so long as the form and substance of such documents are reasonably acceptable to Seller.

(n) Seller shall deliver to Purchaser, within ten (10) days after receipt by Seller, copies of any bills for real estate taxes and copies of any notices pertaining to real estate taxes or assessments applicable to the Property that are received by Seller after the date hereof, even if received after Closing. The obligations of Seller under this Section 11(n) shall survive the Closing and/or delivery of the Deed.

12. Loss by Condemnation or Casualty. Seller must promptly notify Purchaser of any impending or actual condemnation proceedings against the whole or any part of the Property for which Seller has actual notice or any fire or other casualty to the Property that occurs after the Effective Date up to the Closing Date. If any portion of the Property is threatened to be taken or is taken as a result of condemnation proceedings, or if any portion of the Property is substantially damaged as a result of casualty before the Closing, Purchaser is entitled to:

(a) Terminate this Agreement by a written notice to Seller within 10 days after receipt of notice of such proceedings or damage and neither party will have any further liability to the other under this Agreement other than the provisions of this Agreement that expressly survive termination of this Agreement and Seller will direct the Title Company to promptly return the Deposit to Purchaser; or

(b) Proceed to Closing as provided in this Agreement, agreeing to take the Property in its then-current condition, and Purchaser is entitled to receive all of the condemnation or insurance proceeds payable with respect to the Property only as a result of such condemnation or such damage, and Seller must assign those proceeds to Purchaser at Closing under an assignment that is reasonably acceptable to Purchaser.

13. Breach by Seller.

(a) In the event that Seller shall breach or default in the performance of any of its covenants, representations, warranties and/or obligations to be performed at or prior to the Closing, and Purchaser first actually discovers such breach or default prior to completion of Closing, and/or if Seller shall fail to consummate the transaction contemplated by this Agreement for any reason (except Purchaser's breach or default under this Agreement or a termination of this Agreement by Purchaser or Seller pursuant to a right to do so under the provision hereof), Purchaser, as Purchaser's sole and exclusive remedy, may either (i) terminate this Agreement by written notice to Seller and receive a return of the entire amount of the Deposit, together with reimbursement by Seller of the reasonable out-of-pocket expenses incurred by Purchaser with respect to this Agreement and the Property up to a maximum amount of One Hundred Thousand and 00/100 Dollars ($100,000.00), including, without limitation, attorneys' fees and costs, permit fees and other costs, fees and expenses incurred by Purchaser in connection with its due diligence, in which event neither Seller nor Purchaser shall have any further obligation to the other under this Agreement (other than the provisions of this Agreement that expressly survive termination of this Agreement), or (ii) seek specific performance of Seller's obligations under this Agreement.

(b) In the event that Seller shall breach or default in the performance of any of its covenants, representations, warranties and/or obligations which by the express terms of this Agreement survive the Closing, and Purchaser first actually discovers such breach or default after the Closing has occurred, Purchaser may, in addition to the other remedies expressly set forth in this Agreement, at law or in equity, pursue Seller for actual damages incurred by Purchaser solely as the result of such breach or default.

(c) Purchaser hereby agrees that prior to its exercise of any right or remedy as a result of any breach or default by Seller pre-Closing or post-Closing, Purchaser will first deliver written notice of said breach or default to Seller and give Seller five (5) days thereafter in which to cure said breach or default, if Seller so elects.

(d) In no event shall Purchaser be entitled to claim or receive an award of consequential, special, punitive, speculative, or exemplary damages. The provisions of this Section shall survive termination of this Agreement and the Closing and/or delivery of the Deed.

14. Breach by Purchaser.

(a) In the event that Purchaser shall breach or default in the performance of any of its covenants, representations, warranties and/or obligations to be performed at or prior to the Closing, and Seller first actually discovers such breach or default prior to completion of Closing, and/or if Purchaser shall fail to consummate the transaction contemplated by this Agreement for any reason (except Seller's breach or default under this Agreement or a termination of this Agreement by Purchaser or Seller pursuant to a right to do so under the provision hereof), then Seller, as Seller's sole and exclusive remedy, may terminate this Agreement by written notice to Purchaser, and receive reimbursement by Purchaser of the reasonable out-of-pocket expenses incurred by Seller with respect to this Agreement and the Property up to a maximum amount of Ninety-Five Thousand and 00/100 Dollars ($95,000.00), including, without limitation, attorneys' fees and costs, and other costs, fees and expenses incurred by Seller in connection with its negotiation of this Agreement, which event neither Seller nor Purchaser shall have any further obligation to the other under this Agreement (other than the provisions of this Agreement that expressly survive termination of this Agreement), and the entire amount of the Deposit shall be paid to Seller as full liquidated damages for such default by Purchaser, and not as a penalty, the parties hereto acknowledging that it is impossible to estimate more precisely the damages which might be suffered by Seller upon Purchaser's default.

(b) In the event that Purchaser shall breach or default in the performance of any of its covenants, representations, warranties and/or obligations which by the express terms of this Agreement survive the Closing, and Seller first actually discovers such breach after the Closing has occurred, Seller may, in addition to the other remedies expressly set forth in this Agreement, at law or in equity, pursue Purchaser for actual damages incurred by Seller solely as the result of such breach or default.

(c) Seller hereby agrees that prior to its exercise of any right or remedy as a result of any breach or default by Purchaser pre-Closing or post-Closing, Seller will first deliver

written notice of said breach or default to Purchaser and give Purchaser five (5) days thereafter in which to cure said breach or default, if Purchaser so elects.

(d) In no event shall Seller be entitled to claim or receive an award of consequential, special, punitive, speculative, or exemplary damages. The provisions of this Section shall survive termination of this Agreement and the Closing and/or delivery of the Deed.

15. Closing. Purchaser and Seller shall close this transaction no later than the date which is thirty (30) days after the date on which Due Diligence Period expires, but only if all of the conditions precedent have been satisfied or waived by Purchaser or Seller, as applicable. At the election of either party, the Closing may be accomplished through escrow of documents and funds with the Title Company insuring part or all of the purchase transaction contemplated by this Agreement. Within these limitations, the Closing will take place at the time and place and on the date as is mutually agreed upon by the Parties, and in the absence of such agreement, on the last day permitted for Closing at the offices of the Title Company.

16. Prorations.

(a) *Taxes*. Seller shall, on or before Closing, pay all real estate taxes that are a lien or due and payable or both as of the Closing Date. Real property taxes first becoming due and payable in the year of Closing shall be prorated as of the Closing Date using the calendar year method. Under the calendar-year method, any real property tax bill which first becomes due and payable during a calendar year is deemed to be related to that entire calendar year. Seller's share of any real property tax bills first becoming due and payable during the calendar year of Closing shall be determined by multiplying the aggregate amount of all such bills by a fraction, the numerator of which shall be the number of days from January 1 to, but not including, the Closing Date. Purchaser's share shall be the aggregate amount of all such bills less Seller's share. If the exact amount of any real property taxes is not known on the Closing Date, the proration shall be based on the last bill received, without subsequent adjustment, or if such information is available, the current millage rate and taxable value of the Property. Notwithstanding anything to the contrary contained herein, Seller shall at or before the Closing pay in full all special assessments which become due and payable or a lien or both against the Property on or prior to the Closing, regardless of whether such assessments are payable in installments or, if payable in installments, whether or not all such installments have become due and payable. Further, notwithstanding anything contained herein to the contrary, Seller shall be responsible for all documentary stamp taxes payable in connection with the sale of the Property from Seller to Purchaser.

(b) *Contracts*. Payment with respect to any Contracts that Purchaser elects to assume, if any, shall be prorated as of the Closing Date with Seller being responsible for all costs arising prior to the Closing Date, and Purchaser responsible for all costs arising on or after the Closing Date.

(c) *Closing Proration*. At least five (5) days prior to the Closing Date, Seller shall work with Purchaser in good faith to prepare a mutually acceptable joint statement of the prorations required by this Section 16 and, upon mutual agreement, shall deliver such proration statement to the Title Company for use in preparing the Closing Statement.

(d) *Survival*. The foregoing obligations of Seller and Purchaser pursuant to this Section 16 shall survive the Closing and/or delivery of the Deed.

17. Closing Costs. Purchaser shall pay (a) the cost of recording the Deed, (b) the cost of the Updated Survey, (c) the cost of any endorsements to the Title Policy (other than endorsements required to cure Monetary Liens and any title objections which Seller has agreed to cure in accordance with Section 3 above, both of which shall be paid by Seller), (d) Purchaser's share of prorations as determined in accordance with Section 16, and (e) any other costs or expenses required to be paid by Purchaser under this Agreement. Seller shall pay for (i) all documentary, intangible, transfer and other taxes with respect to the Deed, (ii) the title examination, the Title Commitment, and the premium for the owner's Title Policy to be issued to Purchaser at Closing, (iii) the cost of any endorsements required to cure Monetary Liens and any title objections which Seller has agreed to cure in accordance with Section 3 above, (iv) all recording costs other than the cost of recording the Deed, (v) Seller's share of the prorations as determined in accordance with Section 16, and (vi) any other costs or expenses required to be paid by Purchaser under this Agreement. Any escrow, closing or similar fees of the Title Company shall be split evenly between the parties.

18. Brokers. Except for Robert Tol of Tol Companies Incorporated ("Broker"), Purchaser and Seller each represent and warrant to the other that there has been no involvement of any broker in this transaction. At or prior to Closing, Seller shall pay any fees and/or commissions due to Broker in connection with the transaction contemplated by this Agreement. Each party shall indemnify and hold the other party harmless with respect to the claims of any other real estate broker who may have dealt with such party in connection with this transaction. The foregoing obligations of Seller and Purchaser pursuant to this Section 18 shall survive the Closing and/or delivery of the Deed.

19. Confidentiality. Seller and Purchaser agree to at all times while this Agreement is in effect maintain the confidentiality as to the existence of, and the terms and conditions of, this Agreement, except such disclosures to attorneys, accountants, consultants, lenders and others (including, without limitation, Purchaser's contractors and employees) as are reasonably required in order to consummate the transactions contemplated by this Agreement (provided that Seller or Purchaser who makes such disclosure to such persons or entities advises such persons or entities of the confidentiality requirements contained herein and directs such persons or entities to comply with the same), or otherwise comply with the requirements of any governmental authority or a court with competent jurisdiction. No press release or other media communication shall be issued relating to the transactions contemplated by this Agreement with the prior written approval of Purchaser and Seller.

20. Binding Effect; Assignment. This Agreement shall bind the parties and their respective successors and assigns. Neither party to this Agreement may assign all or any of its rights or obligations hereunder without the prior written consent of the other party, provided, however, that notwithstanding the foregoing, Purchaser may, without the consent of Seller, assign all or any part of its right, title and interest in and to this Agreement at any time and from time to time, to any trust(s), firm(s), partnership(s), limited liability company(ies), person(s), or any other

entity(ies) or corporation(s) controlled by, affiliated with, or to be formed by Purchaser or Purchaser's sole member.

21. Additional Documents. Each party agrees to execute and deliver all such further assignments, endorsements and other documents and take all such further action as either party hereto may reasonably request from time to time in order to effectuate the terms, purposes and intent of this Agreement. The parties hereto agree to cooperate, each with the other, in securing all consents and approvals necessary to effectuate the transactions contemplated by this Agreement. The foregoing obligations of Seller and Purchaser pursuant to this Section 21 shall survive the Closing and/or delivery of the Deed for a period of two (2) years after the Closing.

22. Costs. Whether or not the transactions contemplated by this Agreement are consummated, and except as otherwise expressly provided in this Agreement, each party shall bear its respective fees, costs and expenses incurred in connection with the preparation, negotiation, execution and performance of this Agreement (including, without limitation, legal, accounting and other professional fees).

23. Notices. Any notices, demands or requests required or permitted to be given hereunder must be in writing and shall be deemed to be given (i) when hand delivered, (ii) when sent by electronic mail ("e-mail") (provided, however, if any such notice, demand and/or request is sent via e-mail, then a hardcopy of the same shall be sent via overnight courier on the same day that the e-mail is sent), or (iii) one (1) business day after delivery to Federal Express, UPS or similar overnight service for next business day delivery. Any notice, demand and/or request which a party may or is required to give may be authored and/or given by that party's attorney with such notice, demand and/or request having the same force and effect as if given by the party itself. In all cases notices shall be addressed to the parties at their respective addresses as follows (unless changed by similar notice in writing given by the particular party whose address is to be changed):

If to Seller:	Chateau Village, LLC 547 Baldwin Dr. Jenison, Michigan 49428 Attn: Julie Boetsma Email: julie@koetjebuilders.com
with a required copy to:	durellaw PLC 644 Lovett Ave. SE, Ste. C Grand Rapids, Michigan 49506 Attn: Jonathan Durell e-mail: jmd@durellaw.com
If to Purchaser:	3 West, LLC 1460 Whitehall Rd. Muskegon, Michigan 49445 Attn: JJ Westgate Email: jjwestgate@wescoinc.com

with a required copy to:

Gielow Groom Terpstra & McEvoy, PLC
281 Seminole, 2nd Floor
Norton Shores, Michigan 49444
Attn: Nicolas Morano
e-mail: nicolas@ggtmlaw.com

24. Counterparts. This Agreement may be executed in one or more counterparts, and by different parties to this Agreement on separate counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same document. Copies of executed counterparts transmitted by facsimile, PDF or other electronic transmission service shall be considered original executed counterparts for purposes of this Section.

25. Attorney's Fees. Subject to the limitations in Sections 13(a) and 14(a), if either party hereto fails to perform any of its obligations under this Agreement or under any document, instrument or agreement delivered at Closing pursuant to the terms of this Agreement (a "Closing Document"), or if any dispute arises between the parties hereto or the parties to a Closing Document concerning the meaning or interpretation of any provision of this Agreement or such Closing Document, then the defaulting party or the party not prevailing in such dispute, as the case may be, shall pay any and all costs and expenses incurred by the other party on account of such default and/or in enforcing or establishing its rights hereunder or under such Closing Document, including, without limitation, court costs and reasonable attorneys' fees and disbursements. Any such attorneys' fees and other expenses incurred by any party in enforcing a judgment in its favor under this Agreement or under a Closing Document shall be recoverable separately from and in addition to any other amount included in such judgment, and such attorneys' fees and other expenses obligation is intended to be severable from the other provisions of this Agreement and such Closing Document, and to survive and not be merged into this Agreement, such Closing Document and/or any such judgment.

26. Third Parties. Nothing in this Agreement, express or implied, is intended to confer upon any person, other than the parties hereto and their respective successors and permitted assigns, any rights or remedies whatsoever.

27. Captions. Captions are inserted for convenience of reference only and shall not limit, affect or define the construction, interpretation and/or meaning of any provisions of this Agreement.

28. Time; Saturdays, Sundays and Holidays. Time is of the essence of each and every term, condition, obligations and provision of this Agreement. If the expiration of a time period provided hereunder shall fall on a Saturday, Sunday or on a day which banking institutions in Michigan are authorized by Law to close, then, such time period shall be deemed to expire on the next day which is not a Saturday, Sunday or a day on which banking institutions in Michigan are authorized by Law to close (any such days which are not such Saturdays, Sundays or days on which banking institutions in Michigan are authorized by Law to close may be referred to in this Agreement as "business days").

29. Waiver. Failure of either party to complain of any act or omission on the part of the other party, no matter how long the same may continue, shall not be deemed to be a waiver by such party to any of its rights hereunder. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions, whether or not similar, nor shall any waiver be a continuing waiver. No waiver shall be binding unless executed in writing to the party making the waiver. Each waiver or consent shall be effective only in the specific instance and for the purpose for which it was given, and shall not constitute a continuing waiver or consent. No course of dealing among the parties to this Agreement shall operate as a waiver of any right, power or remedy of either party. No single or partial exercise of any right, power or remedy under this Agreement by a party to this Agreement, nor any abandonment or discontinuance of steps to enforce any right, power or remedy, shall preclude the party from any other or further exercise of the right, power or remedy or the exercise of any other right, power or remedy under this Agreement. No notice to or demand on a party not expressly required under this Agreement shall entitle the party receiving the notice or demand to any other or further notice or demand in similar or other circumstances or constitute a waiver of the rights of the party giving the notice or demand to any other or further action in any circumstances without the notice or demand.

30. Severability. If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions of this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

31. Integration. This Agreement, including the Exhibits hereto (which are by this reference incorporated into this Agreement as fully set forth herein), constitutes the entire agreement and understanding between the parties hereto relating to the sale and purchase of the Property, and supersedes all prior or contemporaneous, written or oral negotiations, agreements, correspondence and understandings among the parties regarding the subject matter of this Agreement. The parties agree that any change in, addition to, or amendment or modification of the terms hereof shall be of no effect unless reduced to writing and executed by both Purchaser and Seller.

32. Construction. The parties have participated jointly in the negotiation and drafting of this Agreement. If any ambiguity or question of intent or interpretation arises, no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any of the provisions of this Agreement. Whenever the context of this Agreement reasonably requires, all words used in the singular shall be deemed to have been used in the plural, and the neuter gender shall be deemed to include the masculine and feminine gender, and vice versa.

33. Governing Law. This Agreement will be governed by and construed in accordance with the Laws of State of Michigan, excluding that body of Michigan Law concerning conflicts of Law.

34. No Shop. In consideration of the significant time and expense to be devoted by Purchaser to its potential acquisition of the Property, Seller agrees that, from the Effective Date and continuing through the Closing Date (or, if the Closing does not occur hereunder, through the date on which this Agreement terminates), Seller shall not, nor shall it cause or permit any other person or entity to, market or offer for sale all or any portion of the Property or any interests in Seller, or deal or negotiate with, or accept offers or back-up offers from, any persons, trusts and/or entities for the purchase of all or any portion of the Property or any interests in Seller.

IN WITNESS WHEREOF, Purchaser and Seller shall be deemed to have executed this Agreement on the Effective Date.

PURCHASER:

3 WEST, LLC,
a Michigan limited liability company

By:_____
Print Name: Gerald Z. Westgate
Its: Member

SELLER:

CHATEAU VILLAGE, LLC,
a Michigan limited liability company

By:_____
Print Name: Ivan Koetje
Its: Manager

IN WITNESS WHEREOF, Purchaser and Seller shall be deemed to have executed this Agreement on the Effective Date.

PURCHASER:

3 WEST, LLC,
a Michigan limited liability company

By:_____
Print Name: Gerald Z. Westgate
Its: Member

SELLER:

CHATEAU VILLAGE, LLC,
a Michigan limited liability company

By: Ivan Koetje
Print Name: Ivan Koetje
Its: Manager

Exhibit A

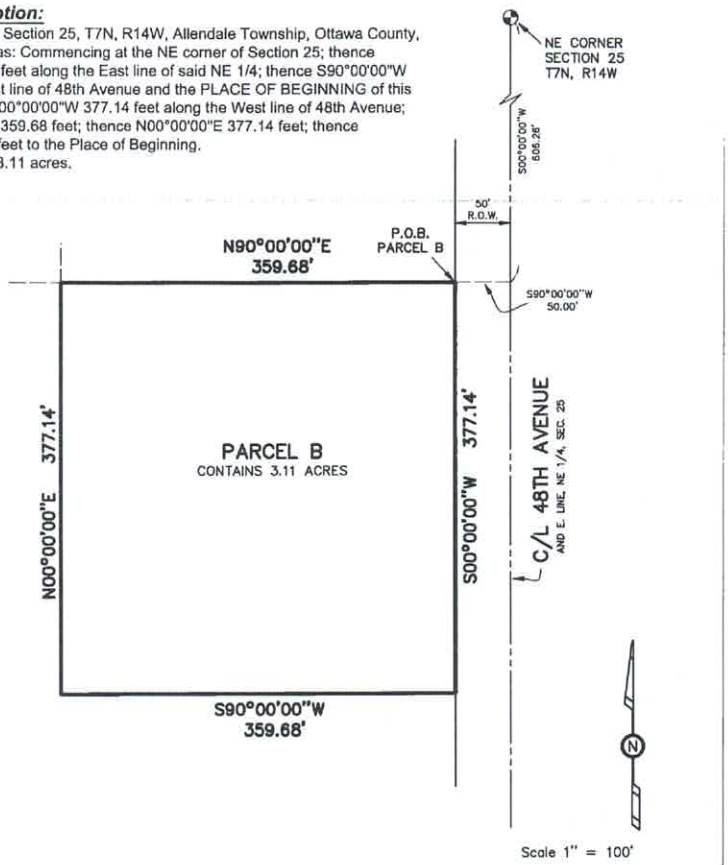
Depiction and Description of Land

SKETCH AND DESCRIPTION
FOR: Koetje Builders, Inc.
attn: Julie Boetsma
547 Baldwin Dr.
Jenison, MI 49428

RE: 48th Ave Parcels, Allendale
Parcel B

Property Description:

Part of the NE 1/4, Section 25, T7N, R14W, Allendale Township, Ottawa County, Michigan, described as: Commencing at the NE corner of Section 25; thence S00°00'00"W 606.26 feet along the East line of said NE 1/4; thence S90°00'00"W 50.00 feet to the West line of 48th Avenue and the PLACE OF BEGINNING of this description; thence S00°00'00"W 377.14 feet along the West line of 48th Avenue; thence S90°00'00"W 359.68 feet; thence N00°00'00"E 377.14 feet; thence N90°00'00"E 359.68 feet to the Place of Beginning.
This parcel contains 3.11 acres.



Notes:
1. The bearings shown hereon are based on description on the East line of the NE 1/4 of Section 25 as S00°00'W
2. This property has direct access to 48th Avenue which is a public right-of-way.

exxel engineering, inc.
planners · engineers · surveyors
5252 Clyde Park, S.W. • Grand Rapids, MI 49509
Phone: (616) 531-3660 www.exxelengineering.com

FILE NO.: S201331 DATE: 5/11/2020
P:\Projects\2020\201331\Drawings\201331.dwg-parcel B-bfay

Part of Parcel No.: 70-09-25-200-079
Part of address commonly known as: 11125 48th Avenue, Allendale, Michigan 49401

Exhibit B

List of Contracts

None.

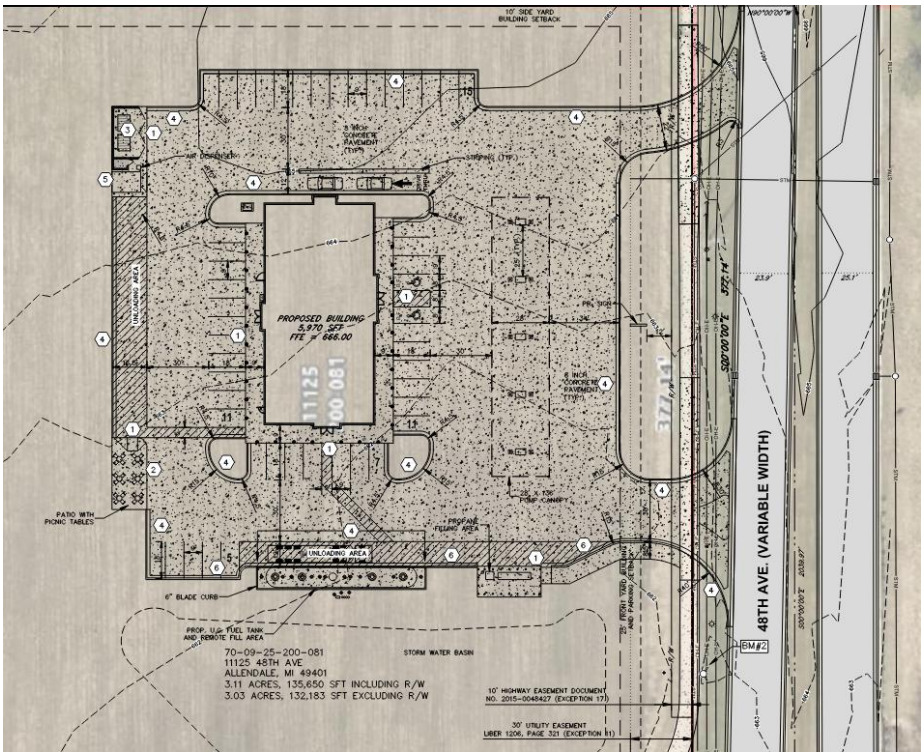
Exhibit C

Seller's Materials

All of the following items to the extent they are in the Seller's possession or reasonable control:

1. Most recent ALTA, boundary, and topographic surveys of the Property.
2. Seller's title insurance commitment (or owner's policy, if available) for the Property.
3. Most recent Phase I Environmental Site Assessment report (and Phase II Environmental Site Assessment report if applicable) for the Property if it (or they) exist.
4. Copies of all engineering reports, soil studies, drainage studies, other environmental assessments or reports, and wetland and floodplain studies.
5. Any information and/or documentation concerning any septic systems, fields and/or tanks located at the Property.
6. Any information and/or documentation concerning any wells located at the Property.
7. Any information and/or documentation concerning utility connections at the Property, including, without limitation, water and sewer connections.
8. Copies of restrictions, restrictive covenants, easement, ingress/egress and/or parking agreements (recorded or unrecorded), and entitlements relating to the Property.
9. Copies of all zoning, use, building and occupancy permits, development approvals, site plan approvals, zoning approvals, master plan information, and all other governmental licenses, permits and approvals.
10. Copies of all contracts and agreements relating to the property, if any.
11. List of all of recurring services that are not contracted for (include vendor, cost and frequency).
12. Any notices from a governmental authority or other third party claiming that the Property is not in compliance with all applicable laws, contracts or documents of records, including, without limitation, notices of violations of zoning, building, health or environmental laws, rules or regulations, if any.
13. Lien waivers on all activities relating to any construction, renovation or similar work completed at the Property.
14. Other items as reasonably requested by Purchaser after review of the aforementioned items.

PROGRESSIVE COMPANIES



TRAFFIC IMPACT STUDY
ALLENDALE WESCO
GRAND RAPIDS, MICHIGAN

Prepared for:

Matthew Cole, PE
Roosien & Associates, PLLC
5055 Plainfield Avenue
Grand Rapids, MI 49525

Prepared by:

Progressive Companies
1811 4 Mile Road NE
Grand Rapids, MI 49525

April 2026
Project No. 86530001

Allendale Wesco – Traffic Impact Study

TABLE OF CONTENTS-

EXECUTIVE SUMMARY **1**
INTRODUCTION **1**
Background Traffic Volumes 1
Trip Generation 1
Conclusions 2
Recommendations 3
INTRODUCTION **4**
EXISTING CONDITIONS **6**
Key Study Area Roadways 6
Data Collection 6
Existing Conditions Capacity Analysis 6
Crash Analysis 7
FUTURE (2027) CONDITIONS **9**
Proposed Development and Site Access 9
Background Traffic Volumes 9
Trip Generation 9
Future (2027) Capacity Analysis 10
CONCLUSIONS AND RECOMMENDATION **16**
Conclusions 16
Recommendations 17

LIST OF FIGURES AND TABLES

FIGURES

Figure 1. Study Area 4
Figure 2. Existing Peak Hour Volumes and Levels of Service 8
Figure 3. Preliminary Site Plan 9
Figure 4. North Driveway Right Turn Lane Warrant 11
Figure 5. South Driveway Right Turn Lane Warrant 12
Figure 6. U-Turn Prevention Concepts 12
Figure 7. Future (2027) Trip Distribution and Traffic Assignment 14
Figure 6. Future (2027) Peak Hour Volumes and Levels of Service 15

TABLES

Table 1. Existing Levels of Service and Delay 6
Table 2. Trip Generation 10
Table 3. Future (2027) Levels of Service and Delay 10

EXECUTIVE SUMMARY

INTRODUCTION

Wesco is working to construct a new gas station on an existing vacant parcel on the west side of 48th Avenue, south of Lake Michigan Drive (M-45), in Allendale, Michigan. The development will consist of 10 gas pumping stations and a 5,970-square-foot convenience store with one drive-through window for customers to order coffee, snacks or pre-made sandwiches from the convenience store. Access to the development will be via two new driveways on 48th Avenue, one one-way (enter only) and one right-in and right-out driveway.

The purpose of this Traffic Impact Study is to analyze the potential impacts of the new development and identify what physical and/or operational roadway system improvements may be necessary to mitigate existing or anticipated background issues and/or impacts created by this development's traffic.

Pre-study coordination was completed with Allendale Township and Ottawa County Road Commission (OCRC) staff to help identify the required study area, study parameters and any specific areas of concern. The following chapters outline the results of analyses completed during the study process.

Study Area

The study area includes the southbound to northbound crossover on 48th Avenue, south of Lake Michigan Drive (M-45) and the two site driveways on southbound 48th Avenue.

Data Collection

Morning (7:00 a.m. – 9:00 a.m.) and evening (4:00 p.m. – 6:00 p.m.) peak hour turning movement counts at the study area intersection were collected in March 2026 on a typical weekday. In addition, a 24-hour traffic count was done near the proposed driveway on the southbound 48th Avenue. These counts indicate that the typical weekday morning peak hour generally occurs between 7:15 a.m. and 8:15 a.m. and the typical afternoon peak hour occurs between 5:00 p.m. and 6:00 p.m.

Analysis

Two analysis scenarios were completed for the weekday morning and afternoon peak hours as part of the study, as follows:

- Existing Conditions
- Future (2029) Conditions

Background Traffic Volumes

An annual traffic growth rate was used to estimate growth on the study area roadways. An annual growth rate of one percent was applied to the existing peak hour volumes to help determine the background (2027) peak hour volumes. To our knowledge, no other developments are planned near the study area that could influence 2027 traffic patterns. A separate analysis of the background traffic conditions was not completed as part of this study, as the results would be largely the same as existing conditions, with only slightly more delay due to the minor increase in traffic volumes.

Trip Generation

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* was used to calculate the anticipated traffic that may be generated by the proposed development. Trips are measured individually for inbound and outbound movements; therefore, a visit to the site by a customer, for instance, generates two trips – one inbound and one outbound. Based on the land use descriptions provided within the ITE *Trip Generation Manual*, the most applicable land uses for the proposed site is Convenience Store/Gas Station (GFA 5.5-10K) (Land Use Code 945) and Coffee/Donut Shop with Drive-Through Window and no Indoor Seating (Land Use Code 938).

Trip generation for the stie was calculated for the typical weekday morning and afternoon peak hours based on the site plan provided by the site Owner as well as the methodology defined in the ITE *Trip Generation Manual*.

The development is expected to generate approximately 60 new weekday morning peak hour vehicle trips (30 inbound, 30 outbound) and approximately 52 new weekday afternoon peak-hour vehicle trips (26 inbound, 26 outbound) onto the street system. In addition, it is expected to generate approximately 212 pass-by weekday morning peak hour vehicle trips (106 inbound, 106 outbound) and approximately 174 pass-by weekday afternoon peak hour vehicle trips (87 inbound, 87 outbound) onto the street system.

Conclusions
Based on the analyses performed as part of this study, the proposed development will have minimal impact to the surrounding roadway network. The findings of this study are as follows:

Existing Conditions
Based on the existing conditions analysis, the southbound left turn movement currently operates at a LOS "B" for both peak periods. Additionally, 95th percentile queues are shown to be within the storage space available for both peak periods.

Crash Analysis
Crash information for the most recent five years available (2020–2024) was reviewed, based on information available on the *Michigan Traffic Crash Facts* website. The crash analysis was completed at midblock near the proposed driveways and at the southbound 48th Avenue crossover.

There was a total of three crashes at the 48th Avenue south crossover in the last five years. All the observed crashes resulted in no injury. Single motor vehicle crashes were the most common crash type at this intersection (two crashes), followed by rear-end crashes (one crash). There were no crashes involving pedestrians or cyclists and there does not appear to be a crash pattern at the study area intersection.

Future (2027) Conditions
The future (2027) conditions analysis showed that all intersections in the study area are anticipated to have a slight increase in delay, and still operate at a level of service (LOS) "B" or better during the morning and afternoon peak hours. Queues are also expected to remain acceptable.

Turn Lane Warrant Analysis
A Michigan Department of Transportation (MDOT) right-turn lane warrant analysis was conducted for both proposed site driveways and found that a taper is recommended for both morning and afternoon peak hours at both the proposed north and south driveways.

Northbound left turn / U-turn Prevention
Due to the site driveways proximity to the end of the center median on 48th Avenue, there is potential for northbound traffic to be tempted to make a U-turn at the end of the center median to be able to access the proposed gas station. Due to the existing gas station and convenience store less than 900 feet to the north of this location, U-turns are not anticipated to be a major concern, however, installing a R3-4 "NO U-TURN" sign at the end of the center median, and potentially installing flexible delineators on the northbound side of the center lane for 50 feet could help discourage U-turn movements further.

Internal Site Circulation
Wesco provided sales data from a similar Wesco location with a drive through for the prior six months, and it was found that this drive through window experiences an average peak hour of 19 customers, with a 95th percentile of 28 customers per hour. This data can be found in the appendix. While average transaction time is unknown, previous studies conducted by Progressive Companies have found that typical coffee shop drive-throughs have a service time of about 60 seconds. To remain conservative on the queue estimate, a service time of 72 seconds was used to project anticipated queues at this location (a 20 percent increase compared to a typical coffee shop). Using an M/M/1 queue model with an average of 19 customers per hour and a service time of 72 seconds, the average queue was found to be 0.2 vehicle lengths. With the 95th percentile of 28 customers per hour and 72 second service time, average queues were found to be 0.7 vehicle lengths.

Recommendations

Based on the analysis of the study area intersections and proposed site driveways, right-turn tapers should be constructed for each proposed site driveway on southbound 48th Avenue.

CHAPTER 1

INTRODUCTION

Wesco is working to construct a new gas station on an existing vacant parcel on the west side of 48th Avenue, south of Lake Michigan Drive (M-45), in Allendale, Michigan. The development will consist of 10 gas pumping stations and a 5,970-square-foot convenience store with one drive-through window for customers to order coffee, snacks, or pre-made sandwiches from the convenience store. Access to the development will be via two new driveways on 48th Avenue, one one-way (enter only) and one right-in and right-out driveway.

The purpose of this Traffic Impact Study is to analyze the potential impacts of the new development and identify what physical and/or operational roadway system improvements may be necessary to mitigate existing or anticipated background issues and/or impacts created by this development's traffic.

Pre-study coordination was completed with Allendale Township and OCRC staff to help identify the required study area, study parameters and any specific areas of concern. The following chapters outline the results of analyses completed during the study process. Tasks undertaken to complete the analyses include:

1. **Data Collection**
   Morning and afternoon peak-hour turning movement counts were completed on southbound 48th Avenue near the proposed site and the southbound crossover south of the proposed site in March 2026. Information regarding lane configurations, speed limits, traffic controls and other related data for the study area roadways was also collected.

Figure 1: Study Area

2. **Background Growth**
   An annual background traffic growth rate of one percent was applied to the existing volumes to help reflect anticipated non-development traffic increases by the 2027 horizon year. This background growth rate was provided by the township staff.

3. **Trip Generation/Distribution**
   The number of trips the proposed development is expected to generate during peak hours was identified. These trips were then assigned to the adjacent street system based upon the patterns followed by existing traffic and engineering judgment.

4. **Levels of Service**
   Capacity calculations were completed at the study area intersections to identify existing and anticipated future peak-hour operational characteristics.

5. **Mitigation**
   Roadway/intersection improvements were identified, when applicable, that will enable the adjacent roadways and study area intersections to maintain equal and/or acceptable levels of operation under future conditions, upon the addition of background traffic growth and/or due to the development's traffic.

The following chapters outline the results of analyses completed during the study process.

CHAPTER 2

EXISTING CONDITIONS

The first step in identifying potential traffic impacts is to determine how well the adjacent streets are operating under current conditions. The study area includes one crossover at the southbound 48th Avenue. This chapter summarizes the data collection and analysis procedures for existing operating conditions.

Northbound 48th Avenue

Key Study Area Roadways

48th Avenue

48th Avenue is a north-south arterial road within the study area managed by the Ottawa County Road Commission. It features a divided four-lane cross-section, with two travel lanes in each direction, a raised median, and a speed limit of 45 mph in the study area. Weekday 24-hour traffic volumes along 48th Avenue average approximately 11,000 vehicles per day.

Data Collection

Morning (7:00 a.m. – 9:00 a.m.) and evening (4:00 p.m. – 6:00 p.m.) peak hour turning movement counts at the study area intersection were collected in March 2026 on a typical weekday. In addition, a 24-hour traffic count was done near the proposed driveway location on the southbound 48th Avenue. These counts indicate that the typical weekday morning peak hour generally occurs between 7:15 a.m. and 8:15 a.m. and the typical afternoon peak hour occurs between 5:00 p.m. and 6:00 p.m.

Existing Conditions Capacity Analysis

Intersection LOS calculations were completed to evaluate the current operational efficiency of the study area intersections. These calculations were completed using techniques outlined in the *Highway Capacity Manual*, published by the Transportation Research Board. Per MDOT requirements, *Synchro*® traffic analysis software, Version 12, based on the *Highway Capacity Manual* methodologies, was used in the analysis.

Levels of service at signalized and unsignalized intersections relate to the delay, traffic volumes, and intersection geometry. Levels of service are expressed in a range from “A” to “F”, with “A” denoting the highest or best operating conditions. Generally, a LOS “D” rating is considered the minimum acceptable service level for signalized and unsignalized intersections in most areas, although a LOS “E” or LOS “F” can be deemed as acceptable during the peak hours. The criteria for determining the LOS at signalized and unsignalized intersections are outlined in the Appendix of this report.

The existing morning and afternoon peak hours were analyzed at the study area intersection Table 1 shows the overall levels of service, while Figure 2 shows the levels of service for all movements at the study area intersection. Copies of the *Synchro*® analyses are included in the Appendix.

Table 1. Existing Levels of Service and Delay

Intersection	Existing Conditions					
	A.M.			P.M.		
	LOS	Delay(s)	95% Queue (ft)	LOS	Delay(s)	95% Queue (ft)
48th Avenue – SB Crossover[1]	B	10.4	39	B	11.8	42

[1]Unsignalized intersection, critical/worst approach/movement shown

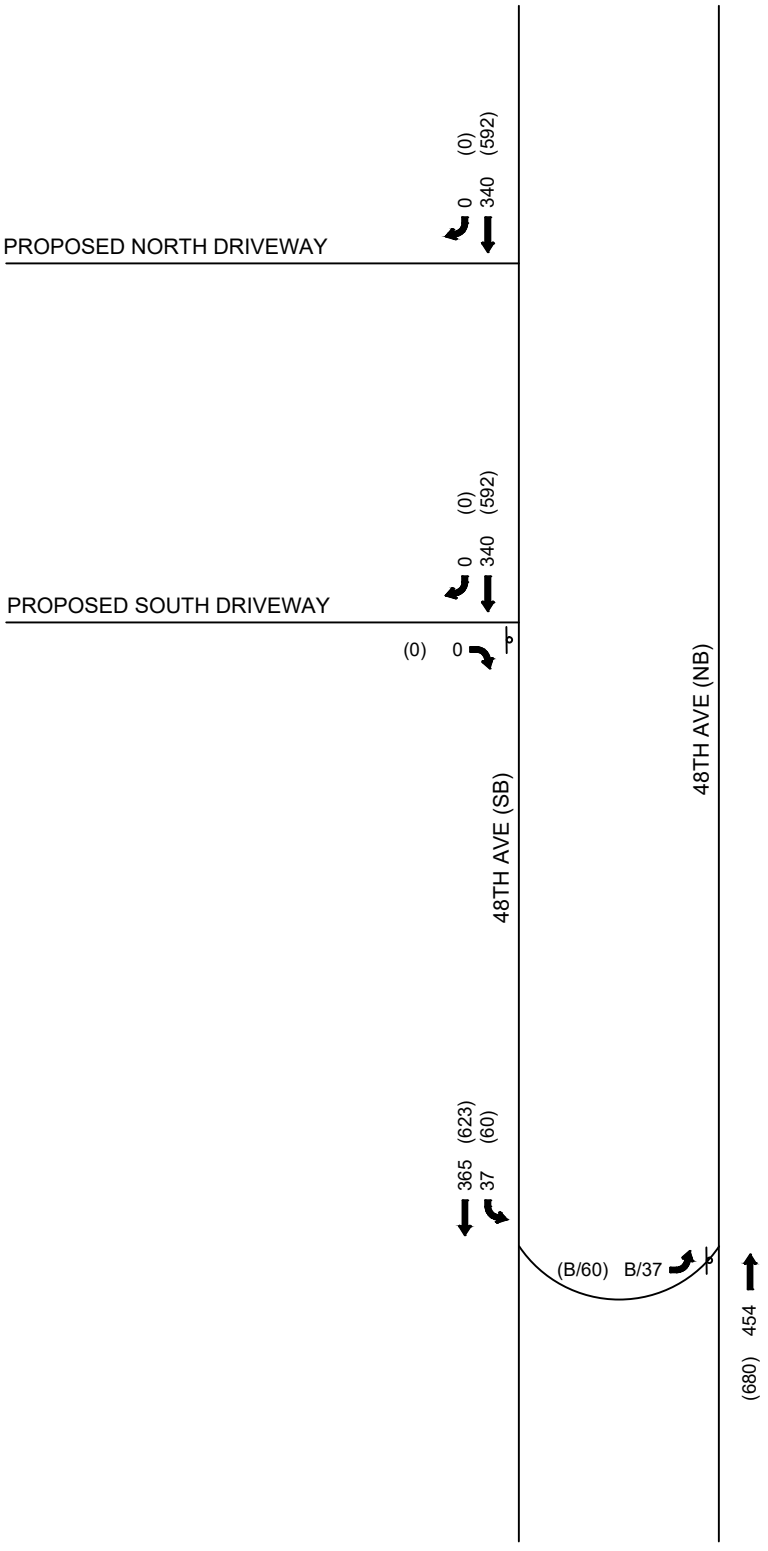
Source: Progressive Companies, April 2026

Based on the existing conditions analysis, the southbound left turn movement currently operates at a LOS "B" for both peak periods. Additionally, 95th percentile queues are shown to be within the available storage space available for both peak periods.

Crash Analysis

Crash information for the most recent five years available (2020–2024) was reviewed, based on information available on the *Michigan Traffic Crash Facts* website. The crash analysis was completed at midblock near the proposed driveways and at the southbound 48th Avenue crossover.

There was a total of three crashes at the 48th Avenue south crossover in the last five years. All the observed crashes resulted in no injury. Single motor vehicle crashes were the most common crash type at this intersection (two crashes), followed by rear-end crashes (one crash). There were no crashes involving pedestrians or cyclists, and there does not appear to be a crash pattern at the study area intersection.



ALLENDALE WESCO TIS

LEGEND

XX (XX) = AM (PM)
A = LEVEL-OF-SERVICE
(S) = SIGNALIZED INTERSECTION
= STOP-CONTROLLED

EXISTING PEAK-HOUR VOLUMES
+ LEVELS-OF-SERVICE

N
No Scale

FIGURE
2

CHAPTER 3
FUTURE (2027) CONDITIONS

The purpose of this chapter is to summarize the anticipated future (2027) traffic conditions within the study area with background traffic growth and the proposed development's traffic in place. This analysis will provide the before/after comparison of future conditions and help define the timing and applicability of any potential roadway improvements necessary to mitigate the impact of the proposed development.

Proposed Development and Site Access

Wesco is working to construct a new gas station on an existing vacant parcel, located on the west side of 48th Avenue, south of Lake Michigan Drive (M-45), as shown in Figure 3. Access to the development will be via two new driveways to southbound 48th Avenue.

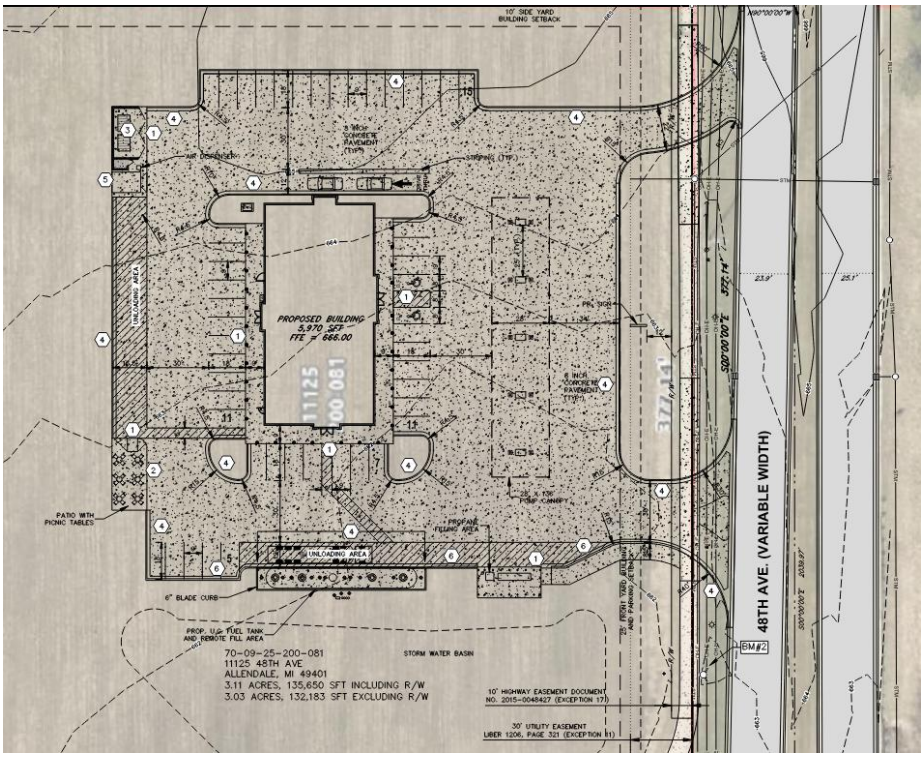


Figure 3. Preliminary Site Plan

Background Traffic Volumes

An annual growth rate of one percent was applied to the existing peak hour volumes to help determine the background (2027) peak hour volumes. To our knowledge, no other developments are planned near the study area that could influence 2027 traffic patterns. A separate analysis of the background traffic conditions was not completed as part of this study, as the results would be largely the same as existing conditions, with only slightly more delay due to the minor increase in traffic volumes.

Trip Generation

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* was used to calculate the anticipated traffic that may be generated by the proposed development. Trips are measured individually for inbound and outbound movements; therefore, a visit to the site by a customer, for instance, generates two trips – one inbound and one outbound. Based on the land use descriptions provided within the ITE *Trip Generation Manual*, the most applicable land uses for the proposed site is Convenience Store/Gas Station (GFA 5.5-10K) (Land Use Code 945) and Coffee/Donut Shop with Drive-Through Window and no Indoor Seating (Land Use Code 938).

Trip generation for the stie was calculated for the typical weekday morning and afternoon peak hours based on the site plan provided by the site owner as well as the methodology defined in the ITE *Trip Generation Manual and* is shown in table 2.

Table 2. Trip Generation

Land Use	ITE Code	Size	A.M.			P.M.		
			Total	Enter	Exit	Total	Enter	Exit
Convenience Store/Gas Station (5.5-10K)	945	10 Pumps	232	116	116	211	105	106
Coffee/Donut Shop with Drive-Through Window and no Indoor Seating	938	1 Drive Through Lanes	40	20	20	15	8	7
Subtotal			**272**	**136**	**136**	**226**	**113**	**113**
Less pass-by trips			**212**	**106**	**106**	**174**	**87**	**87**
Total new trips			**60**	**30**	**30**	**52**	**26**	**26**

Source: ITE Trip Generation Manual, 12th Edition

The development is expected to generate approximately 60 new weekday morning peak hour vehicle trips (30 inbound, 30 outbound) and approximately 52 new weekday afternoon peak-hour vehicle trips (26 inbound, 26 outbound) onto the street system. In addition, it is expected to generate approximately 212 pass-by weekday morning peak hour vehicle trips (106 inbound, 106 outbound) and approximately 174 pass-by weekday afternoon peak hour vehicle trips (87 inbound, 87 outbound) onto the street system.

Trip Distribution

The directional distribution of the site-generated new trips was based upon existing travel patterns and engineering judgment. Since the development will not have access from northbound traffic, and there is a similar gas station and convenience store on the northbound side of 48th Avenue approximately 900 feet north of the proposed site that would better serve northbound traffic, 100 percent of the site trips are assumed to be from southbound 48th Avenue.

The anticipated site trips were added to the background (2027) peak hour volumes to depict the estimated total future (2027) volumes during the morning and afternoon peak hours. Figure 4 and 5 show the total anticipated future (2027) new generated trips and total future (2027) volumes, respectively.

Future (2027) Capacity Analysis

Intersection level of service calculations were completed to evaluate the future (2027) morning and afternoon peak hour conditions at the site access driveways and the 48th Avenue-Southbound crossover, assuming the completion of the proposed development. Table 3 shows the levels of service at the study area intersections. Copies of the *Synchro*® analyses are included in the Appendix.

Table 3. Future (2027) Levels of Service and Delay

Intersection	Future (2027) Conditions					
	A.M.			P.M.		
	LOS	Delay(s)	95% Queue (ft)	LOS	Delay(s)	95% Queue (ft)
48th Avenue – SB Crossover[1]	B	10.8	39	B	12.3	44
48th Avenue & Site Driveway	B	10.2	58	B	11.4	58

[1]Unsignalized intersection, critical/worst approach/movement shown

Source: Progressive Companies, April 2026

The future (2027) conditions analysis showed that all intersections in the study area are anticipated to have a slight increase in delay but still operate at a LOS “B” or better during the morning and afternoon peak hours. 95th percentile queue lengths are also anticipated to remain acceptable.

Turn Lane Warrant Analysis

An MDOT right-turn lane warrant analysis was conducted for both proposed site driveways and found that a right-turn taper is recommended on southbound 48th Avenue for both morning and afternoon peak hours at both the proposed north and south driveways. Figures 4 and 5 show the right-turn lane warrant at the proposed north and south driveways, respectively.

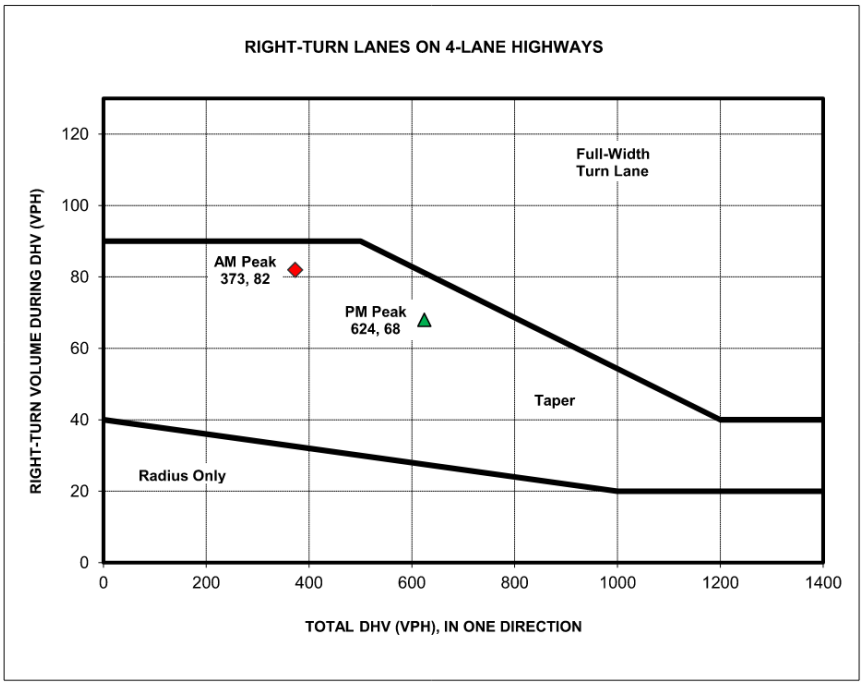


Figure 4: North Driveway Right Turn Lane Warrant

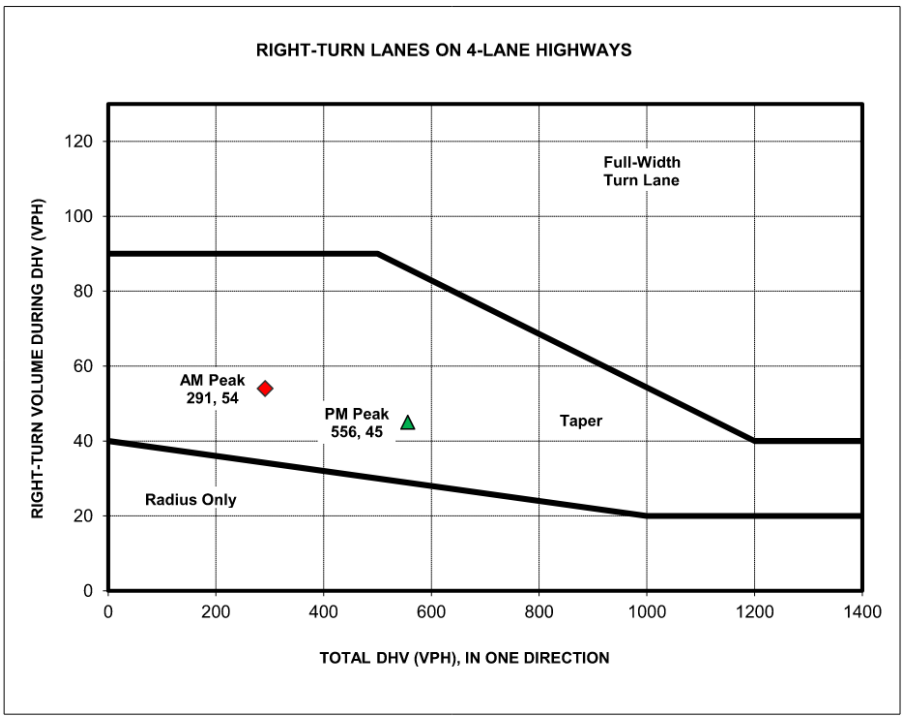


Figure 5: South Driveway Right Turn Lane Warrant

Northbound left turn / U-turn Prevention

Due to the site driveways proximity to the end of the center median on 48th Avenue, there is potential for northbound traffic to be tempted to make a U-turn at the end of the center median to be able to access the proposed gas station. Due to the existing gas station and convenience store less than 900 feet to the north of this location, U-turns are not anticipated to be a major concern, however, installing a R3-4 “NO U-TURN” sign at the end of the center median, and potentially installing flexible delineators on the northbound side of the center lane for 50 feet would help discourage U-turn movements further. Figure 6 shows a concept of these implementations.

Figure 6: U-Turn Prevention Concepts

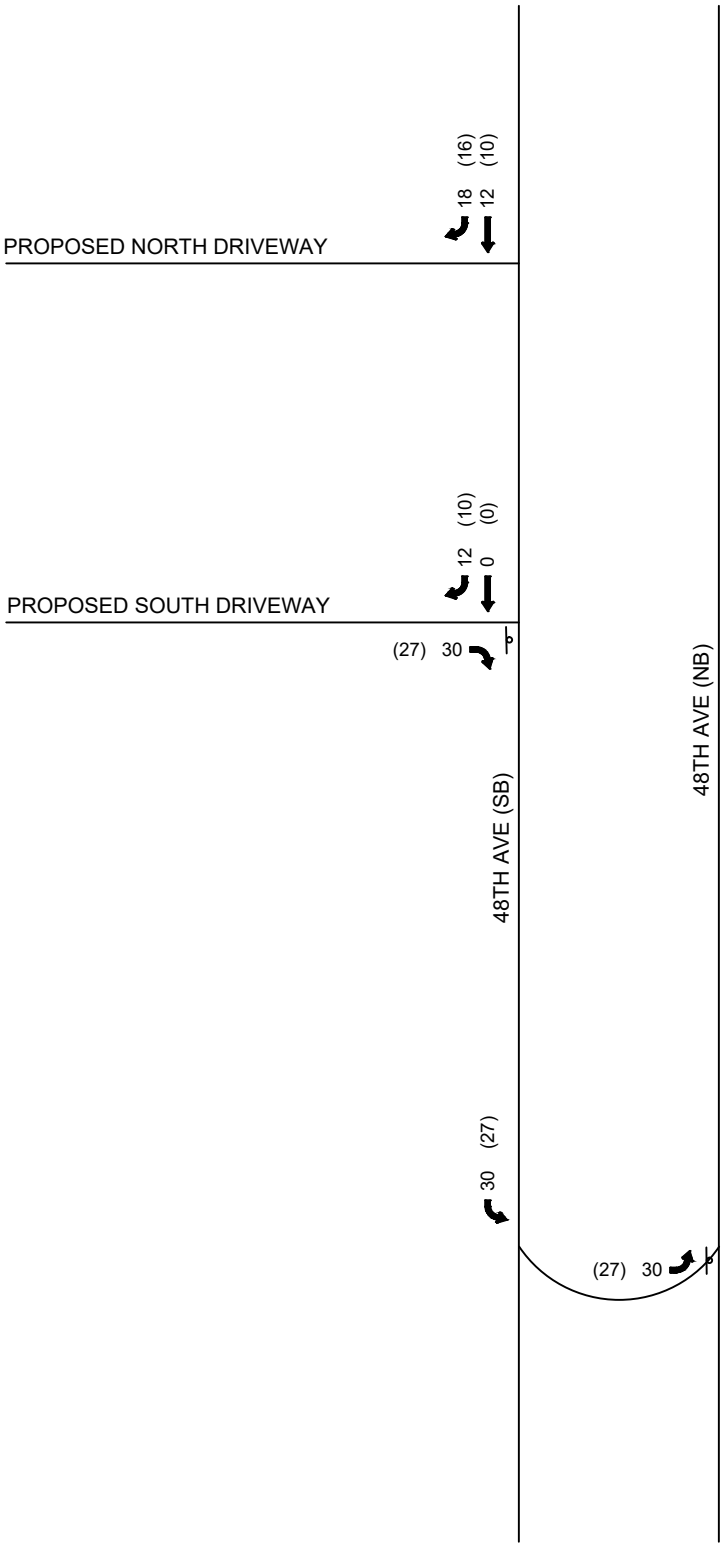
Internal Site Circulation

Due to the drive through window located on the north side of the proposed building, internal site circulation was evaluated to ensure that internal traffic will not be blocked by queues, that could then block incoming traffic from 48th Avenue.

The current site plan has a drive-through window located on the north side of the building, with queue space for a maximum of three vehicles before extending into more general gas station space around the proposed gas pumps. The drive-through window is approximately 200' from 48th Avenue, providing a worst-case scenario storage length of 10 vehicles before extending into the public road.

Wesco provided sales data from a similar Wesco location with a drive through for the prior six months, and it was found that this drive through window experiences an average peak hour of 19 customers, with a 95th percentile of 28 customers per hour. This data can be found in the appendix. While average transaction time is unknown, previous studies conducted by Progressive Companies have found that typical coffee shop drive-throughs have a service time of about 60 seconds. To remain conservative on the queue estimate, a service time of 72 seconds was used to project anticipated queues at this location (a 20 percent increase compared to a typical coffee shop). Using an M/M/1 queue model with an average of 19 customers per hour and a service time of 72 seconds, the average queue was found to be 0.2 vehicle lengths. With the 95th percentile of 28 customers per hour and 72 second service time, average queues were found to be 0.7 vehicle lengths.

With these queue calculations, the proposed drive-through is not anticipated to cause any internal circulation issues. The 95th percentile drive-through demand is anticipated to be contained in the available queue space with the customer data provided by Wesco and using a 20 percent increased service time compared to a typical coffee shop drive-through.



ALLENDALE WESCO TIS

LEGEND

XX (XX) = AM (PM) GENERATED TRIPS

(X%) = DISTRIBUTION FOR NEW TRIPS

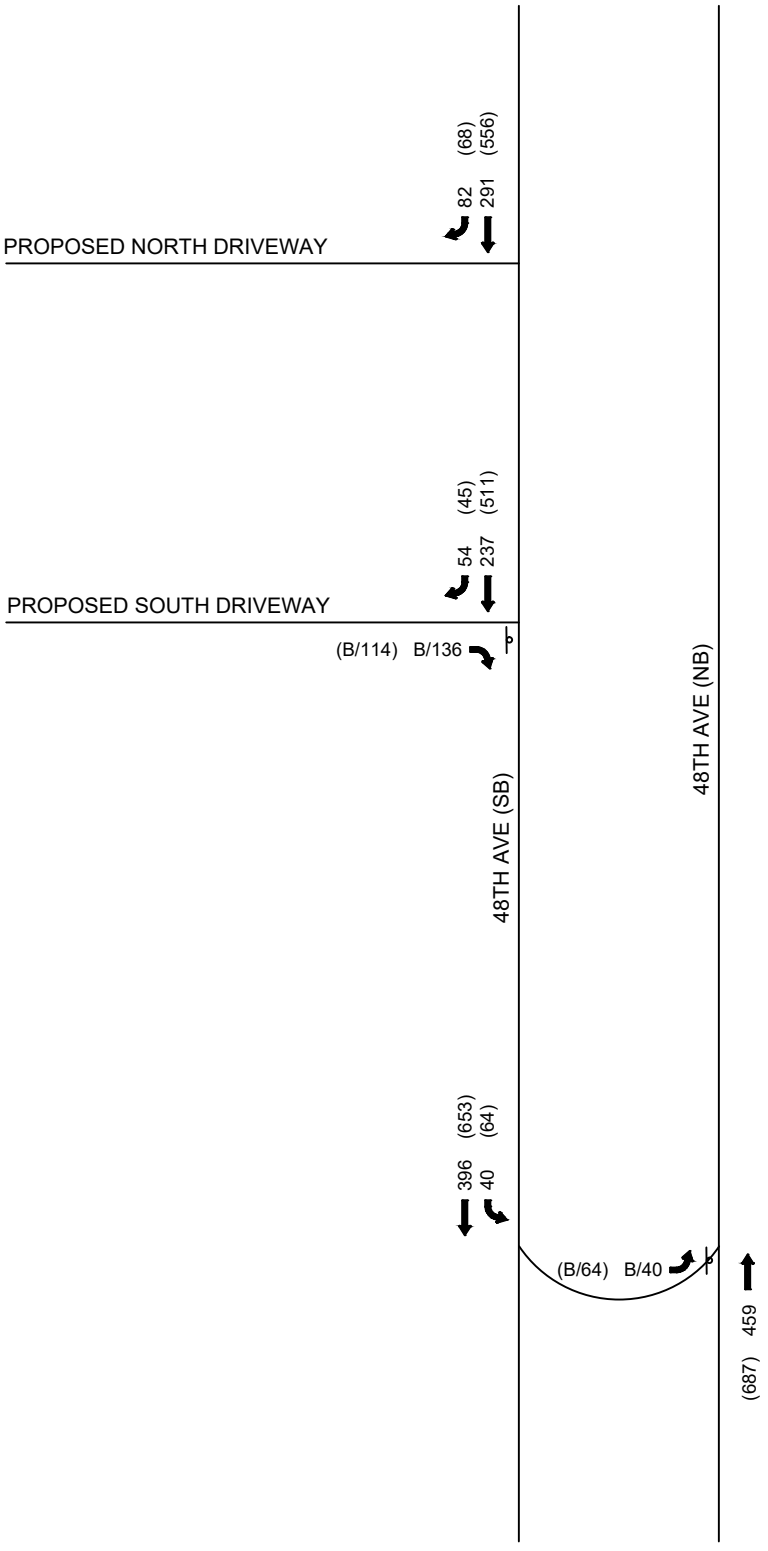
FUTURE (2027) TRIP DISTRIBUTION
+ TRAFFIC ASSIGNMENT

N

No Scale

FIGURE

7



ALLENDALE WESCO TIS

LEGEND

XX (XX) = AM (PM)
A = LEVEL-OF-SERVICE
(S) = SIGNALIZED INTERSECTION
= STOP-CONTROLLED

FUTURE (2027) PEAK-HOUR VOLUMES
+ LEVELS-OF-SERVICE

N
No Scale

FIGURE
8

CHAPTER 4

CONCLUSIONS AND RECOMMENDATION

This chapter summarizes the results of the analyses performed as part of the study. A recommendation to improve the surrounding roadway network is also presented.

Conclusions

Based on the analyses performed as part of this study, the proposed development will have minimal impact to the surrounding roadway network. The findings of this study are as follows:

Existing Conditions

Based on the existing conditions analysis, the southbound left turn movement currently operates at a LOS "B" for both peak periods. Additionally, 95th percentile queues are shown to be within the storage space available for both peak periods.

Crash Analysis

Crash information for the most recent five years available (2020–2024) was reviewed, based on information available on the *Michigan Traffic Crash Facts* website. The crash analysis was completed at midblock near the proposed driveways and at the southbound 48th Avenue crossover.

There was a total of three crashes at the 48th Avenue south crossover in the last five years. All the observed crashes resulted in no injury. Single motor vehicle crashes were the most common crash type at this intersection (two crashes), followed by rear-end crashes (one crash). There were no crashes involving pedestrians or cyclists, and there does not appear to be a crash pattern at the study area intersection.

Future (2027) Conditions

The future (2027) conditions analysis showed that all intersections in the study area are anticipated to have a slight increase in delay, and still operate at a LOS "B" or better during the morning and afternoon peak hours. Queues are also expected to remain acceptable.

Turn Lane Warrant Analysis

An MDOT right-turn lane warrant analysis was conducted for both proposed site driveways and found that a taper is recommended for both morning and afternoon peak hours at both the proposed north and south driveways. Figure 6 and 7 show the right-turn lane warrant at the proposed north and south driveways, respectively.

Northbound left turn / U-turn Prevention

Due to the site driveways proximity to the end of the center median on 48th Avenue, there is potential for northbound traffic to be tempted to make a U-turn at the end of the center median to be able to access the proposed gas station. Due to the existing gas station and convenience store less than 900 feet to the north of this location, U-turns are not anticipated to be a major concern, however, installing a R3-4 "NO U-TURN" sign at the end of the center median, and potentially installing flexible delineators on the northbound side of the center lane for 50 feet could help discourage U-turn movements further.

Internal Site Circulation

Wesco provided sales data from a similar Wesco location with a drive through for the prior six months, and it was found that this drive through window experiences an average peak hour of 19 customers, with a 95th percentile of 28 customers per hour. This data can be found in the appendix. While average transaction time is unknown, previous studies conducted by Progressive Companies have found that typical coffee shop drive-throughs have a service time of about 60 seconds. To remain conservative on the queue estimate, a service time of 72 seconds was used to project anticipated queues at this location (a 20 percent increase compared to a typical coffee shop). Using an M/M/1 queue model with an average of 19 customers per hour and a service time of 72 seconds, the average queue was found to be 0.2 vehicle lengths. With the 95th percentile of 28 customers per hour and 72 second service time, average queues were found to be 0.7 vehicle lengths.

Recommendations

Based on the analysis of the study area intersections and proposed site driveways, right-turn tapers should be constructed for each proposed site driveway on southbound 48th Avenue.

PROGRESSIVE COMPANIES

Technical Appendix

Allendale Wesco
Traffic Impact Study

- **Level of Service Definitions**
- **Glossary**
- **Site Plan**
- **Traffic Count Data**
- **Drive-Through Data**
- **Synchro Analyses Results**

Level of Service Definitions
Signalized Intersections

Level of Service A: Describes operations with very low average stopped delay, i.e., less than 10.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of Service B: Describes operations with an average stopped delay in the range of 10.0 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C: Describes operations with an average stopped delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level of Service D: Describes operations with an average stopped delay in the range of 35.1 to 55.0 seconds per vehicle. At Level of Service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c (volume/capacity) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E: Describes operations with an average stopped delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay in many cases. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.

Level of Service F: Describes operations with an average stopped delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Level of Service Definitions
Unsignalized Intersections

Level of Service A: Average delay per vehicles for impeded movements is less than 10 seconds. There is little or no delay with typically low side street and/or main street traffic.

Level of Service B: Average stopped delays from 10.1 seconds to 15.0 seconds. Short delays, many acceptable gaps in main street traffic stream.

Level of Service C: Average delay per vehicle ranges from 15.1 to 25.0 seconds. Average traffic delays with frequent gaps in main street traffic.

Level of Service D: Average delays from 25.1 to 35.0 seconds for impeded movements. Long traffic delays for impeded movements due in part to a limited number of acceptable gaps.

Level of Service E: Average delays in the 35.1 to 50.0 second range. May experience very long delays for impeded movements with a very small number of acceptable gaps in the traffic stream.

Level of Service F: Average vehicle delays of over 50.0 seconds. Extreme traffic delays with virtually no acceptable gaps in main street traffic.

Glossary

Approach: A set of lanes accommodating all left-turn, through, and right-turn movements arriving at an intersection from a given direction.

Arterial: Signalized streets that serve primarily through traffic and provide access to abutting properties as a secondary function.

Average Stopped Delay: The total time vehicles are stopped in an intersection approach or lane group during a specified time interval divided by the volume departing from the approach or lane group during the same time period, in seconds per vehicle.

Background Traffic: Traffic volumes that will be on the roadway network without the presence of the proposed development.

Bypass Lane: A one-lane widening on a two-lane roadway that allows through traffic to pass by waiting left-turn traffic.

Capacity: The maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions; usually expressed as vehicles per hour or persons per hour.

Conflicting Traffic Volume: The volume of traffic which conflicts with a specific movement at an intersection.

Corridor: A lineal study area aligned with a roadway facility in which traffic, land use, right-of-way, environmental, and other factors are evaluated to determine future transportation facility needs.

Cycle: Any complete sequence of traffic signal indications.

Cycle Length: The total time for a traffic signal to complete one cycle.

Design Hour Volume: The traffic volume for the design hour, usually a forecast of the relevant peak hour volume, in vehicles per hour.

Diverted Linked Trips: Trips from the traffic volume on roadways within the vicinity of the generator but which requires a diversion from that roadway to another roadway to gain access to the site.

Driveway Offset: Distance between driveways on opposite sides of a roadway, measured parallel to roadway.

Freeway: A multi-lane divided highway having a minimum of two lanes for exclusive use of traffic in each direction and full control of access and egress.

Gaps (Critical Gap): The median time headway between vehicles in a major traffic stream which will permit side-street vehicles to cross through or merge with the major traffic stream.

Green Time: The actual length of the "green" indication for a given movement at a signalized intersection.

Level of Service: A qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Operational Analysis: A use of capacity analysis to determine the prevailing level of service on an existing or projected facility, with known or projected traffic, roadway, and control conditions. This analysis can involve a particular location, such as an intersection or a corridor.

Pass-by Trips: Trips made as intermediate stops on the way from an origin to a primary trip destination.

Peak Hour (AM): The one hour period in the morning representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour (PM): The one hour period in the afternoon or evening representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour Factor: The hourly volume during the maximum volume hour of the day divided by four times the peak 15-minute flow within the peak hour; a measure of traffic demand fluctuation within the peak hour.

Phase: The part of the signal cycle allocated to any combination of traffic movements receiving the right-of-way simultaneously during one or more intervals.

Roadway Conditions: Geometric characteristics of a street or highway, including the type of facility, number and width of lanes (by direction), shoulder widths and lateral clearances, design speed, etc.

Service Drive: A roadway (usually private) that provides internal access to two or more uses.

Site Traffic: Existing or projected vehicular traffic generated by the development.

Study Area: The geographic area containing site access points and critical intersections (and connecting highway segments) which are impacted by the site-traffic generated by the development, and should be evaluated.

System Improvements: Added lanes, signal improvements, and other roadway improvements not considered site-related improvements.

Traffic Impact: The adverse impact on intersection Level of Service and/or street and highway safety and operations as determined by the criteria and procedures set forth in this handbook.

Trip (Directional Trip): A single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site.

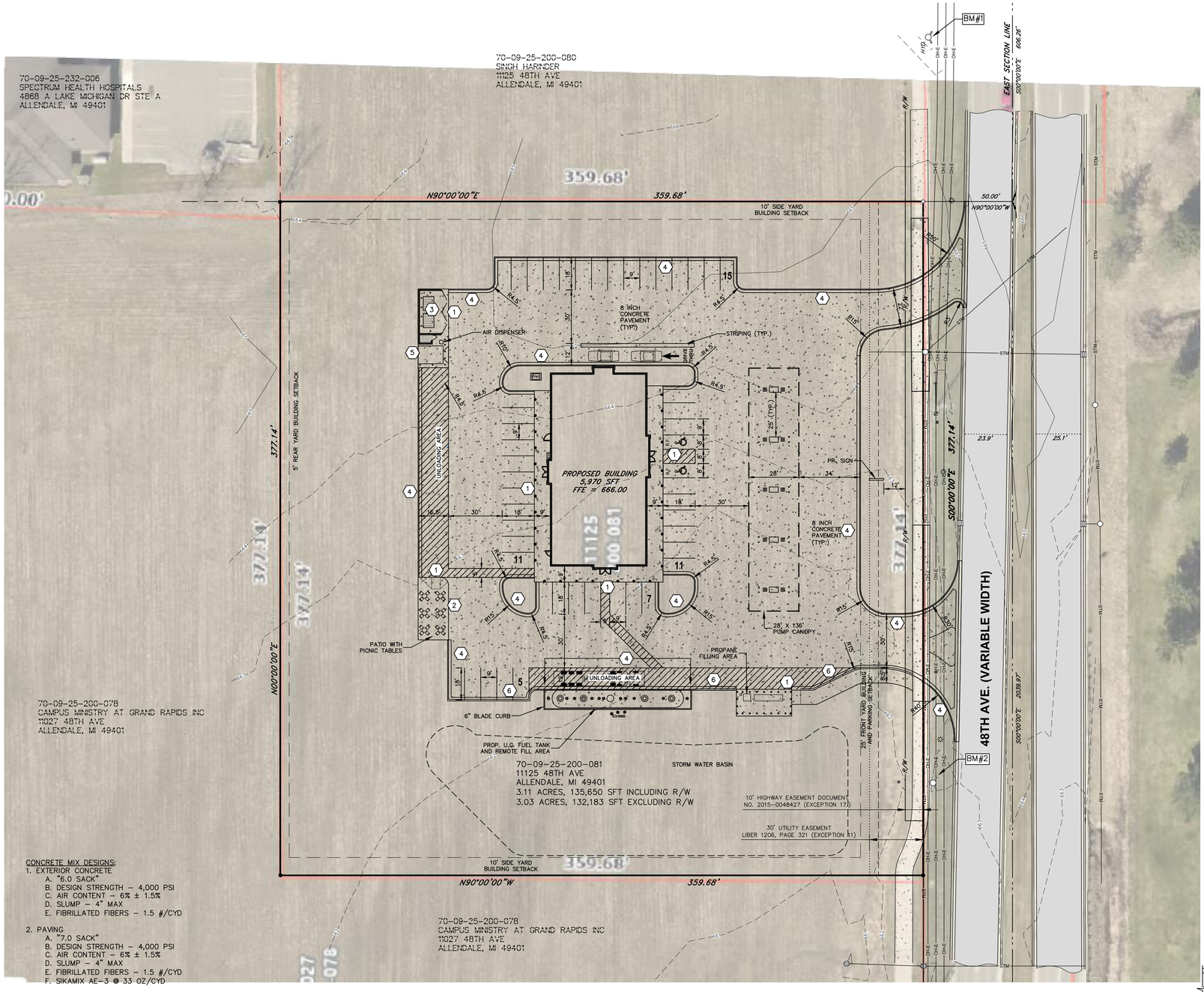
Trip Distribution: The distribution or assignment of site traffic into site driveways and study area roadways/intersections based upon expected direction of approach and departure.

Unsignalized Intersection: Any intersection not controlled by traffic signals.

Volume: The number of persons or vehicles passing a point on a lane or roadway during some time interval, such as one hour or during an average day.

Volume-to-Capacity Ratio (V/C): The ratio of demand flow rate to capacity for a traffic facility.

Site Plan



GRAPHIC SCALE
30' 0 15' 30'
(IN FEET)
1 inch = 30 ft.

SITE DATA:

SITE:	3.03 ACRES (EXCLUDING R.O.W.)	
ZONED:	G-C, GENERAL COMMERCIAL	
USE:	GAS STATION WITH RETAIL, WITH PROPANE DISPENSER, AND WITH DRIVE UP/IN/THRU SPECIAL USE PERMIT REQUIRED	
	REQUIRED	PROVIDED
MAXIMUM BUILDING HEIGHT:	35'	SEE ARCH.
MAXIMUM CANOPY HEIGHT:	18'	18' (SEE ARCH.)
MAXIMUM CANOPY CLEARANCE:	14'	14' (SEE ARCH.)
FRONT BUILDING SETBACK:	20'	152.5' TO EAST
SIDE BUILDING SETBACK:	10'	76' TO NORTH
REAR BUILDING SETBACK:	10'	149.2' TO WEST
IMPERVIOUS SURFACE:	N/A	45%

PARKING DATA:

MIN. REQUIRED PARKING: 33 SPACES
(1 SPACES PER 200 SFT OF RETAIL SPACE + 1 PER EMPLOYEE)
(5970 / 200) + 3 = 32.9

PROPOSED PARKING: 49 SPACES
(INCLUDES 2 BARRIER FREE SPACES)
STACKING FROM WINDOW: 6 SPACES

PARKING SPACE:	9' x 18'	9' x 18' MIN.
DRIVE AISLE WIDTH (TWO WAY):	26'	30' MIN.

PROPOSED LOADING ZONES ILLUSTRATED

NOTES

A) ALL DIMENSIONS SHOWN TO THE CONCRETE CURB AND GUTTER ARE TO THE FACE OF THE CURB (6 INCHES FROM THE BACK OF THE CURB) UNLESS NOTED OTHERWISE.
B) THE CONCRETE GUTTER PAN IS TO TIP IN THE SAME DIRECTION AS THE ADJACENT PAVEMENT. THE GUTTER PAN IN THE BARRIER FREE SPACES SHALL BE PLACED FLAT.
C) THE LAST 3 FEET OF ALL OF THE CURB SHALL BE DUBBED DOWN UNLESS NOTED OTHERWISE.
D) REFER TO ARCHITECTURAL PLANS FOR DETAILS OF CONCRETE DOOR STOOPS, DUMPSTER ENCLOSURE, DETAIL OF BUILDING, EXACT BUILDING DIMENSIONS, CANOPY DETAILS, FUEL ISLAND DETAILS AND DIMENSIONS, SHED DETAILS, AIR FILL DETAILS, AND PROPANE TANK AND DISPENSER DETAILS.
E) ALL BARRIER FREE SPACES AND SIDEWALKS SHALL MEET A.D.A. REQUIREMENTS.
F) ALL SIGNAGE SHALL CONFORM TO ALLENDALE TOWNSHIP STANDARDS.

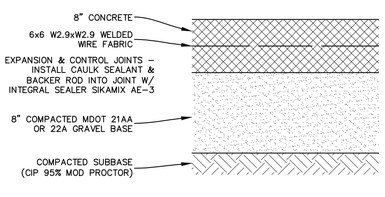
SITE PLAN KEY NOTES

1. FLUSH SLAB EDGE AND BARRIER FREE RAMP
2. RAISED CONCRETE SIDEWALK (SEE SHEET C-501)
3. DUMPSTER ENCLOSURE AND PAD (SEE SHEET C-502)
4. MDOT F-4 CURB AND GUTTER
5. SHEDS (SEE SHEET C-502)
6. 4" ROLLED CURB AND GUTTER

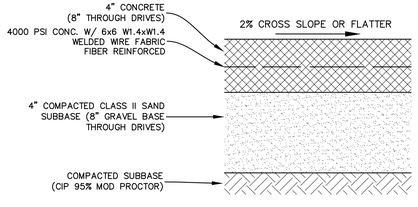
LEGEND

- 1150 — EXISTING MAJOR CONTOUR
- 1151 — EXISTING MINOR CONTOUR
- PROPOSED CONC.
- BUMP POST
- PROPOSED LIGHT POLE
- PROPOSED EVERGREEN TREE

CONCRETE MIX DESIGNS:
1. EXTERIOR CONCRETE
   A. "6.0 SACK"
   B. DESIGN STRENGTH – 4,000 PSI
   C. AIR CONTENT – 6% ± 1.5%
   D. SLUMP – 4" MAX
   E. FIBRILLATED FIBERS – 1.5 #/CYD
2. PAVING
   A. "7.0 SACK"
   B. DESIGN STRENGTH – 4,000 PSI
   C. AIR CONTENT – 6% ± 1.5%
   D. SLUMP – 4" MAX
   E. FIBRILLATED FIBERS – 1.5 #/CYD
   F. SIKAMIX AE-3 @ 33 OZ/CYD



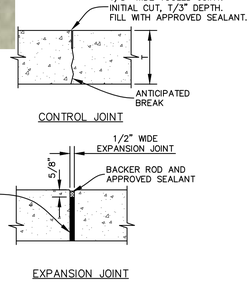
CONCRETE PAVEMENT
NOT TO SCALE



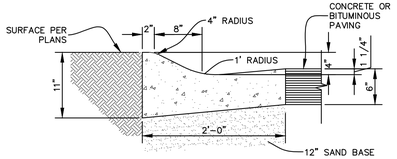
CONCRETE SIDEWALK
NOT TO SCALE

TRAFFIC NOTE:

PER INSTITUTE OF TRANSPORTATION ENGINEERS TRIP GENERATION MANUAL, THE PEAK AM AND PM HOURLY NUMBER OF TRIPS WILL BE APPROXIMATELY 16.46 AND 19.13 TRIPS RESPECTIVELY PER FUELING POSITION. THIS RESULTS IN 165 TRIPS DURING THE AM PEAK HOUR AND 191 TRIPS DURING THE PM PEAK HOUR. THIS COUNTS A VEHICLE ENTERING AND EXITING THE SITE AS 2 TRIPS. BASED ON SIMILAR SITES, WE WOULD ANTICIPATE THE ENTERING TRIPS TO BE 99 AND THE EXITING TRIPS TO BE 92 FOR THE PEAK PM HOUR.



CONCRETE JOINTS
NOT TO SCALE



ROLLED CURB AND GUTTER
NOT TO SCALE

REVISIONS:

DRAWN BY: YS
APPROVED BY: MDC
DATE: JANUARY 9, 2026
REVISIONS:
FEBRUARY 10, 2026 – PER REVIEW COMMENTS
MARCH 9, 2026 – PER REVIEW COMMENTS

Roosien & Associates
SURVEYING AND ENGINEERING
5055 PLAINFIELD AVE. NE MATT@ROOSIEN-ASSOC.COM
GRAND RAPIDS, MI 49525 TELE: (616) 361-7220

SITE LAYOUT AND LANDSCAPE PLAN
WESCO STORE #32
SECTION 25, T7N, R14W
ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

CLIENT:
STACEY WHALEN
WESCO INC.
1460 WHITEHALL RD.
MUSKEGON, MI 49445

PROJECT NO.
251107

C-102

Traffic Count Data

PROGRESSIVE COMPANIES
Progressive Companies
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525
(616) 361-2664

Count Name: 48th Avenue
Site Code:
Start Date: 03/03/2026
Page No: 1

Turning Movement Data

Start Time	48th Avenue Northbound			48th Avenue Southbound				
	Thru	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
7:00 AM	72	0	72	9	85	0	94	166
7:15 AM	89	0	89	7	86	0	93	182
7:30 AM	124	0	124	7	84	0	91	215
7:45 AM	130	0	130	13	105	0	118	248
Hourly Total	415	0	415	36	360	0	396	811
8:00 AM	111	0	111	10	90	0	100	211
8:15 AM	80	0	80	9	83	0	92	172
8:30 AM	71	0	71	10	78	0	88	159
8:45 AM	64	0	64	6	66	0	72	136
Hourly Total	326	0	326	35	317	0	352	678
*** BREAK ***	-	-	-	-	-	-	-	-
4:00 PM	153	0	153	14	153	0	167	320
4:15 PM	141	0	141	18	149	0	167	308
4:30 PM	125	0	125	8	134	0	142	267
4:45 PM	143	0	143	13	127	0	140	283
Hourly Total	562	0	562	53	563	0	616	1178
5:00 PM	176	0	176	6	152	0	158	334
5:15 PM	190	0	190	17	150	0	167	357
5:30 PM	172	0	172	19	172	0	191	363
5:45 PM	142	0	142	18	149	0	167	309
Hourly Total	680	0	680	60	623	0	683	1363
Grand Total	1983	0	1983	184	1863	0	2047	4030
Approach %	100.0	-	-	9.0	91.0	-	-	-
Total %	49.2	-	49.2	4.6	46.2	-	50.8	-
Lights	1966	-	1966	184	1840	-	2024	3990
% Lights	99.1	-	99.1	100.0	98.8	-	98.9	99.0
Mediums	10	-	10	0	17	-	17	27
% Mediums	0.5	-	0.5	0.0	0.9	-	0.8	0.7
Articulated Trucks	7	-	7	0	6	-	6	13
% Articulated Trucks	0.4	-	0.4	0.0	0.3	-	0.3	0.3
Pedestrians	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-

PROGRESSIVE COMPANIES
Progressive Companies
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525
(616) 361-2664

Count Name: 48th Avenue
Site Code:
Start Date: 03/03/2026

Turning Movement Peak Hour Data (7:15 AM)

Start Time	48th Avenue Northbound			48th Avenue Southbound				
	Thru	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
7:15 AM	89	0	89	7	86	0	93	182
7:30 AM	124	0	124	7	84	0	91	215
7:45 AM	130	0	130	13	105	0	118	248
8:00 AM	111	0	111	10	90	0	100	211
Total	454	0	454	37	365	0	402	856
Approach %	100.0	-	-	9.2	90.8	-	-	-
Total %	53.0	-	53.0	4.3	42.6	-	47.0	-
PHF	0.873	-	0.873	0.712	0.869	-	0.852	0.863
Lights	446	-	446	37	358	-	395	841
% Lights	98.2	-	98.2	100.0	98.1	-	98.3	98.2
Mediums	5	-	5	0	7	-	7	12
% Mediums	1.1	-	1.1	0.0	1.9	-	1.7	1.4
Articulated Trucks	3	-	3	0	0	-	0	3
% Articulated Trucks	0.7	-	0.7	0.0	0.0	-	0.0	0.4
Pedestrians	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-

Turning Movement Peak Hour Data (5:00 PM)

Start Time	48th Avenue Northbound			48th Avenue Southbound				
	Thru	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
5:00 PM	176	0	176	6	152	0	158	334
5:15 PM	190	0	190	17	150	0	167	357
5:30 PM	172	0	172	19	172	0	191	363
5:45 PM	142	0	142	18	149	0	167	309
Total	680	0	680	60	623	0	683	1363
Approach %	100.0	-	-	8.8	91.2	-	-	-
Total %	49.9	-	49.9	4.4	45.7	-	50.1	-
PHF	0.895	-	0.895	0.789	0.906	-	0.894	0.939
Lights	680	-	680	60	620	-	680	1360
% Lights	100.0	-	100.0	100.0	99.5	-	99.6	99.8
Mediums	0	-	0	0	1	-	1	1
% Mediums	0.0	-	0.0	0.0	0.2	-	0.1	0.1
Articulated Trucks	0	-	0	0	2	-	2	2
% Articulated Trucks	0.0	-	0.0	0.0	0.3	-	0.3	0.1
Pedestrians	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-

Progressive Companies
1811 4 Mile Road NE
Grand Rapids, MI 49525
Office 616.316.2664

48 A (SB)
S L M Dr
S ID: 01
S r D : 3/3/2026
E d D : 3/4/2026

3/3/2026 T	SB, L 1	SB, L 2	T
12:00 AM	23	10	33
12:15	14	4	18
12:30	12	2	14
12:45	7	4	11
1:00	11	4	15
1:15	5	0	5
1:30	6	1	7
1:45	5	0	5
2:00	7	3	10
2:15	4	1	5
2:30	3	3	6
2:45	1	6	7
3:00	3	2	5
3:15	2	1	3
3:30	1	2	3
3:45	1	0	1
4:00	2	2	4
4:15	1	5	6
4:30	2	5	7
4:45	1	7	8
5:00	4	11	15
5:15	4	18	22
5:30	3	18	21
5:45	12	21	33
6:00	8	32	40
6:15	6	29	35
6:30	17	35	52
6:45	18	33	51
7:00	24	52	76
7:15	20	61	81
7:30	24	49	73
7:45	25	73	98
8:00	24	64	88
8:15	25	56	81
8:30	23	52	75
8:45	25	38	63
9:00	23	38	61
9:15	22	40	62
9:30	31	53	84
9:45	20	55	75
10:00	35	35	70
10:15	35	31	66
10:30	32	33	65
10:45	31	52	83
11:00	48	56	104
11:15	41	47	88
11:30	77	34	111
11:45	61	42	103
T	829	1220	2049
P r	40.5%	59.5%	
P	11:00	7:15	11:00
V	227	247	406
P F r	0.737	0.846	0.914

Progressive Companies
1811 4 Mile Road NE
Grand Rapids, MI 49525
Office 616.316.2664

48 A (SB)
S L M Dr
S ID: 01
S r D : 3/3/2026
E d D : 3/4/2026

3/3/2026 T	SB, L 1	SB, L 2	T
12:00 PM	53	50	103
12:15	47	49	96
12:30	54	52	106
12:45	62	48	110
1:00	76	44	120
1:15	68	46	114
1:30	43	46	89
1:45	49	46	95
2:00	63	47	110
2:15	55	67	122
2:30	74	55	129
2:45	75	47	122
3:00	70	55	125
3:15	56	56	112
3:30	64	53	117
3:45	64	56	120
4:00	96	60	156
4:15	83	63	146
4:30	77	63	140
4:45	64	55	119
5:00	83	63	146
5:15	82	66	148
5:30	104	63	167
5:45	85	46	131
6:00	88	47	135
6:15	79	61	140
6:30	86	54	140
6:45	74	45	119
7:00	92	41	133
7:15	76	39	115
7:30	72	39	111
7:45	77	30	107
8:00	66	36	102
8:15	63	36	99
8:30	78	32	110
8:45	65	32	97
9:00	61	37	98
9:15	67	32	99
9:30	62	25	87
9:45	68	22	90
10:00	52	26	78
10:15	63	29	92
10:30	51	20	71
10:45	33	17	50
11:00	34	14	48
11:15	29	9	38
11:30	24	14	38
11:45	27	12	39
T	3134	2045	5179
P r	60.5%	39.5%	
P	5:15	4:30	5:00
V	359	247	592
P F r	0.863	0.936	0.886
Gr d T	3963	3265	7228
P r	54.8%	45.2%	
AADT	ADT: 7,203	AADT: 7,203	

Drive-Through Data

	5AM-6AM	6AM-7AM	7AM-8AM	8AM-9AM	9AM-10AM	10AM-11AM	11AM-12PM	12PM-1PM	1PM-2PM	2PM-3PM	3PM-4PM	4PM-5PM	5PM-6PM	7PM-8PM	8PM-9PM	9PM-10PM	10PM-11PM	11PM-12AM	Avg Per Day
Average Per Hour	3	11	16	16	15	14	17	17	17	18	19	19	18	16	14	11	9	1	246
95th Percentile	5	15	28	26	22	21	23	24	23	25	24	24	24	22	21	17	15	2	
Count of Transactions	Hour Timestamp																		
Store49 Data	5AM-6AM	6AM-7AM	7AM-8AM	8AM-9AM	9AM-10AM	10AM-11AM	11AM-12PM	12PM-1PM	1PM-2PM	2PM-3PM	3PM-4PM	4PM-5PM	5PM-6PM	7PM-8PM	8PM-9PM	9PM-10PM	10PM-11PM	11PM-12AM	Total Per Day
49	272	1183	2555	2632	2458	2317	2642	2754	2724	2819	2970	2977	2855	2604	2306	1835	1429	50	39382
2025-10-01	2	11	23	20	17	12	14	20	16	18	20	20	18	20	20	16	4		271
2025-10-02	3	13	28	23	16	16	19	22	20	24	20	26	25	21	15	15	9		315
2025-10-03	6	11	21	18	15	12	21	23	27	25	25	24	18	20	24	13	15	2	320
2025-10-04			7	21	18	21	19	22	20	23	17	20	11	19	19	16	9	2	264
2025-10-05			4	5	11	18	20	25	24	22	18	22	19	22	27	14	11		262
2025-10-06	3	9	27	20	17	19	22	11	16	15	23	21	20	29	14	10	6		282
2025-10-07	1	12	27	20	19	19	21	21	10	17	19	22	20	20	19	14	9	1	291
2025-10-08	2	13	25	21	18	16	17	17	20	18	19	16	22	17	20	16	15		292
2025-10-09	4	17	29	21	21	14	17	18	15	18	23	12	26	18	17	14	12		296
2025-10-10	2	13	24	24	13	13	21	20	19	17	23	17	16	14	15	11	9		271
2025-10-11			7	11	15	14	17	20	23	15	22	15	18	17	19	18	15		246
2025-10-12		1	3	11	11	11	24	17	17	17	17	17	21	18	17	11	12		225
2025-10-13	3	11	17	22	16	21	23	15	22	21	21	20	17	20	23	17	8		297
2025-10-14	5	8	24	16	22	18	18	20	18	20	17	20	20	23	22	15	14		300
2025-10-15	2	12	26	26	15	8	16	18	15	19	22	17	8	22	19	14	6		265
2025-10-16	2	15	20	23	19	25	18	24	15	16	17	23	13	12	16	10	10		278
2025-10-17	3	7	24	11	20	14	19	13	11	25	21	22	19	15	12	12	12		260
2025-10-18			7	13	17	15	16	27	21	14	18	22	15	19	18	18	10	4	254
2025-10-19			1	14	7	17	13	20	22	15	18	22	23	18	18	12	11		231
2025-10-20	4	10	22	22	17	12	12	16	20	19	21	22	20	19	18	5	11		270
2025-10-21	4	11	22	30	20	17	20	22	12	13	23	19	12	23	11	10	8		277
2025-10-22	3	13	20	26	19	13	22	17	16	24	21	14	19	19	14	10	8		278
2025-10-23	4	15	25	24	22	17	13	17	12	17	19	21	24	19	16	13	7		285
2025-10-24	2	8	31	27	13	14	23	19	18	17	19	17	18	16	20	12	7		281
2025-10-25			3	15	14	15	16	17	17	16	19	14	17	18	20	16	13	1	231
2025-10-26			2	10	17	10	13	18	17	14	14	16	15	20	17	9	14	1	207
2025-10-27	1	12	28	23	17	13	20	21	18	20	25	17	18	17	16	15	4		285
2025-10-28	2	15	24	16	24	20	19	18	24	14	20	21	15	22	17	10	7		288
2025-10-29	4	16	20	17	16	17	15	15	17	27	15	22	22	20	20	20	9		292
2025-10-30	2	11	21	17	26	18	21	23	21	20	27	22	18	16	17	12	7		299
2025-10-31	5	16	15	19	15	17	23	15	21	17	16	24	22	18	19	16	17		295
2025-11-01			5	12	24	19	22	24	19	23	20	19	20	25	16	17	5		270
2025-11-02			3	15	17	14	23	16	23	21	16	15	22	15	12	6	8		226
2025-11-03	3	7	30	21	16	16	29	23	12	17	24	18	15	16	17	18	8	2	292
2025-11-04	5	11	23	21	20	18	21	18	20	19	12	18	20	15	13	2	8		264
2025-11-05	6	14	26	19	15	11	25	21	11	28	27	24	25	21	16	11	8		308
2025-11-06	3	13	29	22	21	13	21	19	19	19	21	23	21	18	23	13	8		306
2025-11-07	3	11	25	25	19	20	21	20	19	18	22	20	21	13	18	15	10		300
2025-11-08			6	12	17	18	18	15	14	16	18	11	20	18	14	13	1	1	212
2025-11-09			7	7	9	15	19	18	20	14	23	20	15	19	5	10	3		204
2025-11-10	2	7	25	21	12	17	20	25	9	13	20	22	15	16	9	11	8		252
2025-11-11	3	13	27	19	26	16	21	12	21	16	20	21	21	15	11	8	5	1	276
2025-11-12	3	12	25	19	23	17	21	21	14	25	17	18	18	19	14	13	9		288
2025-11-13	4	11	23	20	19	14	19	16	20	15	16	24	19	14	16	15	13		278
2025-11-14	4	10	21	17	19	12	21	14	15	23	20	16	20	19	11	16	10	1	269
2025-11-15				13	12	21	21	16	20	20	19	19	19	17	16	13	8		234
2025-11-16			2	14	12	18	15	21	23	19	24	17	15	19	9	6	9		223
2025-11-17	4	8	25	28	16	18	18	24	18	22	19	24	26	19	7	10	9		295
2025-11-18	5	10	26	19	13	13	16	20	18	16	18	20	17	14	12	8	6		251
2025-11-19	3	11	26	25	15	9	19	18	15	20	23	15	17	14	12	13	6		261
2025-11-20	3	9	25	26	17	20	22	17	19	19	16	19	16	18	20	15	11	1	293
2025-11-21	3	10	25	17	12	16	14	17	24	25	21	23	17	15	14	10	12		275
2025-11-22			3	10	17	19	15	16	25	16	18	20	13	22	17	10	14		235
2025-11-23			5	11	14	13	20	25	22	19	17	12	14	15	18	9	4	2	220
2025-11-24	1	12	23	27	20	14	21	21	15	18	21	19	12	13	9	12	8		266
2025-11-25	4	14	31	26	20	21	23	17	18	20	21	24	20	19	18	8	13		317
2025-11-26	1	10	15	19	17	11	30	16	21	11	14	12	18	13	6	3	7		224
2025-11-27			6	6	11	13	13	14	15	11	13	12	16	12	12	6	3		163
2025-11-28	1	2	6	10	10	12	12	18	16	17	15	17	18	21	18	13	13		219
2025-11-29			7	13	13	19	19	19	7	15	17	16	22	15	6	9	3		200
2025-11-30			3	5	6	11	5	22	15	14	18	13	11	11	12	7	7		160
2025-12-01	2	7	30	19	16	9	21	19	11	12	19	13	13	6	9	3	3		212
2025-12-02	2	1	8	11	5	5	9	16	21	15	12	24	17	13	8	11	5		183
2025-12-03	4	8	23	20	24	9	14	14	21	22	17	17	18	22	8	11	5		257
2025-12-04	3	12	25	25	21	17	14	12	19	23	18	20	19	24	11	8	10		281
2025-12-05	2	11	20	24	22	14	22	17	19	17	28	17	20	6	15	12	13	1	280
2025-12-06			3	12	12	16	19	19	22	12	13	17	18	13	11	9	11		207
2025-12-07			2	9	9	10	22	16	20	18	18	15	20	14	19	6	6		204
2025-12-08	1	11	14	20	15	12	19	20	20	15	19	23	13	22	13	5	7	2	251
2025-12-09	1	11	18	28	19	18	17	9	22	16	17	20	19	16	13	6	5		255
2025-12-10	4	9	15	14	12	10	10	14	18	15	21	16	14	20	13	7	6		218
2025-12-11	4	14	20	19	18	12	23	14	13	16	17	20	15	14	18	12	12	1	262
2025-12-12	4	13	24	16	15	11	12	22	17	16	20	22	18	16	16	14	13		269
2025-12-13			5	4	9	9	18	17	18	14	19	17	21	15	10	15	7		198
2025-12-14			4	7	7	7	13	17	13	9	18	14	20	14	7	5	7		162
2025-12-15	2	13	20	22	20	23	17	11	21	13	18	22	16	10	10	9	10	1	258
2025-12-16	3	10	27	18	26	13	18	14	21	21	22	21	16	14	14	5	6	1	270
2025-12-17	6	8	26	23	18	17	18	11	18	14	14	15	24	16	19	14	13		274
2025-12-18	4	12	29	25	22	18	18	13	21	16	23	20	19	15	15	12	8	2	292
2025-12-19	3	8	18	12	18	12	11	14	17	15	16	18	17	19	18	10	9		235
2025-12-20			7	8	13	10	18	16	17	15	18	13	16	16	16	18	14		215
2025-12-21			3	5	8	18	17	21	19	20	15	23	17	11	16	8	15		216
2025-12-22	1	8	15	13	13	22	14	17	12	20	14	17	15	17	23	12	8		241
2025-12-23	2	12	17	17	15	18	16	19	16	16	18	22	20	13	15	14	4		254
2025-12-24			7	9	18	14	16	13	16	14	18	17	15	14	15	13	7		206
2025-12-25			1	11	10	20	17	18	15	12	15	14	17	16	18	15	9		208
2025-12-26		2	12	7	15	17	12	14	16	21	19	18	17	14	15	16	17	2	234
2025-12-27			7	11	10	15	16	15	17	19	15	17	20	19	16	7	12		216
2025-12-28			4	8	21	18	17	19	15	28	14	16	12	17	13	16	7		225
2025-12-29	3	6	15	7	10	10	14	12	5	14	17	18	24	15	10	7	11		198
2025-12-30	3	6	13	12	15	11	15	14	17	17	22	20	18	17	15	11	14		240
2025-12-31		8	15	6	12	18	16	25	16	14	23	18	18	12	10	11	12		234
2026-01-01			4	3	8	13	13	11	14	15	17	12	15	13	13	11	8		170
2026-01-02	2	7	17	11	8	17	10	25	18	21	19	16	18	16	16	15	5		241
2026-01-03			5	4	13	13	16	18	14	11	19	17	15	22	17	14	18	2	218
2026-01-04			3	9	14	17	15	19	14	15	19	12	12	19	16	16	8	1	209
2026-01-05	2	12	22	21	19	13	19	21	23	17	22	21	14	22	10	9	9		276
2026-01-06	2	12	31	24	12	21	16	15	17	20	22	23	20	13	14	9	11		282
2026-01-07	2	14	20	21	20	17	11	20	12	19	26	26	20	18	12	16	4		278
2026-01-08	2	11	22	26	16	14	19	14	15	22	24	22	22	15	13	17	11	1	286
2026-01-09	1	12	21	21	19	20	13	17	21	26	19	25	21	15	14	12	12	1	290
2026-01-10			3	10	14	11	10	14	11	21	15	20	20	11	13	19	11		203
2026-01-11			5	8	6	11	10	17	26	20	15	13	11	13	8	12	7		182
2026-01-12	1	12	23	24	16	15	19	18	16	20	25	21	16	14	14	6	13		273
2026-01-13	4	9	24	24	14	13	19	19	23	18	22	21	17	16	13	13	8		277
2026-01-14	4	17	22	18	16	21	10	17	16	17	16	17	14	15	13	8	7		248
2026-01-15		14	21	23	14	14	18	17	24	9	18	21	16	20	18	12	12		271

2026-01-16		13	24	23	12	10	12	15	10	4	16	17	19	17	10	11	15		228
2026-01-17			6	9	16	14	18	19	20	13	9	18	19	8	21	11	10		211
2026-01-18			6	6	8	11	8	21	17	12	19	19	17	6	9	12	5		176
2026-01-19	1	6	10	9	7	11	11	10	9	14	6	13	16	6	12	6	4	1	152
2026-01-20		8	13	5	15	12	13	13	11	21	15	15	17	14	15	15	10		212
2026-01-21	2	3	13	13	13	5	5	11	17	14	11	15	10	11	6	7	6		162
2026-01-22	3	12	14	16	15	14	11	14	11	14	13	19	21	17	19	10	6		229
2026-01-23	1	11	11	15	8	12	12	5	12	17	16	15	21	11	18	14	9		208
2026-01-24			4	7	11	9	11	15	15	16	9	17	16	8	9	8	5		160
2026-01-25				8	10	12	11	14	20	20	18	17	14	18	12	13	11		198
2026-01-26		10	24	20	19	12	20	14	12	18	19	15	14	14	17	7	5		240
2026-01-27	2	9	16	20	16	8	13	15	14	13	9	23	16	13	7	10	8		212
2026-01-28	3	11	15	23	14	10	14	16	23	11	21	19	16	18	14	13	6		247
2026-01-29	2	14	22	22	15	12	16	12	15	17	23	22	16	11	15	5	15	1	255
2026-01-30		4	14	18	15	15	12	23	15	16	21	15	16	11	13	15	17	2	242
2026-01-31			3	8	11	19	14	17	22	20	17	15	15	18	15	8	7		209
2026-02-01			1	7	11	7	17	23	28	19	22	12	13	17	12	10	6		205
2026-02-02	3	9	20	17	16	14	7	14	18	22	17	26	22	21	11	7	8		252
2026-02-03	6	10	23	26	14	15	13	18	11	23	18	22	15	17	14	10	7		262
2026-02-04	1	11	21	18	18	18	13	20	14	25	18	19	17	13	19	11	6		262
2026-02-05	4	10	23	22	15	19	18	11	16	16	12	21	17	13	13	7	8	2	247
2026-02-06	2	10	16	17	14	15	15	14	12	14	19	20	24	17	13	15	16	1	254
2026-02-07			6	10	10	10	14	12	18	14	15	13	20	9	13	15	12	1	192
2026-02-08			3	11	10	7	13	21	16	25	18	17	23	13	9	7	4		197
2026-02-09	1	13	21	23	15	17	16	15	14	19	23	17	21	13	9	12	7		256
2026-02-10	4	13	25	20	23	19	19	17	16	21	16	28	16	17	14	8	10		286
2026-02-11	1	12	23	18	19	14	17	13	18	19	21	22	24	18	13	10	12		274
2026-02-12	3	9	26	25	17	15	11	17	18	15	23	20	25	21	17	14	10		286
2026-02-13	4	9	22	18	15	11	14	25	16	19	22	19	23	20	14	12	8		271
2026-02-14			3	10	15	17	25	18	19	16	15	16	23	15	11	18	7	3	231
2026-02-15			5	6	14	17	17	21	15	11	20	19	16	16	13	9	8	1	208
2026-02-16	3	10	9	17	17	13	20	11	21	20	13	16	19	25	10	10	4		238
2026-02-17	3	12	23	23	21	12	14	23	16	20	24	22	17	21	15	10	8		284
2026-02-18	2	15	13	25	19	15	20	20	17	24	23	22	18	20	16	10	9		288
2026-02-19	3	10	23	24	20	19	23	17	20	20	20	26	20	21	21	12	12		311
2026-02-20	1	13	22	22	12	17	19	15	15	19	26	21	19	21	11	11	12		276
2026-02-21			8	7	16	12	12	13	16	14	17	17	20	12	17	15	7		203
2026-02-22			6	11	7	11	15	21	16	19	10	13	17	12	10	10	6		184
2026-03-17		10	15	17	17	16	9	16	8	19	18	14	10	16	9	10	10		214
2026-03-18	1	9	25	17	14	9	11	10	14	10	19	17	18	14	15	10	8		221
2026-03-19	1	14	21	17	15	17	14	15	12	17	17	14	11	14	15	10	10		234
2026-03-20	1	10	22	14	19	7	19	14	14	22	16	19	16	13	21	9	5		241
2026-03-21			3	14	15	16	20	13	16	20	15	12	17	12	10	12	10		205
2026-03-22			1	10	11	16	13	16	21	17	14	16	11	11	21	9	4		191
2026-03-23		14	16	18	15	15	11	18	11	19	18	21	20	18	10	7	7	1	239
2026-03-24	1	10	19	20	15	6	19	13	15	16	20	18	22	13	13	17	14		251
2026-03-25	1	14	24	18	15	13	15	10	13	16	23	19	23	22	11	17	5		259
2026-03-26	3	11	22	21	18	14	10	20	11	12	21	15	16	16	13	12	7		242
2026-03-27		10	24	17	18	17	13	21	18	21	17	23	19	20	15	16	10		279
2026-03-28			10	10	14	19	20	16	12	19	19	16	20	14	14	16	9		228
2026-03-29			5	6	10	16	12	18	20	16	16	15	17	10	12	15	8		196
2026-03-30	1	13	19	22	18	7	15	15	23	23	22	25	16	21	11	10	9	1	271
2026-03-31	4	16	22	18	15	12	11	18	15	12	17	22	18	14	16	12	11	2	255
Total Per Day	**272**	**1183**	**2555**	**2632**	**2458**	**2317**	**2642**	**2754**	**2724**	**2819**	**2970**	**2977**	**2855**	**2604**	**2306**	**1835**	**1429**	**50**	**39382**

Synchro Analysis Results

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	0	0	454	0	0
Future Volume (Veh/h)	37	0	0	454	0	0
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.87	0.87	0.92	0.92
Hourly flow rate (vph)	44	0	0	522	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	261	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	261	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	100	100			
cM capacity (veh/h)	706	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	44	261	261
Volume Left	44	0	0
Volume Right	0	0	0
cSH	706	1700	1700
Volume to Capacity	0.06	0.15	0.15
Queue Length 95th (ft)	5	0	0
Control Delay (s/veh)	10.4	0.0	0.0
Lane LOS	B		
Approach Delay (s/veh)	10.4	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: 48th Ave (NB) & 48th Ave (SB) Crossover

Movement	EB
Directions Served	L
Maximum Queue (ft)	33
Average Queue (ft)	14
95th Queue (ft)	39
Link Distance (ft)	13
Upstream Blk Time (%)	2
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	0	0	680	0	0
Future Volume (Veh/h)	60	0	0	680	0	0
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.90	0.90	0.92	0.92
Hourly flow rate (vph)	67	0	0	756	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	378	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	378	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	100	100			
cM capacity (veh/h)	597	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	67	378	378
Volume Left	67	0	0
Volume Right	0	0	0
cSH	597	1700	1700
Volume to Capacity	0.11	0.22	0.22
Queue Length 95th (ft)	9	0	0
Control Delay (s/veh)	11.8	0.0	0.0
Lane LOS	B		
Approach Delay (s/veh)	11.8	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: 48th Ave (NB) & 48th Ave (SB) Crossover

Movement	EB
Directions Served	L
Maximum Queue (ft)	32
Average Queue (ft)	19
95th Queue (ft)	42
Link Distance (ft)	13
Upstream Blk Time (%)	4
Queuing Penalty (veh)	3
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	67	0	0	459	0	0
Future Volume (Veh/h)	67	0	0	459	0	0
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.87	0.87	0.92	0.92
Hourly flow rate (vph)	79	0	0	528	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	264	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	100	100			
cM capacity (veh/h)	703	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	79	264	264
Volume Left	79	0	0
Volume Right	0	0	0
cSH	703	1700	1700
Volume to Capacity	0.11	0.16	0.16
Queue Length 95th (ft)	9	0	0
Control Delay (s/veh)	10.8	0.0	0.0
Lane LOS	B		
Approach Delay (s/veh)	10.8	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	291	82
Future Volume (Veh/h)	0	0	0	0	291	82
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Hourly flow rate (vph)	0	0	0	0	342	96
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	390	219	438			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	390	219	438			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	586	785	1118			

Direction, Lane #	SB 1	SB 2
Volume Total	228	210
Volume Left	0	0
Volume Right	0	96
cSH	1700	1700
Volume to Capacity	0.13	0.12
Queue Length 95th (ft)	0	0
Control Delay (s/veh)	0.0	0.0
Lane LOS		
Approach Delay (s/veh)	0.0	
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	14.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	136	0	0	237	54
Future Volume (Veh/h)	0	136	0	0	237	54
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Hourly flow rate (vph)	0	148	0	0	279	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	311	172	343			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311	172	343			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	82	100			
cM capacity (veh/h)	657	842	1213			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	148	186	157
Volume Left	0	0	0
Volume Right	148	0	64
cSH	842	1700	1700
Volume to Capacity	0.18	0.11	0.09
Queue Length 95th (ft)	16	0	0
Control Delay (s/veh)	10.2	0.0	0.0
Lane LOS	B		
Approach Delay (s/veh)	10.2	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	23.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: 48th Ave (SB)

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 2: 48th Ave (NB)

Movement	EB
Directions Served	L
Maximum Queue (ft)	49
Average Queue (ft)	13
95th Queue (ft)	39
Link Distance (ft)	6
Upstream Blk Time (%)	1
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 101: 48th Ave (SB) & Proposed N. Drwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 102: 48th Ave (SB) & Proposed S. Drwy

Movement	EB
Directions Served	R
Maximum Queue (ft)	74
Average Queue (ft)	37
95th Queue (ft)	58
Link Distance (ft)	175
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	0	0	687	0	0
Future Volume (Veh/h)	88	0	0	687	0	0
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.90	0.90	0.92	0.92
Hourly flow rate (vph)	99	0	0	763	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	382	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	382	0	0			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	100	100			
cM capacity (veh/h)	594	1084	1622			

Direction, Lane #	EB 1	NB 1	NB 2
Volume Total	99	382	382
Volume Left	99	0	0
Volume Right	0	0	0
cSH	594	1700	1700
Volume to Capacity	0.17	0.22	0.22
Queue Length 95th (ft)	15	0	0
Control Delay (s/veh)	12.3	0.0	0.0
Lane LOS	B		
Approach Delay (s/veh)	12.3	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	556	68
Future Volume (Veh/h)	0	0	0	0	556	68
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.89	0.89
Hourly flow rate (vph)	0	0	0	0	625	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	663	351	701			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	663	351	701			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	394	646	892			

Direction, Lane #	SB 1	SB 2
Volume Total	417	284
Volume Left	0	0
Volume Right	0	76
cSH	1700	1700
Volume to Capacity	0.25	0.17
Queue Length 95th (ft)	0	0
Control Delay (s/veh)	0.0	0.0
Lane LOS		
Approach Delay (s/veh)	0.0	
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	114	0	0	511	45
Future Volume (Veh/h)	0	114	0	0	511	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.89	0.89
Hourly flow rate (vph)	0	124	0	0	574	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	600	313	625			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	600	313	625			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	82	100			
cM capacity (veh/h)	433	683	952			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	124	383	242
Volume Left	0	0	0
Volume Right	124	0	51
cSH	683	1700	1700
Volume to Capacity	0.18	0.23	0.14
Queue Length 95th (ft)	16	0	0
Control Delay (s/veh)	11.4	0.0	0.0
Lane LOS	B		
Approach Delay (s/veh)	11.4	0.0	
Approach LOS	B		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: 48th Ave (SB)

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 2: 48th Ave (NB)

Movement	EB
Directions Served	L
Maximum Queue (ft)	49
Average Queue (ft)	24
95th Queue (ft)	44
Link Distance (ft)	6
Upstream Blk Time (%)	4
Queuing Penalty (veh)	2
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 101: 48th Ave (SB) & Proposed N. Drwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 102: 48th Ave (SB) & Proposed S. Drwy

Movement	EB
Directions Served	R
Maximum Queue (ft)	74
Average Queue (ft)	35
95th Queue (ft)	58
Link Distance (ft)	175
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 2

Store-66

Stacey Wilson
APPROVED
3-23-2021

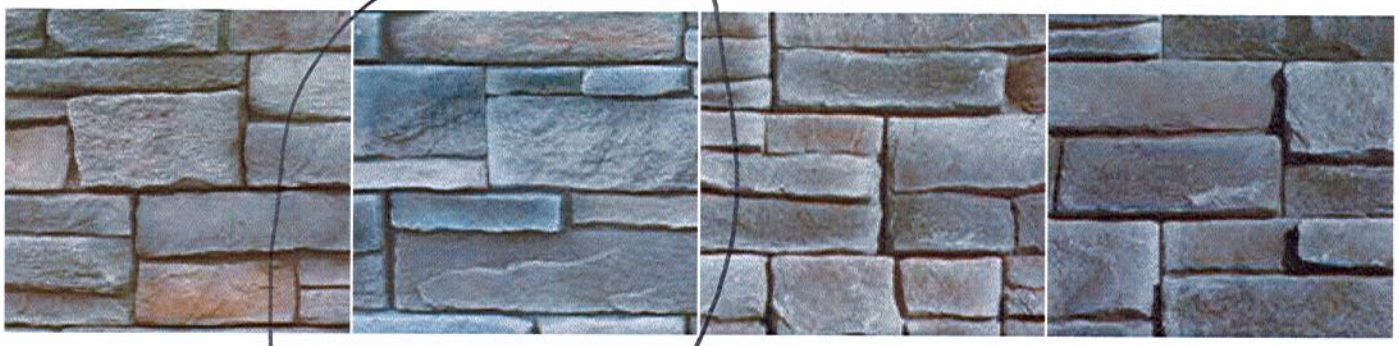
Great Lakes Specifications

Unit Dimensions

Specifications

	STONE	CORNER STONE
THICKNESS	1" TO 2"	1" TO 2"
HEIGHT	5"	5"
LENGTH	8", 12" & 20"	8" & 12"
RETURN	N/A	4"

Available Colours



Brindle Raven Fawn Carbon

If you are interested in receiving a sample please call 800.265.3174.

Great Lakes Installation

Besides a luxurious, rugged and traditional profile available in four distinctive colour selections Great Lakes has the added benefit of mortar-free installation. This means no mess and a quick start to finish project time. Curb appeal is assured with Great Lakes as is a rich and refined touch to any interior project.

Patented DIY Clip System

Fusion Stone features a patented system of stainless steel clips and screws that can be installed in any weather by anyone for a lifetime of maintenance free performance.

SIMPLE, CONSISTENT EXECUTION

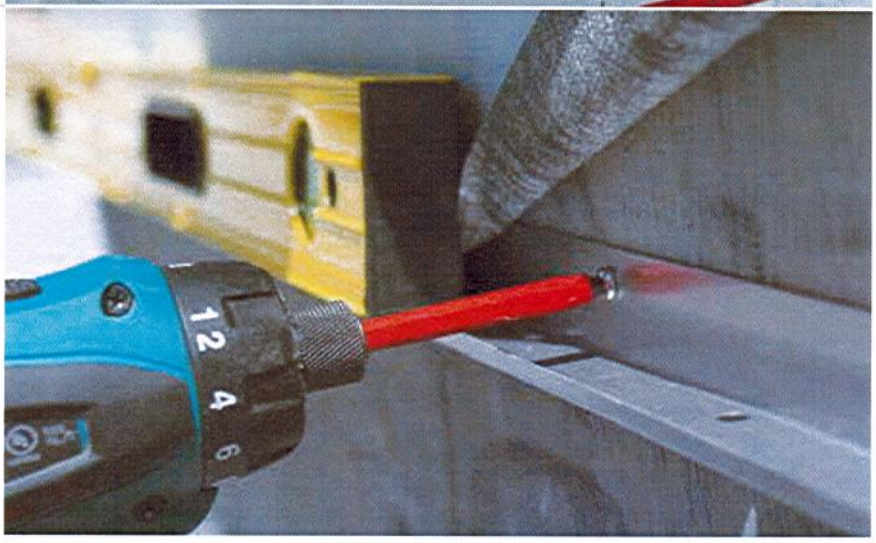
Installation Overview

Prepare the Surface

Fusion Stone is installed over a plywood or OSB substrate. Ensure that the substrate has been covered in a code approved, breathable, weather resistant barrier. Not required on interior installations.

Install the Starter Strip

Starter Strips are used at the base of all jobs as well as above any openings (windows and doors). Level and install the Starter Strips using the stainless steel screws provided.



FOR FLAWLESS DELIVERY OF YOUR AESTHETIC VISION EVERYTIME.

Complete Corner Install

Begin installing Fusion Stone at the corner. As you build the corner ensure that you alternate short and long sides.

Continue Stone Installation

Continue to lay the stone in the pattern described in the detailed instructions. The last stone installed on every row may need to be cut to length

Dry-Stack Specifications

Unit Dimensions

Specifications

	STONE	CORNER STONE
THICKNESS	32MM	32MM
HEIGHT	95MM & 190MM	95MM & 190MM
LENGTH	130MM TO 390MM	220MM
RETURN	N/A	90MM

Available Colours

Caramel

Charcoal

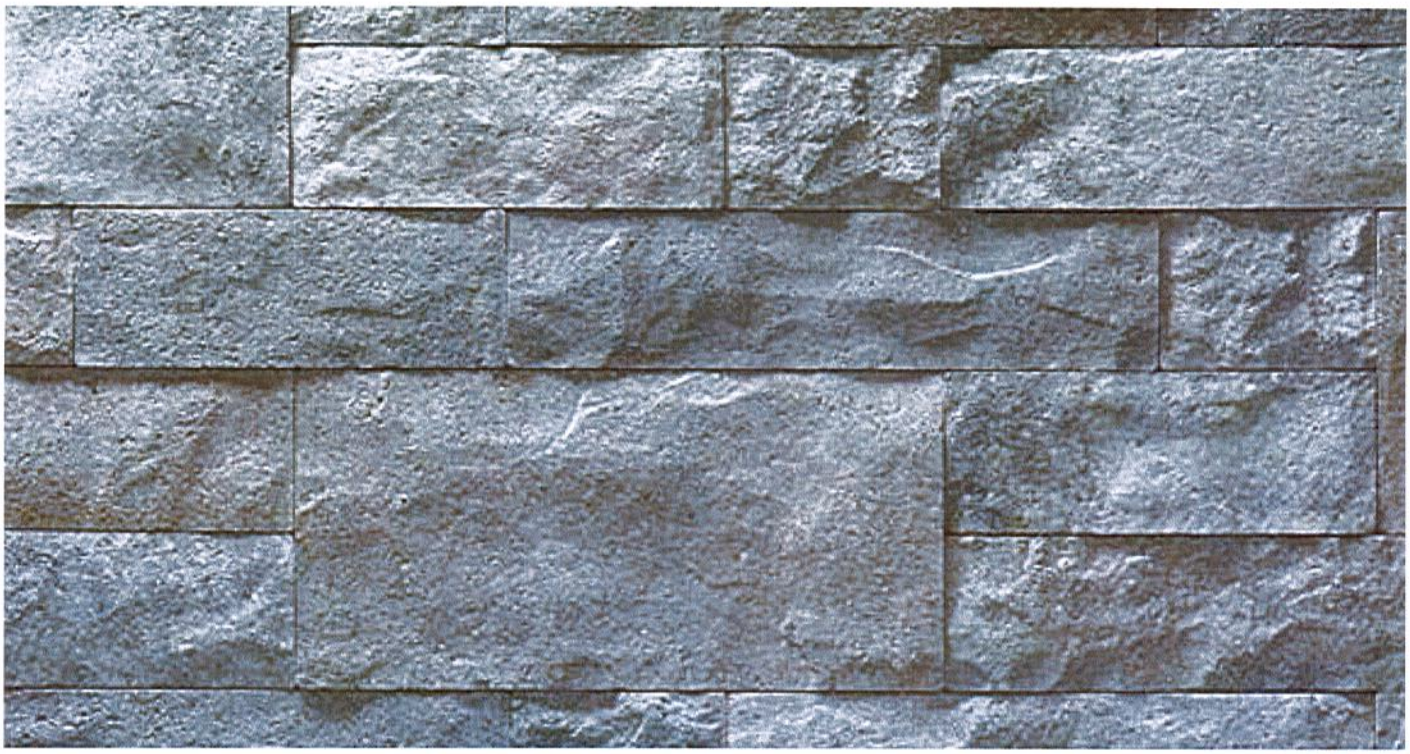
If you are interested in receiving a sample please call 800.265.3174.

Dry-Stack Installation

The benefit of a modern, highly finished appearance, characteristic of Dry-Stack, is complemented by the no mess, easy application appeal of a no mortar installation. Two colour choices that coordinate well with almost any background or associated material complete a picture of design perfection.

Patented DIY Clip System

Fusion Stone features a patented system of stainless steel clips and screws that can be installed in any weather by anyone for a lifetime of maintenance free performance.



SIMPLE, CONSISTENT EXECUTION

Installation Overview

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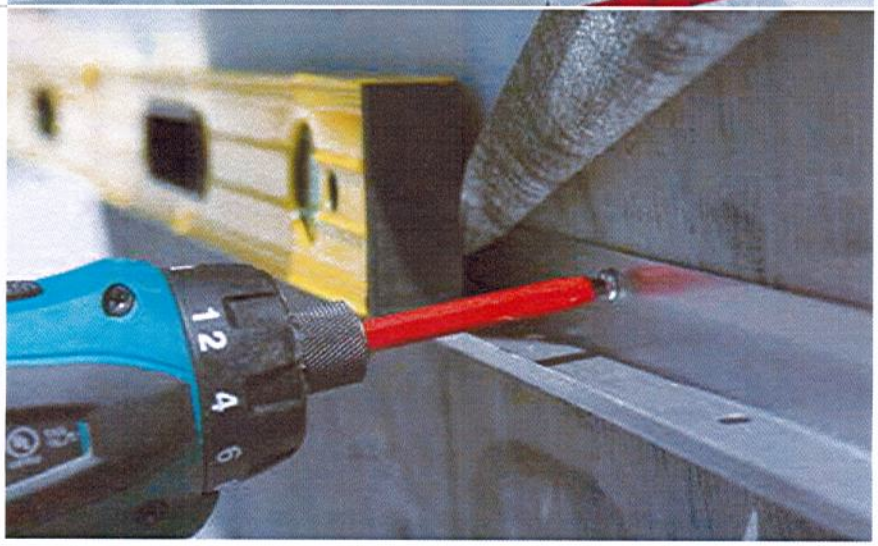
Install the Starter Strip

Starter Strips are used at the base of all jobs as well as above any openings (windows and doors). Level and install the Starter Strips using the stainless steel screws provided.



FOR FLAWLESS DELIVERY OF YOUR AESTHETIC VISION EVERYTIME.

Complete Corner Install

Begin installing Fusion Stone at the corner. As you build the corner ensure that you alternate short and long sides.

Continue Stone Installation

Continue to lay the stone in the pattern described in the detailed instructions. The last stone installed on every row may need to be cut to length.

FUSION
STONE

Welcome to FUSION STONE

As you review the information in this package please do not hesitate to contact us if you have any questions.

CCMC# 14008-R

FUSION STONE

Do-it-yourself Masonry...
You can actually do yourself.

"Fusion" is defined as "a merging of diverse, distinct, or separate elements into a unified whole". So it is with Fusion Stone; the coming together of the beauty, strength, and maintenance free characteristics of traditional stone with the ease of installation and affordability of stone veneer. Truly the best of both worlds!

Fusion Stone is an easy and budget-friendly way to beautifully upgrade a home or business, both inside and out. The easy, step-by-step installation process can be implemented in a variety of ways from exterior walls, BBQs, and planter boxes to interior fireplaces, kitchen islands, backsplashes, and feature walls.

A patented Shouldice innovation, Fusion Stone is a thin stone veneer that is easily installed with the included stainless steel clips & screws. You just screw it to the wall and it's "Hooked for Life".

Fusion Stone is also a great product for contractors. It has proven consumer appeal, multiple application possibilities, is quick and easy to install, and has a compelling margin opportunity.

www.fusionstone.ca

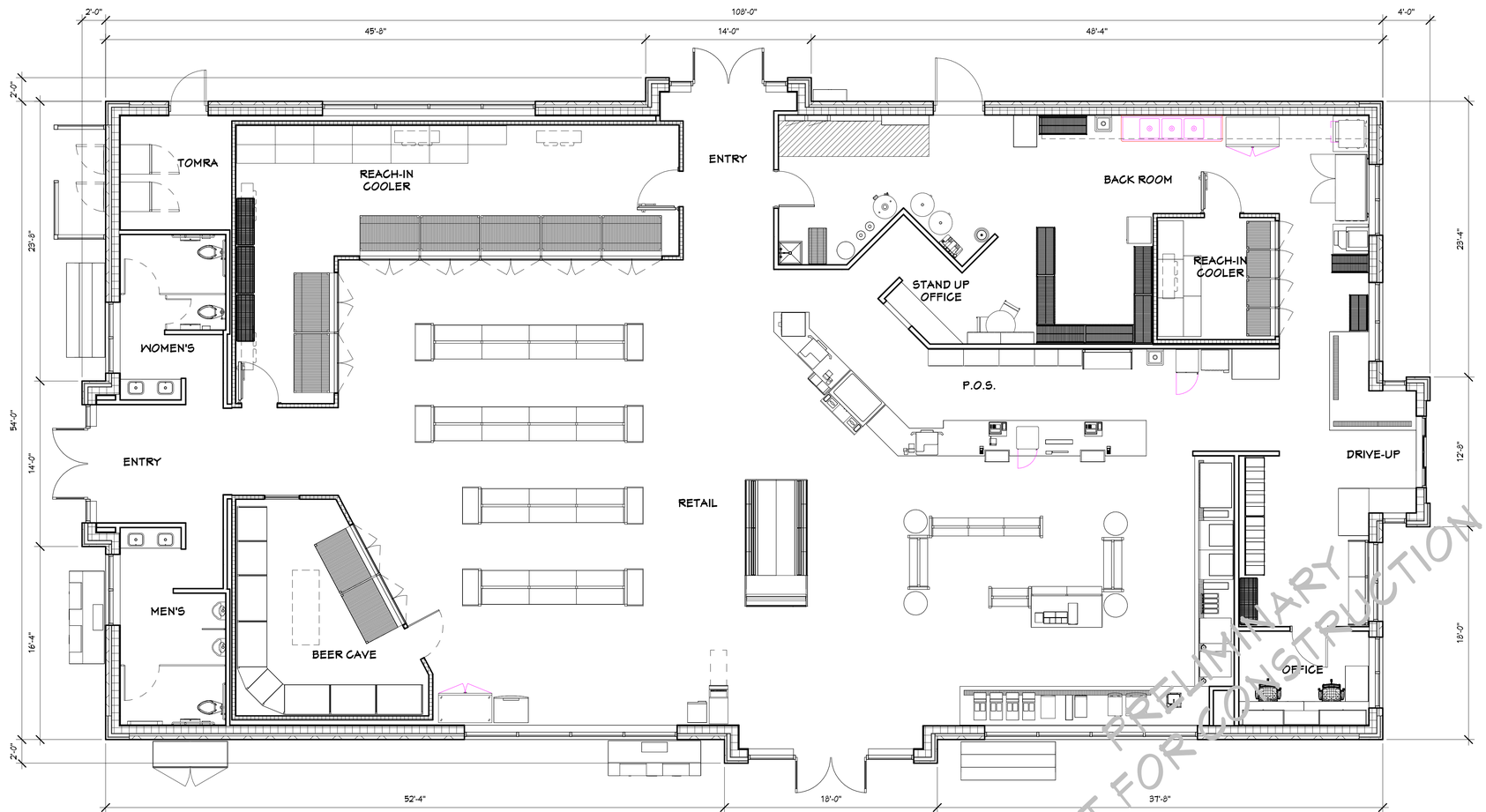
3884

Welcome to FUSION STONE

As you review the information in this package please do not hesitate to contact us if you have any questions.

CCMC# 14008-R

Model		BE43T-H	BE50T-H	BE55T-H	BE65T-H	BE70T-H	BE75T-H
Certification	Safety	UL(USA) : cUL60065	UL(USA) : cUL60065	UL(USA) : cUL60065	UL(USA) : cUL60065	UL(USA) : cUL60065	UL(USA) : cUL60065
	EMC	Class B FCC (USA) Part 15, Subpart B	Class B FCC (USA) Part 15, Subpart B	Class B FCC (USA) Part 15, Subpart B	Class B FCC (USA) Part 15, Subpart B	Class B FCC (USA) Part 15, Subpart B	Class B FCC (USA) Part 15, Subpart B
	Included	Remote Control, Batteries, User Manual, Power Cable	Remote Control, Batteries, User Manual, Power Cable	Remote Control, Batteries, User Manual, Power Cable	Remote Control, Batteries, User Manual, Power Cable	Remote Control, Batteries, User Manual, Power Cable	Remote Control, Batteries, User Manual, Power Cable
Accessory	Optional Stand	Yes	Yes	Yes	Yes	Yes	Yes
	Optional Mount	N/A	N/A	N/A	N/A	N/A	N/A
	Optional Specialty	N/A	N/A	N/A	N/A	N/A	N/A
	Media Player	USB M / player	USB M / player	USB M / player	USB M / player	USB M / player	USB M / player
Video	Picture Engine	Crystal Processor 4K	Crystal Processor 4K	Crystal Processor 4K	Crystal Processor 4K	Crystal Processor 4K	Crystal Processor 4K
	HDR10+	Yes	Yes	Yes	Yes	Yes	Yes
Audio	Dolby Digital Plus	Yes	Yes	Yes	Yes	Yes	Yes
	Sound Output (RMS)	20W	20W	20W	20W	20W	20W
	Speaker Type	2CH (10W+10W)	2CH (10W+10W)	2CH (10W+10W)	2CH (10W+10W)	2CH (10W+10W)	2CH (10W+10W)
	Woofer	N/A	N/A	N/A	N/A	N/A	N/A
	Bluetooth Audio	Yes	Yes	Yes	Yes	Yes	Yes
Broadcasting System	Digital Broadcasting	ATSC / ClearQAM	ATSC / ClearQAM	ATSC / ClearQAM	ATSC / ClearQAM	ATSC / ClearQAM	ATSC / ClearQAM
	DTV Sound System	Dolby	Dolby	Dolby	Dolby	Dolby	Dolby
	Analog Tuner	Yes	Yes	Yes	Yes	Yes	Yes
	Analog Tuner Type	NTSC 3.58	NTSC 3.58	NTSC 3.58	NTSC 3.58	NTSC 3.58	NTSC 3.58
	CI (Common Interface)	N/A	N/A	N/A	N/A	N/A	N/A
Smart Service	Smart TV Type	Smart	Smart	Smart	Smart	Smart	Smart
	Operating System	Tizen™	Tizen™	Tizen™	Tizen™	Tizen™	Tizen™
	Supported	Samsung businessTV, Web browser, Youtube	Samsung businessTV, Web browser, Youtube	Samsung businessTV, Web browser, Youtube	Samsung businessTV, Web browser, Youtube	Samsung businessTV, Web browser, Youtube	Samsung businessTV, Web browser, Youtube
	Adaptive Sound	Adaptive Sound	Adaptive Sound	Adaptive Sound	Adaptive Sound	Adaptive Sound	Adaptive Sound
	Instant On	Yes	Yes	Yes	Yes	Yes	Yes
	Game Mode	Yes (Game Enhancer)	Yes (Game Enhancer)	Yes (Game Enhancer)	Yes (Game Enhancer)	Yes (Game Enhancer)	Yes (Game Enhancer)
Additional Feature	Mobile to TV - Mirroring, DLNA	Yes	Yes	Yes	Yes	Yes	Yes
	Remote Access	Yes	Yes	Yes	Yes	Yes	Yes
	Easy Setup	No	No	No	No	No	No
	Wired TV On - Samsung WOL	Yes	Yes	Yes	Yes	Yes	Yes
	WiFi Direct	Yes	Yes	Yes	Yes	Yes	Yes
	TV Sound to Mobile	Yes	Yes	Yes	Yes	Yes	Yes
	Sound Mirroring	Yes	Yes	Yes	Yes	Yes	Yes
	BizTV App (Android, iOS)	Yes	Yes	Yes	Yes	Yes	Yes
	On/Off timer	Yes	Yes	Yes	Yes	Yes	Yes
	Autorun Signage(App auto launch)	Yes	Yes	Yes	Yes	Yes	Yes
	App pre-installation	Yes	Yes	Yes	Yes	Yes	Yes
	OTN On/Off	Yes	Yes	Yes	Yes	Yes	Yes
	Security lock	Yes	Yes	Yes	Yes	Yes	Yes
	Panel button lock	Yes	Yes	Yes	Yes	Yes	Yes
	Usb port lock	Yes	Yes	Yes	Yes	Yes	Yes
	Mobile Connection menu lock	Yes	Yes	Yes	Yes	Yes	Yes



NORTH

FLOOR PLAN

3/16" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

CONCEPT DESIGN STUDIO, INC.
800 E. ELLIS ROAD SUITE 506
NORTON SHORES, MI 49441
PH. (231) 799-4936
FAX (231) 799-4937

CDS
CONCEPT DESIGN STUDIO, INC.

NEW STORE FOR:

WESCO, INC. - STORE #32

ALLENDALE, MICHIGAN

PROJECT # 1660-26

ISSUANCES

OWNER REVIEW XX.XX.2026

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DRAWN BY KAW

SHEET TITLE

PRELIMINARY FLOOR PLAN

SHEET NO.

A1.01

4/16/2026 11:09:03 AM C:\Users\lwolff\Documents\Revit User Files\1660-25_Wesco - Store #32_2026_lwolff@conceptdesignstudio.net.rvt

Allendale Twp. Ordinance Requirements:

Article 21A.04 F.1: Front Yard Requirements

For each 150' of road frontage 2 deciduous or evergreen trees, 2 ornamental trees and 8 shrubs per tree is required.

Required along 48th Ave.: (377.14'/10) 5.02 dec. or ever. trees, 5.02 ornamental trees and 50.12 shrubs

Provided along 48th Ave.: 5 deciduous trees, 2 evergreen trees, 5 ornamental trees and 44 shrubs

Article 21A.04 G: Off Street Parking Area Requirements

All parking areas consisting of 20 or more spaces shall have 20 sf of landscaping per space.

Required based on 49 parking spaces 980 sf of landscaping.

Provided based on 49 parking spaces 1440 sf of landscaping.

Required one canopy tree per 20 parking spaces: 49 spaces/20 = 2.45 trees

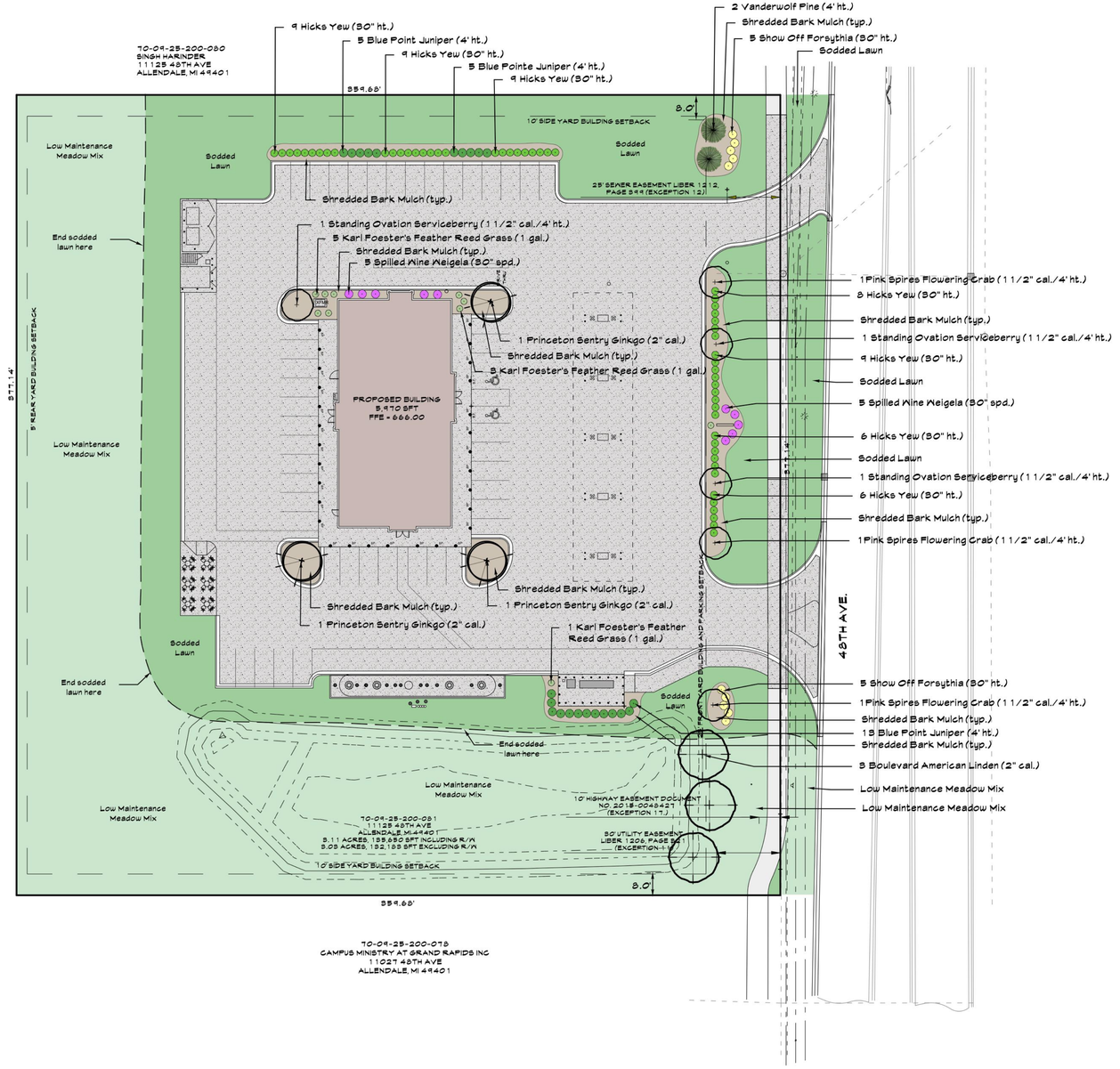
Provided based on 49 parking spaces 3 canopy trees and 1 ornamental tree.

In addition to the front yard landscaping requirements of this Section:

A continuous landscaped hedge with a minimum height of twenty-four (24) inches at planting with a minimum height of three (3) feet at maturity consisting of plant material that will maintain its green foliage year round along the entire length of the parking area

Article 24 .05 F9:

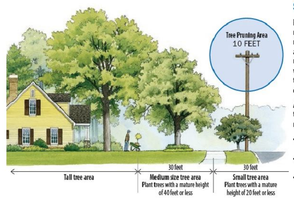
I certify this landscape plan if installed as shown to be per ordinance



Plant List

Quantity	Common Name	Latin Name	Planted Size
2	Princeton Sentry Ginkgo	Ginkgo biloba 'Princeton Sentry'	2" cal..
5	Boulevard American Linden	Tilia americana 'Boulevard'	2" cal..
2	Vanderwolf Pine	Pinus flexilis 'Vanderwolf'	4' ht.
25	Blue Point Juniper	Juniperus chinensis 'Blue Point'	4' ht.
5	Standing Ovation Serviceberry	Amelanchier alnifolia 'Obelisk'	1 1/2" cal/4' ht.
9	Pink Spires Flowering Crab	Malus 'Pink Spires'	1 1/2" cal/4' ht.
10	Spilled Wine Weigela	Weigela florida 'Bokraspiwi'	30" spd.
10	Show Off Forsythia	Forsythia x intermedia 'Show Off'	30" ht.
56	Hick's Yew	Taxus 'Hicksii	30" ht.

(note: Plant list for ordinance purposes only, the landscape contractor is responsible for plant quantities shown on the landscape plan)

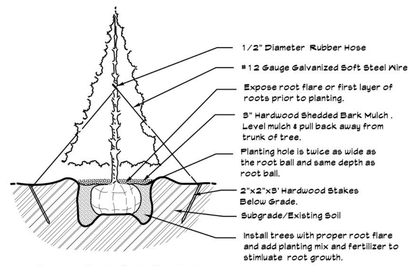


Smart planting

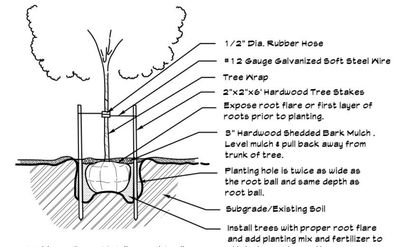
No trees should be planted near power lines. However, many trees are attractive additions to your yard and, under normal conditions, will not grow tall enough to interfere with our distribution lines.

Avoid planting tall-growing trees such as the following near or under power lines:

- Silver Maple
- Norway Maple
- Oak
- White Spruce
- Colorado Blue Spruce
- Most pines
- Willows



Evergreen Planting Detail-8' and Taller



Deciduous Trees 3" Caliper and Smaller

Shrub Planting Detail

Low Maintenance Meadow Mix
50% CHEWINGS FESCUE
30% HARD FESCUE
20% SHEEP FESCUE

Notes:

1. All landscaping shall be installed by a qualified Landscape Contractor. Plant sizes specified on the landscape plan shall be the size planted. Plants smaller then specified will be rejected. Substitutions of any kind must be approved by the Landscape Architect.
2. All plantings shall be mulched with 3" shredded premium hardwood bark mulch. Trees in lawn areas shall receive a 6' diameter bark ring 3" deep.
3. The landscape contractor shall remove any twine that is wrapped around the trunk of a tree or shrub as well as the top third of any burlap. Remove excess soil on the top of the root ball to expose the root flare or first layer of roots prior to planting. Use a wire cutter to make 3-5 cuts in the wire basket to allow roots to grow through.
4. Trees and shrubs shall be planted with a plant mixture consisting of 1/3 existing soil, 1/3 topsoil and 1/3 composted manure or peat.When planting trees in the lawn area or on a berm the existing soil within a 10 foot diameter shall be loosened by tilling or similar and amended with composted manure or peat at a depth of 6-12".
5. Planting areas shall be edged with a mechanical bed edger to define a border for the shedded bark mulch.
6. Parking Islands shall be back filled with at least 24" of topsoil. Amend the topsoil with composted manure or peat and mix into the topsoil at a depth of 6-12". Any aggregate or stone from the construction of the parking lot shall be removed prior to backfill.
7. Lawn areas shall recieve at least 4" of topsoil and sodded as indicated on the landscape plan. Check with specifications for topsoil availability or contact project manager. Topsoil for lawns shall be appropriate for growing and sustaining a healthy lawn. Sodded lawns shall be a seed mix appropriate for the region and site. The storm water basin and disturbed areas beyond the sodded lawn areas shall be seeded with a low maintenance meadow mix.
8. Maintenance of the landscape shall be provided for by the owner and include fertilizing of lawn and plant material, yearly pruning, top dressing of mulch areas every other year and provide 1" of water per week during the growing season.
9. Plant materials shall be chosen and installed in accordance with standards recommended by the County Cooperative Extension Service or American Nursery Association.

North

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

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STATE OF MICHIGAN
JOYCE E. WEISE
LANDSCAPE ARCHITECT
No. 1202
LICENSED LANDSCAPE ARCHITECT

Landscape Plan Drawn By:
Joyce E. Weise PLA, ASLA

Wesco Store #32

48th Ave. Allendale Twp., Michigan

PROPOSED LANDSCAPE PLAN FOR:

AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS

PROJECT NUMBER:
251107

DRAWN BY:
Joyce E. Weise PLA, ASLA

DRAWING DATE:
051926

ISSUED FOR:

05/23/26	Approval
05/31/26	Per Review

SCALE
1"=30'

SHEET NUMBER
L-101

ELECTRICAL SYMBOL LEGEND

LIGHTING

- FIXTURE - RECTANGULAR RECESSED
- FIXTURE - RECTANGULAR SURFACE
- FIXTURE - RECTANGULAR SUSPENDED
- FIXTURE - RECTANGULAR WALLWASH
- FIXTURE - ROUND PENDANT
- FIXTURE - ROUND RECESSED
- FIXTURE - ROUND SURFACE
- FIXTURE - ROUND WALLWASH
- FIXTURE - WALL STRIP LIGHT
- FIXTURE - WALL MOUNTED
- FIXTURE - TRACK
- FIXTURE - TRACK SPOT LIGHT
- FIXTURE - STRIP LIGHT
- FIXTURE - SITE BOLLARD
- FIXTURE - SITE POLE ARM MOUNT
- FIXTURE - SITE POLE POST TOP (SQUARE, ROUND)
- LAMP HOLDER WITH PULL STRING (WALL, CEILING)
- FAN OUTLET (CEILING)
- PADDLE CEILING FAN
- ELU - CEILING (SINGLE, DUAL)
- ELU - REMOTE HEAD CEILING (SINGLE, DUAL)
- EXIT SIGN CEILING (1-FACE, 2-FACE)
- EXIT SIGN WALL (1-FACE, 2-FACE)
- EXIT SIGN / ELU (CEILING, WALL)

LIGHTING CONTROLS

- LIGHTING CONTACTOR
- LIGHTING CONTROL PANEL
- LIGHTING SYSTEM CONTROLLER
- RELAY PACK - AUTOMATIC LOAD CONTROL RELAY
- RELAY PACK - AUXILIARY RELAY
- RELAY PACK - POWER PACK
- RELAY PACK - LOAD CONTROLLER
  - BLANK = LIGHTING W/ 0-10V DIMMING
  - "EM" = EMERGENCY
  - "PD" = PHASE DIMMING
  - "PL" = PLUG LOAD
- SWITCH
  - BLANK = 1-POLE
  - "2" = 2-POLE
  - "3" = 3-WAY
  - "4" = 4-WAY
  - "D" = DIMMER
  - "K" = KEYED
  - "LV" = LOW-VOLTAGE
  - "LVD" = LOW-VOLTAGE - DIMMING
  - "LVK" = LOW-VOLTAGE - KEYED
  - "N_" = NETWORK (REF. TO SWITCH SCHEDULE)
  - "OS" = OCCUPANCY SENSOR
  - "OS1" = OCCUPANCY SENSOR - 2-ZONE
  - "OSD" = OCCUPANCY SENSOR - DIMMING
  - "P" = PILOT LIGHT
  - "T" = TIMER - COUNTDOWN
  - "TA" = TIMER - ASTRONOMIC & 24-HR/7-DAY
  - "TH" = TIMER - 24-HR/7-DAY
  - "WP" = WEATHERPROOF
- SENSOR - OCCUPANCY CEILING
  - BLANK = INDOOR
  - "EXT" = EXTERIOR
  - "HB" = HIGHBAY
  - "LT" = LOW TEMPERATURE
  - "WG" = WIREGUARD
  - "WL" = WET LOCATION
- SENSOR - OCCUPANCY WALL
- SENSOR - PARTITION CEILING
- SENSOR - PHOTOCELL (CEILING, WALL)
- SENSOR - PHOTOSENSOR (CEILING, WALL)
- TIME SWITCH - ELECTRONIC
- TOUCHPANEL

POWER DEVICES

- BLANKED OUTLET
- CONTACTOR
- CONTACTOR RECESSED
- DIRECT CONNECTION
- DISCONNECT SWITCH
- DISCONNECT SWITCH FUSED
- EMERGENCY POWER OFF SWITCH
- JUNCTION BOX
- JUNCTION BOX CEILING
- JUNCTION BOX FLOOR
- METER WITH SOCKET ENCLOSURE
- MOTOR (W/ HP INDICATED)
- MOTORIZED DAMPER
- MOTOR CONTROLLER
- MOTOR CONTROLLER WITH DISCONNECT SWITCH
- MULTI-OUTLET ASSEMBLY
- MULTI-OUTLET SURFACE RACEWAY (VERTICAL)
- POWER POLE
- PULL BOX
- RECEPTACLE - DUPLEX WALL
  - X-"X" = MOUNTING HEIGHT TO CENTERLINE
  - "AC" = ABOVE COUNTER
  - "C" = CONTROLLED
  - "IG" = ISOLATED GROUND
  - "NL" = NIGHT LIGHT
  - "RGF" = PROTECTED BY REMOTE GFCI DEVICE
  - "SPD" = SURGE PROTECTIVE DEVICE
  - "TH" = 24-HR/7-DAY TIMER
  - "TR" = TAMPER RESISTANT
  - "USB" = USB
  - "WP" = WEATHERPROOF
  - "WR" = WEATHER RESISTANT
- RECEPTACLE - DUPLEX GFCI
- RECEPTACLE - DUPLEX SPLIT-CIRCUIT
- RECEPTACLE - DUPLEX ON EMERGENCY CIRCUIT
- RECEPTACLE - DUPLEX CEILING
- RECEPTACLE - CORD REEL
- RECEPTACLE - DROP CORD ON JBOX
- RECEPTACLE - DUPLEX FLOOR
  - BLANK = RECESSED
  - "FURN." = FURNITURE FEED
  - "PED." = PEDESTAL
- RECEPTACLE - COUNTERTOP
- RECEPTACLE - QUADRUPLEX
- RECEPTACLE - SINGLE WALL
- RECEPTACLE - SPECIAL WALL
  - "#-#R" = NEMA CONFIGURATION
- SWITCH
  - BLANK = 1-POLE
  - "F" = FUSED
  - "FS" = FAN SPEED CONTROL
  - "FSD" = FAN SPEED CONTROL AND DIMMER
  - "HS" = HUMIDITY SENSOR
  - "HS1" = HUMIDITY SENSOR - W/ LIGHT SWITCH
  - "M" = MANUAL MOTOR STARTER
  - "RTS" = REMOTE TEST SWITCH
  - "TF" = TIMER - VENTILATION FAN AIR CYCLE
- STATIC GROUND RECEPTACLE
- UTILITY SERVICE POWER POLE

POWER DISTRIBUTION EQUIPMENT

- PANELBOARD
- ATS — AUTOMATIC TRANSFER SWITCH
- GDS — GENERATOR DOCKING STATION
- MTS — MANUAL TRANSFER SWITCH
- NTS — NON-AUTOMATIC TRANSFER SWITCH
- GEN. — GENERATOR
- T — TRANSFORMER
- SWITCHBOARD SECTION
- MOTOR CONTROL CENTER (TWO SECTION)

DATA & TELEPHONE

- OUTLET - DATA WALL
- OUTLET - DATA CEILING
- OUTLET - DATA FLOOR
- OUTLET - DATA AND TELEPHONE
- OUTLET - TELEPHONE
- TELECOM RACK - FLOOR MOUNTED
- TELECOM RACK - WALL MOUNTED
- TELEPHONE BOARD (T. BRD.)
- WIRELESS ACCESS POINT (AP)

COMMUNICATION SYSTEMS

- BELL
- CALL STATION
- CATV OUTLET
- CLOCK
- SPEAKER - CEILING, WALL
- MICROPHONE OUTLET
- TV OUTLET
- VOLUME CONTROL
- ELAPSED TIMER

SECURITY

- ACCESS CONTROL - CARD READER
- ACCESS CONTROL - DOOR CONTACT
- ACCESS CONTROL - ELECTRIC PANIC HARDWARE
- ACCESS CONTROL - ELECTRIC STRIKE
- CAMERA
- DOOR BELL
- DOOR CHIME
- ENTRY INTERCOM - DOOR STATION
- ENTRY INTERCOM - ENTRY STATION
- ENTRY INTERCOM - GUARD STATION
- ENTRY INTERCOM - MASTER STATION
- ENTRY INTERCOM - SUBMASTER STATION
- ENTRY INTERCOM - TENANT STATION
- KEYPAD
- PUSHBUTTON SINGLE WALL
- MOTION DETECTOR CEILING
- MOTION DETECTOR WALL
- REQUEST-TO-EXIT
- SIREN
- SIREN STROBE
- STROBE LIGHT
- UNDERCOUNTER PUSHBUTTON

FIRE ALARM & MASS NOTIFICATION

- ADDRESSABLE INPUT MODULE
- ADDRESSABLE OUTPUT MODULE
- FIRE ALARM BELL
- DETECTOR; CARBON MONOXIDE
- DETECTOR; DUCT SMOKE
- DETECTOR; HEAT
- DETECTOR; SMOKE
  - "MSA" = MULTI-STATION ALARM
  - "SSA" = SINGLE-STATION ALARM
- DETECTOR; SMOKE AND CARBON MONOXIDE
- DOOR HOLDER
- MANUAL PULL STATION
- NOTIFICATION; HORN (CEILING, WALL)
  - "LF" = LOW-FREQUENCY (520 HZ)
- NOTIFICATION; HORN-STROBE (CEILING, WALL)
- NOTIFICATION; SPEAKER-STROBE (CEILING, WALL)
- NOTIFICATION; STROBE (CEILING, WALL)

NURSE CALL

- CODE BLUE STATION
- DUTY STATION
- EMERGENCY STATION
  - "PC" = PULL CORD
- PATIENT STATION
- STAFF STATION
- DOME LIGHT CEILING - 1-COLOR
- DOME LIGHT WALL - 1-COLOR

FIRE PROTECTION (REFERENCE ONLY)

- SPRINKLER FLOW SWITCH (FS)
- SPRINKLER POST INDICATOR VALVE (PIV)
- SPRINKLER TAMPER SWITCH (TS)

MECHANICAL DEVICES (REFERENCE ONLY)

- HUMIDISTAT
- HUMIDITY SENSOR
- THERMOSTAT
- TEMPERATURE & HUMIDITY SENSOR
- TEMPERATURE SENSOR

WIRE & PATHWAYS

- CABLE TRAY
- CIRCUIT HOMERUN
- CONDUIT (VERTICAL)
- CONDUIT JUNCTION BOX

MISCELLANEOUS

- 1i — TAG - ARCHITECTURAL EQUIPMENT
- 101 — TAG - DOOR
- # — TAG - DRAWING REVISION
- # — TAG - KEYNOTE
- TAG - LIGHTING CONTROL RELAY
- XXX-## — TAG - MECHANICAL EQUIPMENT
- ROOM NAME / 101 — TAG - ROOM
- SPOT ELEVATION
- - / --- — NUMBER OF DETAIL ON SHEET / NUMBER OF SHEET WHERE DETAIL APPEARS
- 1 / A101 SIM — SECTION HEAD
- 1 Ref / Ref A101 Ref / Ref 1 — ELEVATION MARK
- 1 / A101 View Name — 1/8" = 1'-0" VIEW TITLE WITH NORTH ARROW
- 0 4" 8" 16" — GRAPHIC SCALE

LINES

- PHASE - NEW
- PHASE - EXISTING
- PHASE - DEMOLITION
- CLEARANCE

FILLED REGIONS

- AREA OF DEMOLITION

ABBREVIATIONS & ACRONYMS

AC	ALTERNATING CURRENT
ACS	ACCESS CONTROL SYSTEM
ADJ	ADJACENT
AF	AMP FRAME
AFC	AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
AL, ALUM	ALUMINUM
ALT	ALTERNATE
AMPL	AMPLIFIER
ANNUN	ANNUNCIATOR
APPROX	APPROXIMATELY
ARCH	ARCHITECT, ARCHITECTURAL
AS	AMP SWITCH
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CAB	CABINET
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCA	COPPER CLAD ALUMINIM
CCTV	CLOSED CIRCUIT TELEVISION
CF, CU FT	CUBIC FEET
CKT	CIRCUIT
CLG	CEILING
CM	CONSTRUCTION MANAGER
COAX	COAXIAL
COMM	COMMUNICATIONS
COPS	CRITICAL OPTERATIONS POWER SYSTEMS
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREE
DET	DETAIL
DEMO	DEMOLITION
DIA	DIAMETER
DISC	DISCONNECT
DPDT	DOUBLE POLE DOUBLE THROW
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EHD	ELECTRIC HAND DRYER
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATOR
ELU	EMERGENCY LIGHTING UNIT
EM, EMERG	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EPO	EMERGENCY POWER OFF
EPSS	EMERGENCY POWER SUPPLY SYSTEM
EQ	EQUAL
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EX, EXIST	EXISTING
EXT	EXTERIOR
FA	FIRE ALARM
FAA	FIRE ALARM ANNUCIATOR
FACU	FIRE ALARM CONTROL UNIT
FDS	FUSED DISCONNECT SWITCH
FLA	FULL LOAD AMPERES
FLR	FLOOR
FMC	FLEXIBLE METAL CONDUIT
FPC	FIRE PUMP CONTROLLER
FU	FUSE
G, GND	GROUND
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFPE	GROUND FAULT PROTECTION OF EQUIPMENT
GYP	GYPSUM
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
HOA	HANDS-OFF AUTOMATIC SWITCH
HORIZ	HORIZONTAL
HTR	HEATER
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
IDF	INTERMEDIATE DISTRIBUTION FRAME
IMC	INTERMEDIATE METAL CONDUIT
INV	INVERTER
JB, JBOX	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
L-G	LINE TO GROUND
L-L	LINE TO LINE
L-N	LINE TO NEUTRAL
LAN	LOCAL AREA NETWORK
LCP	LIGHTING CONTROL PANEL
LED	LIGHT EMITTING DIODE
LF, LN FT	LINEAR FEET
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LRA	LOCKED ROTOR AMPERES
LRS	LEGALLY REQUIRED STANDBY
LTG	LIGHTING
LTS	LIGHTS
LV	LOW VOLTAGE
MAN	MANUAL
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMAPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTION
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MNS	MASS NOTIFICATION SYSTEM
MOA	MULTIOUTLET ASSEMBLY
MOP	MAXIMUM OVERCURRENT PROTECTION
MS	MOTOR STARTER
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MTR	MOTOR
MV	MEDIUM VOLTAGE
N	NEUTRAL
N/A	NOT APPLICABLE
NAC	NOTIFICATION CIRCUIT POWER BOOSTER
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NFDS	NON-FUSED SAFETY DISCONNECT SWITCH
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NRTL	NATIONALLY RECOGNIZED TESTING LABORATORY
NTS	NOT TO SCALE
OC	ON CENTER
OCPD	OVERCURRENT PROTECTION DEVICE
OHD	OVERHEAD DOOR
OSB	OPTIONAL STANDBY
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX, PUSHBUTTON
PDU	POWER DISTRIBUTION UNIT
PED	PEDESTAL
PEND	PENDANT
PF	POWER FACTOR
PH	PHASE
PIV	POST INDICATOR VALVE
PNL	PANEL
POE	POWER OVER ETHERNET
PRI	PRIMARY
PROJ	PROJECTOR
PSU	POWER SUPPLY UNIT
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
RCES	RADIO COMMUNICATION ENHANCEMENT SYSTEM
RCPT, RECP	RECEPTACLE
REF	REFERENCE
RLA	RUNNING LOAD AMPACITY
RM	ROOM
RMC	RIGID METAL CONDUIT
RTRC	REINFORCED THERMOSETTING RESIN CONDUIT
SF, SQ FT	SQUARE FEET
SCADA	SUPERVISORY CONTROL AND DATA AQUISITION
SCBA	SELF-CONTAINED BREATHING APPARATUS
SCCR	SHORT CIRCUIT CURRENT RATING
SEC	SECONDARY
SIM	SIMILAR
SOO	SEQUENCE OF OPERATIONS
SPD	SURGE PROTECTIVE DEVICE
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SPKR	SPEAKER
SS	STAINLESS STEEL
SUSP	SUSPENDED
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
TEF	TELECOM ENTRANCE FACILITY
TEL	TELEPHONE
TER	TELECOM EQUIPMENT ROOM
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TR	TELECOM ROOM
TYP	TYPICAL
UC	UNDER COUNTER
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
W	WIRE
W/	WITH
W/O	WITHOUT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

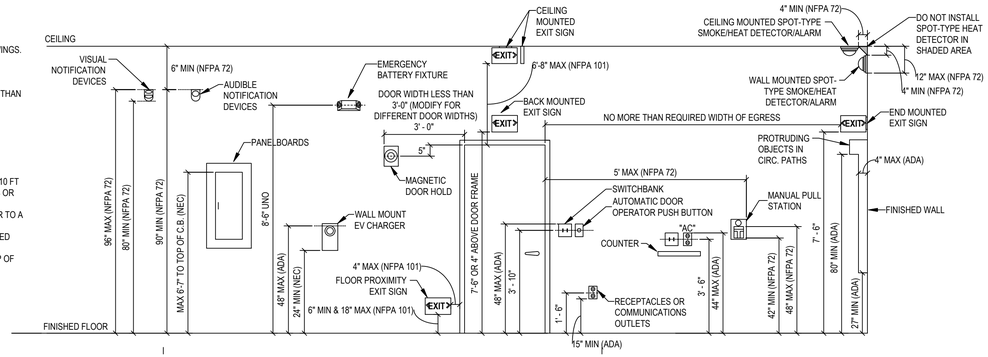
ELECTRICAL GENERAL NOTES

1. COMPLY WITH APPLICABLE CODES, LAWS, AND STANDARDS AS AMENDED AND ADOPTED BY THE AUTHORITY HAVING JURISDICTION. NOTIFY ENGINEER OF CONFLICTS.
2. SECURE AND PAY FOR REQUIRED PERMITS, FEES, AND LICENSES.
3. PROVIDE ELECTRICAL UTILITY SERVICE FROM WHERE INDICATED. COORDINATE SCOPE OF WORK WITH UTILITY AND OWNER . COMPLY WITH UTILITY REQUIREMENTS. NOTIFY ENGINEER OF CONFLICTS.
4. COORDINATION:
   A. COORDINATE WORK WITH APPLICABLE TRADES.
   B. COORDINATE POWER, COMMUNICATIONS, SECURITY, AND LIFE SAFETY SYSTEM DISRUPTIONS WITH OWNER.
   C. REFER TO MECHANICAL DRAWINGS FOR MECHANICAL EQUIPMENT AND DEVICES. COORDINATE MECHANICAL AND PLUMBING EQUIPMENT ELECTRICAL CONNECTIONS WITH MECHANICAL AND PLUMBING DRAWINGS BEFORE INSTALLATION. FURNISH AND INSTALL ROUGH-INS FOR MECHANICAL CONTROL WALL DEVICES INCLUDING THERMOSTATS AND HUMIDISTATS.
   D. REFER TO FIRE PROTECTION DRAWINGS FOR FLOW AND TAMPER SWITCHES. COORDINATE FIRE PROTECTION ELECTRICAL WITH FIRE PROTECTION DRAWINGS BEFORE INSTALLATION.
   E. REFER TO ARCHITECTURAL DRAWINGS FOR ELECTRIC DOOR HARDWARE AND APPLIANCE LOCATIONS. COORDINATE ARCHITECTURAL EQUIPMENT ELECTRICAL WITH ARCHITECTURAL DRAWINGS BEFORE INSTALLATION.
   F. REFER TO FOOD SERVICE DRAWINGS FOR FOOD SERVICE EQUIPMENT. COORDINATE FOOD SERVICE ELECTRICAL WITH FOOD SERVICE DRAWINGS BEFORE INSTALLATION.
   G. VERIFY FINISH SELECTIONS WITH ARCHITECT BEFORE INSTALLATION.
5. EQUIPMENT AND MATERIALS SHALL BE NEW AND THE MANUFACTURERS' CURRENT MAKE AND MODEL UNLESS OTHERWISE INDICATED.
6. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES SHALL BE LISTED, LABELED, AND IDENTIFIED, AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING LABORATORY RECOGNIZED BY THE AHJ AND MARKED FOR THE INTENDED LOCATION AND USE. USE AND INSTALL EQUIPMENT IN ACCORDANCE WITH ANY INSTRUCTIONS INCLUDED IN THE LISTING, LABELING, OR IDENTIFICATION. NOTIFY ENGINEER OF CONFLICTS.
7. FIELD VERIFY EXISTING CONDITIONS IN AREA OF WORK, INCLUDING EQUIPMENT CLEARANCES, PRIOR TO INSTALLATION. NOTIFY ENGINEER OF CONFLICTS.
8. COMPLY WITH MANUFACTURER INSTRUCTIONS. NOTIFY ENGINEER OF CONFLICTS.
9. PROVIDE RECORD DOCUMENTS AND MANUALS TO BUILDING OWNER WITHIN 90 DAYS AFTER DATE OF SYSTEM ACCEPTANCE IN ACCORDANCE WITH ASHRAE 90.1.
10. ELECTRICAL EQUIPMENT, SUCH AS SWITCHBOARDS, SWITCHGEAR, PANELBOARDS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS, SHALL BE FIELD OR FACTORY MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ARC FLASH HAZARDS WHERE REQUIRED BY NFPA MARKING SHALL COMPLY WITH NFPA 70.
11. EQUIPMENT SHORT CIRCUIT CURRENT RATINGS AND OVERCURRENT PROTECTIVE DEVICE INTERRUPT RATINGS SHALL EXCEED AVAILABLE FAULT CURRENT.
12. CONDUCTORS FOR SERVICES, FEEDERS, AND BRANCH CIRCUITS SHALL BE MINIMUM #12 AWG COPPER WITH TYPE THHN/THWN-2 OR XHHW-2 INSULATION, UNLESS OTHERWISE INDICATED. FOR CIRCUITS EXCEEDING 100 FT, CONDUCTORS SHALL BE MINIMUM #10 AWG COPPER.
13. CONDUIT ABOVE GRADE INDOORS SHALL BE EMT, IMC, OR RMC. CONDUIT ABOVE GRADE OUTDOORS SHALL BE IMC OR RMC. CONDUIT BELOW GRADE SHALL BE PVC WITH RMC ELBOWS. CONDUIT SIZES INDICATED ARE MINIMUM SIZE, REGARDLESS OF CONDUIT TYPE.
14. COMMUNICATIONS CABLE INSTALLED IN ENVIRONMENTAL AIR DUCTS AND PLENUMS SHALL BE UL PLENUM RATED.
15. FURNISH AND INSTALL FEEDERS AND BRANCH CIRCUITS WITH EQUIPMENT GROUNDING CONDUCTORS, UNLESS OTHERWISE INDICATED.
16. ABOVEGROUND CONDUIT SHALL BE METALLIC AND UNDERGROUND CONDUIT SHALL BE NONMETALLIC, UNLESS OTHERWISE INDICATED. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.
17. INSTALL CABLE IN RACEWAY OR CABLE TRAY. UNENCLOSED CABLE PERMITTED ABOVE ACCESSIBLE CEILINGS AND WITHIN ACCESSIBLE CASEWORK OR PARTITIONS.
18. CONCEAL CONDUIT WITHIN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED. SURFACE CONDUIT PERMITTED IN ELECTRICAL AND MECHANICAL ROOMS AND IN EXPOSED CEILING SPACES. CONDUIT SHALL BE SQUARE TO THE BUILDING AND PAINTED TO MATCH MOUNTING SURFACE.
19. CONCEAL MC CABLE IN WALLS, PARTITIONS, OR CEILINGS. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.
20. SURFACE RACEWAYS PERMITTED FOR EXISTING WALLS, UNLESS OTHERWISE INDICATED.
21. VOLTAGE DROP SHALL NOT EXCEED 3% FOR FEEDERS OR BRANCH CIRCUITS OR EXCEED 5% FOR FEEDERS AND BRANCH CIRCUITS COMBINED. FOR SENSITIVE ELECTRONIC EQUIPMENT, DO NOT EXCEED 1.5% FOR BRANCH CIRCUITS OR 2.5% FOR BRANCH AND FEEDERS COMBINED.
22. BRANCH CIRCUIT LOADING:
   A. DO NOT EXCEED 80% OF THE OVERCURRENT PROTECTIVE DEVICE RATING FOR LIGHTING AND RECEPTACLE CIRCUITS.
   B. UNLESS OTHERWISE MARKED, MAX OVERCURRENT PROTECTION FOR A SINGLE NON-MOTOR OPERATED APPLIANCE WITH 20 A FOR APPLIANCES NOT EXCEEDING 13.3 A OR 150% OF THE CURRENT RATING FOR APPLIANCES EXCEEDING 13.3 A.
   C. FOR SINGLE MOTOR LOADS, DO NOT EXCEED 1/3 HP FOR 120-V 15 A CIRCUITS OR 1/2-HP FOR 120-V 20-A CIRCUITS UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER.
23. CONDUIT SHALL BE SIZE 3/4-INCH OR LARGER. 1/2-INCH CONDUIT PERMITTED FOR INDOOR BRANCH CIRCUITS NOT CONCEALED IN WALLS, PARTITIONS, FLOORS, OR HARD CEILINGS.
24. FURNISH AND INSTALL CONDUIT BUSHINGS TO CONDUIT STUBS-UPS NOT TERMINATING IN HUBS OR ENCLOSURES.
25. SEAL AROUND PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS, AND CEILINGS WITH UL LISTED FIRESTOPPING.
26. GANG ADJACENT SWITCHES AND RECEPTACLES TOGETHER, UNLESS OTHERWISE INDICATED. INSTALL BARRIERS BETWEEN CIRCUITS OF DIFFERENT VOLTAGES.
27. DO NOT EXCEED MORE THAN THE EQUIVALENT OF TWO (2) 90-DEGREE BENDS PER SECTION OF CONDUIT FOR MULTI-CONDUCTOR CONTROLS OR COMMUNICATIONS CABLE.
28. UNDERGROUND CONDUIT STUB-UPS SHALL BE RMC OR IMC. INSTALL SUPPLEMENTARY CORROSION PROTECTION.

LEGEND NOTES:

1. NOT ALL SYMBOLS SHOWN ARE NECESSARILY USED IN THIS PROJECT.
2. SYMBOLS THAT HAVE A DARK LINE WEIGHT REPRESENT NEW. SYMBOLS THAT HAVE A LIGHT LINE WEIGHT REPRESENT EXISTING. SYMBOLS THAT ARE DASHED REPRESENT ITEMS FOR DEMOLITION.
3. EMERGENCY FIXTURES ARE INDICATED BY PARTIAL SHADING AS SHOWN:

NOTES:
1. COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS. WHERE MOUNTING HEIGHTS CONFLICT, COMPLY WITH ARCHITECTURAL DETAILS.
2. VISUAL NOTIFICATION APPLIANCES IN SLEEPING ROOMS:
   A. FOR SLEEPING ROOMS WITH LINEAR DIMENSION GREATER THAN 16 FT, INSTALL WITHIN 16 FT OF THE PILLOW.
3. SMOKE AND CARBON MONOXIDE DETECTORS AND ALARMS:
   A. IN HIGH CEILING AREAS, INSTALL SMOKE DETECTORS FOR ELEVATOR RECALL WITHIN 5 FT FROM THE TOP OF THE ELEVATOR DOOR AND SMOKE DETECTORS FOR FACU PROTECTION WITHIN 5 FT FROM THE TOP OF THE FACU ENCLOSURE.
   B. DO NOT INSTALL PHOTOELECTRIC SMOKE ALARMS WITHIN 10 FT OF COOKING APPLIANCES AND IONIZATION SMOKE ALARMS OR DETECTORS WITHIN 20 FT OF COOKING APPLIANCES.
   C. DO NOT INSTALL SMOKE ALARMS WITHIN 3 FT FROM A DOOR TO A BATHROOM CONTAINING A SHOWER OR TUB.
   D. DO NOT INSTALL SMOKE ALARMS WITHIN 3 FT FROM A FORCED AIR HVAC SUPPLY REGISTER.
   E. DO NOT INSTALL SMOKE ALARMS WITHIN 3 FT FROM THE TIP OF THE BLADE OF A CEILING FAN.
   F. WHERE REQUIRED OUTSIDE OF A SLEEPING ROOM, INSTALL WITHIN 21 FT OF DOOR TO SLEEPING ROOM.



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DIRECT ELECTRIC INC

WESCO 32 PHOTOMETRICS

NEW CONSTRUCTION

48TH AVE
ALLENDALE TOWNSHIP, MICHIGAN

ENGINEER SEAL:

NOT FOR CONSTRUCTION

REVISIONS:

NO.	DATE	DESCRIPTION
04	03/10/26	SITE REVISION
03	02/25/26	SITE PLAN REVIEW
02	01/21/26	SITE PLAN REVIEW
01	01/13/26	SITE PLAN REVIEW

DRAWN BY MRS
REVIEWED BY KVD

SHEET TITLE:
ELECTRICAL LEGEND & SYMBOLS

SHEET NUMBER:
E001

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DIVISION 26:

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section. In cases of conflicting requirements, comply with the Division I requirements.

1.2 SCOPE OF WORK

- Furnish and install materials and equipment and provide labor, tools, transportation, superintendence, and services as required to complete the work indicated in the drawings and/or specifications herein. Include all work required for furnishing, installing, and testing a complete and operable system.
- Secure and pay for licenses, permits, inspections, and fees for this work as required by the authority having jurisdiction.
- Installer shall be responsible for safe job site conditions for personnel and property during performance of work. No act, service, drawing review, or construction review by the Owner, Architect, or Engineer is intended to include review of the adequacy of the Installers' safety measures in, on, or near the job site.
- Work of this Division shown anywhere therein shall be furnished under this Division, unless otherwise indicated.
- Drawings are diagrammatic in nature, indicating the general arrangement of equipment and wiring, and do not represent exact locations routing of raceway, wire, and cable, unless otherwise noted. Exact locations of equipment and routing of raceway, wire, and cable shall governed by job site conditions. Consult other related drawings and specifications prior to bid. Extra lengths of wiring or additional of pull or junction boxes, etc. necessitated by such conditions shall be included in the bid.
- Include cutting and patching required for work of this Division herein. Coordinate with General Contractor and other applicable trades. Installer shall bear the responsibility for and the added expense of adjusting for improper holes, supports, etc.

1.3 COORDINATION

- Coordinate work with applicable trades.
- Work shall be performed in an efficient and orderly manner. Coordinate construction operations with applicable trades for proper installation, connection, and operation.
- Furnish and install rough-ins and connections for equipment furnished and installed by other trades which require electrical connections.
- Inform applicable trades of access and clearance requirements for electrical equipment as required to maintain serviceability and comply with code.
- Notify Construction Manager of discrepancies or omissions in the drawings and/or specifications. Consult Construction Manager for clarification of design intent.
- Submit significant changes to the Construction Manager for approval before proceeding with work.
- Architect/Engineer and/or Construction Manager reserves the right to make minor location adjustments of piping and equipment, prior to rough-in, without additional cost.
- Field verify existing conditions related to the scope of work prior to bid. Consult Engineer for resolution of conflicts.

1.4 ACTION SUBMITTALS

- Submit product data and shop drawings to Architect/Engineer for review prior to installation. Installer shall be responsible for errors, omissions or other deficiencies or deviations in the submittals from the contract drawings or specifications.
- Submit product data and shop drawings for the following:
  - Power distribution equipment.
  - Safety switches, enclosed circuit breakers, and motor controls.
  - Wiring devices including switches, receptacles, cover plates, and hoods.
  - Lighting, lighting controls, and poles.

1.5 INFORMATIONAL SUBMITTALS

- Submit test and inspection reports to the Construction Manager upon completion of testing and inspecting.
- Submit manufacturer installation instructions to Construction Manager prior to installation.
- Submit manufacturer storage instructions to Construction Manager prior to receiving material.

1.6 CLOSEOUT SUBMITTALS

- Upon project closeout, submit closeout submittals to Owner including operation and maintenance manuals, software, warranty documentation, and record documentation.
- Record drawings indicating as-built conditions shall include, but not be limited to, the following:
  - Revisions to drawing details and one-line diagrams.
  - Dimensional changes.
  - Locations and depths of underground electrical.
  - Revisions to electrical circuitry.
  - Actual equipment locations.
  - Locations of concealed internal utilities.

1.7 REGULATORY AND STANDARDS REQUIREMENTS

- Comply with applicable laws, codes, standards, and standards of the Authority Having Jurisdiction (AHJ).
- Comply with applicable codes and standards as amended and adopted by the AHJ including, but not limited to, the following:
  - OSHA Standards.
  - ADA Standards.
  - IEC: IBC, IEBC, IECC, IFC, and IRC.
  - NFPA: 70, 70E, 72, and 101.
  - ASHRAE: 90.1 and 90.4.
- Comply with requirements of the applicable utilities.
- Consult Engineer for resolution of conflicts.

1.8 REGULATORY AND STANDARDS REQUIREMENTS

- Store materials in accordance with manufacturer storage instructions.
- Store in warm, dry, and temperature-stable locations. Protect from exposure to dirt, fumes, water, corrosive substances, and physical damage.
- Deliver and store products in manufacturer's unopened packaging labeled with brand name and manufacturer's identification, product model names, catalog numbers, and related information, until ready for installation.

1.9 WARRANTY

- Installer Warranty: Installer warrants that fabricated and installed electrical equipment and components shall be free from defects of workmanship and material for a period of one (1) year after the Date of Certification of final payment and agrees to repair or replace during the warranty period without cost to the owner.
- Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

- Equipment, components, and accessories shall be new, undamaged, and the manufacturers' current make and model, unless otherwise indicated. Notify Engineer of products indicated in bid documents which have been discontinued.
- Electrical components, devices, and accessories shall be listed and labeled, as defined in NFPA 70, by a qualified testing agency recognized by the Authority Having Jurisdiction, and marked for the intended location and use.
- Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2.2 SUBSTITUTIONS

- Substitutions shall be submitted to the Architect/Engineer for review and include product data and shop drawings as necessary to indicate compliance with contract documents and compatibility with other portions of work.
- Obtain approval from Owner before proceeding with work.

2.3 LOW-VOLTAGE CONDUCTORS AND CABLE

- Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."
- Building Wire: UL 83 listed (UL CCN ZLGR) THHN/THWN-2 or UL 44 (UL CCN ZKST) listed XHHW-2; marked "Gasoline and Oil Resistant II".
- SE Cable: UL 854 listed (UL CCN TYLZ); UL 83 listed THHN/THWN-2 or UL44 listed XHHW-2; marked sunlight resistant; 90 deg C temperature rating.
- NM Cable: UL 83 and UL 719 listed (UL CCN PWVX).
- UF Cable: UL 83 and UL 493 listed (UL CCN YDUZ).
- VFD Cable: Type TC-ER; UL 1277 listed (UL CCN QPOR); UL 44 XHHW-2 or RHH/RHW-2 listed; NEMA WC/ICEA S-95-658 compliant; 90 deg C temperature rating; marked sunlight resistant and oil resistant II; insulated ground conductor; 100% coverage foil plus 85% coverage braided shield with drain wire; extra-flexible stranded.
- MC Cable: UL 1569 listed (UL CCN PJAZ); UL 83 listed THHN/THWN-2 or UL 44 listed XHHW-2; insulated ground conductor.
- Wire Connectors: UL listed.

2.4 CONTROL VOLTAGE ELECTRICAL POWER CABLES

- Manufacturer List: Belden, General Cable, Genesis Cable, Hitachi Cable, Hubbell, LAPP, Leviton, Panduit, Siemon, Superior Essex, Southwire.
- Balanced Twisted Pair Cable: UL 444 listed, UL CCN DUZX; NEMA WC 66, ICEA S-116-732, TIA-568-C.2 compliant; unshielded twisted pair; CAT6, unless otherwise indicated or recommended by manufacturer; gray jacket.
- Serial Cable: UL 444 listed, UL CCN DUZX; TIA-232, TIA-422, or TIA-485 compliant; low-capacitance; shielded with tinned copper drain wire.
- Control Cable: UL 444 listed, UL CCN DUZX.

2.5 CONDUIT

- Minimum Conduit Size: 3/4-inch. 1/2 inch permitted for indoor branch circuits not concealed in walls, floors, or ceilings.
- Type EMT (Steel): UL 797 listed, UL CCN FJMX; ANSI C80.3 compliant, hot dip galvanized with organic top coat.
- Type ENT: UL 1653 listed, UL CCN FKHU, marked for use with 90 deg C wire.
- Type HDPE: UL 615A listed, UL CCN EAZX; schedule 40 or 80.
- Type IMC (Steel): UL 1242 listed, UL CCN DYBY; ANSI C80.6 compliant; hot dip galvanized with organic top coat.
- Type RMC (Steel): UL 6 listed, UL CCN DYIX; ANSI C80.1 compliant; hot dip galvanized with organic top coat.
- Type FMC (Steel): UL 1 listed, UL CCN DXUZ.
- Type FMT: UL 1652 listed, UL ILJW.
- Type LFMC (Steel): UL 360 listed, UL CCN DXHR; marked for 80 deg C dry, 60 deg wet, 70 deg C oil resistant.
- Type LFNC: UL 1660 listed, UL CCN DXOQ, marked for 90 deg C dry, 60 deg C wet, 70 deg C oil resistant.
- Type PVC: UL 651 listed, UL CCN DZYR; marked for use with 90 deg C wire; schedule 40 or 80.
- Type RTRC: UL 2515, UL 2515A, and/or UL 2420 listed as where applicable, UL CCN DZKT.
- Fittings, Cements, and Threaded Conduit Compounds: UL listed; comply with NEMA FB 1 where applicable
  1. Coupling Method: Compression.

2.6 BOXES AND COVERS

- Metallic Boxes: UL 514A listed, UL CCN QCIT; NEMA OS 1 compliant.
  - Outlet Boxes (Steel): Galvanized; 4-inch square; minimum 2-inch depth.
  - Data Outlet Boxes (Steel): Galvanized; 4-11/16-inch square; minimum 2-1/8-inch depth.
  - Device Boxes (Steel): Galvanized, minimum 2-inch depth.
- Nonmetallic Boxes: UL 514C listed, UL CCN QCMZ; NEMA OS 2 compliant, NEMA OS 4 compliant for airtight boxes.
- Junction Boxes and Pull Boxes: UL 50 and UL 50E listed, UL CCN BGUZ.
- Cover Plates: UL 514D listed, UL CCN QCIT (metallic) or UL QCMZ (nonmetallic); metal screws with head color matching wall plate finish.
- Hoods for Outlet Boxes: UL 514D listed, UL CCN QCIT (metallic) or UL CCN QCMZ (non-metallic); extra-duty, while-in-use, self-closing.
- Stainless steel fasteners for outdoor, wet, and corrosive locations.
- Underground Handholes and Boxes: Precast or polymer concrete. ASTM C858 and SCTE 77 compliant.
- Floorboxes and Poke-Thrus:
  1. Manufacturers: ABB, Eaton, FSR, Hubbell, Legrand, Leviton, Panduit, Schneider Electric
  2. UL 514A or UL514C listed. UL 514D listed for cover plates.
  3. On-Grade Floorboxes: On-grade box type; steel or cast iron.

2.7 SURFACE RACEWAY

- Manufacturers: FSR, Hubbell, Legrand, Panduit
- Metallic: UL 5 listed, UL CCN RJBT; galvanized steel; ivory finish.

2.8 WIRING DEVICES

- Manufacturers: Eaton (Arrow-Hart), Hubbell (Bryant Electric, Wiring Device-Kellems), Legrand (Pass & Seymour), Leviton
  - Cord Reels: Hubbell (Bryant, Gleason Reels, Wiring Device-Kellems), Legrand (Pass & Seymour)
- Color: Coordinate with Architect.
- General-Use Receptacles: UL listed (UL CCN RTRT); NEMA WD 1, NEMA WD 6, and Fed. Spec. W-C-596 compliant; heavy-duty specification grade (commercial grade permitted for dwelling units; back and side wired; NEMA 5-20R (NEMA 5-15R permitted for dwelling units).
  - USB Receptacles: Combination type A/C; minimum 5 A output current.
- General-Use Switches: UL 20 listed, UL CCN WMUZ; NEMA WD 1 and Fed. Spec. W-S-896 compliant; heavy-duty specification grade (commerical grade permitted for dwelling units), 20 A rated (15 rated permitted for 15 A branch circuits in dwelling units).
  1. Keyed: Forked-key; toggle switch profile.
- Cord Reels: UL 355 listed (UL CCN SBCV); spring-driven; No. 12 AWG conductors; 45 ft cord length; double duplex 5-20R outlet, ball stop.

2.9 ENCLOSED SWITCHES AND CIRCUIT BREAKERS

- Manufacturers: ABB, Eaton, Schneider Electric, Siemens
- Safety Switches: UL 98 listed; NEMA KS 1 compliant; 600 VAC rated; heavy duty; listed for 60 / 75 deg C conductors; horsepower rated, lockable handle with minimum capacity for three padlocks; interlocked with cover in closed position.
- Circuit Breakers Enclosures: UL 489 listed; directly operable from front for NEMA 1 or externally operable with operating mechanism; padlockable in the closed position.

2.10 MOTOR CONTROLLERS

- Manufacturer List: ABB, Eaton, Emerson (Appleton), Legrand (Pass & Seymour), Leviton, Siemens, Rockwell Automation (Allen-Bradley), Schneider Electrical (Square D), Siemens
- Manual Motor Controllers: UL 60947-4-1 listed; NEMA ICS 2 general purpose Class A; non-reversing; red pilot light; flush mounting.
- Combination Full-Voltage Magnetic Motor Controllers: UL 60947-4-1 listed; NEMA ICS 2 general purpose Class A; non-reversing; across-the-line start; 600 VAC rated; red and green light LED lights; hand-off-auto selector switch; reset button; solid-state overload relay class 10/20; heavy-duty, NEMA KS 1, disconnecting means with lockable handle with space for three padlocks and interlocking cover in closed position; (2) NO and (2) NC auxiliary contacts.

2.11 PANELBOARDS

- Manufacturer List: ABB, Eaton, Schneider Electric (Square D), Siemens
- Panelboards:
  - UL 67 listed, UL CCN QEUY; UL 899A listed for service entrance equipment; Fed Spec W-P-115 Type 1 Class 1, NEMA PB 1 compliant.
  - Enclosures (Steel): Flush and surface mount; dead-front; key-locking; door-in-door-trim; galvanized steel; minimum 20-inch width.
  - Buses: Tin-plated aluminum or hard-drawn copper; full-sized neutral electrically isolated from enclosure; equipment ground bus for feeder and branch circuit grounding conductors, bonded to box.
  - Connectors: Tin-plated aluminum or hard-drawn copper; listed for use with 75 deg C conductors; mechanical type lugs.
  - Circuit Breakers: UL 489 listed; molded-case; accepts plug-in and bolt-on breakers. Provide multi-pole units with common trip element.
  - Surge Protection: UL 1449 listed Type 2; IEEE C62.41 and C62.45 compliant; EMI/RFI filtering; minimum 200 kA SCCR; 20 kA nominal discharge current rating; integral, unless otherwise indicated; surge counter. Provide where indicated in drawings.

2.12 LOW-VOLTAGE DISTRIBUTION TRANSFORMERS

- Manufacturers: ABB, Eaton, Emerson, Federal Pacific, Hammond, Hubbell, Jefferson, Maddox, Rockwell Automation, Schneider Electric, Siemens.
- Dry Type Distribution Transformers: UL 1561 listed, UL CCN XQNX; NEMA ST 20, ANSI C57.12, 10 CFR 431 compliant; aluminum or copper; ventilated; minimum (2) 2.5% percent taps above and below; 220 deg C insulation system; 150 deg C temperature rise.

2.13 ELECTRICITY METERING

- Manufacturers: ABB, Eaton, Honeywell, Leviton, Milbank, Schneider Electric, Siemens, Xykem (Sensus)
- Current Transformer Cabinets: Comply with requirements of the electrical power utility company.
- Meter Sockets: Comply with requirements of the electrical power utility company.
- Modular Meter Centers: Comply with requirements of the electrical power utility company.

2.14 FUSES

- Manufacturers: Eaton (Bussman), Littelfuse, Mersen
- Cartridge Fuses: UL listed (UL CCN JDDZ); NEMA BI 50009 compliant; current limiting, nonrenewable, time delay, rejection style, blown indicator.
- Services, Feeders, Branch CKTs: Class RK5 for 0 to 600 A (RK1 for motors), Class L for 601A to 6000A.

2.15 LIGHTING

- Manufacturers and Products: Refer to light fixture schedule.
- Light Fixtures:
  - LED light source.
  - UL damp location listed for indoor lighting and wet location for outdoor lighting, unless otherwise indicated.
  - Minimum 32 to 104 deg F operating temperature range.
  - Maximum 3-step MacAdam Ellipse for indoor lighitng, 4-step for dwelling unit lighting, and 7-step for exterior lighting.
  - Minimum 0.125-inch lens.
  - Minimum 80 CRI for indoor lighting, minimum 90 CRI for dwelling unit lighting, and 70 CRI for outdoor lighting, unless otherwise indicated.
  - Minimum Lumen Maintenance for Luminaires: 40,000 hours to L90, 50,000 hours to L80, and/or 50,000 hours to L70.
- Emergency Lighting: UL 924 listed; LED; test pushbutton; indicator light; integral self-test.
- Emergency Lighting Inverters: UL 924 listed; self-testing.
- Exit Signs: UL 924 listed; LED; dual voltage 120 / 277 V.
- Supports: Proper supports and mounting accessories, such as hangers, stems, yokes, and plaster frames, shall be provided as required for the type of ceiling installed.

2.16 LIGHTING CONTROLS

- Manufacturers:
  - Lighting Control Devices: Acuity, Crestron, Current, Cooper Lighting Solutions, Eaton, ETC, Functional Devices, Hubbell, Intermatic, Leviton, Legrand, Lutron, NSI-Tork, Schneider Electric, SensorWorx
    - Additional Manufacturers for Emergency Lighting Controls: Assurance, Evenlite, Isolite, LVS, Myers EPS, Sure-Lites
    - Additional Manufacturers for Lighting Contactors: ABB, Rockwell Automation, Siemens
  - Network Lighting Controls: Acuity (Fresco, nLight), Cooper Lighting Solutions (ILC, Wavelinx), Crestron (Green Light, Zum), Current (NX), ETC (Echo, Paradigm), Legrand (Encelium, Wattstopper), Leviton (GreenMAX, GreenMAX DRC), Lutron (Athena), Philips (Dynalite)
- Time Switches: 120-277 VAC; holiday schedule; automatic DST adjustment; 365-day operation mode; astronomic time schedule.
- Outdoor Photocells: Comply with UL 773; 120-277 VAC; 1.5 fc to 10 fc monitoring range; Fail ON failure mode; 1.5 fc turn on level; -40 to 140 deg F operating temperature.
- Occupancy Sensors: 12-24 VDC; dual-technology (PIR and ultrasonic or microphonic); NEMA WD 7 compliant.
- Photosensors: 12-24 VDC, open or closed loop; 1-100 fc range; remote calibration; continuous dimming.
- Lighting Contactors: Comply with NEMA ICS 2; 120-480 VAC; Hand-OFF-Auto selector switch; electrically operated, electrically held; pilot light; NO auxiliary contacts.
- Wallbox Occupancy Sensor Switches: 120-277VAC; dual-technology (PIR and ultrasonic or microphonic; 800 VA electronic ballast rating; white.
- Timers: Comply with UL 20; 120-277 VAC; 800 VA electronic ballast rated; 1/4 HP motor rated; interval countdown type; white.
- Dimmers: Comply with UL 1472; 120-277 VAC; NEMA SSL 7A compliant for phase dimming loads; 800 VA electronic ballast load rating for 0-10V dimmers; decora profile; white.
- Power Packs: UL 2043 plenum rated; 120-277VAC; mounts to 1/2-inch knockout; supports Auto ON/Auto OFF sequence of operations and Manual ON/Auto OFF where indicated.
- Automatic Load Control Relays: UL 924 listed; plenum rated; 120-277 VAC; integral test switch; fire alarm override contacts; 0-10V override for dimming loads; 16 A electronic ballast load rating.
- Network Lighting Controls:
  - Network: Wired.
  - Lighting Control Panels: Support UL 924 listed relays; network interface; 14 kA minimum SCCR; alarm override contact; 16 A load rating; supports 1-, 2-, and 3-pole switch legs; hinged door; voltage barriers between different voltages and between emergency and normal power.
  - Load Controllers: Plenum rated; network interface; 120-277 VAC; 16 A load rating; mounts to 1/2-inch knockout or surface mount.
  - Switches: Decorator profile; network interface; gangable; ON/OFF status LEDs; pushbutton; white.
  - Touchscreens: Full-color capacitive touchscreen; network interface; auto screen shutoff; password option; single-gang vertical 3-inch screen for up to 16 channels; 2-3 gang horizontal screen for more than 16 channels and for color control.

PART 3 - EXECUTION

3.1 EXAMINATION

- Before beginning sitework, investigate and verify the existence and location of underground utilities and electrical systems, and other construction affecting the Work.
- Before proceeding with each component of the Work, examine substrates, areas, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance. Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- Notify Engineer of conflicts between existing conditions and requirements of the electrical drawings and specifications.

3.2 SELECTIVE DEMOLITION

- Demolish and remove existing construction only to the extent required by new construction and as indicated.
- For items indicated for removal and reinstallation, clean and repair items to functional condition adequate for intended reuse. Protect items from damage during transport and storage. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- Remove abandoned conductors and cables. Abandoned conductors and cables are those installed that are not terminated at equipment and are not identified with a tag for future use.
- Remove abandoned conduit in exposed locations, crawl spaces, or above accessible ceiling. Cap or plug abandoned conduit extending through floors.
- Remove abandoned surface mounted boxes and raceway.
- Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.3 TEMPORARY POWER AND LIGHTING

- Furnish and install temporary electrical power and lighting adequate for construction operations. Comply with NECA, NEMA, and UL standards and NFPA 70 for temporary electrical services.

3.4 SELECTION OF CONDUCTORS AND CABLES

- Low Voltage Power Conductors and Cables
  - Material:
    - Services and Feeders: Aluminum or copper; stranded.
    - Branch Circuits:
      - Dwelling Units: Copper; solid for No. 10 AWG or less and stranded for No. 8 AWG and larger.
      - Non-Dwelling Units: Copper; stranded.
  - Minimum Conductor Sizes:
    - Copper: No. 12 AWG. No. 14 AWG permitted for dwelling units.
    - Aluminum: No. 8 AWG.
  - Type NM and UF Cable: Permitted in concealed locations where permitted by applicable codes.
  - Type USE and SE cable: Permitted in concealed locations where permitted by applicable codes.
  - Type MC Cable: Permitted in concealed locations where permitted by applicable codes.
- Control Circuit Conductors Sizes: Comply with NFPA 70 and manufacturer's instructions.

3.5 SELECTION OF CONDUIT

- Aluminum not permitted.
- Conduit Types:
  - Outdoors, Aboveground, Exposed: RMC, IMC.
  - Outdoors, Aboveground, Concealed: RMC, IMC, PVC, RTRC.
  - Outdoors, Belowground: PVC, HDPE, RTRC.
  - Outdoors, Connections to Vibrating Equipment: LFMC.
  - Underground Stub-Ups: RMC, IMC.
  - Undeground Elbows: RMC, IMC, RTRC.
  - Indoors, Not Subject to Severe Physical Damage: RMC, IMC, EMT.
  - Indoors, Subject to Severe Physical Damage: RMC, IMC.
  - Indoors, Damp or Wet Locations: RMC, IMC, stainless steel EMT, Schedule-80 PVC, RTRC.
  - Indoors, Corrosive Environments: 316 stainless RMC and IMC, PVC-coated RMC and IMC, Schedule 80 PVC, RTRC.
  - Indoors, Connections to Vibrating Equipment:
    - Dry Locations: LFMC and FMC.
    - Damp and Wet Locations: LFMC.

3.6 SELECTION OF BOXES AND COVERS

- Material: Metallic.
  - Wet Locations: FS/FD galvanized cast metal, 302/304 or 316 stainless steel, PVC-coated metallic, PVC, or fiberglass.
  - Corrosive Locations: 316 stainless steel, PVC-coated metallic, PVC, or fiberglass.
- Cover Plates: 302/304 stainless steel.
  - Dwelling Units: Nylon. Coordinate finish with architect.
- Hoods: Metallic.
  1. Dwelling Units: Nonmetallic permitted.
- Underground Handhole and Box Load Ratings:
  1. Units in Roadways and Other Deliberate Traffic Paths: AASHTO HB 17, H-20
  2. Driveway, Parking Lot, and Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: SCTE 77, Tier 22.
  3. Sidewalk and Similar Applications with Safety Factor for Nondeliberate Loading by Vehicles:SCTE 77, Tier 8.
  4. Subject to Light-Duty Pedestrian Traffic Only: SCTE 77 with 3000 lb-f vertical loading.

3.7 SELECTION OF HANGERS AND SUPPORTS

- Material: Steel.
  1. Wet Locations: 304 stainless steel, PVC-coated metallic, PVC, or fiberglass.
  2. Corrosive Environments: 316 stainless steel, PVC-coated metallic, PVC, or fiberglass.

3.8 INSTALLATION GENERAL REQUIREMENTS

- Install electrical equipment and components in a neat and workmanlike manner in accordance with NECA 1 and other accepted industry best practices.
- Use and install equipment in accordance with any instructions included in the listing, labeling, or identification.
- Comply with manufacturer installation instructions and recommendations.
- Avoid cutting or boring holes through structure where possible. Obtain prior approval of Owner and conform to structural requirements when cutting or boring the structure is necessary and permitted.
- Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.
- Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated. Make vertical work plumb and make horizontal work level. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
- Backboards: Install backboards with 96-inch dimension vertical. Butt adjacent sheets tightly and form smooth gap-free corners and joints.
- Concrete Bases:
  - Construct concrete bases of dimensions indicated, but not less than 4 inch larger in both directions than supported unit, and so which are a minimum of 10 bolt diameters from edge of the base.
  - Use 3000 psi, 28-day compressive-strength concrete.
  - Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded. Install anchor bolts to elevations required for proper attachment to supported equipment. Install anchor bolts according to anchor-bolt manufacturer's written instructions.
- Install SPDs are close as practicable to the equipment served.

3.9 INSTALLATION OF CONDUCTORS AND CABLES

- Comply with NEMA RV 1 (MC cable), RV 2 (NM/UF cable), RV 4 (SE cable), and FB 2.20 (fittings).
- Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours where possible.
- Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than un-spliced conductors.
- Wiring at Outlets: Install conductors at outlets with at least 6 inches of slack. Pigtail connections.
- For MC cable terminations, furnish and install anti-short bushings.
- Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly.
- Comply with TIA-569 for pull box sizing, length of conduit, and number of bends for control voltage cable.
- Comply with TIA-569 and BICSI TDMM for separation of communications cable from EMI sources.
- Control Voltage Open-Cable: Suspend copper cable not in a wireway or pathway a minimum of 8 inch above ceilings by cable supports not more than 30 inches apart.

3.10 INSTALLATION OF CONDUITS

- Comply with STI "Guidelines for Installing Steel Conduit/Tubing".
- Comply with FB 2.40 for expansion fittings, NEMA FB 2.20 for FMC fittings, and NEMA FB 2.10 for metal conduit fittings.
- Install expansion fittings for lengths no more than 25 ft for PVC, 100 ft for EMT, IMC, or RMC, and at locations where conduit cross building or structure expansion joints.
- Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Surface conduit permitted in electrical and mechanical rooms and in exposed ceilings.
- Install conduits parallel or perpendicular to building lines.
- Do not install conduit within 2 inches of metal deck roof.
- Install pull wires in empty duct raceways. Provide polypropylene or monofilament plastic line with not less than 200 lb tensile strength. Leave at least 12 inches of slack at both ends of pull wire. Cap underground duct raceways designated as spare above grade alongside duct raceways in use.
- Where nonmetallic conduits are used in or under floor slabs or concrete pours, change to steel conduit prior to exiting the floor or slab.
- Seal interior of conduits at exterior walls, refrigerated space wall, pressurized space wall, underground service ducts, and where required by NEC.
- Apply secondary corrosion protection, such as compounds, tape wraps, or shrink wraps, to steel conduti in contact with solid and for a minimum of 4-inches where the conduit emerges from the soil. Where raceway emergese from concrete into soil, provide a minimum of 4-inches of protection on either side of the point where the raceway emerges.
- Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound that maintains electrical conductivity to threads of duct raceway and fittings before making up joints. Follow compound manufacturer's published instructions.
- FMC, LFMC, and LFNC: Comply with NEMA RV 3. Provide a maximum of 72 inch of flexible conduit for recessed and semi-recessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
- Duct Raceway Terminations at Locations Subject to Moisture or Vibration: Provide insulating bushings to protect conductors. Install insulated throat metal grounding bushings on service conduits.
- Fire Wall Penetrations: Seal fire wall penetrations with firestopping.
- Acoustic Wall Penetrations: Seal penetrations through wall with acoustic requirements with acoustically rated putty or firestopping on both sides of wall.
- Stub-Ups Above Ceilings: Provide EMT, IMC, or RMC for duct raceways. Provide conduit bushing or insulated fittings to terminate stub-ups not terminated in hubs or enclosures

3.11 INSTALLATION OF UNDERGROUND DUCTS AND RECEWAYS

- Comply with NEMA TCB 2.
- Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching.
- Install 200 lbf test nylon cord in empty ducts.
- Direct Buried:
  - Install top of duct at least 36 inch below finished grade unless otherwise indicated.
  - Place minimum 3 inch of sand as bed for duct. Place sand to minimum of 6 inch above top level of duct.
  - Install duct with minimum of 3 inch between ducts for like services and 6 inches between power and communications duct
  - Bury conducting underground line no less than 12 inch above concrete-encased duct and duct banks and approximately 12 inch below grade. Align tape parallel to and within 3 inches of centerline of duct bank. Provide additional warning tape for each 12-inch increment of duct-bank width over nominal 18 inch. Space additional tapes 12 inch apart, horizontally across width of ducts.
- Handholes and Boxes (Non-Precast):
  - Unless otherwise indicated, support units on level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.
  - Elevation: In paved areas and trafficways, set cover flush with finished grade. Set covers of other handholes 1 inch above finished grade.
  - For enclosures installed in asphalt paving and subject to occasional, nondeliberate, heavy-vehicle loading, form and pour concrete ring encircling, and in contact with enclosure entry, and with top surface screeded to top of box cover frame. Bottom of ring must rest on compacted earth.
    - Concrete: 3000 psi, 28-day strength.
- Dimensions: 10 inch wide by 12 inch deep.

3.12 INSTALLATION OF BOXES

- Comply with NEMA OS 3.
- Horizontally separate boxes mounted on opposite sides of walls, so they are not in the same vertical channel.
- Support boxes in recessed ceilings independent of ceiling tiles and ceiling grid.
- Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for purpose.
- Boxes and Enclosures in Areas or Walls with Acoustical Requirements: Seal openings and knockouts in back and sides of boxes and enclosures with acoustically rated putty. Provide gaskets for wallplates and covers.
- Paint fire-alarm system junction boxes and covers red.
- Install voltage barriers between switches and other switches, receptacles, or similar devices with voltage between devices exceeding 300V.

3.13 INSTALLATION OF SLEEVES AND SLEEVE SEALS

- Wall Sleeves: Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
- Floor-Penetration Sleeves: Extend sleeves installed in floors 2 inch above finished floor level.
- Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.

3.14 INSTALLATION OF EQUIPMENT CONNECTIONS

- Furnish and install conductors and raceways for electric powered equipment.
- Furnish and install a disconnect switch immediately ahead of and adjacent to each magnetic motor starter or appliance unless the motor appliance is located adjacent and within sight of the serving panelboard, circuit breaker or switch. Verify all equipment nameplate current ratings prior to installation.
- Install all rough-in work for equipment from approved shop drawings to suit the specific requirements of the equipment.
- Furnish and install manual thermal protection for all motors not integrally equipped with thermal protection.
- Furnish 120 Volt power to each control panel and time switch requiring a source of power to operate.

3.15 INSTALLATION OF ELECTRICAL EQUIPMENT

- Panelboards:
  1. Comply with NEMA PB 1 and PB 1.1.
  2. For damp, wey, or dirty location, mount surface mounted panelboards to steel slotted supports 1-1/4 inch in depth.
  3. For flush mounting in concrete, tile, or other non-combustible material, install cabinet so that the front edge will not set back more than 1/4 inch from the finished surface.
  4. Install filler plates in unused spaces.
- Ground Fault Protection: Comply with NEMA 2.2.
- Dry Type Distribution Transformers:
  1. Comply with NEMA ST 20.
  2. Comply with manufacturer clearance instructions.
- Disconnect Switches: Comply with NEMA KS 2 and KS 3.
- Enclosed Circuit Breakers: Comply with NEMA AB 4.
- VFDs: Comply with NEMA ICS 7.1 and NEMA 7.2.

3.16 INSTALLATION OF LIGHTING

- Install luminaires under roof decking with minimum 1-1/2 inches clearance measured from the lowest surface of the roof decking to the top of the luminaire.
- Supports: Sized and rated for luminaire weight.
- Fasten luminaire to structural support.

3.17 WIRE COLOR CODE

- Color coding shall be continuous for wire #12 through #10 AWG. Phase conductors #8 and larger and conductors of any size in cable assemblies may have colored phasing tape at terminations. Color code wires as follows:

-	Voltage	Phase A	Phase B	Phase C	Neutral	Ground
-	120/208V	Black	Red	Blue	White	Green
-	277/480V	Brown	Orange	Yellow	Gray	Green

3.18 IDENTIFICATION

- System Identification for Raceways and Cables: Identification shall completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.
- Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
- Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for minimum distance of 6 inch where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.
- Underground Line Warning Tape:
  1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in common trench or concrete envelope exceeds 16 inch overall.
  2. Install underground-line warning tape for direct-buried cables and cables in raceways.
- Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.
- Accessible Fittings for Raceways and Cables within Buildings: Identify cover of junction and pull box of the following systems with self-adhesive labels containing wiring system legend and system voltage. System legends must be as follows:
  1. "POWER"; "EMERGENCY POWER"; "OPTIONAL STANDBY POWER"; "LEGALLY REQUIRED STANDBY POWER"; "UPS"
- Equipment:
  1. Equipment to be Labeled: Panelboards, switchgear, switchboards, transformers, substations, motor control centers, enclosed circuit breakers, motor controls, transfer switches, disconnects, contactors, inverters, power generating units, and UPS's.
  2. Indoor: Baked-enamel signs, metal-backed butyrate signs, laminated acrylic or melamine plastic signs.
  3. Outdoor: Outdoor Equipment: Laminated acrylic or melamine signs.
  4. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.
  5. Unless otherwise indicated, provide single line of text with 1/2-inch-high letters on 1-1/2-inch-high sign; where two lines of text are required, use labels 2 inch high.
- Panel Schedules: Furnish and install printed panel schedule with transparent plastic protective cover. Schedule shall match circuits as installed after balancing panelboard loads. Install inside panelboard door.
- Switches and Receptacles: Label cover or cover plate with panel identification and circuit number.
- Control Voltage Cable:
  - Identify data and communications system components, wiring, and cabling according to TIA-606-B; label printers shall use label stocks, laminating adhesives, and inks complying with UL 969.
  - Identify each wire on each end and at each terminal with a number-coded identification tag. Each wire must have a unique tag.

3.19 GROUNDING

- Service and Separately Derived Systems: Ground services and separately derived systems in accordance with NFPA 70 and utility requirements.
- Equipment Groun

EXTERIOR LIGHTING SCHEDULE

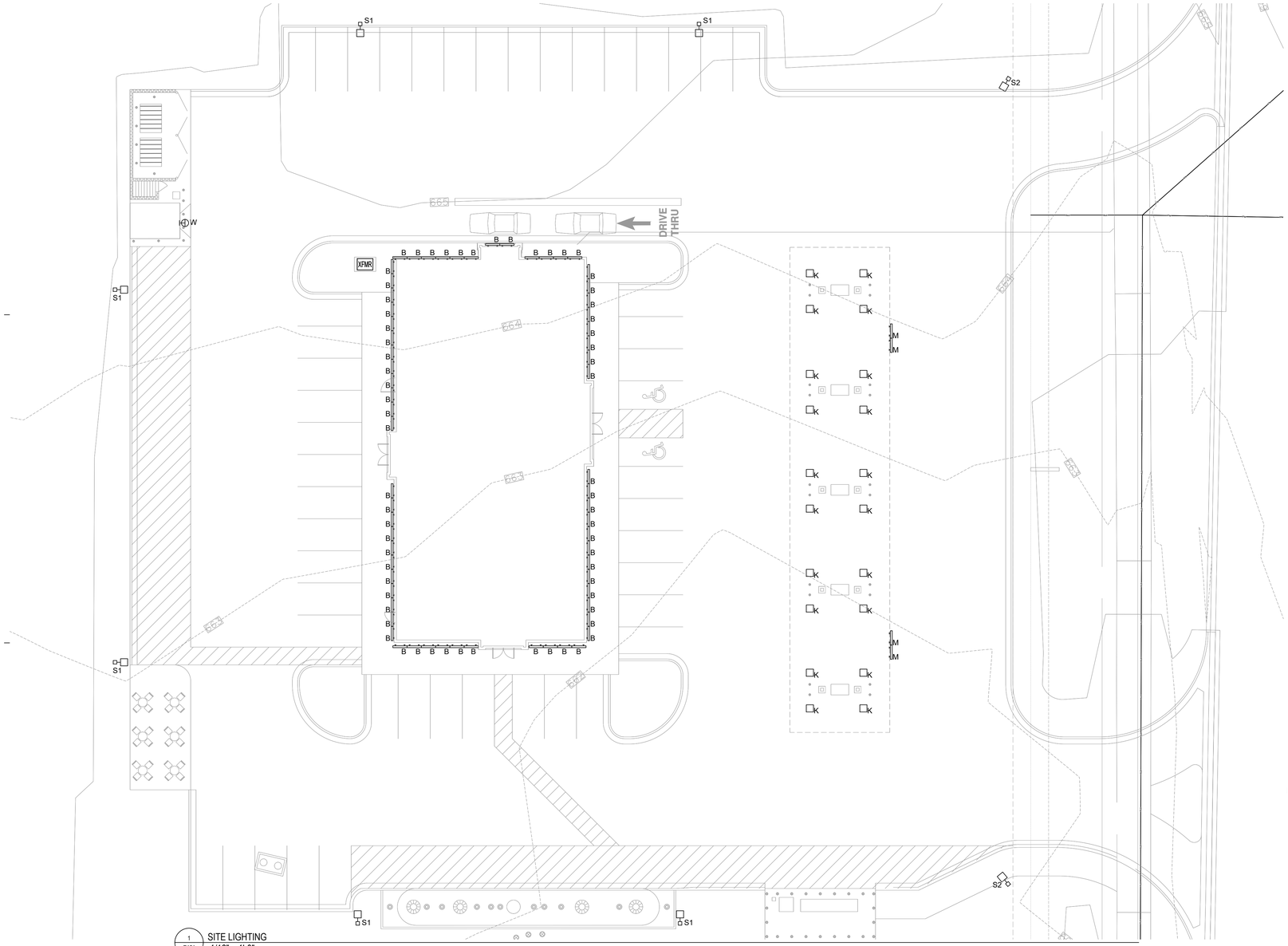
TYPE	DESCRIPTION	MAKE: MODEL	VOLTAGE	LIGHT SOURCE	DRIVER	LENS	MIN. LUMENS	FINISH	MOUNTING	LOAD (W)	NOTES
B	4' LOW PROFILE DRIVERLESS LINKABLE LED	G&G INDUSTRIAL: GPX4-SO-40K-UVO-120V / GPX-LDR-10 / GPX-JMP-2 - OR EQUAL	120V	LED, 4000K CCT MIN. 80 CRI	FIXED	CLEAR	2,400	BLACK	SURFACE	18	1,6
K	LED CANOPY LIGHT	LITHONIA: XPCNY-LED-ALO2-SWW2-FPCL-MVOLT-DWGXD-M3 - OR EQUAL	UNIVERSAL (120-277V)	LED, 4000K CCT MIN. 80 CRI	FIXED	CLEAR	13,000	WHITE	CEILING SURFACE	88	1
M	OUTDOOR LINEAR	PINNACLE: MW-HE-840-6-WH-U-FSD-1-0-W-GMF - OR EQUAL	UNIVERSAL (120-277V)	LED, 4000K CCT MIN. 80 CRI	FIXED	CLEAR	750 /FOOT	WHITE	WALL SURFACE	7 /FOOT	1,6
S1	POLE MOUNTED AREA LIGHT, ALUMINUM HOUSING, ALUMINUM POLE, TYPE III DISTRIBUTION, IP65 RATED, HOUSE SIDE SHIELDING	LITHONIA: DSX1 LED-P2-40K-70CRI-T3M-MVOLT-SPA-HS-DWHXD - OR EQUAL	UNIVERSAL (120-277V)	LED, 4000K CCT MIN. 70 CRI	FIXED	CLEAR	8,400	WHITE	MOUNTED TO 20 FT SQUARE ALUMINUM POLE	68	1,3,4,5
S2	POLE MOUNTED AREA LIGHT, ALUMINUM HOUSING, ALUMINUM POLE, TYPE IV DISTRIBUTION, IP65 RATED, LOW GLARE, EXTERNAL GLARE SHIELD	LITHONIA: DSX1 LED-P1-40K-70CRI-T4LG-MVOLT-SPA-DWHXD-EGSR - OR EQUAL	UNIVERSAL (120-277V)	LED, 4000K CCT MIN. 70 CRI	FIXED	CLEAR	6,600	WHITE	MOUNTED TO 20 FT SQUARE ALUMINUM POLE	51	1,3,4,5
W	WALL MOUNTED AREA LIGHT, ALUMINUM HOUSING, IP65 RATED, FULL CUTOFF	COOPER: XTOR3B-W-BK - OR EQUAL	UNIVERSAL (120-277V)	LED, 4000K CCT MIN. 70 CRI	FIXED	CLEAR	2,000	BLACK	WALL MOUNT	26	1,3,4,5

GENERAL NOTES:

A. FIXTURE TAGS WITH "*E" ARE POWERED BY AN EMERGENCY POWER SOURCE AND TYPES WITH "*E" INCLUDE INTERGRAL EMERGENCY BATTERIES.
B. MINIMUM 5-YEAR STANDARD WARRANTY.
C. MAXIMUM 7-STEP MACADAM ELLIPSE/SDCM (DLC PREMIUM OR LUNA QUALIFIED).
D. WET LOCATION LISTED, UNLESS OTHERWISE INDICATED.
E. MINIMUM LED LUMEN MAINTENANCE OF L70 AT 50,000 HOURS PER IES LM-80 AND IES TM-21.
F. MINIMUM 0.9 POWER FACTOR AT FULL LOAD PER ANSI C82.77 (TITLE 24 JA8, DLC QUALIFIED).
G. VERIFY ALL FINISH SELECTION WITH ARCHITECT/INTERIORS.

NOTES:

1.OR EQUAL BY LITHONIA, LUMINIS, BEGA, HYDREL, LUMINIS, MCGRAW-EDISON, LUMARK, INVUE, LIGMAN, LSI, HE WILLIAMS, NLS, PERFORMANCE IN LIGHTING, TARGETTI, EXO, BEACON, KIM, GARDCO, STONCO
2. MINIMUM 90 MINUTE EMERGENCY BATTERY; UL 924 LISTED.
3. ZERO UPLIGHT (U0 RATED) PER IESNA TM-15.
4. INTEGRAL MOTION SENSOR WITH SEQUENCE OF OPERATIONS OF AUTO PARTIAL OFF TO MAXIMUM 50% LIGHT LEVEL.
5. INTEGRAL WIRELESS NETWORK MOTION SENSOR / PHOTOSENSOR.
6. INCLUDE ALL NECESSARY HARDWARE AND ACCESSORIES FOR A COMPLETE AND OPERABLE FIXTURE.
7. DESIGN LIGHTS CONSORTIUM (DLC) QUALIFIED AND/OR ENERGY STAR CERTIFIED.



1 E101 SITE LIGHTING
1/16" = 1'-0"

LIGHTING GENERAL NOTES:

A. FURNISH AND INSTALL MINIMUM #18 AWG WIRE (VIOLET & PINK) FOR 0-10V DIMMING LIGHT FIXTURES. DO NOT EXCEED THE SINK CAPACITY OF THE DIMMING CONTROLLER. DO NOT EXCEED 0.3V VOLTAGE DROP, UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER.

B. CIRCUIT BATTERY POWERED EXIT SIGNS TO THE NEAREST NON-SWITCHED NORMAL UTILITY POWER LIGHTING CIRCUIT. CIRCUIT AC-ONLY EXIT SIGNS TO THE NEAREST NON-SWITCHED EMERGENCY POWER LIGHTING CIRCUIT.

C. CONCEAL LOAD CONTROLLERS AND POWER PACKS ABOVE ACCESSIBLE CEILINGS WHERE POSSIBLE. FURNISH AND INSTALL ACCESS PANELS FOR LOAD CONTROLLERS AND POWER PACKS INSTALLED BEHIND INACCESSIBLE WALLS OR CEILINGS.

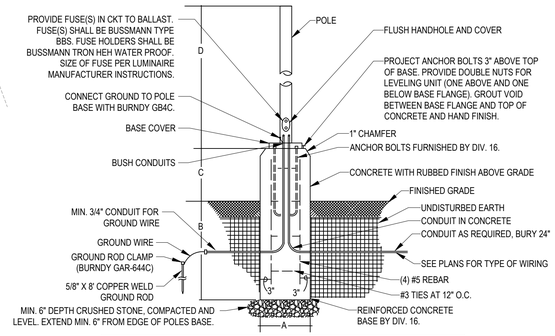
D. FURNISH AND INSTALL LIGHTING CONTROLS IN ACCORDANCE WITH ASHRAE 90.1 AND IECC AS AMENDED AND ADOPTED BY THE AHJ.

E. REPLACE BURNT OUT LAMPS, DEFECTIVE BALLASTS, AND BROKEN LENSES FOR EXISTING-TO-REMAIN LIGHT FIXTURES IN PROJECT AREA. FIELD VERIFY CONDITION OF EXISTING LIGHT FIXTURES.

F. INSTALL NON-CLOSET RATED LUMINAIRES IN CLOTHES CLOSETS WITH MINIMUM 12-INCH CLEARANCE FROM CLOTHES STORAGE SPACE AS DEFINED IN NFPA 70.

G. FURNISH AND INSTALL REMOTE TEST SWITCHES FOR EMERGENCY LIGHTING INVERTERS, BATTERIES, AND LOAD CONTROL RELAYS INSTALLED IN INACCESSIBLE LOCATIONS.

H. VERIFICATION AND FUNCTION PERFORMANCE TESTING:
   a. CODE COMPLIANCE: TEST AND VERIFY LIGHTING CONTROLS IN ACCORDANCE WITH ASHRAE 90.1 SECTIONS 4.2.5.1 AND 9.9.1.
   b. CRITERIA: TEST AND VERIFY CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED, AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURERS' INSTRUCTIONS.
   c. PROCEDURES: PERFORM MINIMUM TEST AND VERIFICATION PROCEDURES FOR LIGHTING CONTROLS IN ASHRAE 90.1 SECTION 9.9.1.
   d. V&T PROVIDER: REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS.



POLE AND BASE DIMENSIONS				
FIXTURE TYPE	A	B	C	D
S1, S2	2'-0"	6'-0"	2'-6"	17'-6"

2 E101 SITE LIGHTING POLE BASE
NOT TO SCALE

E3M SOLUTIONS
2855 44TH ST SW - SUITE 360
GRANDVILLE, MI 49418
616.365.5680
www.e3msolutions.com

DIRECT ELECTRIC INC

WESCO 32 PHOTOMETRICS

NEW CONSTRUCTION

48TH AVE
ALLENDALE TOWNSHIP, MICHIGAN

ENGINEER SEAL:

NOT FOR CONSTRUCTION

REVISIONS:

NO.	DATE	DESCRIPTION
04	03/10/26	SITE REVISION
03	02/25/26	SITE PLAN REVIEW
02	01/21/26	SITE PLAN REVIEW
01	01/13/26	SITE PLAN REVIEW

DRAWN BY MRS
REVIEWED BY KVD

SHEET TITLE:
ELECTRICAL LIGHTING PLAN

SHEET NUMBER:
E101

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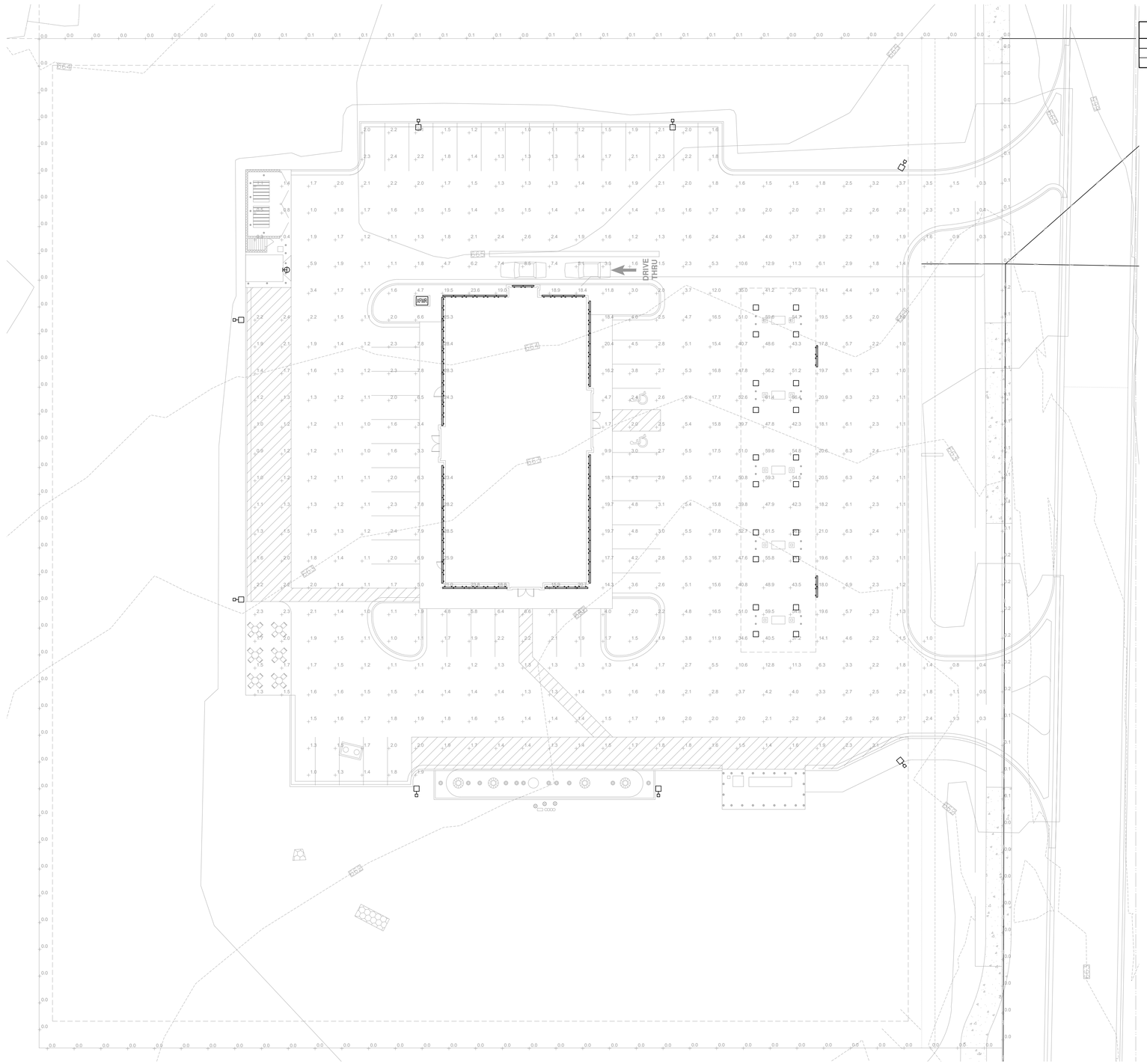

SITE PHOTOMETRIC STATISTICS

AREA	AVG. (fc)	MAX. (fc)	MIN. (fc)	MAX:MIN	AVG:MIN
PARKING LOT	7.8	61.5	0.3	205.0:1	26.0:1
PROPERTY LINE	0.0	0.2	0.0	N/A	N/A

1 E201 SITE PROPERTY LINE PHOTOMETRICS
1" = 20'

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E3M SOLUTIONS
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GRANDVILLE, MI 49418
616.365.5680
www.e3msolutions.com

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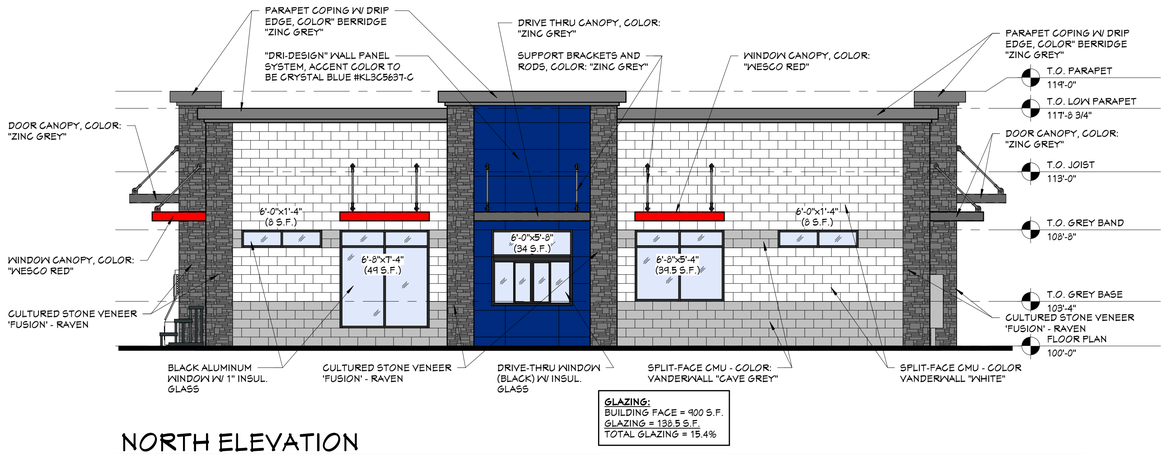
DRAWN BY MRS
REVIEWED BY KVD

SHEET TITLE:
ELECTRICAL SITE PHOTOMETRIC PLAN

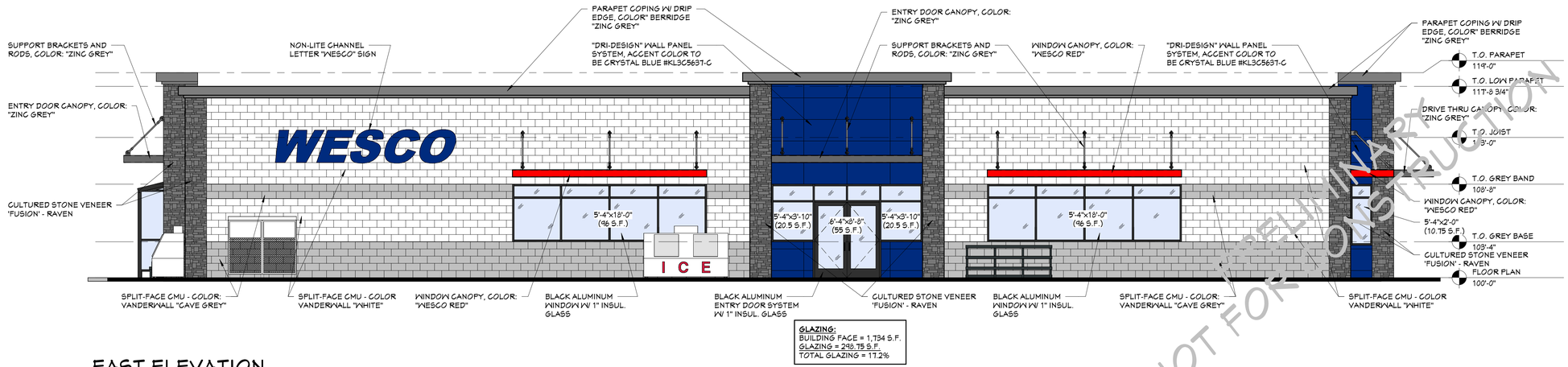
SHEET NUMBER:
E201

Mast Mini Barns of Fremont Michigan



NORTH ELEVATION

3/16" = 1'-0"



EAST ELEVATION

3/16" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

CONCEPT DESIGN STUDIO, INC.
800 E. ELLIS ROAD, SUITE 506
NORTON SHORES, MI 49441
PH. (231) 799-4936
FAX (231) 799-4937

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CONCEPT DESIGN STUDIO, INC.

NEW STORE FOR:

WESCO, INC. - STORE #32

ALLENDALE, MICHIGAN

PROJECT # 1660-26

ISSUANCES

OWNER REVIEW	XX.XX.2026

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DRAWN BY KAW

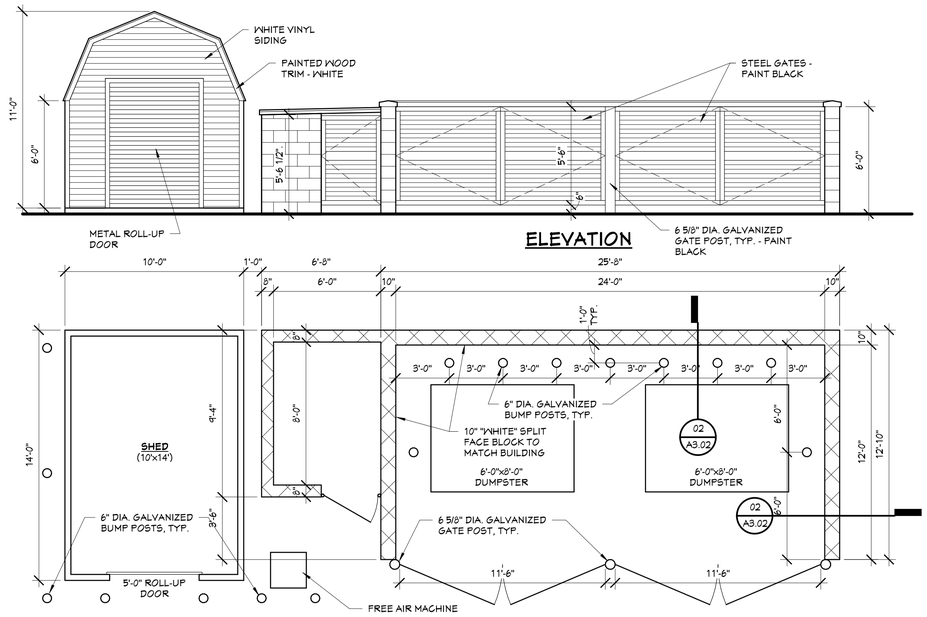
SHEET TITLE

EXTERIOR ELEVATIONS

SHEET NO.

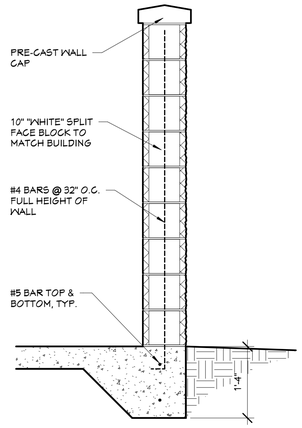
A3.01

3/30/2026 10:04:11 AM C:\Users\kwolff\Documents\Revit User Files\1660-25_Wesco - Store #32_2026_kwolff@conceptdesignstudio.net.rvt



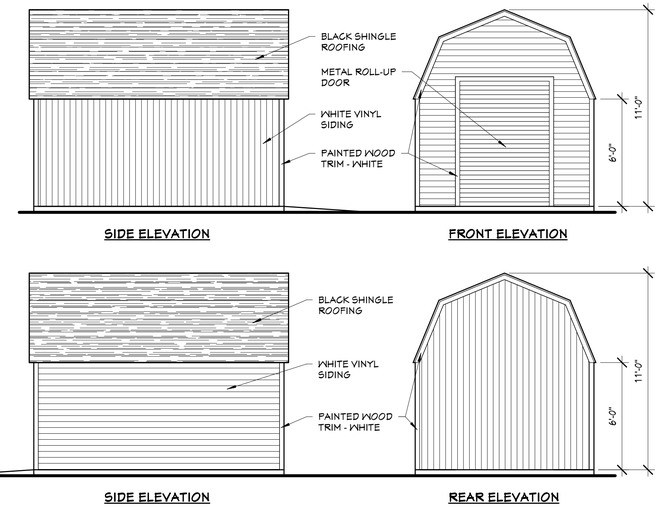
01 A3.02 DUMPSTER/SHED ENCLOSURE PLAN

1/4" = 1'-0"



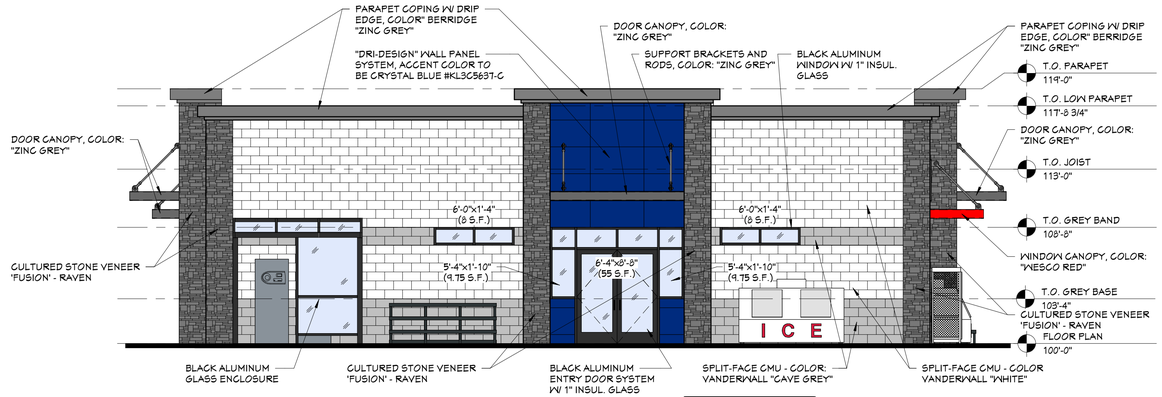
02 A3.02 DUMPSTER SECTION

3/4" = 1'-0"



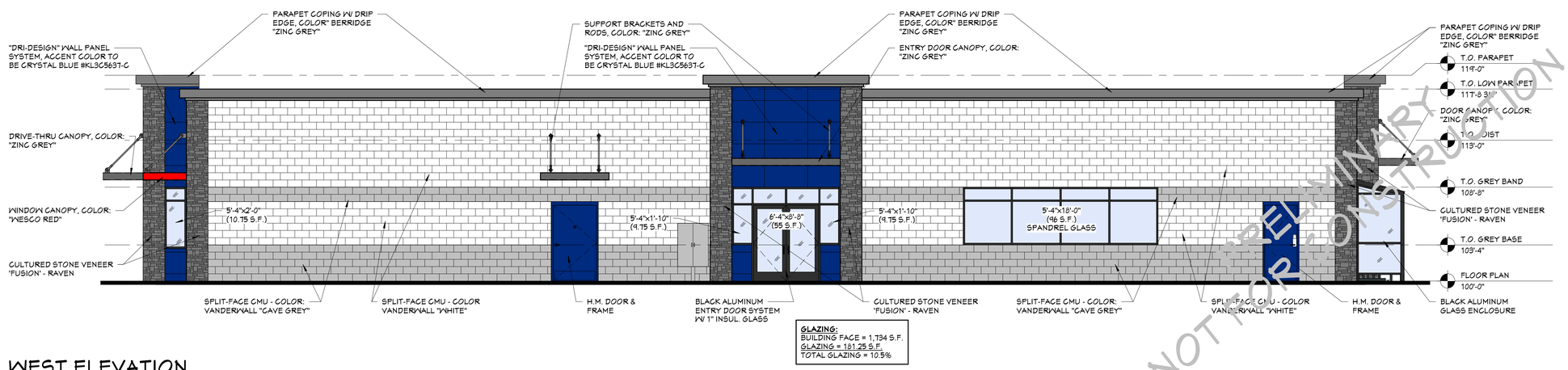
PRE-MANUFACTURED SHED ELVATIONS

1/4" = 1'-0"



SOUTH ELEVATION

3/16" = 1'-0"



WEST ELEVATION

3/16" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

CONCEPT DESIGN STUDIO, INC.
800 E. ELLIS ROAD SUITE 506
NORTON SHORES, MI 49441
PH. (231) 799-4936
FAX (231) 799-4937
CDS
CONCEPT DESIGN STUDIO, INC.

NEW STORE FOR:

WESCO, INC. - STORE #32

ALLENDALE, MICHIGAN

PROJECT # 1660-26

ISSUANCES

OWNER REVIEW XX.XX.2026

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DRAWN BY KAW

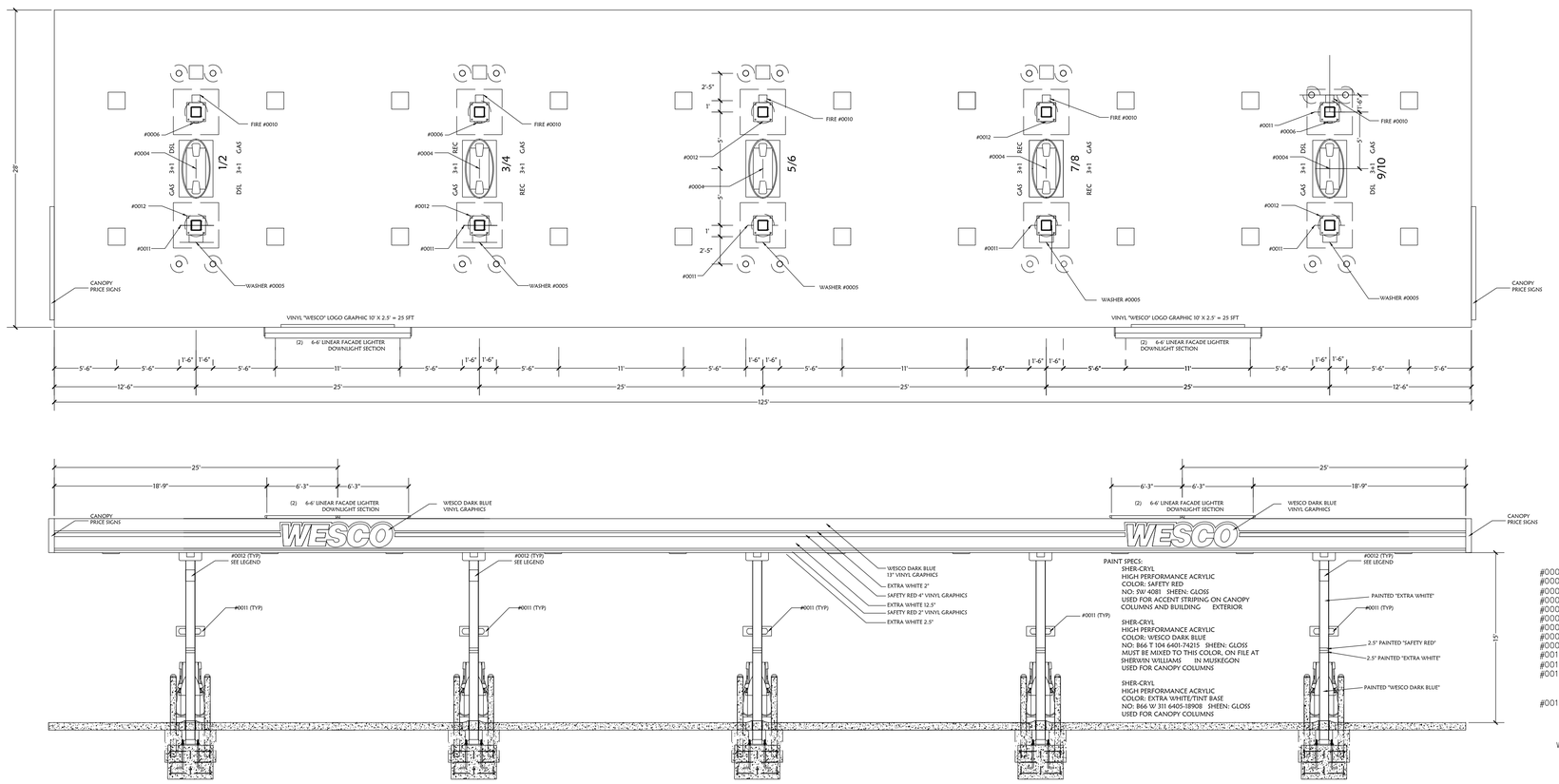
SHEET TITLE

EXTERIOR ELEVATIONS & DUMPSTER ENCLOSURE

SHEET NO.

A3.02

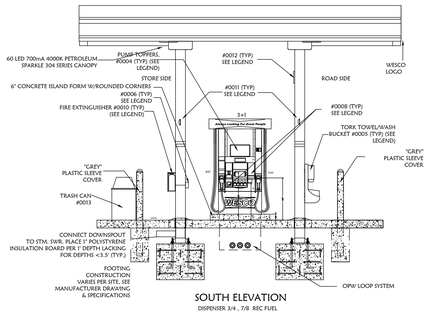
3/30/2026 10:04:12 AM C:\Users\kwolff\Documents\Revit User Files\1660-25_Wesco - Store #32_2026_kwolff@conceptdesignstudio.net.rvt



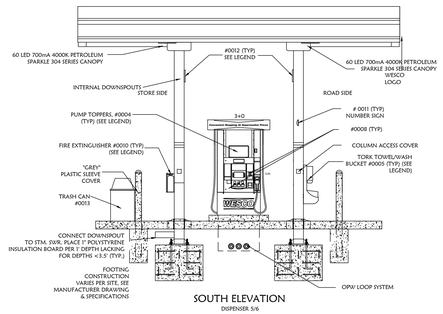
EAST ELEVATION

#0001	1	OVERFILL ALARM & TEST BUTTON	VEEDEROOT
#0002	1	FREE AIR MACHINE	JE ADAMS
#0003		N/A NOT USED	
#0004	6	PUMP TOPPERS	UNITED SIGN
#0005	5	WASHER BUCKETS	UNITED SIGN
#0006	2	DIESEL MITT HOLDER	UNITED SIGN
#0007	9	ID TAGS – BANDS	UNITED SIGN
#0008	12	PUMP LOOKS	COMPEX
#0009	1	TANK STICK	LARSON
#0010	5	FIRE EXTINGUISHER	COFESSCO
#0011	12	METAL DISPLAY COLUMN #'S	WESCO
#0012	5	NO SMOKING DECALS (MIDDLE OF WHITE BAND) (INSIDE COLUMN – EVERY OTHER PUMP)	WESCO
#0013	5	TRASH CAN	WESCO

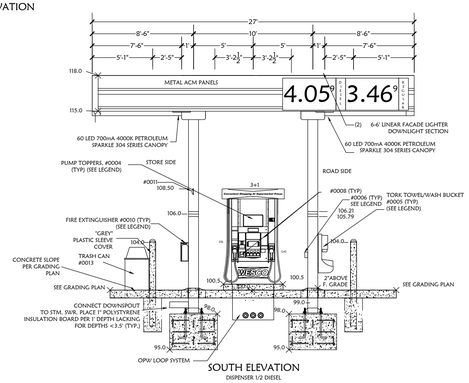
WESCO EQUIPMENT LEGEND — MANUF.



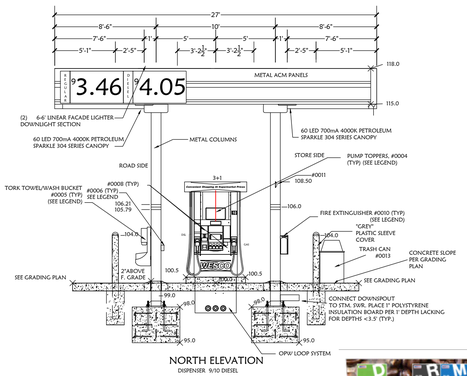
SOUTH ELEVATION
DISPENSER 3/4 , 7/8 REC FUEL



SOUTH ELEVATION
DISPENSER 5/6



SOUTH ELEVATION
DISPENSER 1/2 DIESEL



NORTH ELEVATION
DISPENSER 9/10 DIESEL

CANOPY & FUEL DISPENSERS

NO SCALE

PROVIDE OVATION–2 DISPENSER AND FEATURES

1 SILVER COLUMNS, VALANCES, & LOWER PUMP PANELS
2 BLACK BEZEL WITH WESCO GRAPHICS
3 X–FLOW METER
4 INNOVATION TV WITH GATEWAY
5 PAY WAVE
6 WAYNE CONNECT–CAT–5e WIRE CONNECTED AT THE DISPENSERS
7 MUSIC & INTERCOM
8 EMV PINPAD
9 EMV READY CARD READER
10 10" SCREEN

*NOTE: SEE GRAPHICS ABOVE.

DISPENSER REBRANDING

NO SCALE

(THIS DETAIL PROVIDED BY THE OWNER & WAS NOT PREPARED BY D&A)

Postema Signs

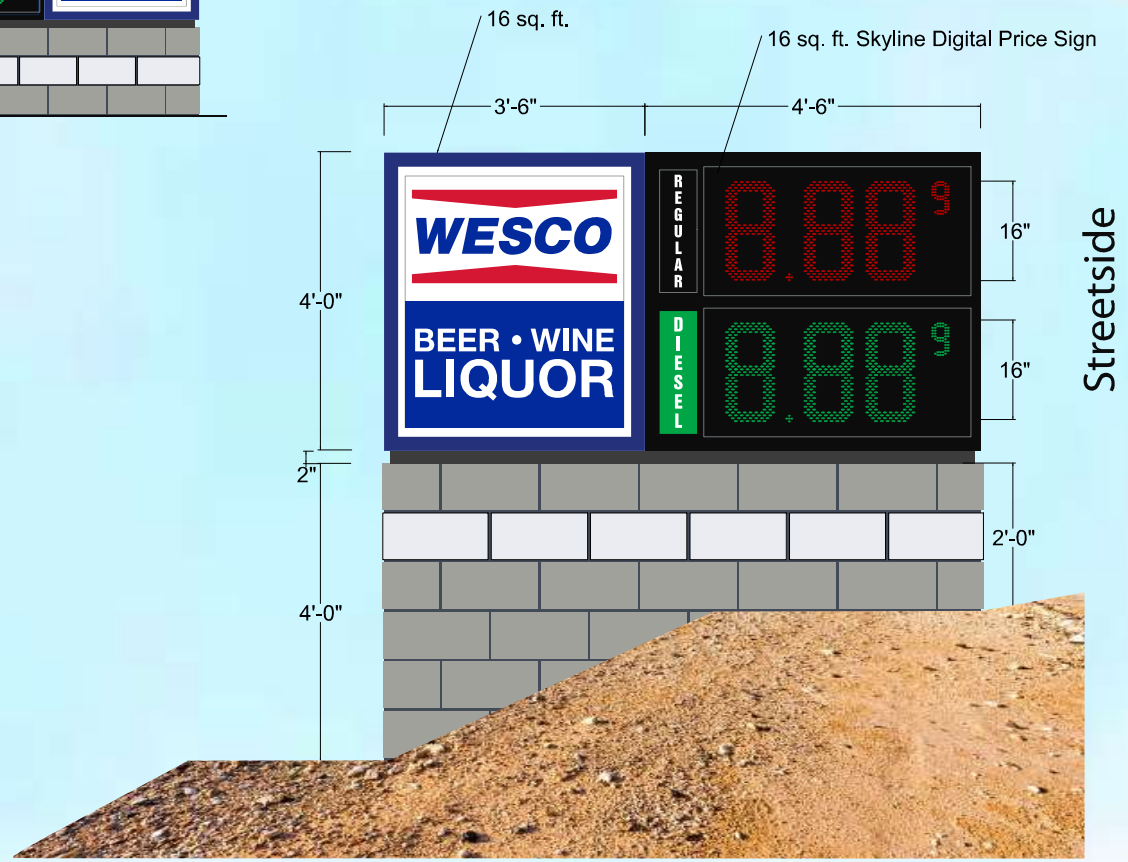
7475 South Division Avenue
Grand Rapids MI 49548
616.455.0260

Sales Consultant: Ross Postmus
email: ross@postemasign.com
cell phone: 616.723.2084

www.postemasign.com

watchfire AUTHORIZED DEALER

Side B



STRUCTURE
- *Double sided sign*
- *SignComp Wide Body aluminum extrusion*
- *2 1/4" aluminum retainers - hingeable for service*
- *Masonary base by others*
- *Paint to be Matthews Acrylic Polyurethane*

ELECTRICAL
- *Low voltage White LED lighting*
- *Integrated disconnect*
- *Photocell to be included*
- *UL listed and labeled*

FACES
- *Painted embossed polycarbonate pan faces*

SKYLINE PRODUCTS
- *16" RED Price Changer - Retrofit*
- *16" Green Price Changer - Retrofit*
- *Lighting to be white LED modules*
- *Regular & Diesel to be acrylic panels*

Sign Size: 32 Sq. Ft.

Customer Design Approval | Date

Matthews Paint
Satin Black

Matthews Paint
MP10453 Dark Blue

All designs and specifications are sole property of Postema Signs and Graphics. Any unauthorized use or distrubution is prohibited.

FLEIS&VANDENBRINK
DESIGN. BUILD. OPERATE.

May 8, 2026

Gregory Ransford, MPA
Fresh Coast Planning
119 1/2 Washington Avenue, Studio B
Grand Haven, MI 49417

RE: Wesco Store #32 – 11125 48th Ave.
Site Plan Revision for Planning Commission

Dear Mr. Ransford:

Fleis & VandenBrink (F&V) received the Wesco Store #32 re-submitted construction documents on April 29, 2026, which were prepared by Roosien & Associates, and Civil Site Plans dated April 28, 2026. Additionally, the applicant provided a Traffic Impact Study (TIS) for this project on April 20, 2026, prepared by Progressive Companies dated April 2026.

F&V staff have performed a review of the aforementioned plan set and TIS against the latest Allendale Charter Township and Ottawa County Road Commission (OCRC) standards and have the comments below to offer.

Site Plan Review Comments

1. Previous review comment to be addressed: Confirmation with Allendale Charter Township Public Utilities shall be obtained for the proposed connection of the sanitary lateral to the existing 8-inch PVC stub out from MH 4540.
2. Previous review comment to be addressed: A detail of the proposed oil/water separator shall be provided with construction document submission for review.
3. Previous review comment to be addressed: The applicant should ensure plans are sent to Ottawa County Water Resources Commission for review and approval of the storm water management (SWM) of this site.

Traffic Impact Study Review Comments

Comments provided by Julie Kroll, P.E., PTOE of F&V:

4. The study assumed that zero (0) vehicles would access this site from the south on 48th Ave. It is expected that there will be a desire for vehicles to access the site from the south. Further consideration of this potential traffic impact should be provided. Specifically, how those vehicles will access the site with the existing access restrictions on 48th Ave. The treatments for restricting access at the end of the median to restrict u-turns is not supported by the Ottawa County Road Commission (OCRC).
5. Further clarification is needed regarding the projected queue lengths for the drive-through operations. The study indicates that less than 1 vehicle will be queued in the drive-through. The analysis assumes that all vehicles arrive in an metered interval; however, actual operations of drive-through facilities have random arrivals which need to be considered in this study for the potential impact of the drive-through queue on the internal circulation of the site. Alternatively, the site plan could be revised to relocate the drive-through to the opposite side of the building have the queue at the rear of the site.

2960 Lucerne Drive SE
Grand Rapids, MI 49546
P: 616.977.1000
F: 616.977.1005
www.fveng.com

6. The TIS recommends right-turn tapers at the site driveways. We agree with the recommendation, and was also confirmed with OCRC they also agree with this recommendation. The site plan should be updated to reflect the right-turn tapers at both site driveways.

Sincerely,

FLEIS & VANDENBRINK

Nathan George, EIT

Brant Mercer, P.E.
Project Manager

Julie M. Kroll, P.E., PTOE
Traffic Engineering Services Manager

cc: Chad Doornbos, ACT
Zach Fields, ACT

Fresh Coast Planning

119 1/2 Washington Avenue, Studio B
Grand Haven, MI 49417
www.freshcoastplanning.com

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Kevin Yeomans
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Aaron Bigelow
616-919-2370
aaron@freshcoastplanning.com

Andrea Goodell
616-313-9333
andrea@freshcoastplanning.com

MEMORANDUM

To: Allendale Charter Township Planning Commission
From: Gregory L. Ransford, MPA
Date: May 13, 2026
Re: Wesco Special Use Application – Final Review

Pursuant to your direction provided at your April 20, 2026, meeting, attached is a final site plan from 3 West, LLC to construct a 5,970 square foot gas station and retail store at 11125 48th Avenue, parcel number 70-09-25-200-081. As you know, the subject property is located within the General Commercial (GC) Zoning District and is located on the west side of 48th Avenue just south of Lake Michigan Drive.

We reviewed the application materials and offer the following findings for your final review.

Planning Commission Direction

As you know, at your April 20, 2026, meeting you directed the applicant to perform the following changes to the submission.

- Add a three foot tall berm on the west side of the property to block lights from cars, beginning at the shed and extending south to the end of the outdoor seating area
- Identify the drive through as a "pick up" window
- Include a reciprocal easement to the north property on the site plan and provide the necessary easement agreement

We believe the applicant has fulfilled your direction accordingly. The only new item of note is that the applicant has not updated the Landscape Plan (yet) to match the main site plan set with the addition of the berm. Given this, we recommend a condition of approval to include that updated Landscape Plan.

Township Department Reviews

Township Engineer

Generally, no additional comments have been provided by staff since your preliminary review. However, the Township Engineer, Julie Kroll, expressed concerns as a result of the Traffic Impact Study. In particular, Ms. Kroll noted the following when we asked for additional information regarding her fourth (#4) comment in her review letter (attached).

> My comment regarding the access is that I do expect that some vehicles from the south will want to access the site. If there is an opportunity for them to modify the center median to accommodate this movement, that would be recommended. Otherwise, I expect that vehicles will make that illegal U-turn to access the site-then it would be on the Police to enforce and County to address if it becomes a problem. I would suggest that the PC discuss this item and determine if they have the same concerns that I have regarding the access.
>
> My recommendation is to make sure that the site is designed in a way such that there are no issues to mitigate. Proactive design vs reactive design.

The primary concerns for traffic on this site are: Site access to/from the north (and) Drive-through queueing impacting site circulation.

Ottawa County Road Commission

Fred Keena from the Ottawa County Road Commission also provided us comment regarding the Traffic Impact Study, which is below.

> After reviewing the traffic impact study, we agree with the recommendation to add right turn tapers to both proposed driveways into the site. Also, we would recommend holding off on any northbound U-Turn mitigation measures north of the median unless a problem develops in the future.

Legal Counsel

Pursuant to your direction to include a reciprocal easement to the north adjacent property, the applicant also provided the necessary easement document. That document is currently being reviewed by the Township Legal Counsel. Once we receive comments from Counsel, we will provide them to you.

Standards of Review

Special Use Standards

As you are aware, you must review the request in accordance with your standards provided for special use approval in Section 470-20.06 – Standards of the ACTZO. In that regard, below is copy of said Standards as well as our response to each in italic font, in an effort to assist you with your review of the request.

Section 470-20.06 STANDARDS.

No special land use shall be approved by the Planning Commission unless the Commission finds:

A. That the establishment, maintenance, or operation of the special land use will not be detrimental to or endanger the public health, safety, or general welfare.

Based on your preliminary review, it appears that the special land use generally would not be detrimental to health, safety, or general welfare. However, in order to fulfill that end, the applicant should alleviate the concerns of the Township Engineer and the Ottawa County Road Commission regarding the roadway network by providing the necessary road improvements in order to approve the special use request because the request would otherwise be denied without those improvements. Pending the commitment of the applicant to conduct those improvements, this standard may be met.

B. That the special land use will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor shall it substantially diminish and impair property values in the neighborhood.

We do not believe the special land use will be injurious to the use and enjoyment of other property in the immediate vicinity given the landscaping control measures, reciprocal access design, and the expected resolution of the roadway network improvements. However, pending comment received during the public hearing, the Planning Commission may disagree with our conclusion.

C. That the establishment of the special land use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.

Pending the aforementioned commitment of the applicant to remedy concerns within the existing roadway through proper improvement and given the reciprocal access easement to the north property, we believe the special land use will not impede the normal and orderly development and improvement of surrounding property. As a result, this standard may be met.

D. That adequate utilities, access roads, drainage, and necessary facilities have been or are being provided.

While we anticipate this standard will be met, comments from the Ottawa County Water Resources Commissioner's office will be provided following any site plan approval. Access to the site appears to be sufficient as required by the Ottawa County Road Commission. Again, pending the related improvements as a result of the Traffic Impact Study, this standard appears to be met.

E. That adequate measures have been or will be taken to provide ingress or egress so designed as to minimize traffic congestion in the public streets.

As aforementioned, the Township Engineer expressed concerns with the current roadway function related to the proposed use. In the event the applicant does not address those concerns with the necessary improvements, it appears that adequate measures to minimize traffic congestion on 48th Avenue may be lacking. Given this, it appears this standard may not be met.

F. That the special land use shall, in all other respects, conform to the applicable regulations of the district in which it is located and to any additional conditions or procedures as specified in Article 23.

We believe the proposed special land use conforms to the applicable regulations of the district in which it is located because of the previous conclusion by the Planning Commission. Given this, it appears this standard has been met.

Site Plan Review Standards

In addition to your special land use standards provided by Section 470-20.06 of the ACTZO, as you are aware, Section 470-24.06 – Standards for Approval of the ACTZO provides your standards of review when deliberating regarding a site plan application. In that regard, below, in part, is copy of said Standards for Approval as well as our response to each in italic font in an effort to assist you with your review of the request. As you are further aware, each standard is very lengthy and provides guidance and authority to the Planning Commission. Given this, rather than providing the entirety of each standard within this memorandum, we have included the subtitle and our comments for each. If you require the entirety of any standard, please let us know and we will provide it to you.

Section 470-24.06 STANDARDS FOR APPROVAL

Prior to approving a site plan, the Planning Commission shall require that the following standards and requirements be satisfied. If these standards and all other requirements of applicable Township ordinances are met, the site plan shall be approved.

A. General Access Requirements

As a result of your direction during the preliminary review, the applicant has provided a reciprocal easement to access the adjacent property to the north. Pending the completion of review and approval of the related reciprocal easement document by the Township Legal Counsel, it appears this standard may be met.

B. Environmental Considerations

Given that the Township Engineer is generally satisfied with the proposed plans and because the Ottawa County Water Resources Commissioner will be involved with the overall storm design, it appears that this standard may be met.

C. Sidewalks and Pedestrian Circulation

The applicant has provided sidewalk as required by the ACTZO. Given this, it appears this standard has been met.

D. Landscaping and Buffering

Given the requirement by the Planning Commission during the preliminary review of a berm along the west portion of the property, it appears this standard may be met.

E. Lighting

As noted during the preliminary plan review, the proposed lighting for the site complies with this section. Given this, it appears that this standard has been met.

F. Utility Service

The applicant has indicated that all utilities will be buried underground. As a result, it appears that this standard has been met.

G. Outdoor Features

As noted during the preliminary plan review, the applicant will screen rooftop equipment with parapet walls. In addition, the Planning Commission concluded that the proposed landscaping for other equipment and tanks is adequate, with the addition of the west berm. Given this, it appears that this standard may be met.

H. Waste Disposal Facilities

As you know from your previous review of the proposed plans, the applicant provided a dumpster enclosure in accordance with this section. Given this, it appears that this standard may be met.

I. The location and dimensions of all existing and proposed structures on the subject property

The applicant has provided the location and dimensions of all existing and proposed structures on the subject property. Given this, it appears that this standard has been met.

J. Building Appearance

As a result of your preliminary plan review, the applicant provided elevations for the proposed building that were deemed satisfactory with this section. Given this, it appears this standard may be met.

K. Site plans shall conform to all applicable requirements of County, State and Federal statutes and approval may be conditioned on the applicant receiving necessary County, State and Federal permits before final site plan or an occupancy permit is granted

The applicant is aware of the related County, State, or Federal permits that will be required of the proposed use. As a result, it appears that this standard has been met.

L. Trip Generation Analysis.

As aforementioned, the Township Engineer has expressed concerns with the results of the Traffic Impact Study. If approval of the proposed is contemplated, the Planning Commission should inquire regarding the commitment of the applicant to conduct the necessary road improvements in order to accommodate and approve the special use.

Planning Commission Considerations & Draft Motion

As the Planning Commission deliberates regarding this application, we believe the following warrant your review and consideration. They are listed in no particular order.

Considerations

- The commitment of the applicant to conduct the necessary road improvements in order to accommodate and approve the special use that without such road improvements would lead to reason for denial
- Section 20.06 – Standards (special use)
- Section 24.06 – Standards for Approval (site plan)

Draft Motion

Given your favorable review of the initial plans at your April 20, 2026, meeting, and in an effort to assist with your formulation of a motion in that regard, we offer the following motion for your consideration. In the event a motion is offered to deny, we will gladly draft that motion for consideration at your next meeting based on your direction.

Motion to approve the site plan as presented, finding that the proposed site plan meets the special use standards of Section 20.06 and the site plan review standards of Section 24.06 of the Allendale Charter Township Zoning Ordinance. The site plan includes:

- An undated two page Planning Commission Site Plan Review Application;
- Site Plan Set – Wesco Inc. Wesco Store #32 Allendale – Project No. 251107, dated April 28, 2026, prepared by Roosien & Associates, which includes:
    - Site Analysis Plan, C-100;
    - Existing Conditions and Removals Plan, C-101;
    - Site Layout Plan, C-102;
    - Site Utility Plan, C-103;
    - Site Grading and SESC Plan, C-104;
    - Detail Plan, C-501;
    - Detail Plan, C-502;
    - Wesco Store #32 landscape plan, drawing date 031926, Sheet Number L-101 (pending replacement to match the site plan)

- Wesco, Inc – Store #32 building elevations prepared by Concept Design Studio, project # 1660-26, which includes;
    - Exterior Elevations, Sheet No. A3.01;
    - Exterior Elevations & Dumpster Enclosure, Sheet No. A3.02;
    - Preliminary Floor Plan, Sheet No. A1.01
- Wesco 32 Photometrics, prepared by E3M Solutions, dated 03/10/26, which includes:
    - Electrical Legend & Symbols, Sheet number E001;
    - Electrical Specifications, Sheet number E002;
    - Electrical Lighting Plan, Sheet number E101;
    - Electrical Site Photometric Plan, Sheet number E201
- Canopy and Fuel Dispensers sheet, undated (1 page);
- Dri-design Wall Panel System catalog (49 pages);
- Mast Mini Barns of Freemont Michigan photos on a sheet (1 page);
- GPX Driverless Linear G&G Industrial Lighting specification sheets (27 pages);
- Great Lakes Specifications (Raven) specification sheets (13 pages);
- Postema Signs sign rendering, undated (1 sheet)

with the following conditions:

1. The roadway network can support the proposed use as outlined by the Ottawa County Road Commission and the Township Engineer related to the Traffic Impact Study.
2. The landscape plan shall match the site plan.
3. The Township Attorney is satisfied with the proposed reciprocal access easement document.
4. Review and approval are required from the Ottawa County Water Resources Commissioner's Office prior to construction.
5. [Insert Condition, if necessary]
6. [Insert Condition, if necessary]

The application has been scheduled for a public hearing at your May 18, 2026, meeting. We expect the applicant to be in attendance. If you have any questions, please let us know.

GLR
Planner

Attachments

cc: Adam Elenbaas, Supervisor
Matt Cole, Rossien & Associates

Allendale
CHARTER TOWNSHIP
"Where community is more than just a concept!"

Planning Commission
Application

Submission Date:_____

Application for Site Plan Review in conjunction with which of the following:

- [X] Site Plan Review Only
- [ ] New PUD Development
- [ ] Rezoning
- [ ] Zoning Amendment (including PUD)
- [X] Special Use Application
- [ ] Other:_____

Property Owner:	Chateau Village LLC		
Mailing Address:	547 Baldwin St., Jenison, MI 49428		
Phone Number:	616-457-3450	Cell Phone:	616-291-4570
Email Address:	Ike@Koetjebuilders.com	Fax:	—
Owner's Signature:	Ivan Koetje		

Applicant Name: (if not owner)	3 West, LLC		
Mailing Address:	1460 Whitehall Rd, Muskegon, MI 49445		
Phone Number:	231.719.4300	Cell Phone:	
Email Address:	jj@weswinc.com	Fax:	
Applicant's Signature:	M Lth		

Who is the responsible party for future invoices? Check one: [ ] Property Owner [X] Applicant

Architect, Engineer, Attorney or other professionals associated with the project (attach additional sheets if necessary):

Contact:	Matt Cole		
Mailing Address:	5055 Plainfield Ave NE, Grand Rapids, MI 49525		
Phone Number:	616-361-7220	Cell Phone:	
Email Address:	matt@roosien-assoc.com	Fax:	
Address of Property:	11125 48th Avenue		

6676 Lake Michigan Drive | P.O. Box 539 | Allendale MI 49401
Phone: 616-895-6295 Fax: 616-895-6670 or 616-895-6330
www.allendale-twp.org

Permanent Parcel Number:	70 - 09 - 25 - 200 - 081				
Legal Description of Property (or attach to the application):	see attached plan				
Lot Area:	3.11 Acres	Lot Depth:	360'	Lot Width:	377'
Current Zoning of Parcel:	G-C	Current Use of Parcel:	Agricultural / Crops		
Proposed Use of Parcel:	Gas station with retail				
Name of Proposed Development (if applicable):					
Name of Proposed Buildings to be constructed:	Wesco				
Square feet of gross:	5,970	Square feet of usable floor area:	2,850		
Number of Permanent Employees (if applicable):	12				

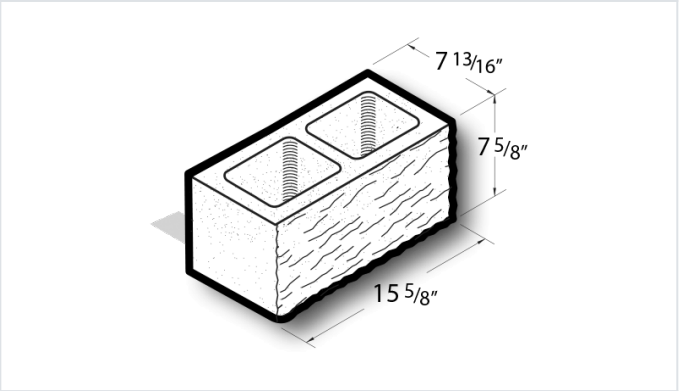
- Please include 5 sets of the proposed Site Plan and 1 electronic copy for staff review along with your application and escrow fee. (When ready for submission to the Planning Commission, smaller than typical plans are allowed when they can be easily interpreted and are to scale.)
- Please see Resolution 2011-2 for our full escrow fee policy. If you would like a copy of this policy it is available online or by request at the Township office.
- If your escrow is not kept up to date, according to our policy, the Township reserves the right to withhold approval of your project, issue a stop work order, or withhold final occupancy until the escrow balance is made current.

For Office Use Only

Date Received:			
Amount Paid:		Check No:	
Notes:			

www.bestblock.com

8x8x16 Split Face Block — Product No: 803000100



8x8x16 Split Face Block is architectural CMU that has the appearence of hand-chiseling to give wall designs a highly textured look. Contact your Best Block representative for special requests and additional options.

- Available in medium, normal, and light-weight varieties
- Competively priced and produced locally.
- Concrete blocks are naturally fire-resistent, highly durable, and its mass creates energy-efficient wall systems.
- Item weight and pallet count may vary by location.
- Contact your Best Block representative for more information.

Unit(s)

Product No.	803000100
Weight/Block:	38
Block/Pallet:	72
Pallet Weight:	2736

Available Colors

#12 Mojave Brown

#123 Alamo Red

#300 Island Sand

#437 Pecan

#5 Terra Cotta

#6 Grey Granite

#7 Burnt Umber

#700 White Limestone

#702 Limestone Cream

#704 White Terrazzo

#708 Pewter Terrazzo

#721 Walgreen Brown

BEST BLOCK
A QUIKRETE® COMPANY

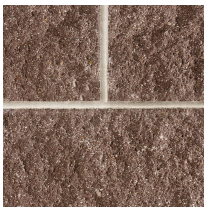
www.bestblock.com

#725 Smoke

#8 Charcoal

#813 Limestone Buff

#9 Cream


Cocoa

Georgetown White

Gun Barrel

Midnight

Palomino

Paprika

Sandstone

Terra Cotta

Walnut Brown

Wet Stone

INSULATED METAL PANEL SYSTEMS

PRODUCT SHOWCASE

FALK, building the future

www.falk.com

FALK®

TABLE OF CONTENTS

FALK Icons

What are IMPs?

FALK IMPs

Colors & Coatings

Colorcoat HPS200 Ultra®

Fluropon® 70% PVDF

Silicone-Modified Polyester (SMP)
& PolyPREMIER™ Polyester (PE)

INSULATED METAL BUILDING PANELS

FALK HFW 40

FALK CSW 44

FALK SSR 42

FALK RRP 40

FALK RDEK 40

"For over 16 years, FALK has been producing state-of-the-art insulated metal panels in the Netherlands. I take pride in bringing that old-world heritage of craftsmanship and quality to our cutting-edge manufacturing facility in Grand Rapids, Michigan."

Boudewijn Haase, President, FALK Panel in Grand Rapids, MI

Disclaimer
Considerable attention has been given to the documentation and technical details in this brochure.
However, this document does not provide any legal guarantees.

FALK ICONS

Facade
Panels featuring this icon are suitable for facade applications.

Wall
Panels featuring this icon are suitable for wall system applications.

Ceiling
Panels featuring this icon are suitable for ceiling installations.

Demising Wall
Panels featuring this icon are suitable for use in demising wall systems.

Low Slope Roof
Panels featuring this icon are suitable for roof decking systems.

Pitched Roof
Panels featuring this icon are suitable for pitch roof systems.

Accessories
We offer compatible accessories to ensure buildings are completed and panels are securely installed.

Roofing Membrane
Panels featuring this icon are suitable for TPO & PVC single-ply membrane applications.

Solar Enabled
Panels featuring this icon are suitable for solar panel installation. The quantity of panels and their attachment should be specified by the support system provider.

Food Safe
A hygiene-compliant coating designed for use in the food industry.

B1142
ASTM E84 CLASS A
FSI< 25 SDI < 450

FLORIDA BUILDING CODE FL41818 |
Meets performance building codes and standards

FLORIDA BUILDING CODE FL41819 |
Meets performance building codes and standards

WHAT ARE INSULATED METAL PANELS?

Insulated Metal Panels (IMPs), often referred to as sandwich panels, are versatile and efficient building materials used in a variety of construction applications. These panels consist of two metal sheets encasing a core of insulating foam, such as polyisocyanurate. This design offers a combination of durability, superior energy efficiency, and rapid installation, making IMPs a favored choice for walls, partitions, ceilings, cold storage, and roofing in numerous building applications. Their energy-saving properties, coupled with a variety of different colors & coatings, make IMPs a practical and visually appealing solution in modern construction.

IMPs stand out for their all-in-one nature, combining elements of exterior cladding, thermal insulation, and a vapor barrier in a single product. They offer high R-values, indicating strong insulating properties, which effectively reduce heat transfer and enhance energy efficiency in buildings.

Additionally, these panels are available in various gauges and can be tailored to meet specific design and construction requirements, including different insulation thicknesses.

IMPs are also compliant with numerous U.S. and international building codes and standards, ensuring their suitability for a wide range of projects.

Overall, IMPs are a versatile, efficient solution for modern construction, offering a blend of aesthetic appeal, cost-effectiveness, and performance benefits. Their balanced approach to practicality and aesthetics makes them a popular choice in contemporary building designs.

WHY CHOOSE FALK?

PRODUCT EXCELLENCE

FALK Insulated Metal Panels (IMPs) are engineered for durability, resistance to external factors, and superior performance. We adhere to stringent quality control standards, guaranteeing products that excel in strength, efficiency, and longevity for any construction need.

INNOVATIVE TECHNOLOGY

Our commitment to cutting-edge technology leads to products that are not only visually appealing but also incorporate the latest in energy efficiency, environmental sustainability, and advanced construction technology.

CUSTOMER SATISFACTION

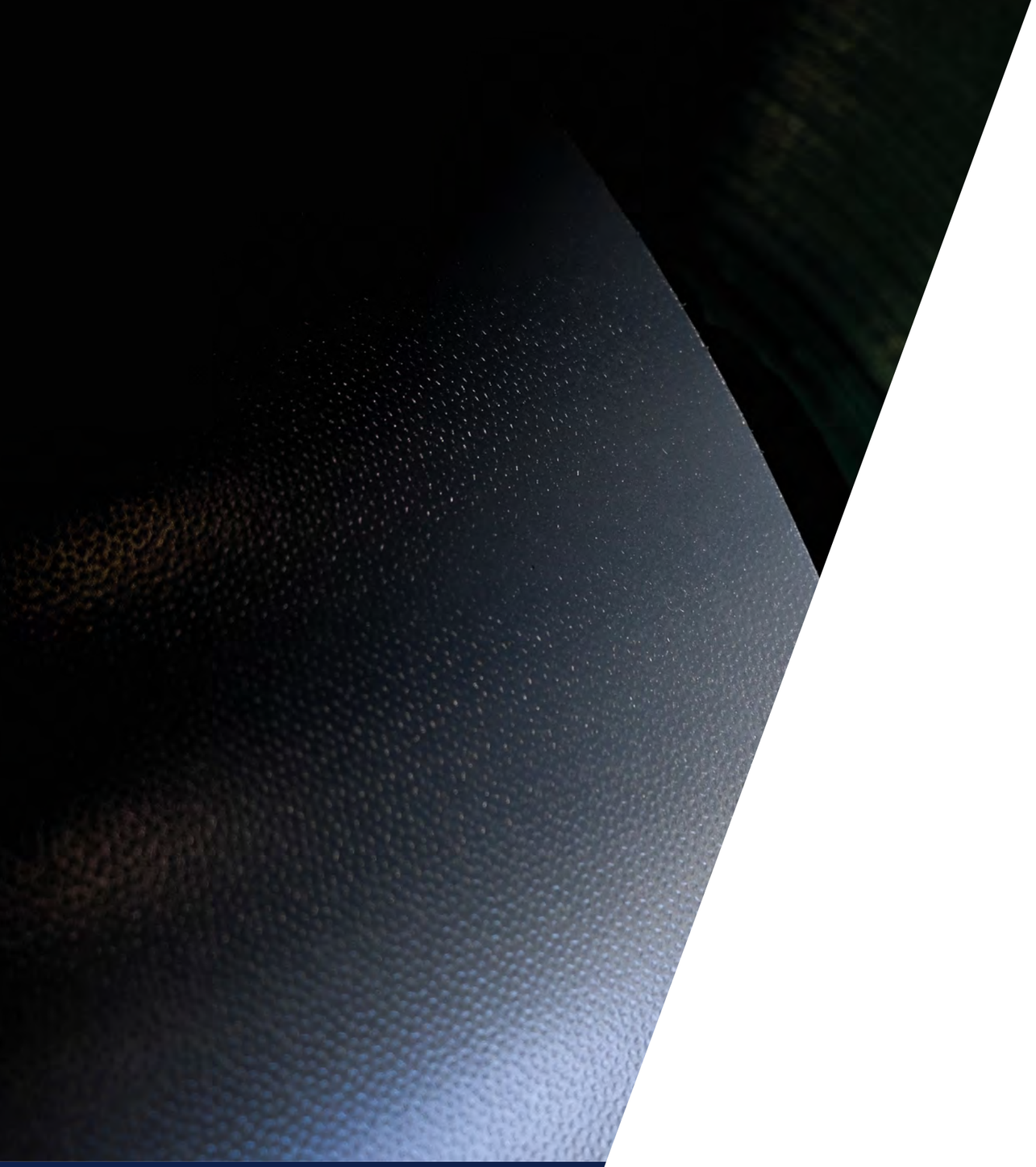
We prioritize a personalized service experience, ensuring every client feels valued from initial contact to post-installation. Our team is dedicated to offering expert guidance and responsive solutions tailored to your specific needs.

EFFICIENT DELIVERY

FALK's robust trucking fleet ensures reliable and timely delivery of your IMPs. We focus on minimizing delays and adhering to project schedules, ensuring smooth progress and success for your construction projects.

Interested in learning how FALK IMPs can enhance your next construction project? Find out more by visiting:

falk.com



COLORS AND COATINGS

- **More than 50 different colors**
- **Coating warranties available for up to 30 years**
- **Color matching available**
- **World-renowned steel suppliers**

COLORS & COATINGS

At FALK, we specialize in robust and visually appealing insulated metal panels. We use high-quality materials sourced from leading coil and coating suppliers, ensuring superior structural integrity.

COLORS

Our panels are available in over 50 different colors. For color samples or color charts, please contact our sales team or visit falk.com/en-us. We offer a range of standard colors and an assortment of custom options. Should you not find the color you need, our sales team is ready to assist you in finding suitable alternatives. Additionally, for those seeking a particular shade, we provide a color-matching service to meet your specific requirements.

COATINGS

Focusing on sustainability, longevity, and versatility, FALK offers a variety of high-quality coatings. Our selection includes Tata Steel's Colorcoat HPS200 Ultra®, Fluropon 70% PVDF®, Silicone-Modified Polyester (SMP), and Sherwin-Williams' PolyPREMIER™ Polyester (PE).

Chosen for their strength, eco-friendliness, and flexibility, these materials align with FALK's commitment to meeting diverse construction industry needs. This approach guarantees that FALK's products are suitable for a wide range of applications, meeting the demands of modern construction projects.

FALK collaborates with leading steel manufacturers such as Tata Steel, Steel Dynamics, Hyundai Steel, Ternium S.A., and ArcelorMittal. We value these partnerships for their dedication to a circular production model. These suppliers utilize electric arc furnace (EAF) technology to produce high-quality, low-carbon steel, primarily from recycled scrap metal. In an industry increasingly geared towards sustainable manufacturing, FALK is at the forefront, promoting a circular economy and the responsible reuse of materials.

NEED MORE INFORMATION?

Please call (616) 541-4500 or visit falk.com

Colorcoat HPS200 Ultra®

TATA STEEL

This pre-finished steel is engineered to withstand the harshest environments, from coastal to industrial settings, offering supreme durability and anti-corrosion properties. It is suitable for a variety of buildings, including warehouses, industrial and retail spaces, and processing plants. Colorcoat HPS200 Ultra® is not only proven for performance but also trusted for reliability. Produced in the UK, it boasts a reduced carbon footprint and meets the BES 6001 responsible sourcing standard.

Standard Colors

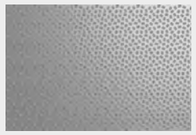
Lead Time: 8 Weeks or Less

White
RAL 9003

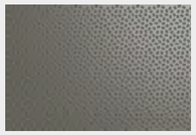
Hamlet
RAL 9002

Mushroom
RAL 080.70.10

Goosewing Grey
RAL 7038



Pure Grey
RAL 000.55.00

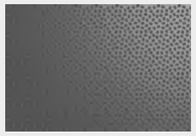


Merlin Grey
RAL 180.40.05

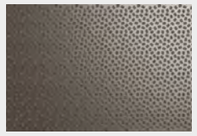
Non-Standard Colors

Lead Time: 8-12 Weeks

Albatross
RAL 240.80.05



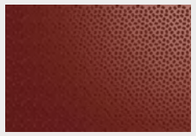
Ardenne
RAL 7022



Mole Brown
RAL 070 40 10

Ivy
RAL 170 20 10

Sargasso
RAL 5003



Barn Red
RAL 030.30.40

Availability

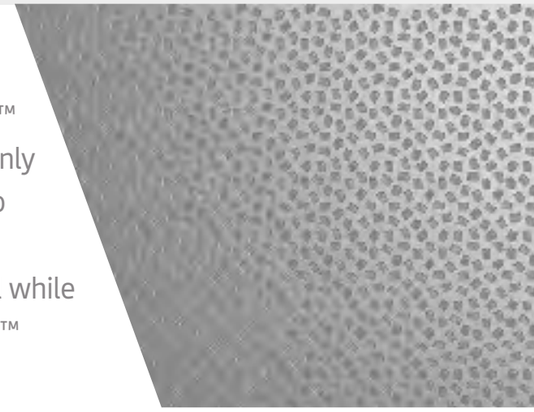
Colorcoat HPS200 Ultra®, in 0.5mm thickness and 13 key colors, is readily available through FALK Panel in a selection of finished profiles. Additionally, a wider selection of colors is available, subject to minimum order quantities and lead times.

Substrate & Metallic Coating

Colorcoat HPS200 Ultra® uses the unique and proven hot-dipped Galvalloy® metallic coating by Tata Steel. Galvalloy® is a specialized blend comprising 95% Zinc (Zn) and 5% Aluminium (Al), complying with the EN 10346:2015 standards, akin to GF90. This meticulously formulated mix of Zinc and Aluminium in Galvalloy® provides a dual benefit: it significantly enhances barrier protection and offers superior sacrificial protection. When compared to conventional Hot Dip Galvanized (HDG) coatings, it delivers unrivaled corrosion protection, even at the cut edges.

Unique Identity

Exclusive to Colorcoat HPS200 Ultra®, the Scintilla™ pattern has been developed to a nominal depth of only 0.05mm. This shallow depth makes it less prone to trapping dirt compared to deeper patterns, thus facilitating easier cleaning of the pre-finished steel while enhancing its robustness. Additionally, the Scintilla™ pattern serves as a guarantee of authenticity and contributes to a thicker overall protective topcoat.



Colorcoat HPS200 Ultra® Layers Illustration

- Top coat with unique Scintilla™ pattern by Tata Steel
- Corrosion resistant primer
- Pre-treatment
- Galvalloy® metallic coating
- Base substrate
- Galvalloy® metallic coating
- Pre-treatment
- High performance backing coat

FALK is the exclusive supply chain partner for the distribution of Colorcoat HPS200 Ultra® by Tata Steel, specifically for the production of insulated metal panels in North America. Please note that digital color representations are approximations of the actual colors. For accurate color matching, contact FALK Panel directly to request physical color samples.

Fluropon® 70% PVDF Coatings

from Sherwin-Williams®

SHERWIN-WILLIAMS. Coil Coatings

Keeping your projects looking as good as the day they were first built. FALK Panel has partnered with Sherwin-Williams Coil Coatings to deliver enduring beauty and durability for your next endeavor.*

Chosen more often than any other brand of PVDF-based coatings, none is more trusted than Sherwin-Williams exterior metal coating systems. Fluoropolymer coatings contain 70% polyvinylidene difluoride (PVDF) resins and are field and time proven. They meet or exceed the most rigorous ASTM performance standards.

Colors

Our Fluropon® systems come in an expansive selection of colors, sheens, gloss levels, and special effects, allowing you to realize almost any visual concept you envision.

Benefits

- Superior resistance to ultraviolet rays
- Outstanding color retention and consistency
- Excellent overall adhesion
- Great flexibility and formability
- High film Integrity

Substrates

Fluropon® coatings can be applied to several pretreated substrates, including Galvalume®, Hot-Dipped Galvanized (HDG) steel, and aluminum.

End Uses

All Fluropon® coatings are ideal for external use on a variety of structures, including monumental buildings, commercial and residential projects, and pre-engineered buildings such as:

- Architectural and residential metal roofing systems
- Composite and insulated metal wall panel systems

Color requests not listed are considered custom requests involving special approval and quantity minimums.

Standard Colors *Lead Time: 8 Weeks or Less*

Regal White
431R444

Sandstone
433R396

Dove Gray
432R1021

Surrey Beige
433B530

Charcoal
432R1065

Non-Standard Colors *Lead Time: 8-12 Weeks*

Taupestone
437C1254

Spartan Bronze
437R270

Regal Blue
436R1030

Hartford Green
435A614

Metallic *Lead Time: 12 Weeks or Less*

Aged Copper
439Z7883M

Weathered Zinc
439RZ1563M

Silversmith
439RZ1541M

Customer Acknowledgment

Please be aware that panels with broad, flat areas may exhibit oil canning, influenced by factors such as handling, structural inconsistencies, fastener application, and thermal expansion. This effect is more pronounced in darker colors under sunlight. To minimize oil canning, options include selecting panels with smaller flat areas, reduced dimensions, embossed textures, lighter colors, or thicker gauges. While complete prevention of oil canning is not assured due to its complex causes, careful material selection, design considerations, and proper installation can mitigate its impact. It's important to note that oil canning, often resulting from external factors, is not grounds for panel rejection.

For an accurate representation of our color offerings, please request a physical color sample. You can do this by calling 616.541.4500 or by visiting falk.com/en-us.

Silicone-Modified Polyester (SMP)

from Sherwin-Williams®

SHERWIN-WILLIAMS. Coil Coatings

WEATHER XL™ -
COIL COATING SYSTEM

Industry Leading
Silicone-Modified Polyester

Sherwin-Williams' WeatherXL™ coating features a unique silicone-modified polyester (SMP) resin system, specifically designed for pre-painted metal products used in the residential, agricultural, and commercial construction industries.

Standard Colors *Lead Time: 8 Weeks or Less*

Bright White
WXW0050L
PMW0864

Igloo White
PMW0532

Old Town Gray
WXA0095L

Non-Standard Colors *Lead Time: 8-12 Weeks*

Dutch White
WXW0704L
PMW33644

Light Stone
WXD0038L

Saddle Tan
WXD0046L

Desert Sand
WXD0055L

Burnished Slate
WXB1007L

Charcoal
WXA0090L

Durable & Long-Lasting

This two-coat system demonstrates proven durability, offering high resistance to stains, abrasions, and metal marking. Its outstanding features enable the product to withstand the physical stresses of fabrication, transit, and construction, effectively minimizing the risks of cracking and marring.

The WeatherXL™ coating stands out as the most durable SMP coating available, thanks to a combination of ceramic, inorganic pigments, and other enhancements. It is renowned for superior weatherability, exceptional color and gloss retention, outstanding color consistency, proven durability, and superior chalk resistance.

Furthermore, WeatherXL™ coatings come in a broad palette of colors. Each color is available in Solar Reflective (SR) formulations, complying with Energy Star and LEED qualifications. This not only ensures aesthetic appeal but also contributes to energy savings and reduced cooling costs.

NON-STANDARD COLORS, CONT. *Lead Time: 8-12 Weeks*

Crimson Red
WXR1630

Rustic Red
WXR0077L

Evergreen
WXG0021L

Gallery Blue
WXL0026L

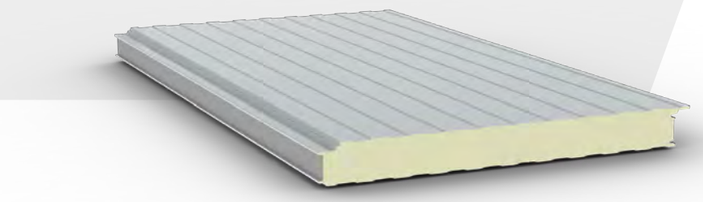
POLYPREMIER™ POLYESTER (PE)

Also by Sherwin-Williams®, PolyPREMIER™ is a line of multi-purpose polyester coatings formulated for metal building and multi-purpose product components. Available PE colors are designated with PE color codes, starting with "PMW ..." .Standard PE colors include Bright White and Igloo White. FALK's available non-standard PE color is Dutch White.

STAINLESS STEEL

FALK also offers 24-gauge 304 stainless steel for interior use only.

FALK HFW 40



Whether it's car service centers, showrooms, or distribution centers, the FALK HFW 40 is versatile and suitable for multiple uses with its variety of profiles and colors. Its concealed fixing method allows for extensive creative design flexibility.

FEATURES

Facade
Panels featuring this icon are suitable for facade applications.

Wall
Panels featuring this icon are suitable for wall system applications.

Demising Wall
Panels featuring this icon are suitable for use in demising wall systems.

Food Safe
A hygiene-compliant coating designed for use in the food industry.

Accessories
We offer compatible accessories to ensure buildings are completed and panels are securely installed.

FALK HFW 40 | HIDDEN FIXED WALL PANEL

Panel Thickness* [in]	R-Value**	U-Value (BTU/HR/FT2/°F)
2.5	20.83	0.048
3	25.00	0.04
4	33.33	0.03
5	41.67	0.024
6	50.00	0.02
8	66.67	0.015

*Panel thickness is nominal.
**R-value calculated based on ASTM 1363 U-Factor results, at 35° mean. FALK's calculated R-value per inch is 8.33.

Panel Length*: 7' - 82'

Profiles: Micro Rib, Macro Rib, & Box

Coatings: HPS200 Ultra®, Fluropon 70% PVDF, SMP, PE, & Stainless

Embossing: Standard for 24 & 26 Gauge
Not Available for 22 Gauge or HPS200 Coating

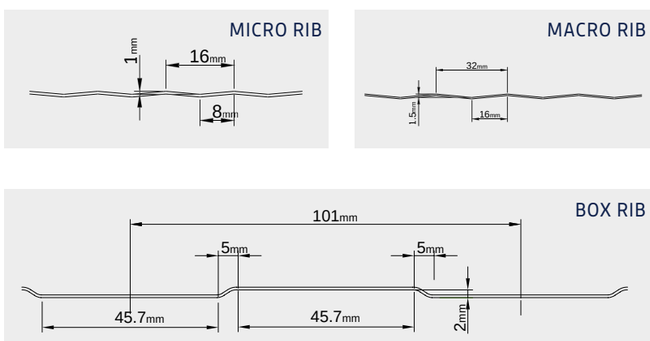
Designed for vertical and horizontal installation

Hidden fastener

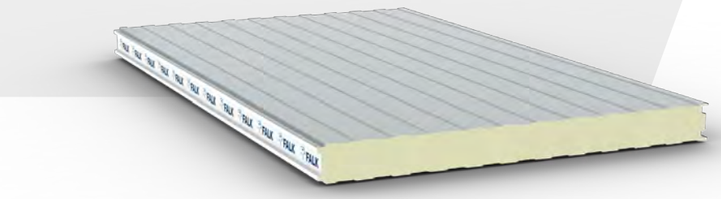
** 82-foot-long panels require special transportation arrangements*

Horizontal and vertical mounting with concealed fastening

The FALK HFW 40 panel features a 'hidden' fastening method that conceals fasteners for a clean look upon installation. Versatile by design, it is ideal for facades, dividing walls, and ceilings. This panel comprises two profiled steel sheets with an insulating core, achieving an R-value of 8.33 per inch. Available outer profiles include micro rib, macro rib, and box profile, offering various design choices.



FALK CSW 44



As a leader in high-performance building solutions, the FALK CSW 44 panel is engineered to endure extreme conditions. These panels are optimally designed for applications such as cold storage, freezers, climate-controlled rooms, production areas, battery testing facilities, and sterile environments. They provide exceptional insulation, adeptly maintaining internal temperatures and repelling external heat, cold, and moisture.

FEATURES

Facade
Panels featuring this icon are suitable for facade applications.

Wall
Panels featuring this icon are suitable for wall system applications.

Demising Wall
Panels featuring this icon are suitable for use in demising wall systems.

Food Safe
A hygiene-compliant coating designed for use in the food industry.

Accessories
We offer compatible accessories to ensure buildings are completed and panels are securely installed.

FALK CSW 44 | COLD STORAGE WALL PANEL

Panel Thickness* [in]	R-Value**	U-Value (BTU/HR/FT2/°F)
3	25.00	0.04
4	33.33	0.03
5	41.67	0.024
6	50.00	0.02
8	66.67	0.015

*Panel thickness is nominal.
**R-value calculated based on ASTM 1363 U-Factor results, at 35° mean. FALK's calculated R-value per inch is 8.33.

Panel Length*: 7′ - 82′

Profiles: Box

Coatings: HPS200 Ultra®, Fluropon 70% PVDF, SMP, PE, & Stainless

Embossing: Standard for 24 & 26 Gauge
Not Available for 22 Gauge or HPS200 Coating

Excellent for use in cold storage, freezer rooms, or grow rooms

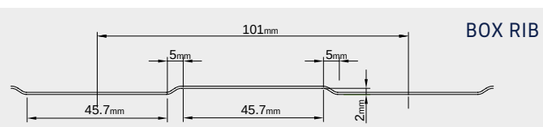
Visible fastener

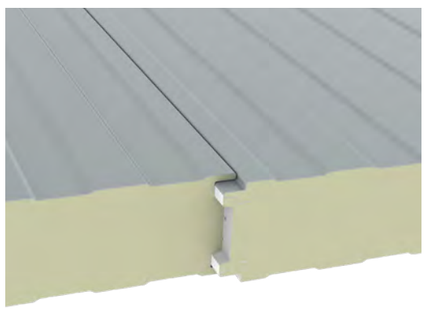
** 82-foot-long panels require special transportation arrangements*

Advanced sealing

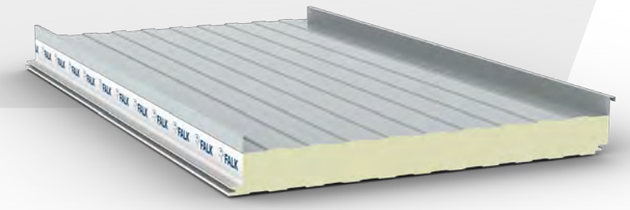
The FALK CSW 44 panel features an advanced joint designed to satisfy the demanding needs of refrigeration applications. This joint ensures an exceptional airtight seal, essential for maintaining consistent temperature and humidity levels. With its versatile design, the FALK CSW 44 can be tailored to meet diverse aesthetic and functional requirements, providing options for both horizontal and vertical installation to complement various architectural styles.

BOX RIB





FALK SSR 42



The FALK SSR 42 roof panel offers a timeless look along with a state-of-the-art composite structure. This comprehensive design ensures robust structural integrity and contributes to the enhanced energy efficiency of the building's envelope.

FEATURES

Pitched Roof
Panels featuring this icon are suitable for pitch roof systems.

Solar Enabled
Panels featuring this icon are suitable for solar panel installation. The quantity of panels and their attachment should be specified by the support system provider.

Accessories
We offer compatible accessories to ensure buildings are completed and panels are securely installed.

FALK SSR 42 | STANDING SEAM ROOF PANEL

Panel Thickness* [in]	R-Value**	U-Value (BTU/HR/FT2/°F)
3	25.00	0.04
4	33.33	0.03
5	41.67	0.024
6	50.00	0.02

*Panel thickness is nominal.
**R-value calculated based on ASTM 1363 U-Factor results, at 35° mean. FALK's calculated R-value per inch is 8.33.

Panel Length*: 10' - 82'

Profiles: Box / SSR Box

Coatings: Fluropon 70% PVDF, SMP, & PE

Embossing: Standard for 24 & 26 Gauge
Not Available for 22 Gauge

Attractive, durable, and energy efficient alternative to standard steel roofs

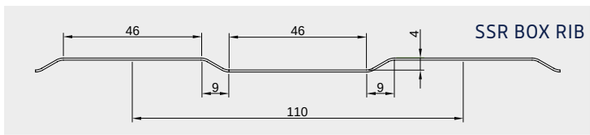
Visible fastener

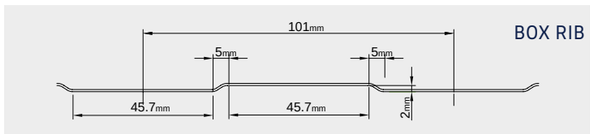
Concealed wide-bay clip assembly

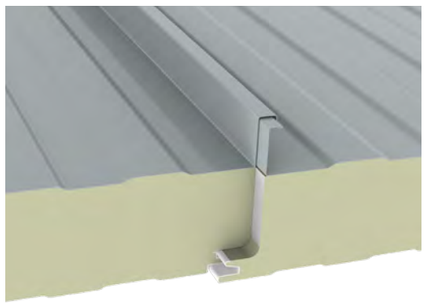
** 82-foot-long panels require special transportation arrangements*

Economical and durable

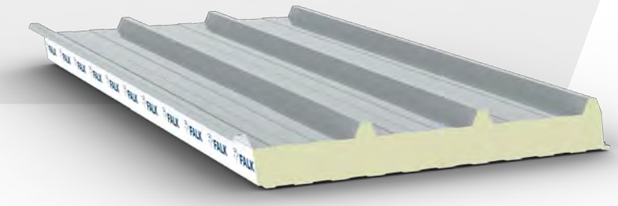
The solar-enabled FALK SSR 42 roofing system offers a reliable weather-tight seal and a prolonged service life, perfect for commercial, industrial, and institutional settings. It excels in thermal and fire resistance, energy efficiency, and provides ease of assembly. Available in various colors, the FALK SSR 42 is a versatile, durable, and environmentally friendly option for roofing.







FALK RRP 40



The FALK RRP 40 panel features a unique three-crown trapezoidal design, blending aesthetic appeal with functional superiority. Its distinctive profile enhances architectural interest while also bolstering strength and durability, ensuring the roof structure's longevity and reliability.

FEATURES

Pitched Roof
Panels featuring this icon are suitable for pitch roof systems.

Facade
Panels featuring this icon are suitable for facade applications.

Solar Enabled
Panels featuring this icon are suitable for solar panel installation. The quantity of panels and their attachment should be specified by the support system provider.

Accessories
We offer compatible accessories to ensure buildings are completed and panels are securely installed.

FALK RRP 40 | RIBBED ROOF PANEL

Panel Thickness* [in]	R-Value**	U-Value (BTU/HR/FT2/°F)
4	33.33	0.03
6	50.00	0.02

*Panel thickness is nominal.
**R-value calculated based on ASTM 1363 U-Factor results, at 35° mean. FALK's calculated R-value per inch is 8.33.

Panel Length*: 10' - 82'

Profiles: Box / RRP Box

Coatings: HPS200 Ultra®, Fluropon 70% PVDF, SMP, & PE

Embossing: Standard for 24 & 26 Gauge
Not Available for 22 Gauge

Roof or wall application

Visible fastener

Slope: From 3/4:12 to 6:12

Rapid installation due to positive stacking

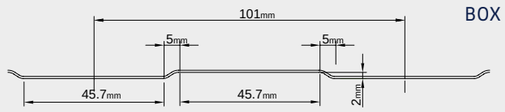
** 82-foot-long panels require special transportation arrangements*

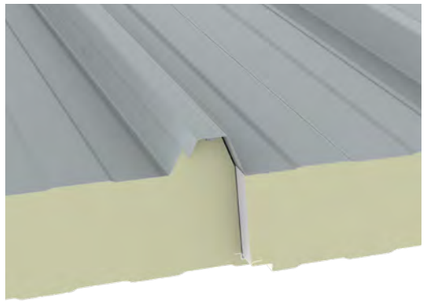
Versatile insulation and secure installation

The FALK RRP 40 panel offers varying insulation levels, with core thickness options ranging from 2.5 to 6 inches to maximize energy efficiency. Featuring an overlapping joint design with factory-applied foam and exposed fasteners, it ensures a secure and enduring connection. With a selection of colors and coatings, the FALK RRP 40 panel combines aesthetic versatility with quick installation, making it an excellent choice for both roofing and wall applications.

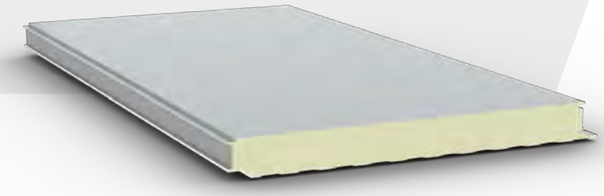
RRP BOX RIB

BOX RIB





FALK RDEK 40



The FALK RDEK 40 system stands out as a premier lightweight, low-slope roof decking option that satisfies long-term performance objectives, especially where diaphragm shear integration is crucial. It replaces traditional B-decking with a single-component system that includes a high-performance polyisocyanurate insulation layer between two steel surfaces to meet rigorous design demands. When paired with either a self-adhered or fully adhered single-ply thermoplastic membrane, the FALK RDEK 40 becomes an indispensable part of a resilient roofing solution.

Suited for slopes from 0 to 1:12, the FALK RDEK 40 panels are delivered with a primed and coated exterior, ready for TPO or PVC application. Offering thickness options from 4 to 8 inches, the FALK RDEK 40 combines strength and aesthetic appeal. Designed to fasten only to the purlins or joists, it ensures a clean interior appearance.

FEATURES

Low Slope Roof
Panels featuring this icon are suitable for roof decking systems.

Roofing Membrane
Panels featuring this icon are suitable for TPO & PVC single-ply membrane applications.

Solar Enabled
Panels featuring this icon are suitable for solar panel installation. The quantity of panels and their attachment should be specified by the support system provider.

Accessories
We offer compatible accessories to ensure buildings are completed and panels are securely installed.

FALK RDEK 40 | ROOF DECK

Panel Thickness* [in]	R-Value**	U-Value (BTU/HR/FT2/°F)
4	33.33	0.03
5	41.67	0.024
6	50.00	0.02
8	66.67	0.015

*Panel thickness is nominal.
**R-value calculated based on ASTM 1363 U-Factor results, at 35° mean. FALK's calculated R-value per inch is 8.33.

Panel Length*: 7′ - 82′

Profiles: Box (Flat with Membrane on Weather-Side)

Coatings: Fluropon 70% PVDF, SMP, & PE
Liner Side Only: HPS200 Ultra® & Stainless

Embossing: Standard for 24 & 26 Gauge
Not Available for 22 Gauge or HPS200 Coating

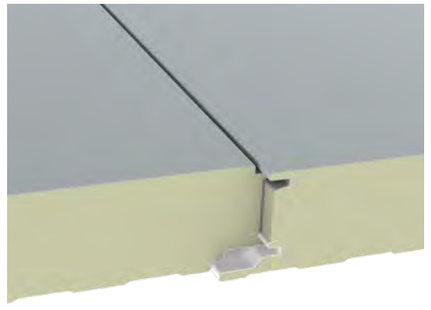
Replaces traditional B-Deck solutions

Slope: From 0 to 1:12

Rapid installation; phased construction permitted

Suitable for high wind locations

** 82-foot-long panels require special transportation arrangements*



Seamless protection and efficiency

The FALK RDEK 40 guarantees immediate watertight integrity upon installation, featuring watertight tongue and groove joints and a pre-installed foam gasket that blocks vapor and water. This accelerates other construction phases, enabling faster, cost-effective building completion. Its watertight design allows phased installation without worry.

The FALK RDEK 40 system is ideal for those seeking durable, aesthetically pleasing, and efficient roofing solutions.

THE FALK ADVANTAGE

Founded in 2020, FALK Panel specializes in manufacturing premium insulated metal panels, operating out of three major production facilities globally. We are committed to delivering innovative, high-quality, eco-friendly construction solutions, with a strong focus on versatility.

Located In West Michigan we take pride in operating North America's most advanced panel production facility. Our panels are designed to streamline construction processes, reduce labor expenses, and offer a variety of aesthetic options to meet diverse architectural needs. Our skilled team is committed to their pursuit of excellence within the insulated metal panel market, delivering outstanding value, craftsmanship, and adaptability.

Alongside our panels, we offer a range of accessories such as fasteners, flashing, trim, tools, and vacuum lifting systems, supported by personalized assistance to enhance your project's success.

Our diverse product range encompasses panels designed for facades, wall systems, ceilings, demising walls, and roof decking applications. All of our roofing systems are solar panel compatible, highlighting our dedication to sustainable solutions. Additionally, we offer our own FALK trucking fleet, ensuring reliable and efficient delivery of our products directly to your project site.

For a partner who understands modern construction and offers solutions tailored to your unique requirements, choose FALK Panel. Contact us for more information and assistance. Let's build the future together.

FALK®

1782 Northridge Dr. NW
Walker MI, 49544
USA

616.541.4500
info@falkpanel.com
www.falk.com

FALK.com

Disclaimer
Considerable attention has been given to the documentation and technical details in this brochure. However, This document does not provide any legal guarantees.

V02.26

R-4

ALLEN PARK DRIVE

12" WATERMAIN

36" STORM SEWER

8" SAN. SEWER

BLACKTOP

66' ROW

36"

WATERMAIN (PER PLAN)

BENCHMARK ELEVATION 659.20
TOP OF S. FLANGE BOLT ON
HYDRANT UNDER "A" OF "USA"

24" ROLLED CONC. CURB (TYP.)

24" STORM

6" LAT

STORM MH TOP 657.09
21" CONC. SW 648.59
24" CONC. NW 648.69
36" CONC. E. 648.69

ARC= 31.73'

S88°50'39"E 72.09'

R=37.0'

ARC= 84.83'

EX. UNDERGROUND ELEC. AND FIBER (FIELD VERIFY)

10' PRIVATE UTILITY EASEMENT

TELEPHONE HANDHOLE

EX. 6" LAT PROPERTY LINE RISER INV 643.3 AT BEND

REMOVE EX. 6" WATERMAIN TO VALVE

REMOVE EX. CONC. CURB

REMOVE BLACKTOP (CROSS HATCHED)

O.B.

CATCH BASIN TOP 654.76
12" CONC. SW/SE 648.76

12" STORM

WATERMAIN EASEMENT (PER PLAN)

6" WATERMAIN

REMOVE 10"SPRUCE

EXISTING HYDRANT

BENCHMARK ELEVATION 657.45
TOP OF SW FLANGE BOLT ON
HYDRANT UNDER "N" OF "OPEN"

EX. 21" STORM 649.0 (PLAN) FIELD VERIFY CONNECTION

EX. 6" LAT PROPERTY LINE RISER INV 645.5 AT BEND

N21°27'05"E 59.0'

MAINTENANCE BUILDING

BLACKTOP SAWCUT LIMITS

REMOVE BLACKTOP (CROSS HATCHED)

BLACKTOP

(REMOVE) 15"POPLAR

(REMOVE) 12"POP.

10"POP.

CATCH BASIN TOP 654.35
12" PLAS. S. 649.95
12" PLAS. N. 650.55
10" PLAS. E. 650.55

CATCH BASIN (PLAN)
TOP 652.0
INV. E 650.8

10" STORM

EXISTING BUILDING
4876 ALLEN PARK DR.

EX. OUTLET CONTROL STRUCTURE (PLAN)
RIM 654.5
21" IN. 649.5

EX. DETENTION BASIN

8"SPRUCE

(REMOVE)

N00°20'56"E 355.05'

S00°20'56"E

REMOVE BLACKTOP (CROSS HATCHED)

BLACKTOP SAWCUT LIMITS

CONC. DUMPSTER PAD WITH CONC. BLK. WALLS

12"SPRUCE

REMOVE WESTERLY STRIPPING

CATCH BASIN TOP 654.34
12" N. 650.74
10" E. & SSE 650.74

CATCH BASIN (PLAN)
TOP 652.0
INV. E 651.0

EX. BLDG

3"MAPLE

4"SPRUCE

TREES

★APARTMENT USE ALLOWED PER CONSENT JUDGEMENT

267.03'

N00°20'56"W

(REMOVE TREES)

TREES

TREES

TREES

BLACKTOP

10"SPRUCE

8"SPRUCE

BLACKTOP SAWCUT LIMITS

REMOVE BLACKTOP (CROSS HATCHED)

YARD DRAIN TOP 654.93
10" PLAS. N. 650.58
10" PLAS. E. 650.63
10" PLAS. SE 650.73

N88°50'40"W 200.07'

5"ORNPEAR

12"SPRUCE

PUD

EX. HOTEL

APT.

APARTMENT

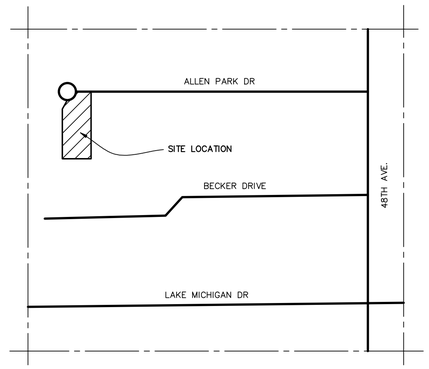
APARTMENT

APARTMENT

APARTMENT

APARTMENT

Description:
Part of the SE 1/4 commencing S00°20'56"E 1313.41 feet, N88°50'39"W 650.22 feet from the E. 1/4 Corner, Section 24; thence S00°20'56"E 355.05 feet; thence N88°50'40"W 200.07 feet; thence N00°20'56"W 267.03 feet; thence N21°27'05"E 59 feet; thence Northerly 84.83 feet along a 70.0 foot radius curve to the left the chord bearing N76°44'00"E 79.74 feet; thence NE'ly 31.73 feet along a 37.0 foot curve to the right the chord bearing N68°35'08"E 30.77 feet; thence S88°50'39"E 72.09 feet to beginning, Section 24, T7N, R14W, Allendale Township, Ottawa County, Michigan.
(1.54 AC.) (67,082 S.F.)



LOCATION MAP (N.T.S)

STATE OF MICHIGAN
TODD R STUIVE
ENGINEER
No. 6201038273
LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 20'
1' CONTOUR INTERVAL

LEGEND

- ○ = IRON STAKE FOUND
- ◕ = MONUMENT
- = HYDRANT
- ⊞ = CATCH BASIN
- ○ = MANHOLE
- C□ = CABLE TV BOX
- G△ = BURIED GAS LINE MARKER

TOPOGRAPHICAL SURVEY

RE: 4900 ALLEN PARK DR.

FOR: MIEDEMA METAL BUILDING SYSTEMS
ATTN: TOM MIEDEMA
3309 HUDSON TRAILS DR.
HUDSONVILLE, MI 49426

PART OF THE SE 1/4, SECTION 24, T7N, R14W, ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

DATE	REVISION	BY
4/21/26	REVISED PER TOWNSHIP	CJK
4/1/26	REVISED PER TOWNSHIP	CJK
2/27/26	REVISED PER TOWNSHIP	CJK
12/05/25	REVISED PER OWNER	CDG
7/27/23	REVISED PER TOWNSHIP	CJK

exxel engineering, inc.
planners · engineers · surveyors
5252 Clyde Park, S.W. • Grand Rapids, MI 49509
Phone: (616) 531-3660 www.exxelengineering.com

DRAWN BY: CJK | APPROVED BY: TRS | FILE NO.: 231267E
PROJ. ENG.: TRS | PROJ. SURV.: | DATE: 5/22/2023

SHEET 1 of 4

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R-4

ALLEN PARK DRIVE

12" WATERMAIN

36" STORM SEWER

8" SAN. SEWER

BLACKTOP

66' ROW

BENCHMARK ELEVATION 659.20
TOP OF S. FLANGE BOLT ON
HYDRANT UNDER "A" OF "USA"

24" STORM

21" STORM

6" LAT

24" ROLLED CONC. CURB (TYP.)

STORM MH TOP 657.09
21" CONC. SW 648.59
24" CONC. NW 648.69
36" CONC. E. 648.69

ARC= 31.73'

S88°50'39"E 72.09'

R=1140'

R24'

P.O.B.

EX. UNDERGROUND ELEC. AND FIBER (FIELD VERIFY)
10' PRIVATE UTILITY EASEMENT

TELEPHONE HANDHOLE

EX. 6" LAT PROPERTY LINE RISER INV 643.3 AT BEND

8" WATERMAIN (PER PLAN)

CATCH BASIN TOP 654.76
12" CONC. SW/SE 648.76

PROPOSED 5' CONC. WALK (1' OFF RW)

WATERMAIN EASEMENT (PER PLAN)

6" WATERMAIN

POTENTIAL SIGN LOCATION

EXISTING HYDRANT

EX. 21" STORM 649.0 (PLAN) FIELD VERIFY CONNECTION

EX. 6" LAT PROPERTY LINE RISER INV 645.5 AT BEND

ARC= 84.83'

PROPOSED 5' CONC. WALK (1' OFF RW)

PROPOSED SNOW STORAGE (TYP)

PROPOSED 18" CONC. ROLLED CURB

28'

R12

R20'

12" STORM

BENCHMARK ELEVATION 657.45
TOP OF SW FLANGE BOLT ON
HYDRANT UNDER "N" OF "OPEN"

MAINTENANCE BUILDING

N21°27'05"E 59.0'

25'

15'

69'

28'

15'

11'

EX. OUTLET CONTROL STRUCTURE (PLAN)
RIM 654.5
21" IN. 649.5

4492 S.F.

PROPOSED 6' CONC. APRON

PROPOSED PARKING SPACES 9'X18'(TYP)

PROPOSED EASEMENT FOR SHARED INGRESS/EGRESS

CATCH BASIN TOP 654.35
12" PLAS. W. 649.95
12" PLAS. N. 650.55
10" PLAS. E. 650.55

10" STORM

CATCH BASIN (PLAN)
TOP 652.0
INV. E 650.8

EX. DETENTION BASIN

PROPOSED 5'X5' CONC. STOOP AT EXIT DOOR (TYP)

PROPOSED BLACKTOP

EXISTING BUILDING
4876 ALLEN PARK DR.

4800 S.F.

PROPOSED 175 S.F OF PARKING LANDSCAPING

S00°20'56"E 355.05'

63'

PROPOSED BUILDING
4900 ALLEN PARK DR
20,960 S.F. TOTAL

PROPOSED DUMPSTER ENCLOSURE 14'X21' SPLIT FACE BLOCK W/ GATES (6' TALL)

56'

CONC. DUMPSTER PAD WITH CONC. BLK. WALLS

3"MAPLE

4"SPRUCE

*APARTMENT USE ALLOWED PER CONSENT JUDGEMENT

PROP B.F. SIGN (TYP)

N00°20'56"W 267.03'

PROPOSED METAL BOLLARDS 1' TO CENTER OFF BACK AND SIDE WALLS AND 3' MAX CENTER TO CENTER SPACING

CATCH BASIN TOP 654.34
12" N. 650.74
10" E. & SSE 650.74

CATCH BASIN (PLAN)
TOP 652.0
INV. E 651.0

PROPOSED CONC. LOADING DOCK 40'X25'

6880 S.F.

BLACKTOP

PROPOSED PARKING SPACES 9'X18'(TYP)

PROPOSED 406 S.F OF PARKING LANDSCAPING

YARD DRAIN TOP 654.93
10" PLAS. N. 650.58
10" PLAS. E. 650.63
10" PLAS. SE 650.73

15'

80'

105'

27'

25'

N88°50'40"W 200.07'

12'

14'

PROPOSED SNOW STORAGE (TYP)

PROPOSED 18" CONC. ROLLED CURB

LOT LINE

APT.

APARTMENT

APARTMENT

APARTMENT

APARTMENT

EX. HOTEL

PUD

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General Notes:

1. Description:
PART OF THE SE 1/4 COMMENCING S00°20'56"E 1313.41 FEET, N88°50'39"W 650.22 FEET FROM THE E. 1/4 CORNER, SECTION 24; THENCE S00°20'56"E 355.05 FEET; THENCE N88°50'40"W 200.07 FEET; THENCE N00°20'56"W 267.03 FEET; THENCE N21°27'05"E 59 FEET; THENCE NORTHERLY 84.83 FEET ALONG A 70.0 FOOT RADIUS CURVE TO THE LEFT THE CHORD BEARING N76°44'00"E 79.74 FEET; THENCE NE'LY 31.73 FEET ALONG A 37.0 FOOT CURVE TO THE RIGHT THE CHORD BEARING N68°35'08"E 30.77 FEET; THENCE S88°50'39"E 72.09 FEET TO BEGINNING, SECTION 24, T7N, R14W, ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN.
(1.54 AC.) (67,082 S.F.)

2. Current Zoning: I (Industrial)

3. Proposed use: Industrial incubator, all uses are intended to be per Allendale zoning ordinances for the industrial zone.

4. Setbacks:
Front: 25'
Side: 15'
Rear: 25'

5. Parking:
Required
Office: 2100 S.F.
1 per 300 S.F. = 7 spaces

Industrial: 18,860 S.F.
1 per 1000 S.F. = 19 spaces

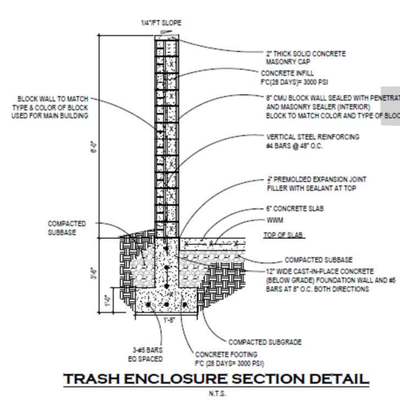
Total Required: 26 spaces
Proposed: 29 spaces (Including 3 B.F. spaces)

6. 1.18 AC. Impervious Surface (77% of total surface)

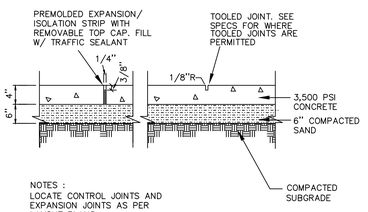
7. There is no outdoor storage proposed

8. Proposed 581 S.F. of Parking Area Landscaping. 580 S.F required

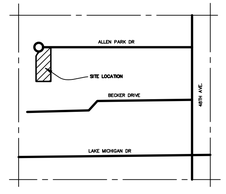
STATE OF MICHIGAN
TODD R STUIVE
ENGINEER
No. 6201038273
LICENSED PROFESSIONAL ENGINEER



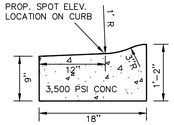
TRASH ENCLOSURE SECTION DETAIL
N.T.S.



4" CONCRETE WALKWAY DETAIL



LOCATION MAP (N.T.S)



18" ROLLED CURB DETAIL (PITCHED OUT)

1 1/2" (MIN) OR 2" OF HMA MDOT 5E3 (TIER 1), OR 4E3 (2" MIN. LIFT) PG 64-28
3" (MIN) OR 3 1/2" OF HMA MDOT 2C (3" MIN. LIFT), 3C (3" MAX. LIFT), OR 3E3 (TIER 2), PG 64-28
8" (MIN) GRAVEL (CIP) (21AA NATURAL) OR 10" (MIN) GRAVEL (CIP) (21AA CRUSHED CONCRETE)
12" (MIN) SAND SUBBASE (CIP) (MDOT CLASS II)

HEAVY DUTY PAVING CROSS SECTION
*RECOMMEND SOIL ENGINEERING DETERMINED CROSS SECTION

SCALE: 1" = 20'
1' CONTOUR INTERVAL

LEGEND
- o = IRON STAKE FOUND
- ◉ = MONUMENT
- = HYDRANT
- ⊞ = CATCH BASIN
- ○ = MANHOLE
- C□ = CABLE TV BOX
- G△ = BURIED GAS LINE MARKER

SITE DEVELOPMENT AND IMPROVEMENT PLAN

RE: 4900 ALLEN PARK DR.

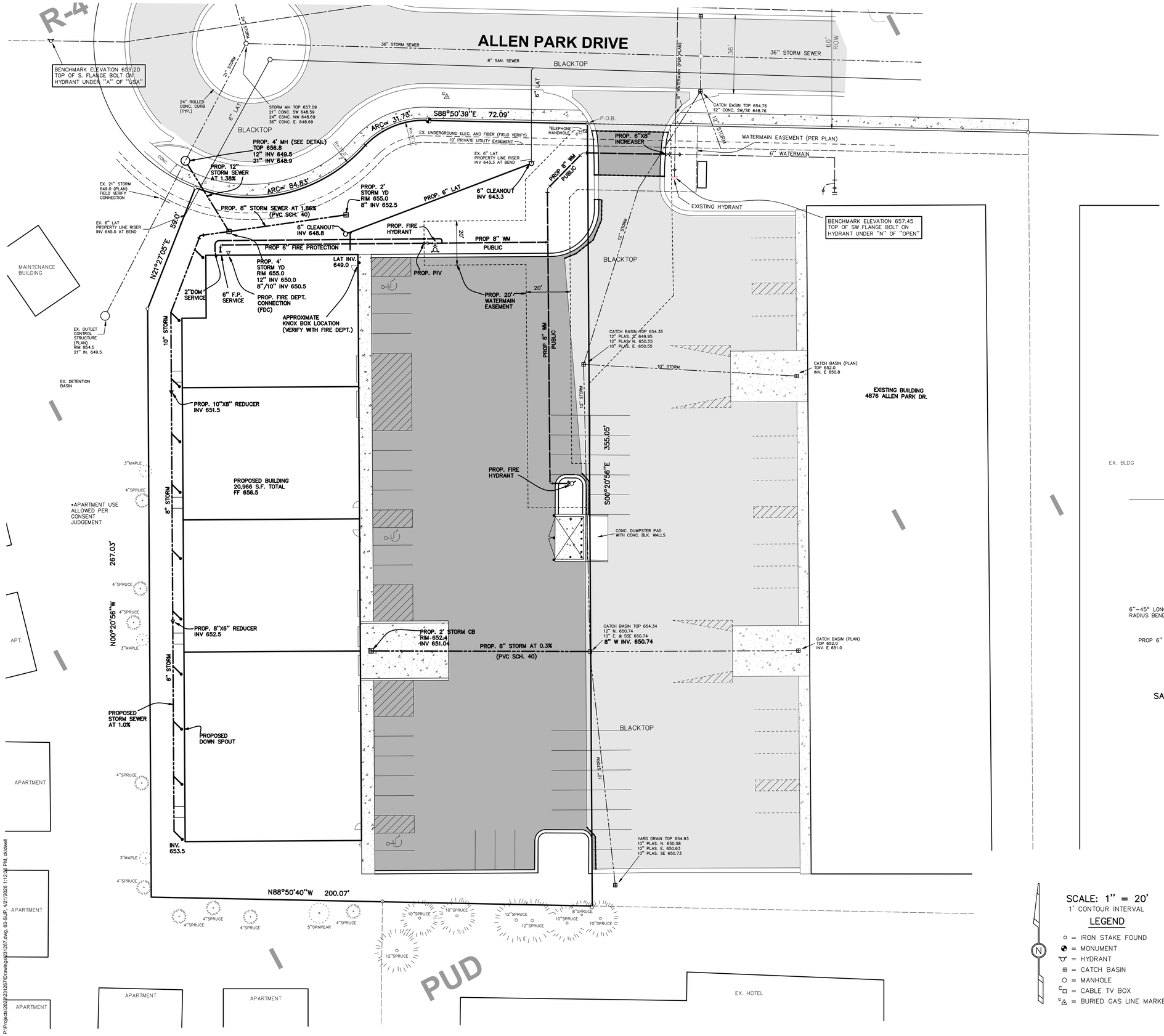
FOR: MIEDEMA METAL BUILDING SYSTEMS
ATTN: TOM MIEDEMA
3309 HUDSON TRAILS DR.
HUDSONVILLE, MI 49426

PART OF THE SE 1/4, SECTION 24, T7N, R14W, ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

DATE	REVISION	BY
4/21/26	REVISED PER TOWNSHIP	CJK
4/1/26	REVISED PER TOWNSHIP	CJK
2/27/26	REVISED PER TOWNSHIP	CJK
12/05/25	REV. PER OWNER	CDG
7/27/23	REVISED PER TOWNSHIP	CJK

DRAWN BY: CJK
APPROVED BY: TRS
FILE NO.: 231267E
PROJ. ENG.: TRS
PROJ. SURV.: .
DATE: 5/22/2023

exxel engineering, inc.
planners · engineers · surveyors
5252 Clyde Park, S.W. • Grand Rapids, MI 49509
Phone: (616) 531-3660 www.exxelengineering.com



ALLENDALE TOWNSHIP WATER SERVICE SPECIFICATIONS :

A. MATERIALS :
1. CORPORATION VALVE AND CURB STOP VALVE TO BE COMPRESSION JOINTS.
2. CURB STOP BOX TO BE ARCH PATTERN, 1" ROD TO WITHIN 12" OF GRADE, STATIONARY ROD MUST BE EMBEDDED IN THE COTTER PIN SADDLE.
3. TYPE "K" COPPER ONLY.
4. ALL SADDLES TO BE DOUBLE STRAP STAINLESS BAND WITH AT LEAST 2 STAINLESS BOLTS.

B. INSTALLATION METHODS :
1. COPPER MUST BE 5' DEEP.
2. SERVICE LINE MUST BE SURROUNDED BY 6" OF SAND.
3. WATER AND SEWER LATERALS MUST BE SEPARATED BY 3 FEET.
4. CURB STOP BOXES TO BE MARKED WITH 4' SECTION OF PVC BURIED 1'.

GENERAL NOTES:
1. THE SANITARY SEWER AND WATERMAIN IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE ALLENDALE CHARTER TOWNSHIP STANDARD CONSTRUCTION REQUIREMENTS.
2. VALVES SHALL BE EJIW AND OPEN RIGHT.
3. THE WATERMAIN WILL BE D.I. CLASS 52.
4. A KNOX BOX WILL BE INCLUDED ON THE BUILDING
5. ALL NEW TELEPHONE AND ELECTRICAL LINES SHALL BE UNDERGROUND

ALLENDALE TOWNSHIP SEWER PROCEDURES :

1. ALL SEWER MAINS MUST BE TELEVISED, WITH THE TOWNSHIP'S INSPECTOR PRESENT AND LATERAL DISTANCES FROM THE DOWNSTREAM MANHOLE MARKED.
2. THE CONSTRUCTION OF ALL SEWER MAINS, MANHOLES AND FLOW CHANNELS, AND LATERALS MUST BE COMPLETE AND FREE OF SAND, ROCKS, AND DEBRIS BEFORE TELEVISING MAY BEGIN.
3. WATER MUST BE FLOWED FROM THE MOST UPSTREAM MANHOLE BEFORE TELEVISING, WITH SAND AND DEBRIS VACUUMED OUT, SO AS NOT TO ENTER THE MUNICIPAL MAIN LINE.
4. ALL SAGS IN THE INSTALLED SEWER MUST BE REPAIRED BEFORE ACCEPTANCE BY ALLENDALE TOWNSHIP.
5. A DVD MUST BE SUBMITTED TO ALLENDALE AND ITS ENGINEER SHOWING THE INSTALLED SEWER MAINS AND LATERAL POSITIONS.
6. LATERAL ENDS TO BE MARKED WITH REROD AND A 4' SECTION OF 4" PVC BURIED 1'.

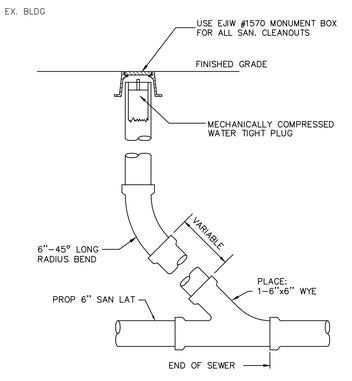
GENERAL STORM SEWER NOTES:

CATCH BASINS
1. ALL 4' DIA. CATCH BASINS (CB) WITHIN BLACKTOP VALLEY GUTTER SHALL HAVE 2' SUMPS AND USE E.J.I.W. #7065 CASTING WITH TYPE M1 GRATE.

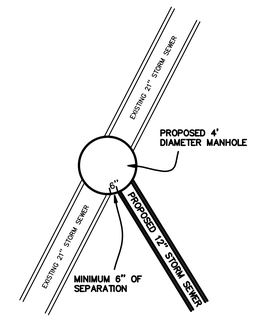
MATERIAL TYPE
1. ROOF DRAIN LEAD SHALL BE PVC SCH. 40
2. ALL STORM LABELED "STORM SEWER" SHALL BE SMOOTH-LINED CORRUGATED PLASTIC PIPE (SLCPP), (ADS N-12, HANCOR HI-Q OR APPROVED EQUAL)

1. ALL 12" (SLCPP) PIPE SHALL HAVE A SILT TIGHT, SURE-LOCK TYPE COUPLER.
2. THE EXISTING STORMWATER BASIN LOCATED EAST OF THIS SITE WAS DESIGNED TO SERVICE THIS SITE FOR STORMWATER MANAGEMENT PURPOSES.

YARD DRAINS
1. ALL 2' DIA. YARD DRAINS (YD) SHALL HAVE 2' DEEP SUMPS. USE EJ #6121 GRATE ONLY.
2. ALL 4' DIA. YARD DRAINS (YD) SHALL HAVE 2' DEEP SUMPS. USE EJ #1046 CASTING WITH TYPE M1 GRATE.



SAN SEWER LATERAL CLEANOUT DETAIL



STORM SEWER MANHOLE CONNECTION

STATE OF MICHIGAN
TODD R STUIVE
ENGINEER
No. 6201038273
LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 20'
1' CONTOUR INTERVAL

LEGEND
- ○ = IRON STAKE FOUND
- ◉ = MONUMENT
- = HYDRANT
- ⊞ = CATCH BASIN
- ○ = MANHOLE
- C□ = CABLE TV BOX
- G△ = BURIED GAS LINE MARKER

SITE UTILITY PLAN
RE: 4900 ALLEN PARK DR.

FOR: MIEDEMA METAL BUILDING SYSTEMS
ATTN: TOM MIEDEMA
3309 HUDSON TRAILS DR.
HUDSONVILLE, MI 49426

PART OF THE SE 1/4, SECTION 24, T7N, R14W, ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

DATE	REVISION	BY
4/21/26	REVISED PER TOWNSHIP	CJK
4/1/26	REVISED PER TOWNSHIP	CJK
2/27/26	REVISED PER TOWNSHIP	CJK
12/05/25	REVISED PER OWNER	CDG
7/27/23	REVISED PER TOWNSHIP	CJK

exxel engineering, inc.
planners · engineers · surveyors
5252 Clyde Park, S.W. • Grand Rapids, MI 49509
Phone: (616) 531-3660 www.exxelengineering.com

DRAWN BY: CJK | PROJ. ENG.: TRS
APPROVED BY: TRS | PROJ. SURV.:
FILE NO.: 231267E | DATE: 5/22/2023

SHEET 3 of 4

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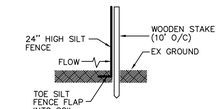
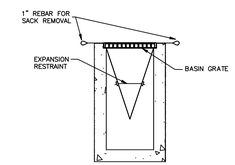
Description:
Part of the SE 1/4 commencing S00°20'56"E 1313.41 feet, N88°50'39"W 650.22 feet from the E. 1/4 Corner, Section 24; thence S00°20'56"E 355.05 feet; thence N88°50'40"W 200.07 feet; thence N00°20'56"W 267.03 feet; thence N21°27'05"E 59 feet; thence Northerly 84.83 feet along a 70.0 foot radius curve to the left the chord bearing N76°44'00"E 79.74 feet; thence NE'ly 31.73 feet along a 37.0 foot curve to the right the chord bearing N68°35'08"E 30.77 feet; thence S88°50'39"E 72.09 feet to beginning, Section 24, T7N, R14W, Allendale Township, Ottawa County, Michigan.



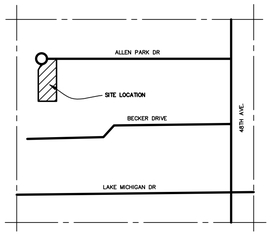
SILT FENCE DETAIL

GENERAL SOIL EROSION CONTROL NOTES:

1. TOTAL AREA OF DISTURBANCE – (1.5 ACRES).
2. ALL SOIL EROSION CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO THE START OF ANY GRADING.
3. INSPECT AND MAINTAIN ALL TEMPORARY SOIL EROSION CONTROLS AFTER EACH SIGNIFICANT RAINFALL AND UNTIL THE SITE HAS BEEN PERMANENTLY STABILIZED.
4. ALL NON–PAVED SURFACES SHALL BE TOPSOILED WITH MINIMUM OF 4" TOPSOIL AND SEEDED.
5. PROTECT PROPOSED STORM INLETS WITH SILT SACKS
6. PLACE SILT FENCE AS SHOWN ON PLAN AND PER DETAIL.



SILT SACK DETAIL



LOCATION MAP (N.T.S)

SCALE: 1" = 20'
1' CONTOUR INTERVAL

LEGEND

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STATE OF MICHIGAN
TODD R STUIVE
ENGINEER
No. 6201038273
LICENSED PROFESSIONAL ENGINEER

SITE GRADING AND SOIL EROSION CONTROL PLAN

RE: 4900 ALLEN PARK DR.

FOR: MIEDEMA METAL BUILDING SYSTEMS
ATTN: TOM MIEDEMA
3309 HUDSON TRAILS DR.
HUDSONVILLE, MI 49426

PART OF THE SE 1/4, SECTION 24, T7N, R14W, ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

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DRAWN BY: CJK | APPROVED BY: TRS | FILE NO.: 231267E
PROJ. ENG.: TRS | PROJ. SURV.: | DATE: 5/22/2023

SHEET 4 of 4

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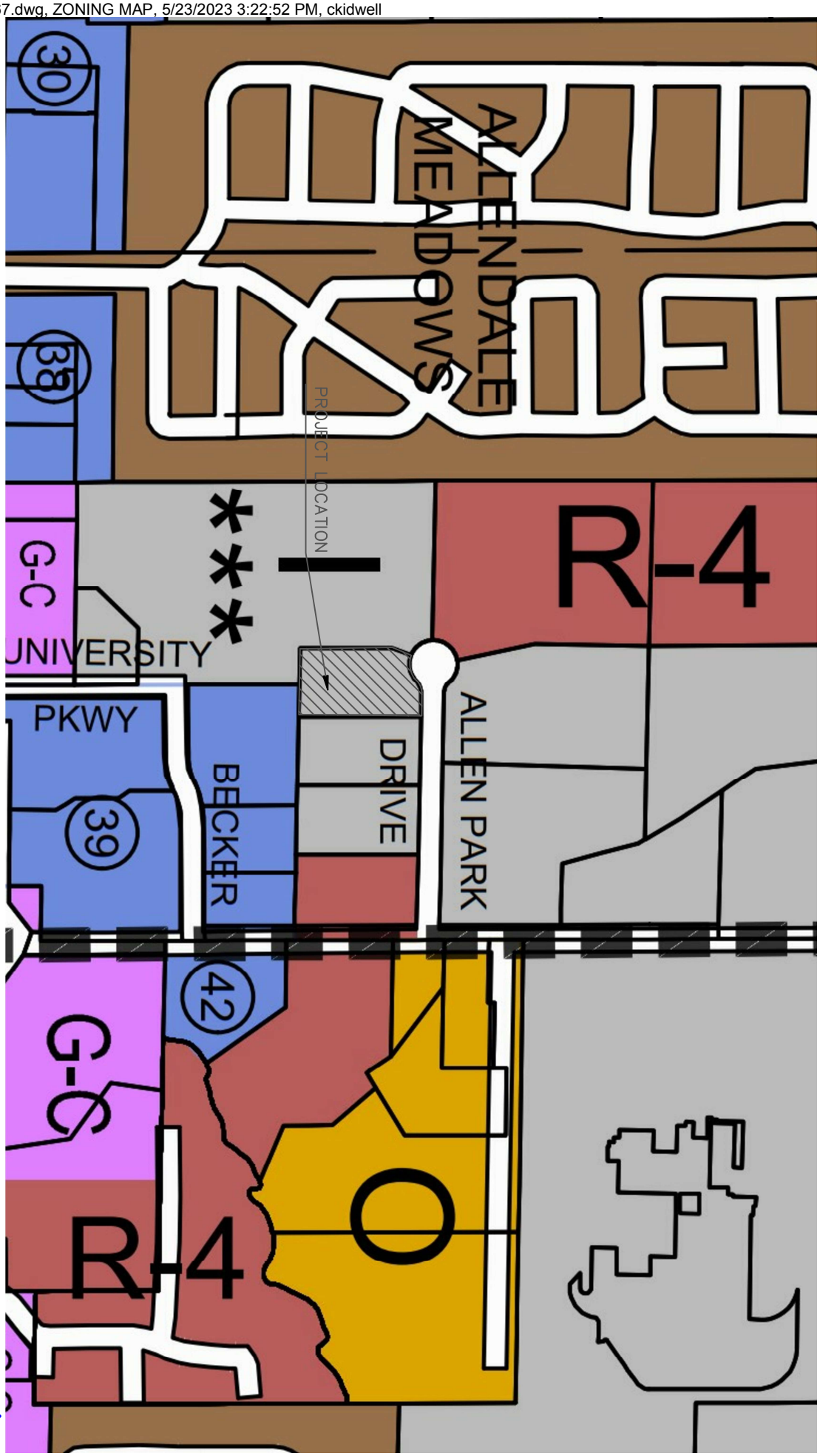

48TH AVE AND ALLENPARK
VICINITY MAP

N.T.S

Fresh Coast Planning

119 1/2 Washington Avenue, Studio B
Grand Haven, MI 49417
www.freshcoastplanning.com

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greg@freshcoastplanning.com

Kevin Yeomans
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kevin@freshcoastplanning.com

Alexis Gulker
616-773-4638
alexis@freshcoastplanning.com

Aaron Bigelow
616-919-2370
aaron@freshcoastplanning.com

Andrea Goodell
616-313-9333
andrea@freshcoastplanning.com

MEMORANDUM

To: Allendale Charter Township Planning Commission
From: Gregory L. Ransford, MPA
Date: May 13, 2026
Re: 4900 Allen Park Site Plan Review Application – Final Review

---

Pursuant to your direction provided at your April 20, 2026, meeting, attached is a final site plan from Air Park Partners, LLC to construct a 20,966 square foot industrial incubator building located at 4900 Allen Park Drive, parcel number 70-09-24-400-047. As you know, the subject property is located within the Industrial Zoning District on the south side of Allen Park Drive at the cul-de-sac.

We reviewed the application materials and offer the following findings for your final review.

Planning Commission Direction

As you know, at your April 20, 2026, meeting you directed the applicant to perform the following changes to the submission.

- Add a sidewalk along Allen Park Drive to the site plan for the adjacent building

We believe the applicant has fulfilled your direction accordingly.

Township Department Reviews

No additional reviews were provided by Township staff.

Standards of Review

Site Plan Review Standards

As you are aware, Section 470-24.06 – Standards for Approval of the ACTZO provides your standards of review when deliberating regarding a site plan application. In that regard, below, in part, is copy of said Standards for Approval as well as our response to each in italic font in an effort to assist you with your review of the request. As you are further aware, each standard is very lengthy and provides guidance and authority to the Planning Commission. Given this, rather than providing the entirety of each standard within this memorandum, we have included the subtitle and our comments for each. If you require the entirety of any standard, please let us know and we will provide it to you.

> Section 470-24.06 STANDARDS FOR APPROVAL
>
> Prior to approving a site plan, the Planning Commission shall require that the following standards and requirements be satisfied. If these standards and all other requirements of applicable Township ordinances are met, the site plan shall be approved.
>
> A. General Access Requirements
>
> *As a result of your conclusions during the preliminary plan review, no access easement was required. Given this, it appears this standard may be met.*

B. Environmental Considerations

As noted during the preliminary plan review, the Township Engineer expressed concern regarding appropriate storm water controls since there is no space to construct an above ground storm water system. Nonetheless, given that your standard condition includes approval by the Ottawa County Water Resources Commissioner (OCWRC), this standard may be met following that review and approval. As always, we prepared a condition in this regard for your consideration with the draft motion and noted that if the site is altered above ground as a result of the OCWRC review, that the applicant shall return to the Planning Commission for revised plan approval.

C. Sidewalks and Pedestrian Circulation

The applicant has provided sidewalk as required by the Allendale Charter Township Zoning Ordinance (ACTZO) and your direction. Given this, it appears this standard has been met.

D. Landscaping and Buffering

The applicant has provided buffers as required by the ACTZO. Given this, it appears this standard has been met.

E. Lighting

As noted during the preliminary plan review, the proposed lighting for the site complies with this section. Given this, it appears that this standard has been met.

F. Utility Service

The applicant has indicated that all utilities will be buried underground. As a result, it appears that this standard has been met.

G. Outdoor Features

As noted during the preliminary plan review, no rooftop equipment is proposed and the applicant will ground mounted equipment with landscaping. Given this, it appears that this standard may be met.

H. Waste Disposal Facilities

As you know from your previous review of the proposed plans, the applicant provided a dumpster enclosure in accordance with this section. Given this, it appears that this standard may be met.

I. The location and dimensions of all existing and proposed structures on the subject property

The applicant has provided the location and dimensions of all existing and proposed structures on the subject property. Given this, it appears that this standard has been met.

J. Building Appearance

As a result of your preliminary plan review, the applicant provided elevations for the proposed building that were deemed satisfactory with this section. Given this, it appears this standard may be met.

K. Site plans shall conform to all applicable requirements of County, State and Federal statutes and approval may be conditioned on the applicant receiving necessary County, State and Federal permits before final site plan or an occupancy permit is granted

The applicant is aware of the related County, State, or Federal permits that will be required of the proposed use. As a result, it appears that this standard has been met.

L. Trip Generation Analysis.

As previously provided, the Trip Generation Analysis concluded that no formal Traffic Impact Study is necessary.

Planning Commission Considerations & Draft Motion

As the Planning Commission deliberates regarding this application, we believe the following warrant your review and consideration. They are listed in no particular order.

Considerations

- Section 24.06 – Standards for Approval (site plan)

Draft Motion

Given your favorable review of the initial plans at your April 20, 2026, meeting, and in an effort to assist with your formulation of a motion in that regard, we offer the following motion for your consideration. In the event a motion is offered to deny, we will gladly draft that motion for consideration at your next meeting based on your direction.

Motion to approve the site plan as presented, finding that the proposed site plan meets the site plan review standards of Section 24.06 of the Allendale Charter Township Zoning Ordinance. The site plan includes:

- Site Plan Set – 4900 Allen Park Drive – File No. 231267E, dated 4/21/26, prepared by Exxel Engineering, which includes:
  - Topographical Survey, Sheet 1 of 4;
  - Site Development and Improvement Plan, Sheet 2 of 4;
  - Site Utility Plan, Sheet 3 of 4;
  - Site Grading and Soil Erosion Control Plan, Sheet 4 of 4;
  - Proposed Building landscape plan, project number 120925, drawing date 03/13/26, Sheet Number L-101;
  - Pipe Sizing Map, Sheet 4 of 4
- 4900 Allen Park Dr. Luminaire Schedule, dated 5.19.2023, designer Jen Yonkers, Sheet 2;
- Truck Turning Template #1 (1 page);
- Truck Turning Template #2 (1 page);
- Truck Turning Template #3 (1 page);
- Garbage Turning Template #4 (1 page);
- East elevation (undated or named) (1 page);
- North elevation (undated or named) (1 page);

- Northwest elevation (undated or named) (1 page);
- South elevation (undated or named) (1 page);
- West elevation (undated or named) (1 page);
- 48th Ave and Allen Park Vicinity Map (1 page);
- 4900 Allen Park Drive, File #: 231267E, date: February 27, 2026 (1 page);
- Best Block 8x8x16 Split Face Block, Product No. 803000100 (2 pages);
- Insulated Metal Panel Systems, Product Showcase, Falk (15 pages);
- Falk Base Detail – Wall Vertical, Detail No. WV-BD-001 (25 pages);
- Ottawa County Parcel Report (1 page);
- 4900 Allen Park Dr, Photometric Plan prepared by Crites, Tidey, & Assoc, Inc., dated 5.19.2023, revisions 2242026, Sheet 1 and Sheet 2
- Allen Park Floor Plan (undated and unlabeled) (1 page);

with the following conditions:

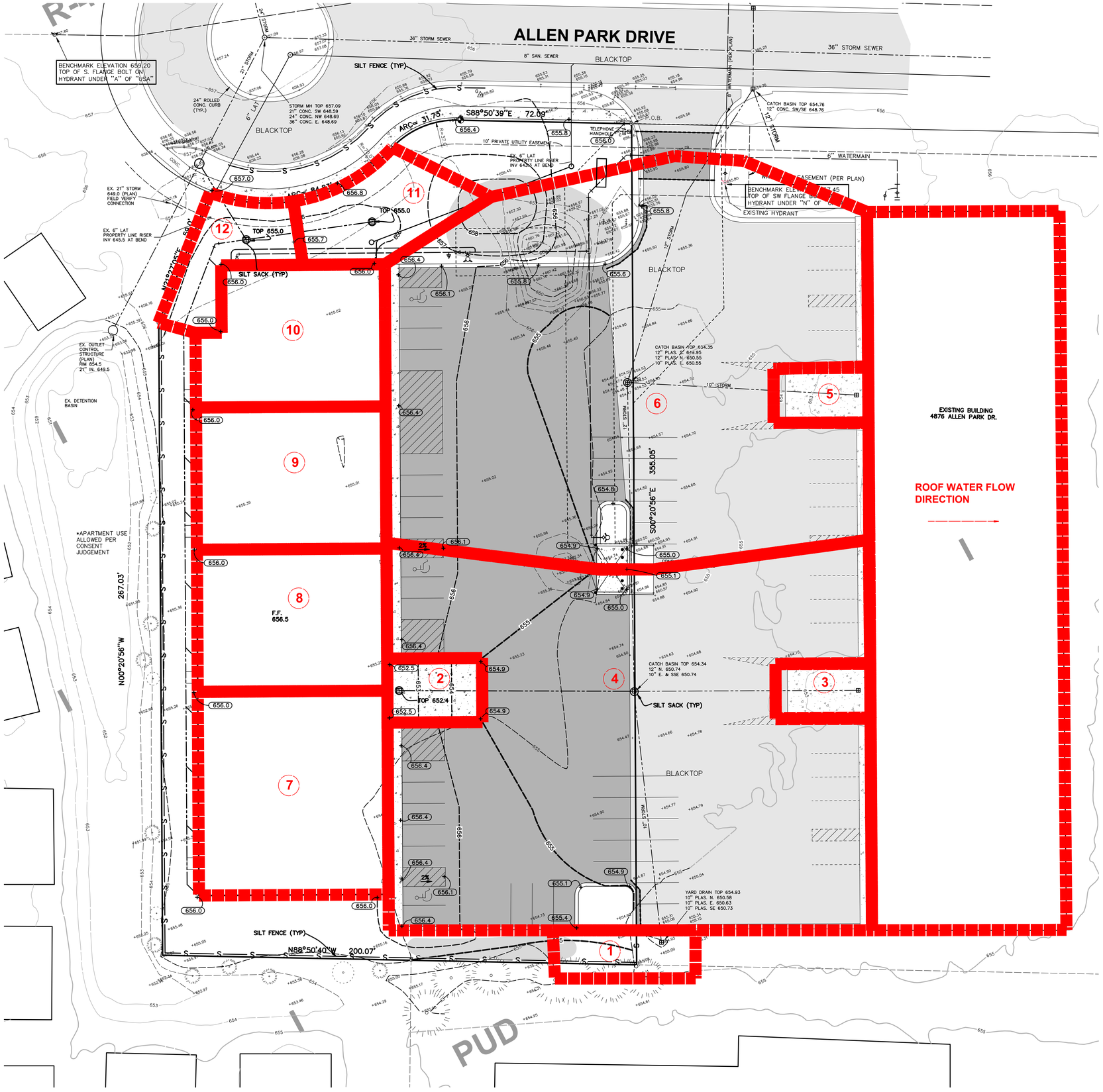
1. Review and approval are required from the Ottawa County Water Resources Commissioner's Office prior to construction. In the instance that the review by the OCWRC Office alters the site layout, the applicant shall return to the Planning Commission for revised approval.
2. [Insert Condition, if necessary]
3. [Insert Condition, if necessary]

The application has been scheduled for your review at your May 18, 2026, meeting. We expect the applicant to be in attendance. If you have any questions, please let us know.

GLR
Planner

Attachments

cc: Adam Elenbaas, Supervisor
Tom Miedema, MMB



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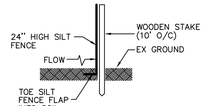

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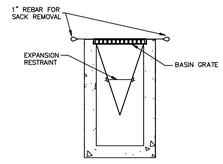
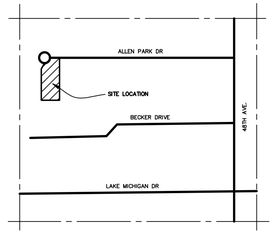


SILT SACK DETAIL



LOCATION MAP (N.T.S)

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STATE OF MICHIGAN
TODD R STUIVE
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PIPE SIZING MAP

RE: 4900 ALLEN PARK DR.

FOR: MIEDEMA METAL BUILDING SYSTEMS
ATTN: TOM MIEDEMA
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PART OF THE SE 1/4, SECTION 24, T7N, R14W, ALLENDALE TOWNSHIP, OTTAWA COUNTY, MICHIGAN

DATE	REVISION	BY
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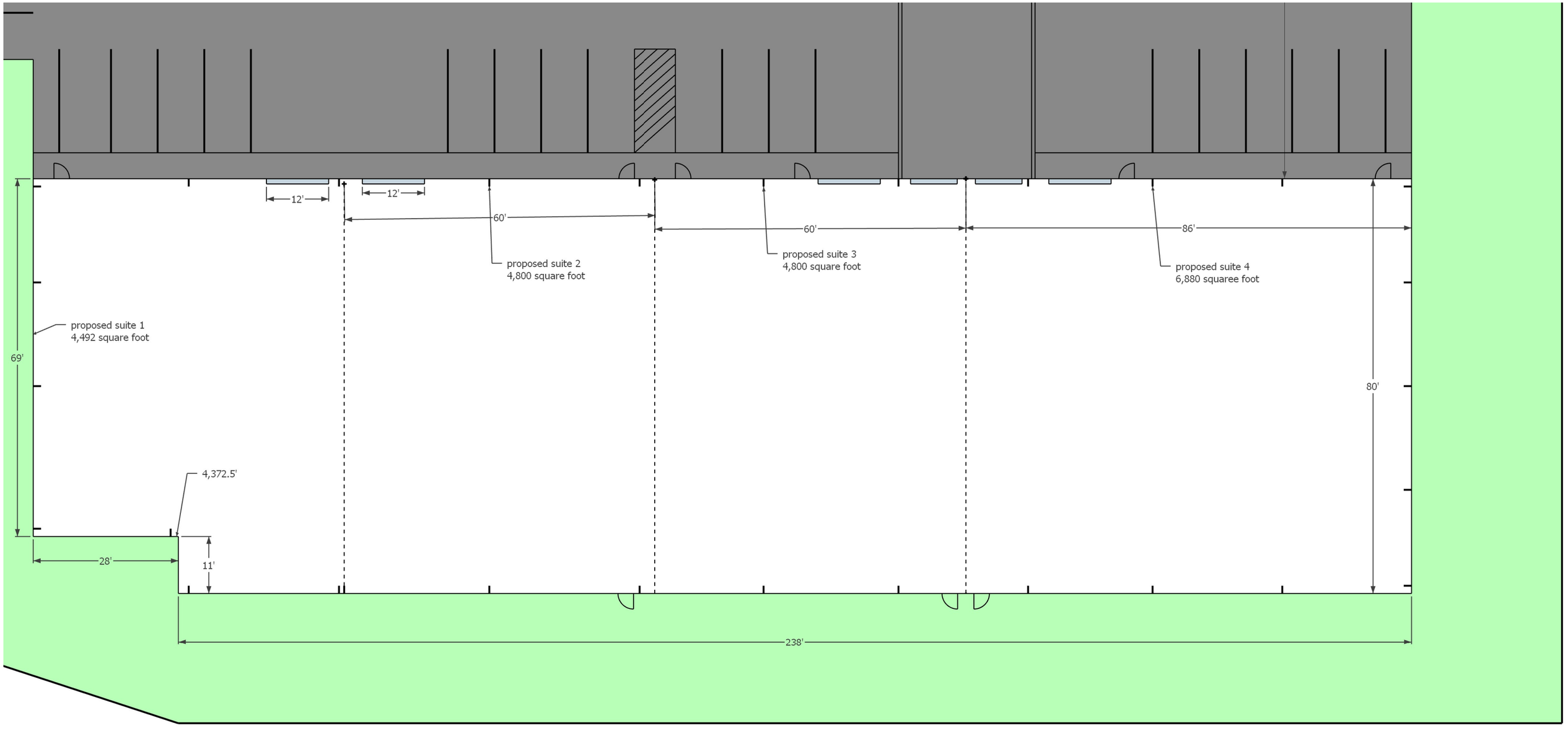
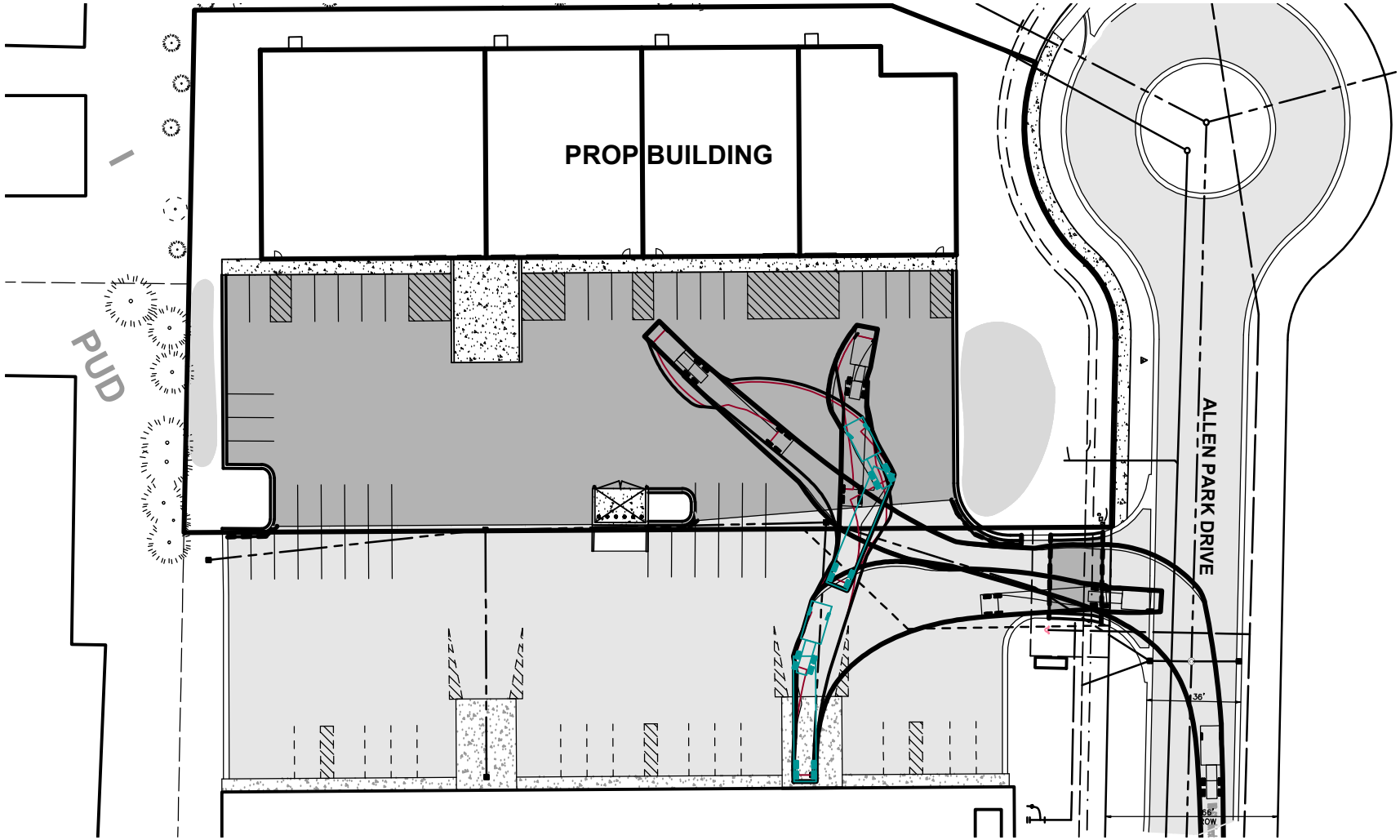
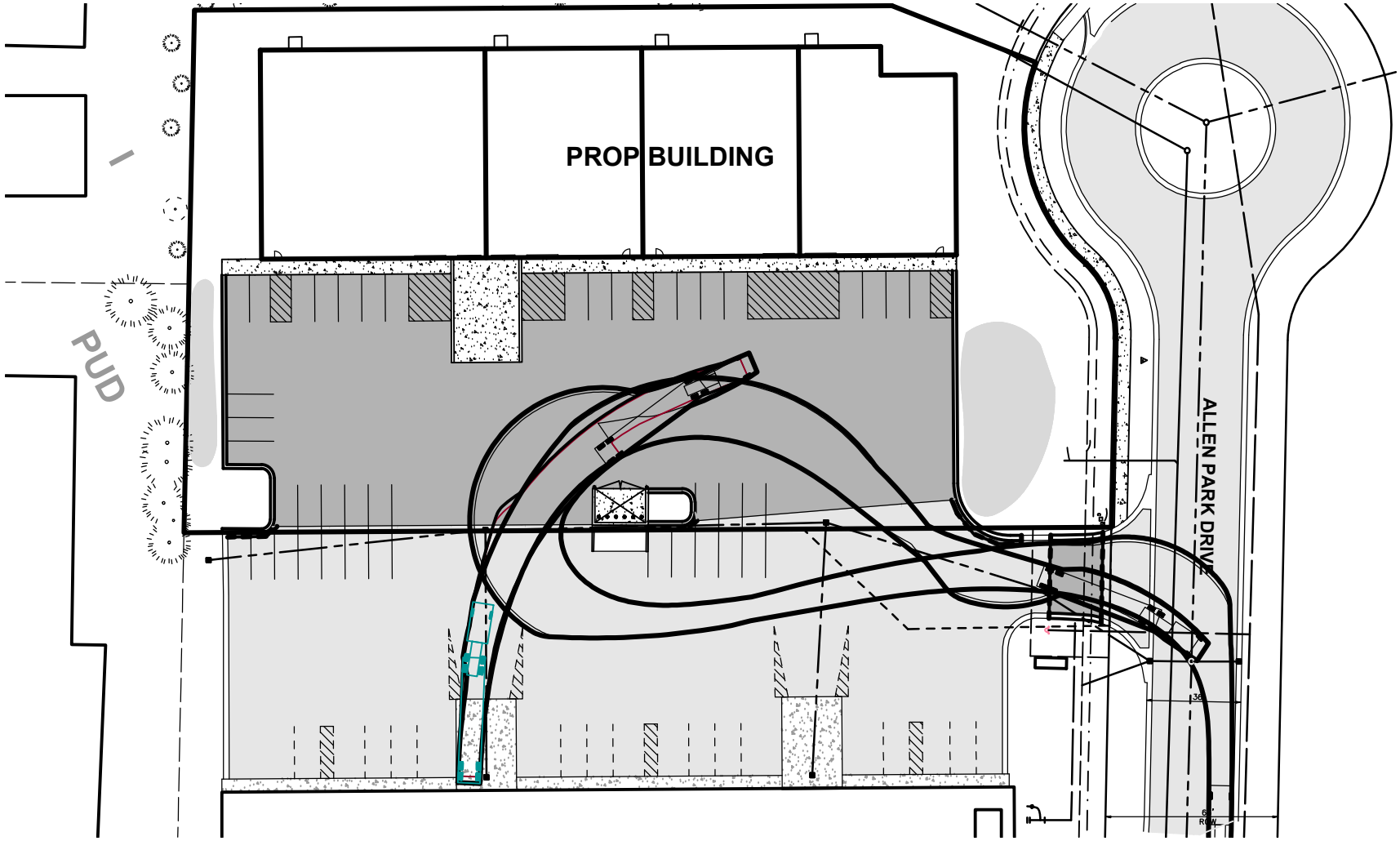

12'
12'
60'
60'
86'
proposed suite 2
4,800 square foot
proposed suite 3
4,800 square foot
proposed suite 4
6,880 squaree foot
proposed suite 1
4,492 square foot
69'
80'
4,372.5'
28'
11'
238'



TRUCK TURNING TEMPLATE #3

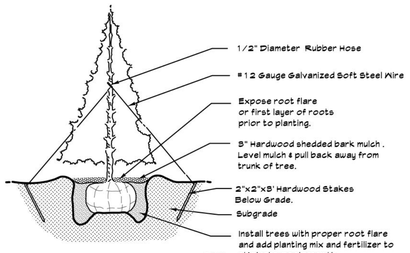
SCALE: 1" = 60'

24'
12'
14'

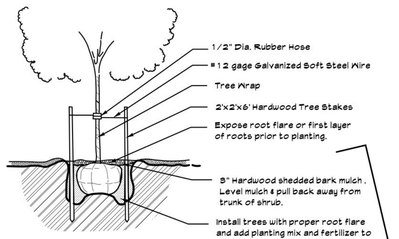


TRUCK TURNING TEMPLATE #2

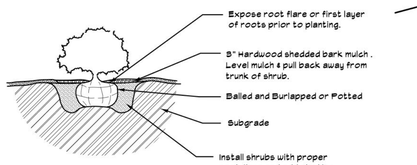
SCALE: 1" = 60'



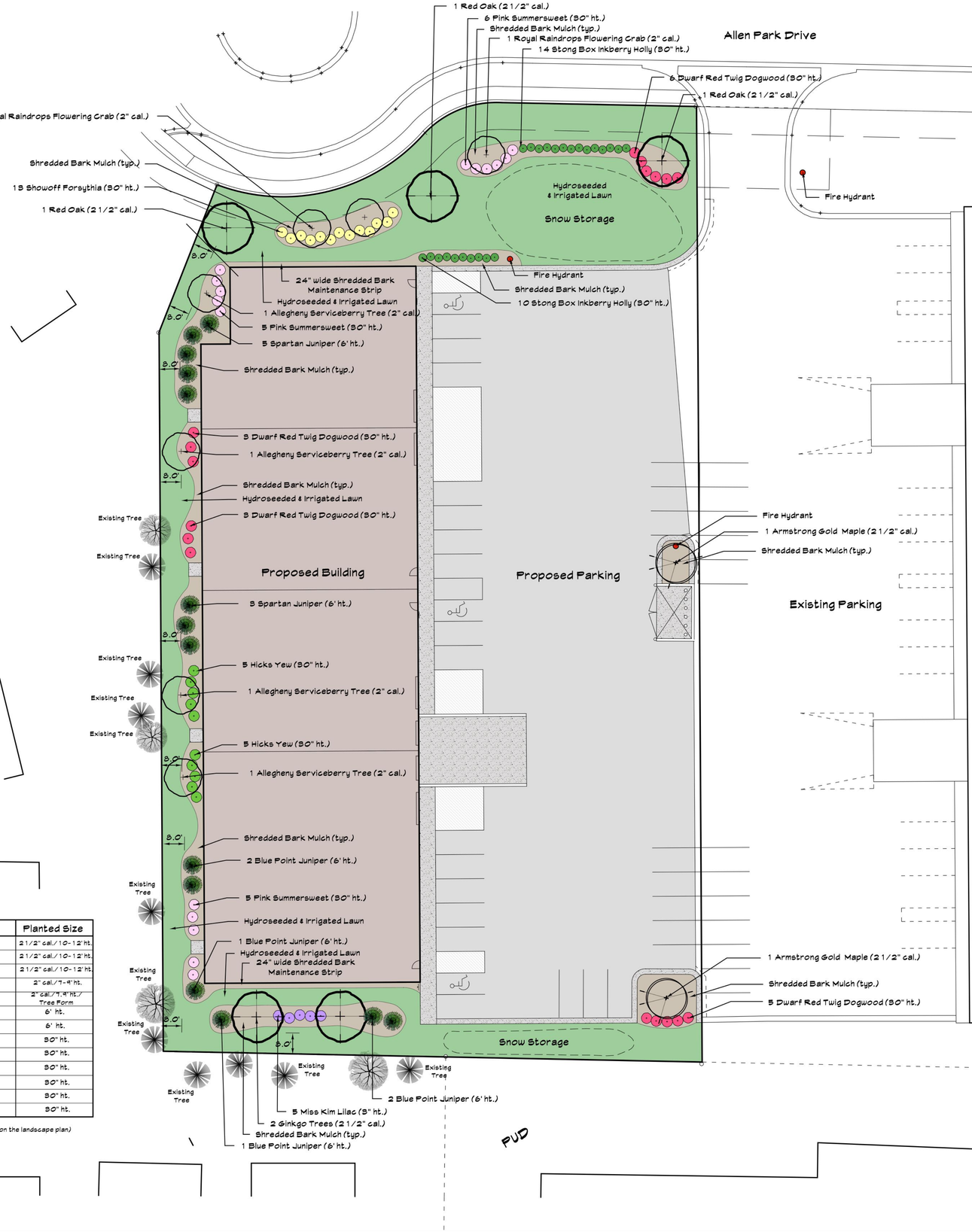
Evergreen Planting Detail-5' and Taller



Deciduous Trees 3" Caliper and Smaller



Shrub Planting Detail



Plant List

Quantity	Common Name	Latin Name	Planted Size
2	Armstrong Gold Maple	Acer rubrum 'Armstrong Gold'	2 1/2" cal./ 10-12' ht.
3	Red Oak	Quercus rubra	2 1/2" cal./ 10-12' ht.
2	Ginkgo Tree	Ginkgo biloba	2 1/2" cal./ 10-12' ht.
3	Royal Raindrops Flowering Crab	Malus 'Royal Raindrops'	2" cal./ 7-9' ht.
4	Allegheny Serviceberry Tree	Amelanchier laevis	2" cal./ 7-9' ht./ Tree Form
6	Blue Point Juniper	Juniperus chinensis 'Blue Point'	6' ht.
8	Spartan Juniper	Juniperus Chinensis 'Spartan'	6' ht.
16	Pink Summersweet	Clethra alnifolia 'Ruby Spice'	30" ht.
24	Stong Box Inkberry Holly	Ilex glabra 'Strong Box'	30" ht.
13	Show Off Forsythia	Forsythia x intermedia 'Show Off'	30" ht.
17	Dwarf Red Twig Dogwood	Cornus stolonifera 'Artic Fire'	30" ht.
5	Dwarf Korean Lilac	Syringa meyeri 'Palibin'	30" ht.
10	Hick's Yew	Taxus 'Hicksii	30" ht.

(note: Plant list for ordinance purposes only, the landscape contractor is responsible for plant quantities shown on the landscape plan)

Allendale Twp. Ordinance Requirements:

Article 21A.04 F.1: Front Yard Requirements

For each 150' of road frontage 2 deciduous or evergreen trees, 2 ornamental trees and 3 shrubs per tree is required.
Required along Allen Park Drive: 187.7'/ 150 = 2.5 dec. or ever. trees, 2.5 ornamental trees and 25.02 shrubs
Provided along Allen Park Drive: 3 dec. trees, 3 ornamental trees and 25 shrubs

Article 21A.04 G: Off Street Parking Area Requirements

All parking areas consisting of 20 or more spaces shall have 20 sf of landscaping per space.
Required based on 29 parking spaces 580 sf of landscaping.
Provided based on 29 parking spaces 581 sf of landscaping.
Required one canopy tree per 20 parking spaces: 29 spaces/20 = 1.45 trees
Provided: 2 canopy trees
In addition to the front yard landscaping requirements of this Section:
A continuous landscaped hedge with a minimum height of twenty-four (24) inches at planting with a minimum height of three (3) feet at maturity consisting of plant material that will maintain its green foliage year round along the entire length of the parking area
Provided: 30" high landscaped hedge

Section 21A.04 Greenbelt Requirements

For each 20 linear feet abutting the adjacent property, one tree shall be planted within the greenbelt. Trees shall be a mixture of evergreen, canopy and ornamental trees. Two shrubs shall be planted for each tree and each shrub shall be a minimum of thirty (30) inches at planting and reach a minimum height of five feet at maturity.
Required along West Property Line: 325.0'/20 = 16.25 dec. or ever. trees, or ornamental trees and 32.50 shrubs
Provided along West Property Line: 16 trees and 32 shrubs
Required along South Property Line: 105.2'/20 = 5.26 dec. or ever. trees, or ornamental trees and 10.52 shrubs
Provided along South Property Line: 5 trees and 10 shrubs

Article 24 .05 F9:

I certify this landscape plan if installed as shown to be per ordinance

Notes:

1. All landscaping shall be installed by a qualified Landscape Contractor. Plant sizes specified on the landscape plan shall be the size planted. Plants smaller then specified will be rejected. Substitutions of any kind must be approved by the Landscape Architect.
2. All plantings shall be mulched with 3" shredded premium hardwood bark mulch. Trees in lawn areas shall receive a 6' diameter bark ring 3" deep..
3. The landscape contractor shall remove any twine that is wrapped around the trunk of a tree or shrub as well as the top third of any burlap. Remove excess soil on the top of the root ball to expose the root flare or first layer of roots prior to planting. Use a wire cutter to make 3-5 cuts in the wire basket to allow roots to grow through.
4. When planting trees in the lawn area or on the berm the existing soil within a 10 foot diameter shall be loosened by tilling or similar and amended with composted manure or peat at a depth of 6-12".
5. Planting areas shall be edged with a mechanical bed edger to define a border for the shedded bark mulch.
6. Parking Islands shall be back filled with at least 24" of topsoil. Amend the topsoil with composted manure and mix into the topsoil at a depth of 6-12". Any aggregate or stone from the construction of the parking lot shall be removed prior to backfill.
7. Lawn areas shall recieve at least 4" of topsoil and hydroseeded. Check with specifications for topsoil availability or contact project manager. Topsoil for lawns shall be appropriate for growing and sustaining a healthy lawn. All lawns shall be hydroseeded with a seed blend consisting of 30% Kentucky Bluegrass, 20% Perennial Ryegrass, 10% Hard Fescue, 20% Creeping Red Fescue and 20% Chewings Fescue.
8. Maintenance of the landscape shall be provided for by the owner and include fertilizing of lawn and plant material, yearly pruning, top dressing of mulch areas every other year and provide 1" of water per week during the growing season.
9. Plant materials shall be chosen and installed in accordance with standards recommended by the County Cooperative Extension Service or American Nursery Association.

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DJS LANDSCAPE MANAGEMENT
Four seasons. One team.
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St. Joseph Muskegon Ann Arbor Romulus
Phone (616)698-2700 Fax (616)698-2900
djslandscape.com

MGIA MICHIGAN GREEN INDUSTRY ASSOCIATION
MNLA

STATE OF MICHIGAN
JOYCE E. WEISE
LANDSCAPE ARCHITECT
No. 1202
REGISTERED LANDSCAPE ARCHITECT

Landscape Plan Drawn By:
Joyce E. Weise PLA, ASLA

PROPOSED LANDSCAPE PLAN FOR:

Proposed Building

4900 Allen Park Dr. Allendale Twp., Michigan

PROJECT NUMBER: 120925

DRAWN BY: Joyce E. Weise PLA, ASLA

DRAWING DATE: 121925

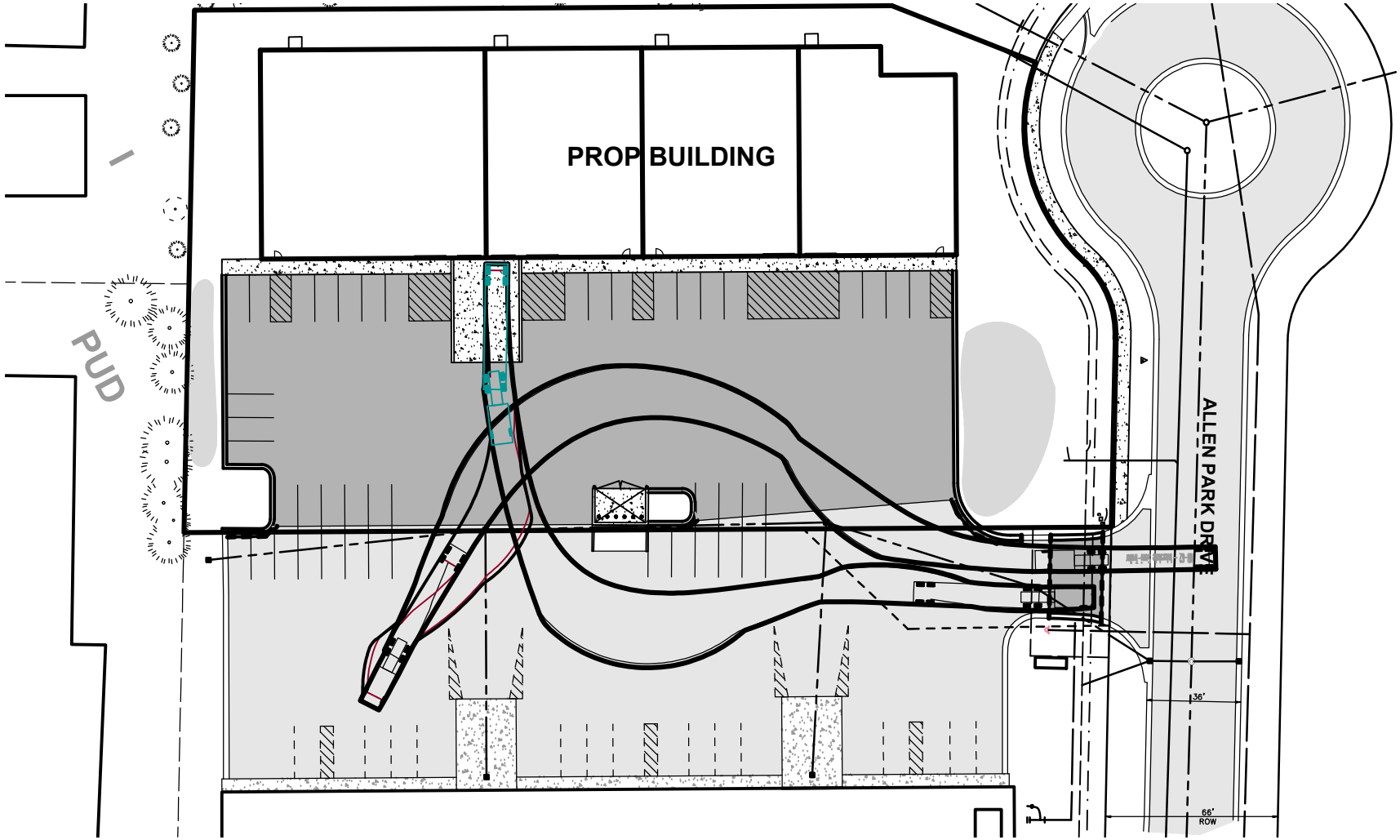
ISSUED FOR:

12/26/25	Review
01/09/26	Review
03/13/26	Per Review

SCALE 1"=20'

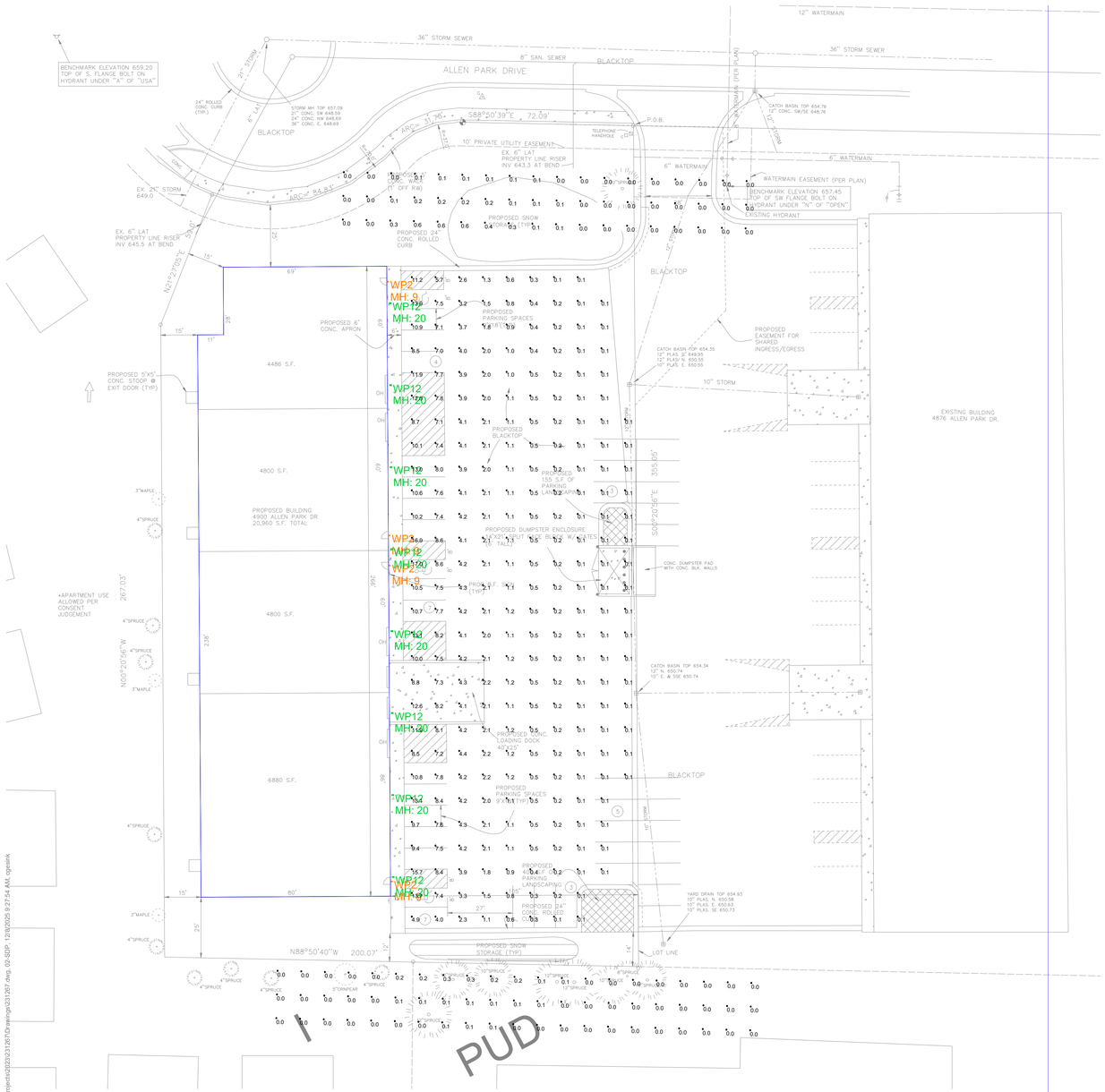
SHEET NUMBER L-1

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



TRUCK TURNING TEMPLATE #1

SCALE: 1" = 60'



PHOTOMETRIC PLAN

SCALE: NTS

Filename: S:\GRAND RAPIDS\Layouts\RANDOMS\4900 ALLEN PARK\SITE LIGHTING.AGI

Crites, Tidey, & Assoc., Inc
908C West River Center Dr
Comstock Park MI 49321
PH: 616-647-2400
www.critestidey.com

PHOTOMETRIC EVALUATION
NOT FOR CONSTRUCTION
Based on the information provided, all dimensions and luminaire locations represent a recommended application. The engineer and/or architect must determine the applicability of the layout regarding existing or future field conditions.

This lighting layout represents illumination levels calculated using laboratory data taken under controlled conditions in accordance with The Illuminating Engineering Society (IES) approved method. Actual performance of a manufacturer's luminaires may vary due to changes in electrical voltage, tolerance in LEDs, and other field conditions. Calculations may not include obstructions such as buildings, curbs, landscaping, or other architectural elements. Fixture nomenclature may not include mounting hardware or poles. This layout is for photometric evaluation purposes only and should not be used as a construction document or as a final document for ordering product.

DESIGNED FOR:

Miedema Metal Building Systems
Hudsonville, Michigan #P426

4900 ALLEN PARK DR
ADDRESS

SALES
QUOTES

DATE
5.19.2023

DESIGNER
JEN YONKERS

REVISIONS

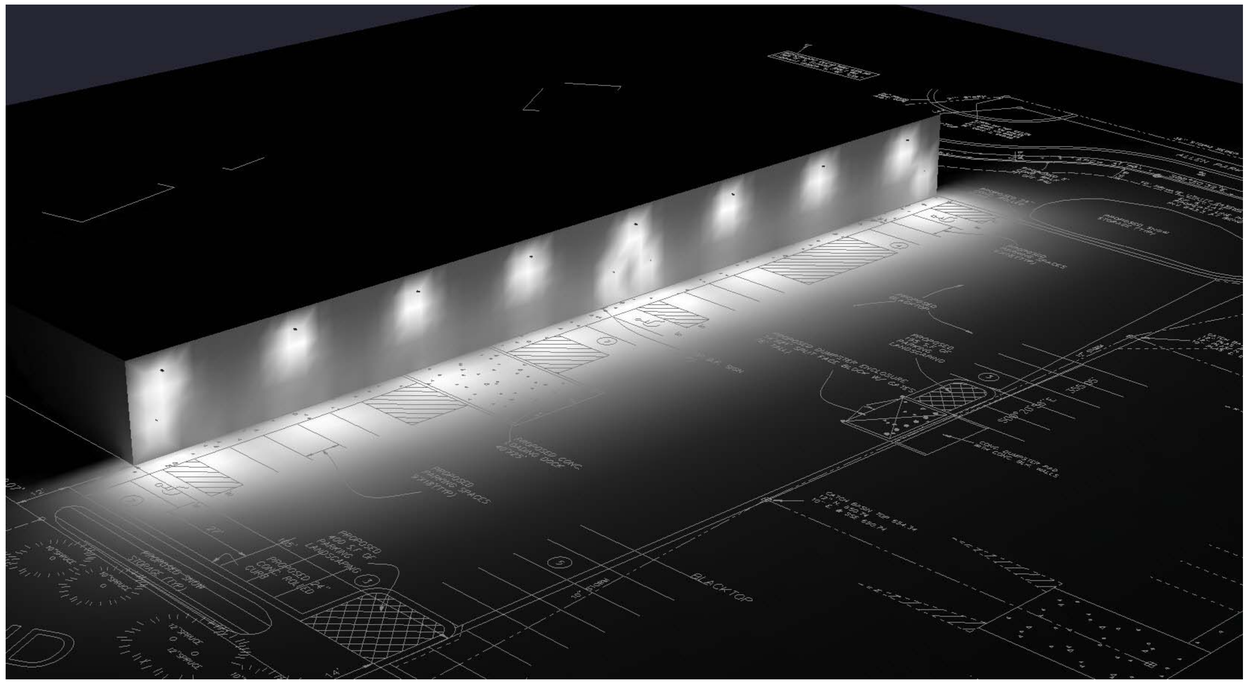
DATE	NAME
2242026	MMBS

SHEET
1

Luminaire Schedule										
Scenario: GEN										
Symbol	Qty	Label	Arrangement	LLD	LDD	BF	[MANUFAC]	Description	MNT HEIGHT	M
	8	WP12	Single	0.980	0.940	1.000	COOPER - LUMARK	XTOR12B	20	W
	4	WP2	Single	0.980	0.940	1.000	COOPER - LUMARK	XTOR2B	9	W

Calculation Summary							
Scenario: GEN							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
NORTH	Illuminance	Fc	0.09	0.6	0.0	N.A.	N.A.
PARKING LOT	Illuminance	Fc	2.83	17.0	0.1	28.30	170.00
SOUTH	Illuminance	Fc	0.04	0.3	0.0	N.A.	N.A.

NOTES:
- CALC AT GRADE


PROPOSED 4900 SF PRE-ENGINEERED BUILDING
PROPOSED 24' WIDE ASPHALT DRIVE
PROPOSED CONCRETE SIDEWALK
PROPOSED 9' WIDE ASPHALT PARKING
PROPOSED 6" CONCRETE CURB & GUTTER
PROPOSED 6" CONCRETE CURB & GUTTER
PROPOSED 24' WIDE ASPHALT DRIVE

Project: 4900 Allen Park Drive
File #: 231267E
Date: February 27, 2026

Design Criteria: Based on O.C.D.C. standards for a 10 year storm event.

Runoff Coefficients, C	
Grass	0.35
Pavement	0.95
Industrial	0.85
Residential	0.43
Grass	0.35
Offsite	0.35

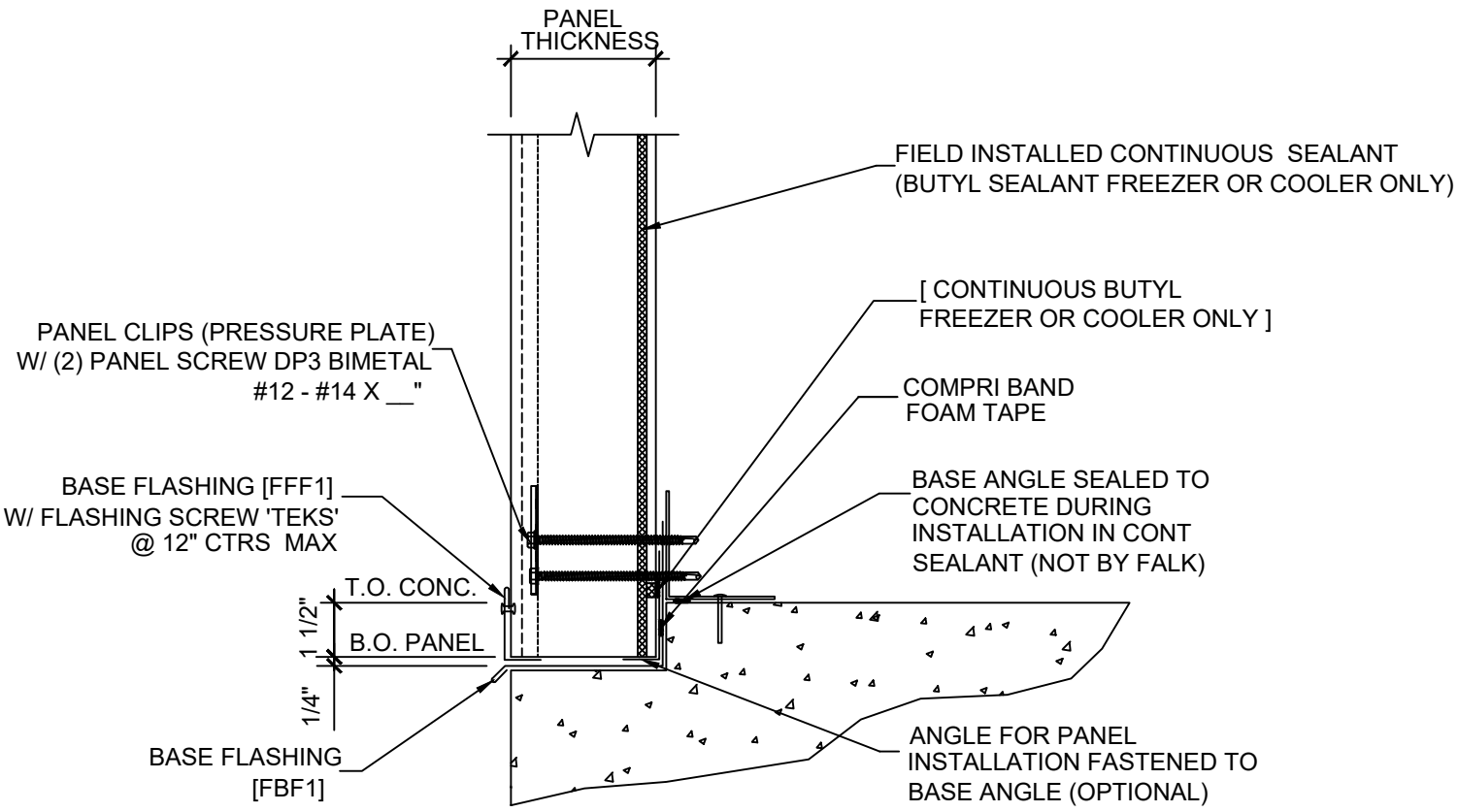
From CB#	1	2	3	4	5	6	7	8	9	10	11	12
To CB#	4	4	4	6	6	EX 36"	8	9	10	12	12	EX 21"
Acres of:												
Grass	0.03	0	0	0.01	0	0.09	0	0	0	0	0.05	0.04
Pavement	0	0.025	0.02	0.68	0.02	0.62	0.15	0.11	0.11	0.1	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0
Residential	0	0	0	0	0	0	0	0	0	0	0	0
Grass	0	0	0	0	0	0	0	0	0	0	0	0
Offsite	0	0	0	0	0	0	0	0	0	0	0	0
Total	0.03	0.025	0.02	0.69	0.02	0.71	0.15	0.11	0.11	0.1	0.05	0.04
C-Adjust Total DA	0.35	0.95	0.95	0.92	0.95	0.90	0.95	0.95	0.95	0.95	0.35	0.85
Total Drainage Area, A	0.03	0.03	0.02	0.77	0.02	1.50	0.15	0.26	0.37	0.47	0.05	0.56
Time, t (min.)	15	15	15	16	15	17	15	15	15	16	15	16
Intensity, i	3.84	3.84	3.84	3.76533	3.84	3.690667	3.84	3.84	3.84	3.7653	3.84	3.7653333
Flow, Q=CiA (CFS)	0.04	0.09	0.07	2.65	0.07	4.95	0.55	0.95	1.35	1.68	0.07	1.80
Contant Flow (CFS)												
Total Flow (CFS)	0.04	0.09	0.07	2.65	0.07	4.95	0.55	0.95	1.35	1.68	0.07	1.80

Required Slopes for:

Plastic Pipe												
6 inch	0.60	0.60	0.60	18.85	0.60	66.06	0.81	2.42	4.90	7.61	0.60	8.72
8 inch	0.60	0.60	0.60	4.06	0.60	14.24	0.60	0.60	1.06	1.64	0.60	1.88
10 inch	0.40	0.40	0.40	1.24	0.40	4.33	0.40	0.40	0.40	0.50	0.40	0.57
12 inch	0.32	0.32	0.32	0.47	0.32	1.64	0.32	0.32	0.32	0.32	0.32	0.32
15 inch	0.24	0.24	0.24	0.24	0.24	0.50	0.24	0.24	0.24	0.24	0.24	0.24
18 inch	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
24 inch	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
30 inch	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
36 inch	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
42 inch	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
48 inch	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
54 inch	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
60 inch	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
66 inch	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
72 inch	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Concrete Pipe												
12 inch	0.32	0.32	0.32	0.55	0.32	1.92	0.32	0.32	0.32	0.32	0.32	0.32
15 inch	0.24	0.24	0.24	0.24	0.24	0.58	0.24	0.24	0.24	0.24	0.24	0.24
18 inch	0.20	0.20	0.20	0.20	0.20	0.22	0.20	0.20	0.20	0.20	0.20	0.20
21 inch	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
24 inch	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
27 inch	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
30 inch	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
36 inch	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
42 inch	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
48 inch	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
54 inch	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
60 inch	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
66 inch	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
72 inch	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Proposed Pipe Size & Slope	EX 10" 0.30%	8" 0.30%	EX 10" 0.30%	EX 12" 0.14%	EX 10" -0.46%	EX 12" 0.88%	6" 1.00%	8" 1.00%	8" 1.06%	10" 1.00%	8" 1.86%	12" 1.38%
HGL Elevation	652.0	652.2	652.0	651.6	651.0							
Rim Elevation	654.9	652.4	652.0	654.3	654.3							

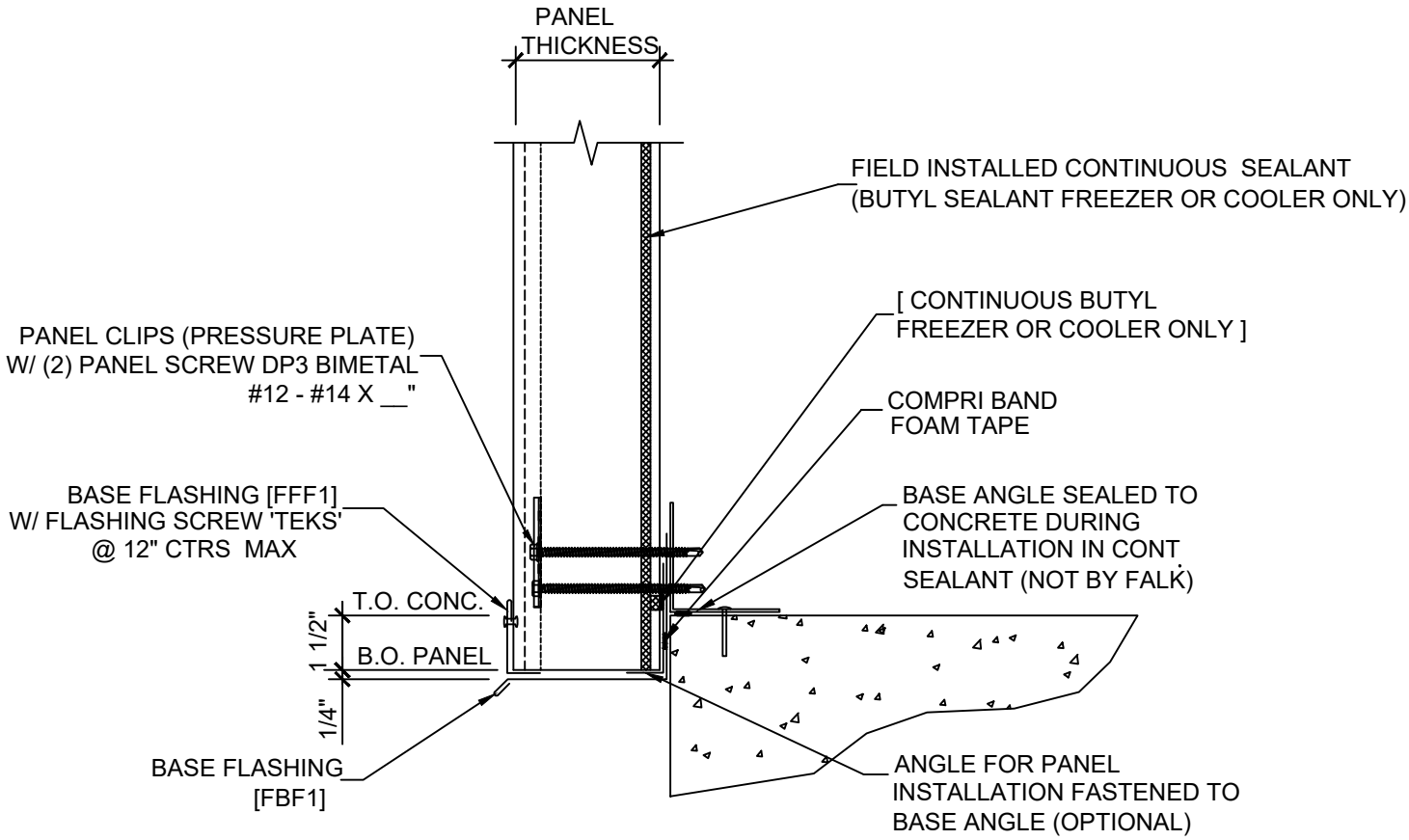
BASE DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-BD-001



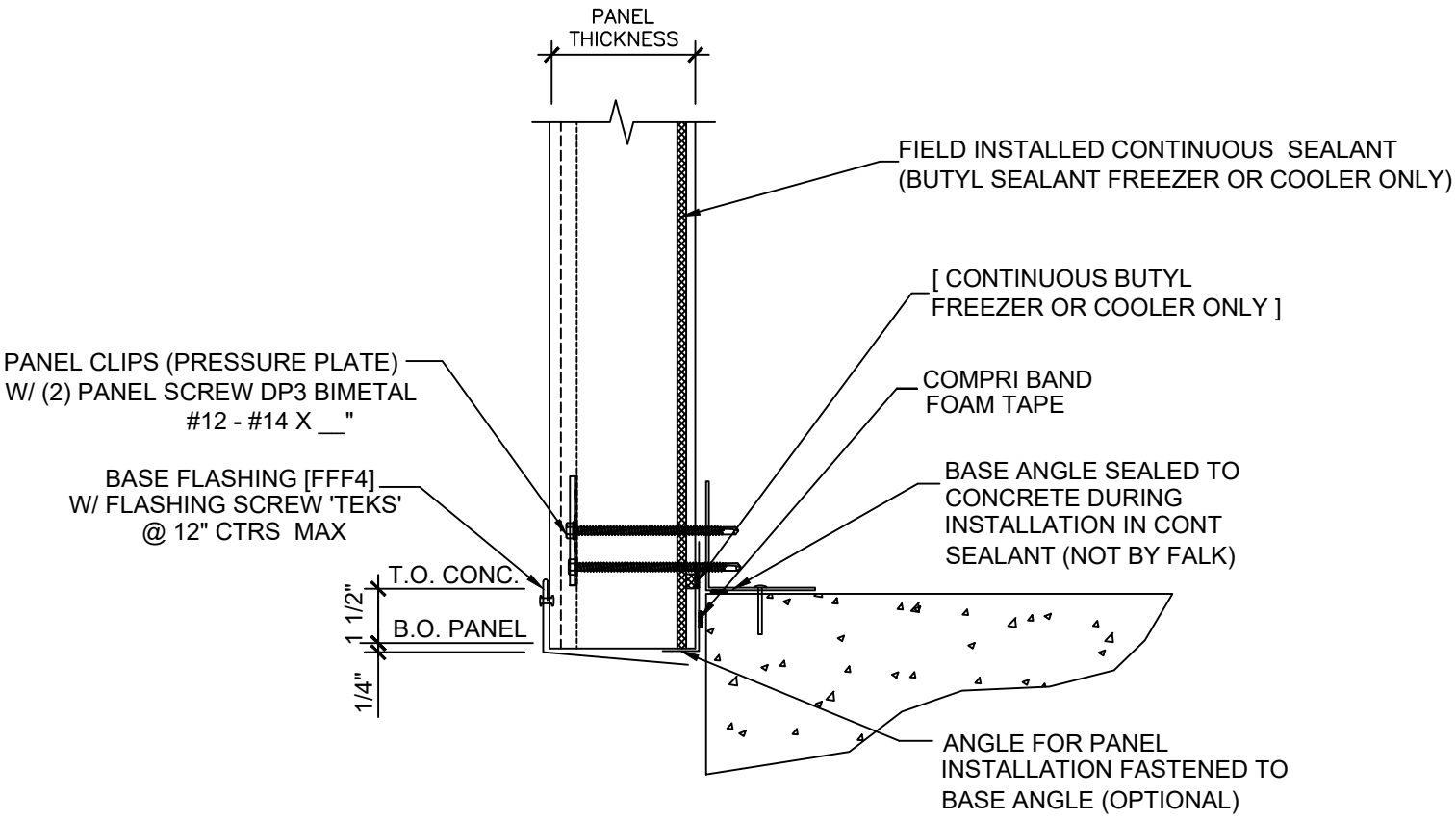
BASE DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-BD-002



BASE DETAIL

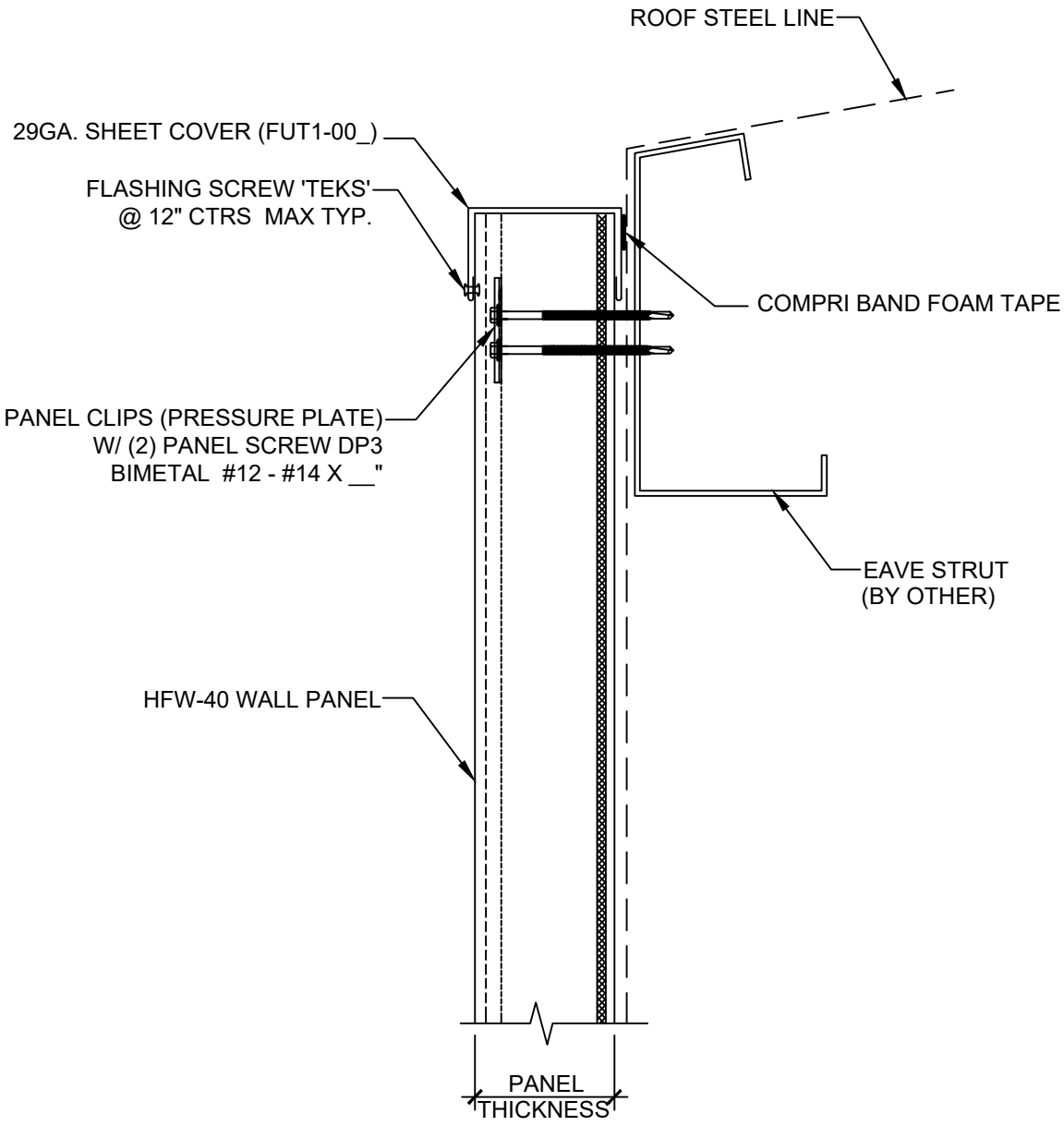
APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-BD-003



EAVE DETAIL

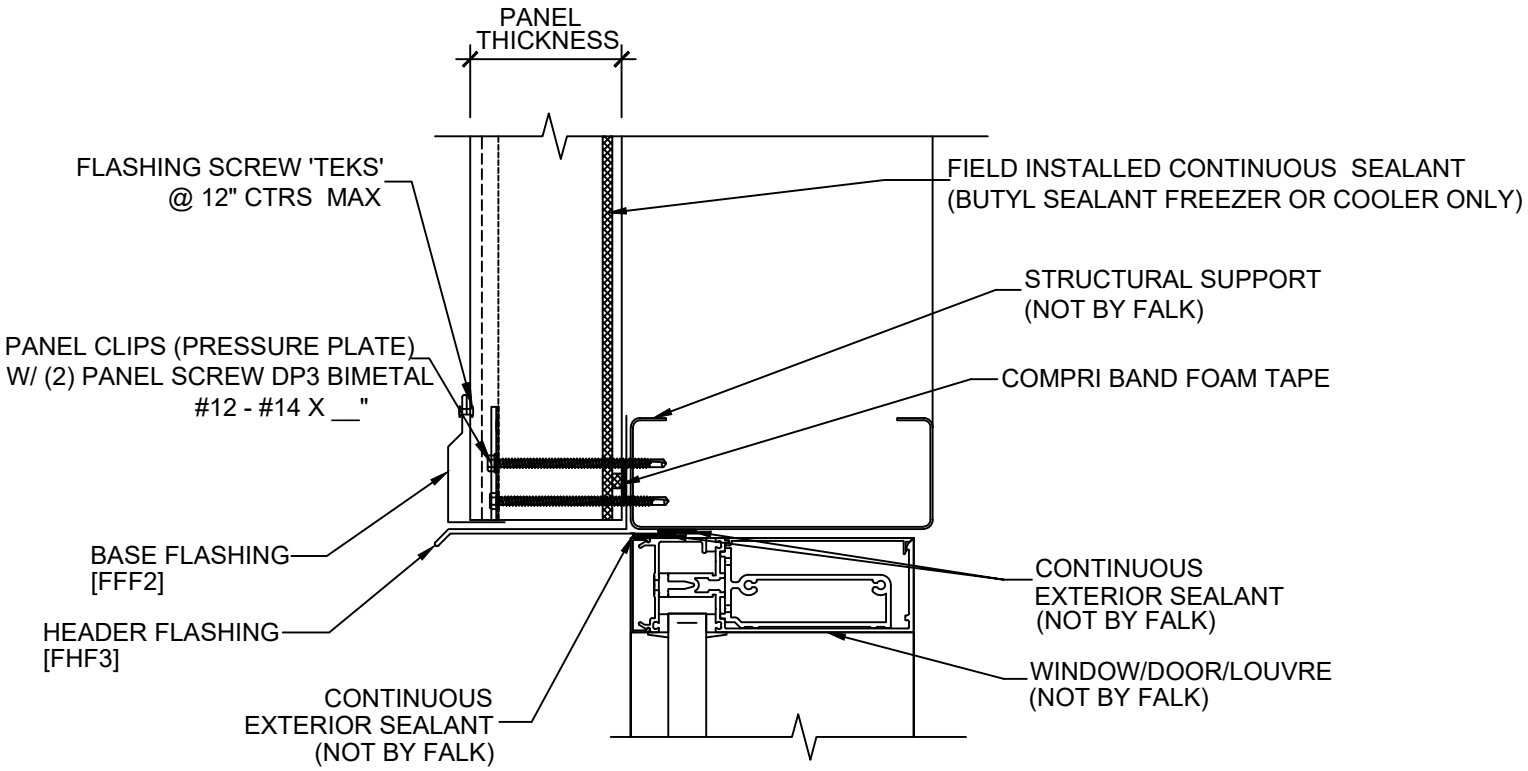
APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-ED-001

U-TRIM TO COVER THE TOP OF THE PANEL FOR PREVENT WATER FROM ENTERING THE PANEL DURING THE INSTALLATION PROCESS.



FRAMED OPENING BOX HEADER TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-FH-001



FRAMED OPENING FLAT HEADER TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
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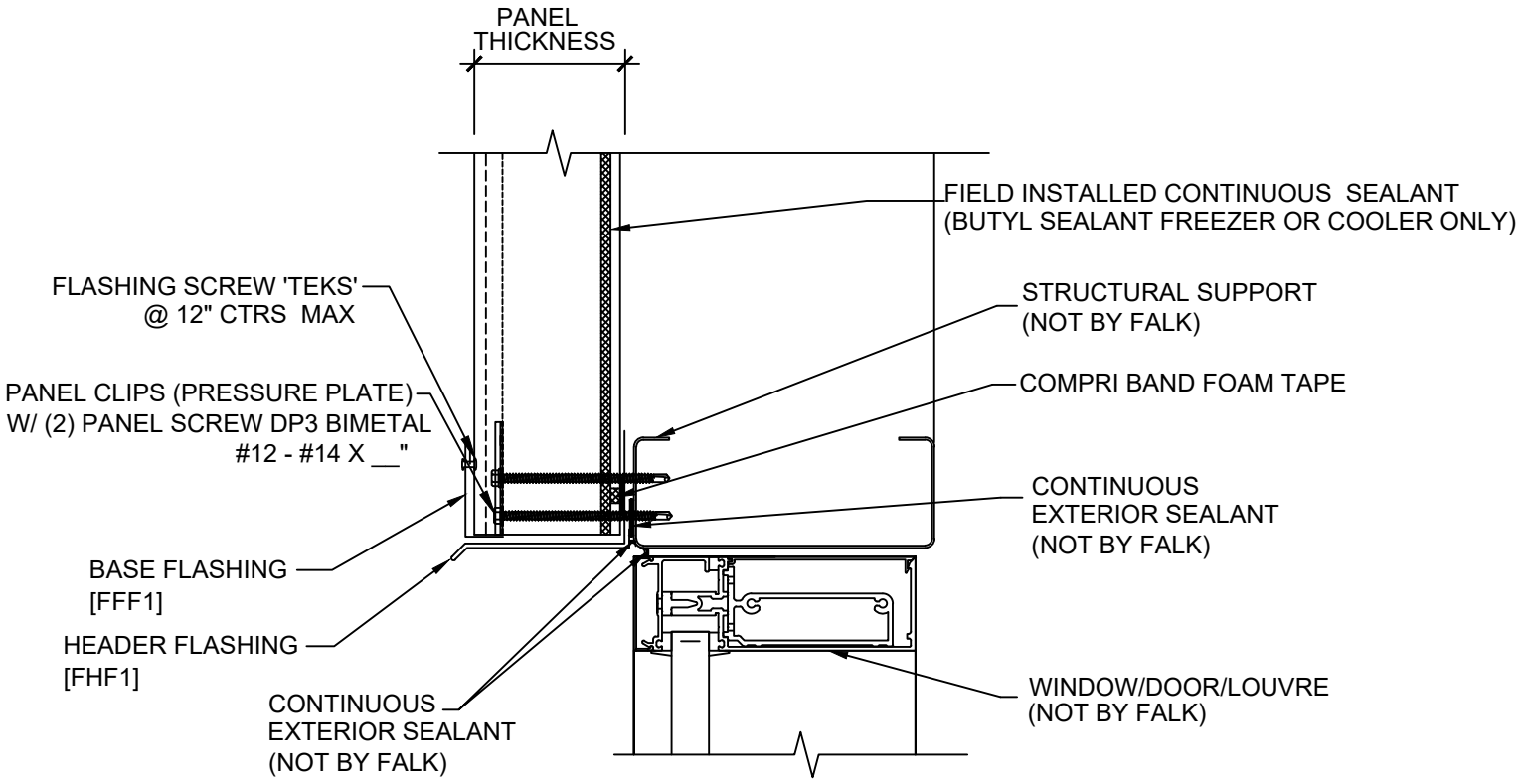

FRAMED OPENING BOX HEADER TRIM W/ WRAP DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
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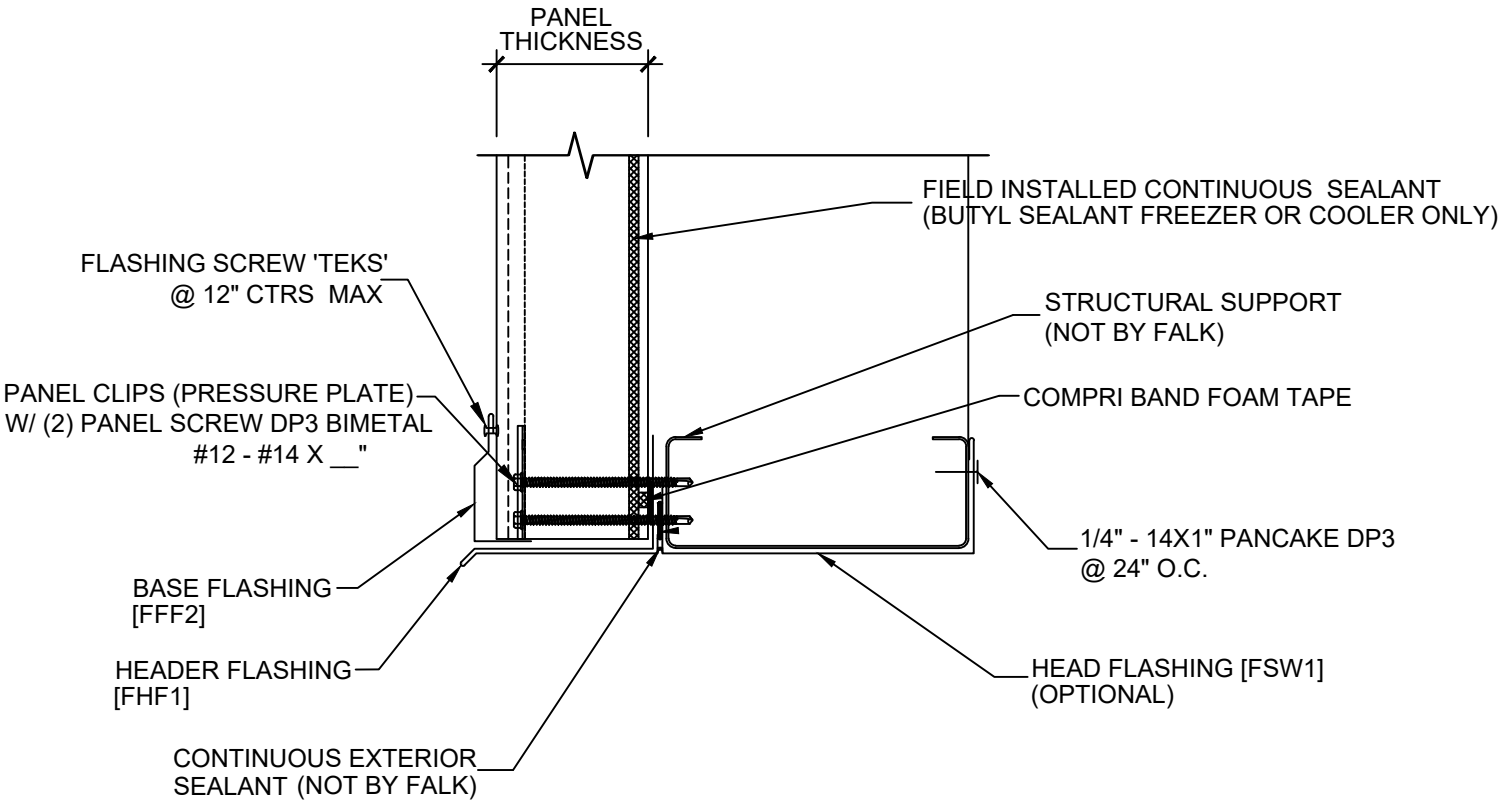

FRAMED OPENING FLAT HEADER TRIM W/ WRAP DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
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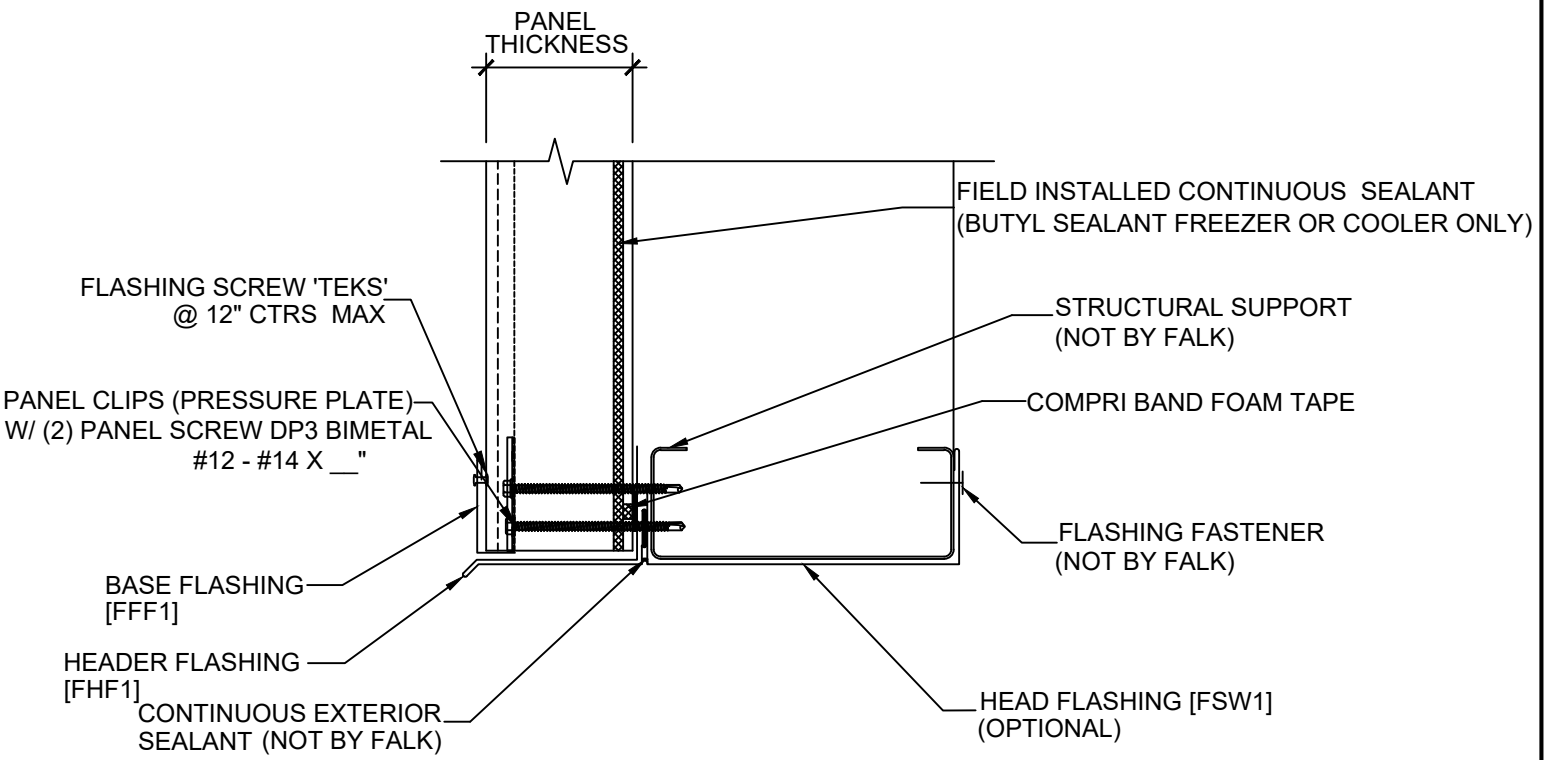
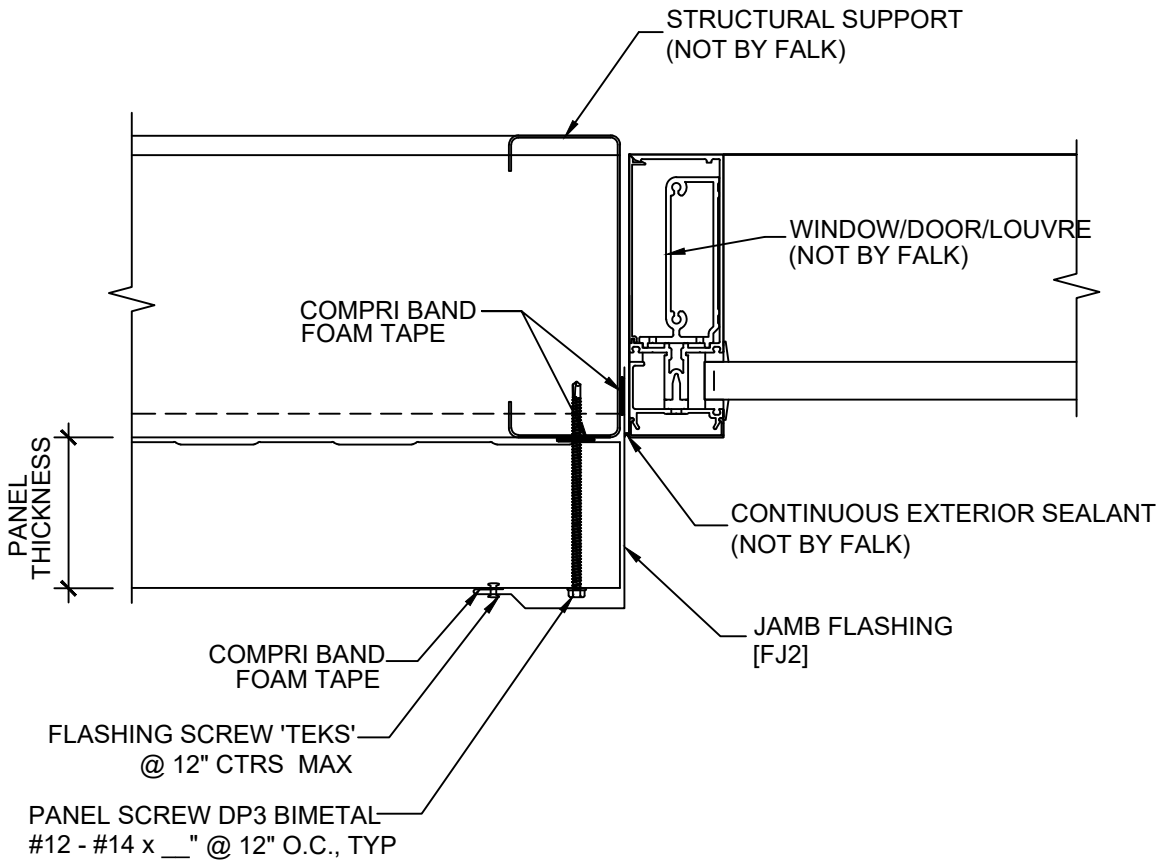


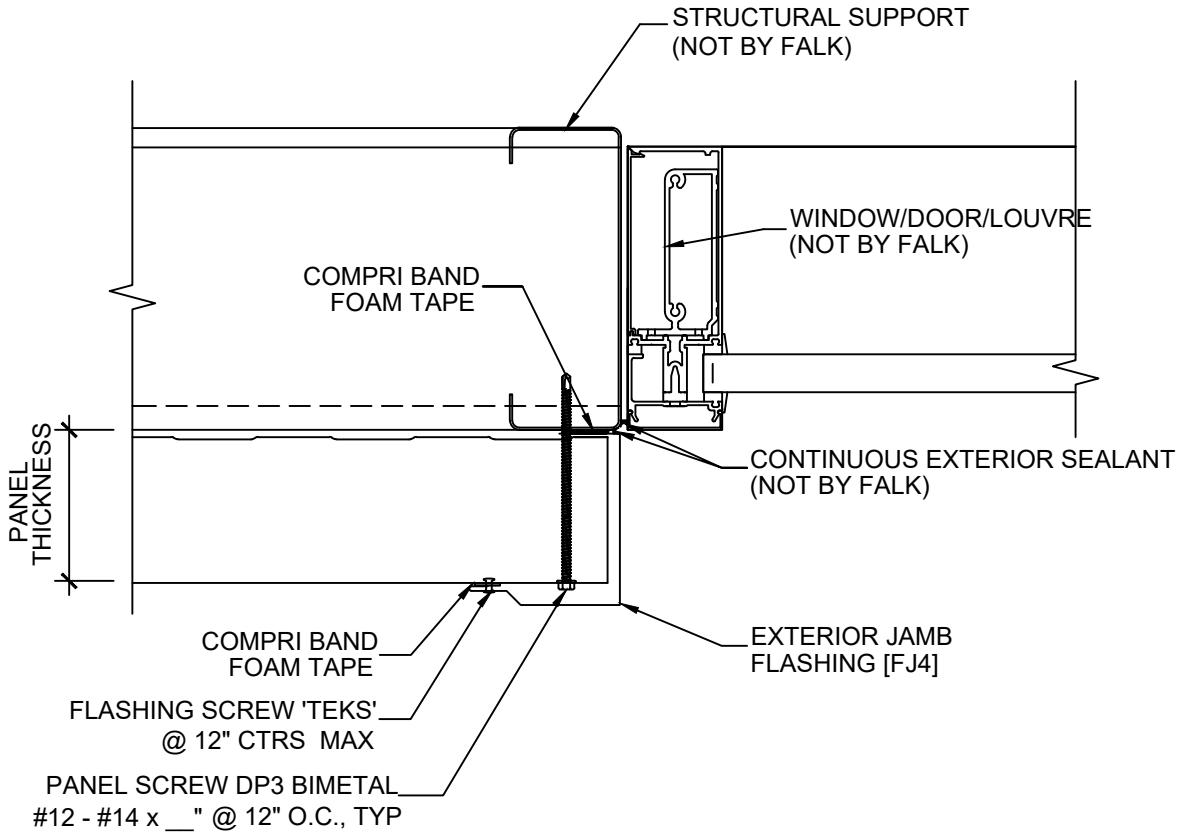
FRAMED OPENING BOX JAMB TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-FJ-001



FRAMED OPENING BOX JAMB TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-FJ-002



FRAMED OPENING BOX JAMB TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
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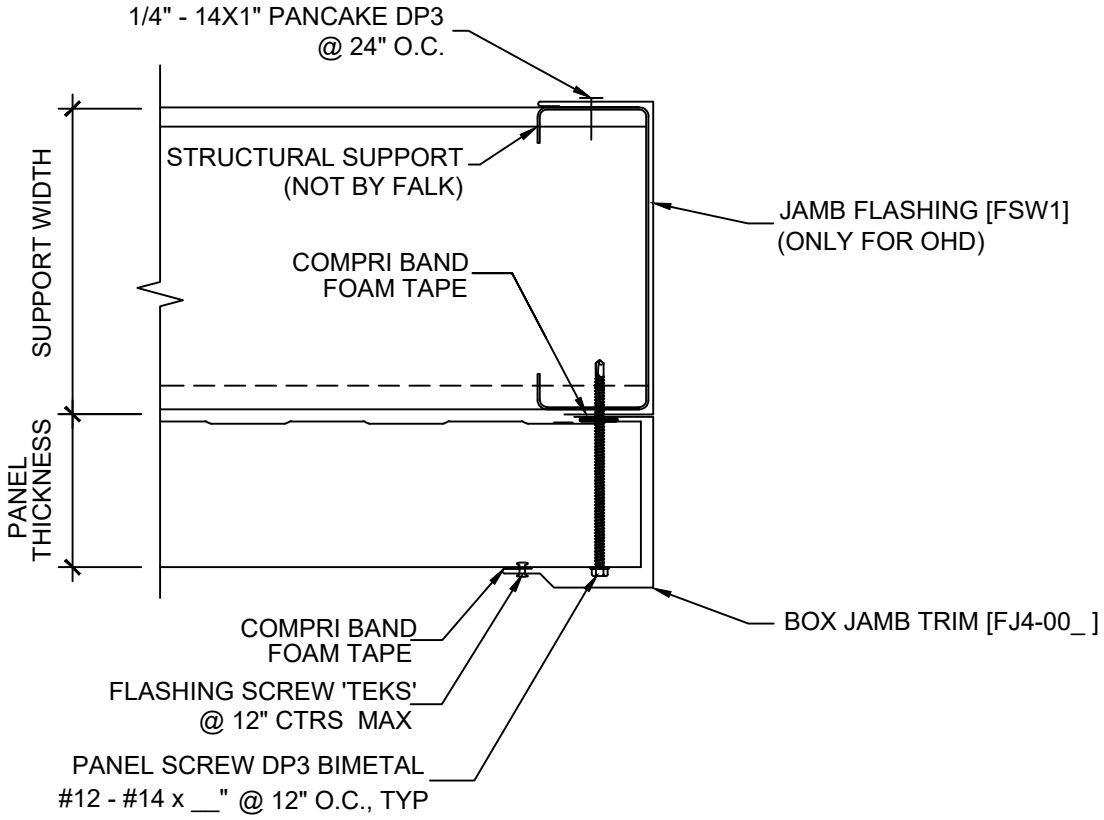

FRAMED OPENING BOX JAMB TRIM W/ COLUMN WRAP DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
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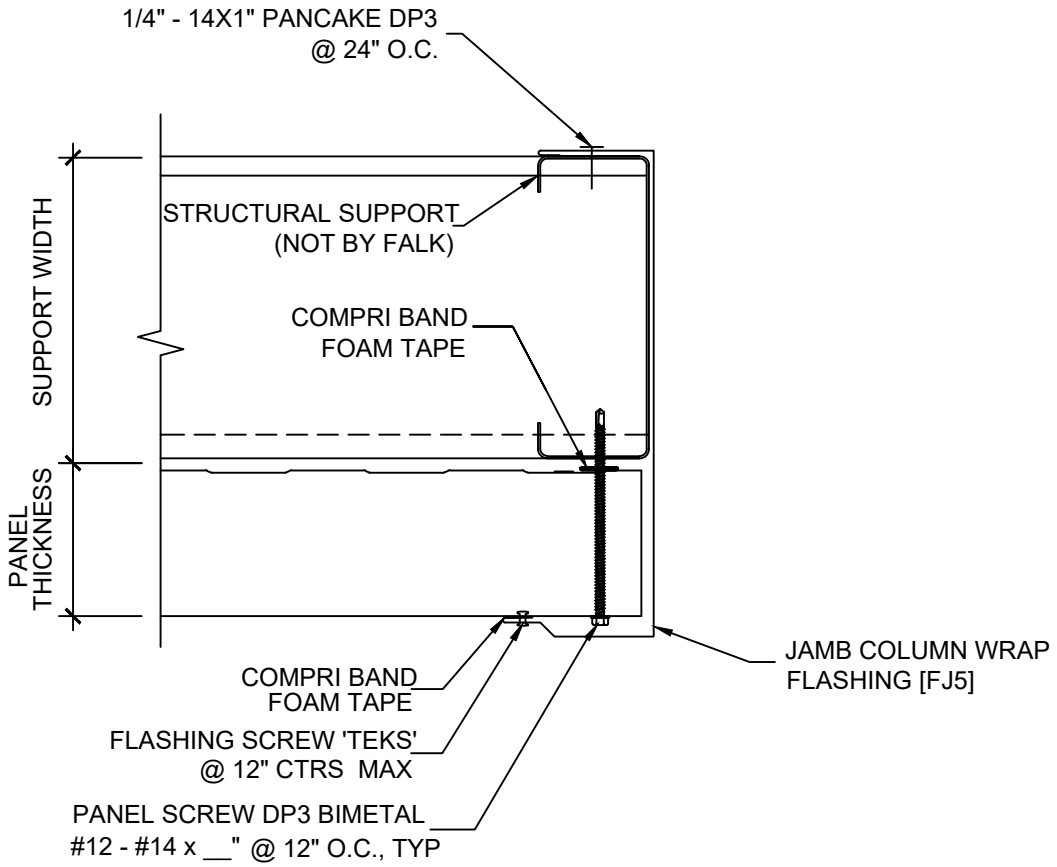

FRAMED OPENING FLAT JAMB TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
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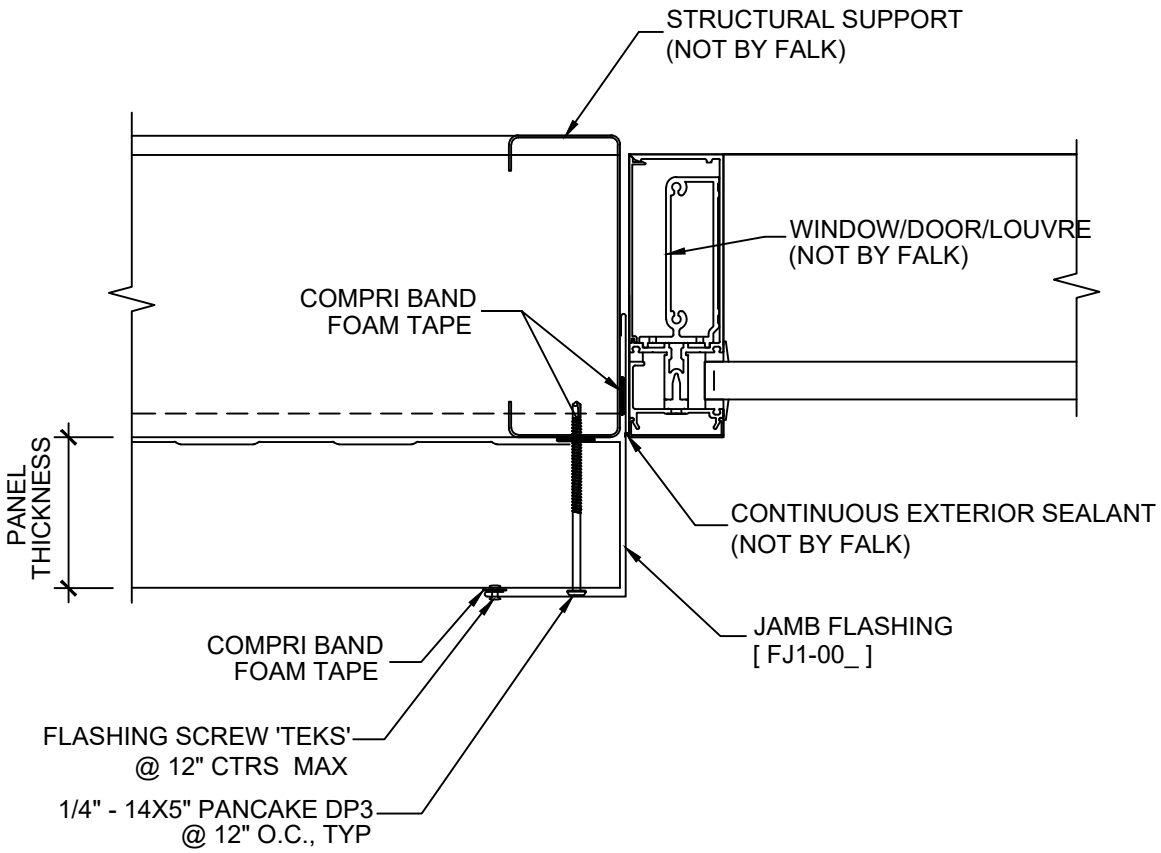
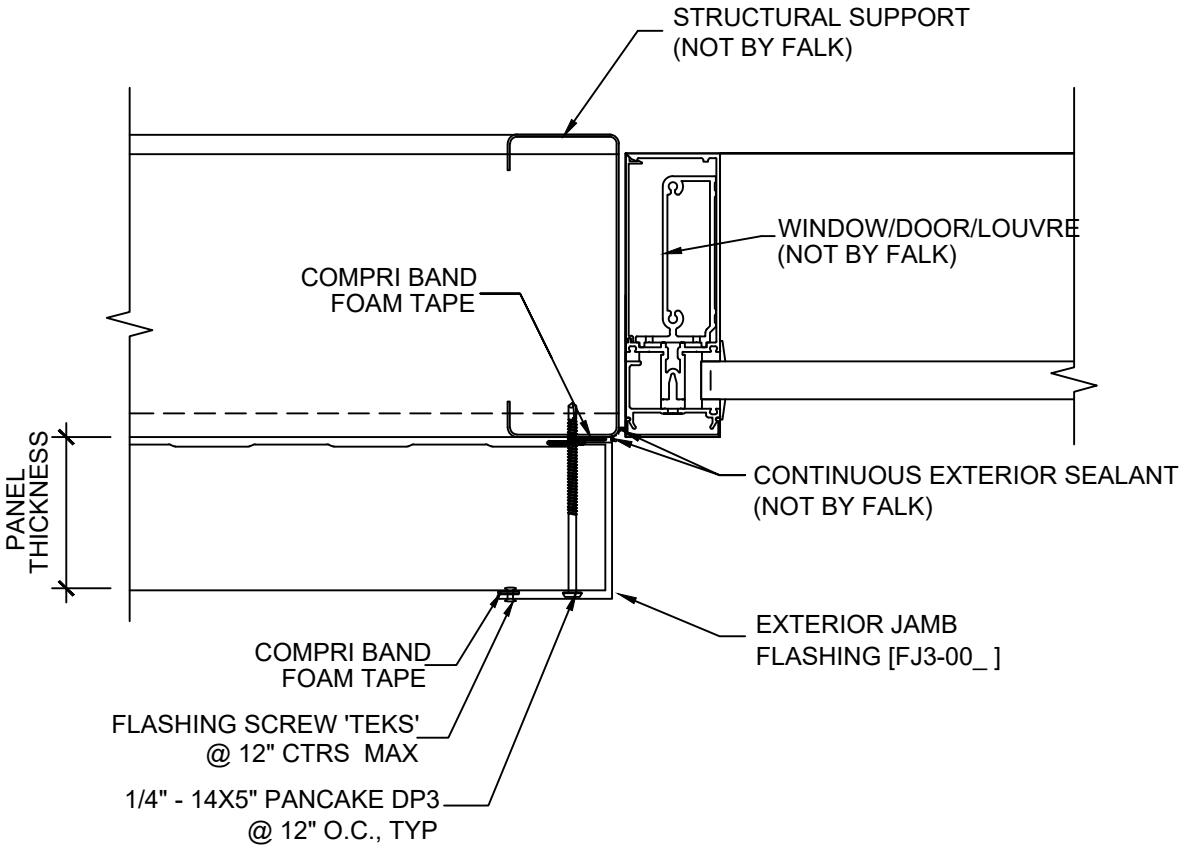


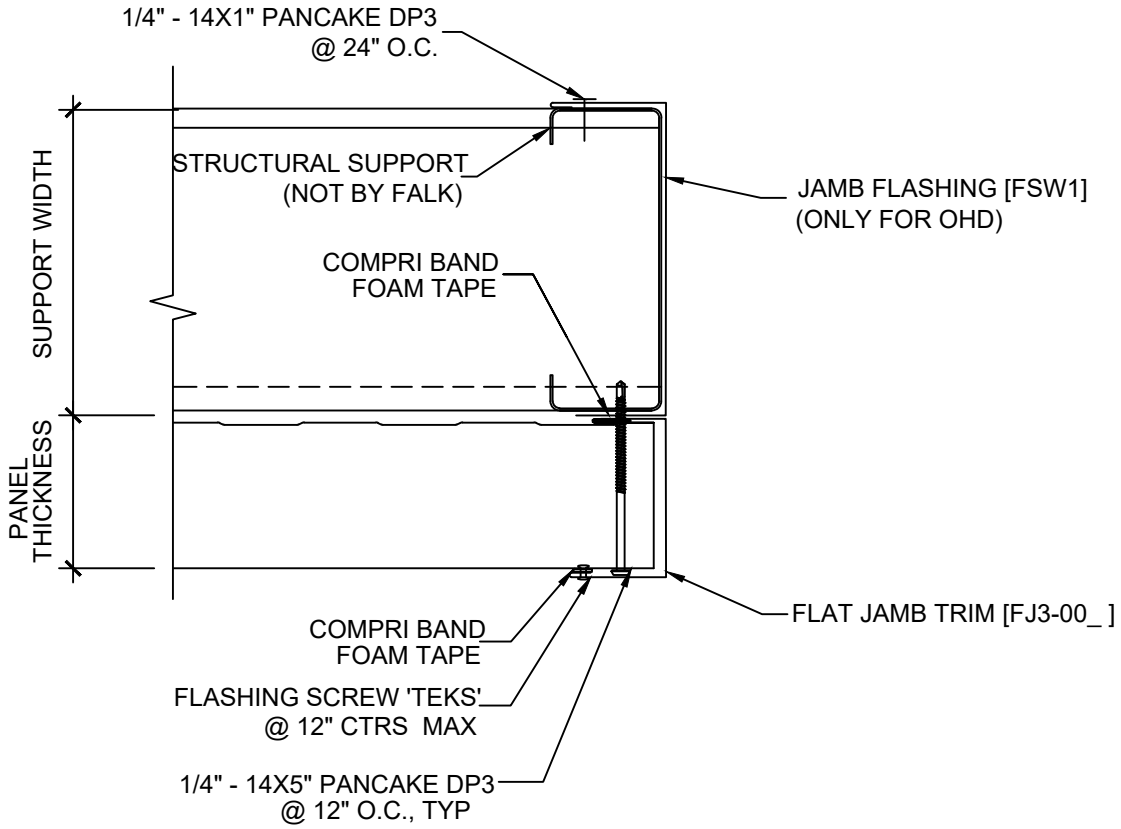
FRAMED OPENING FLAT JAMB TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-FJ-006



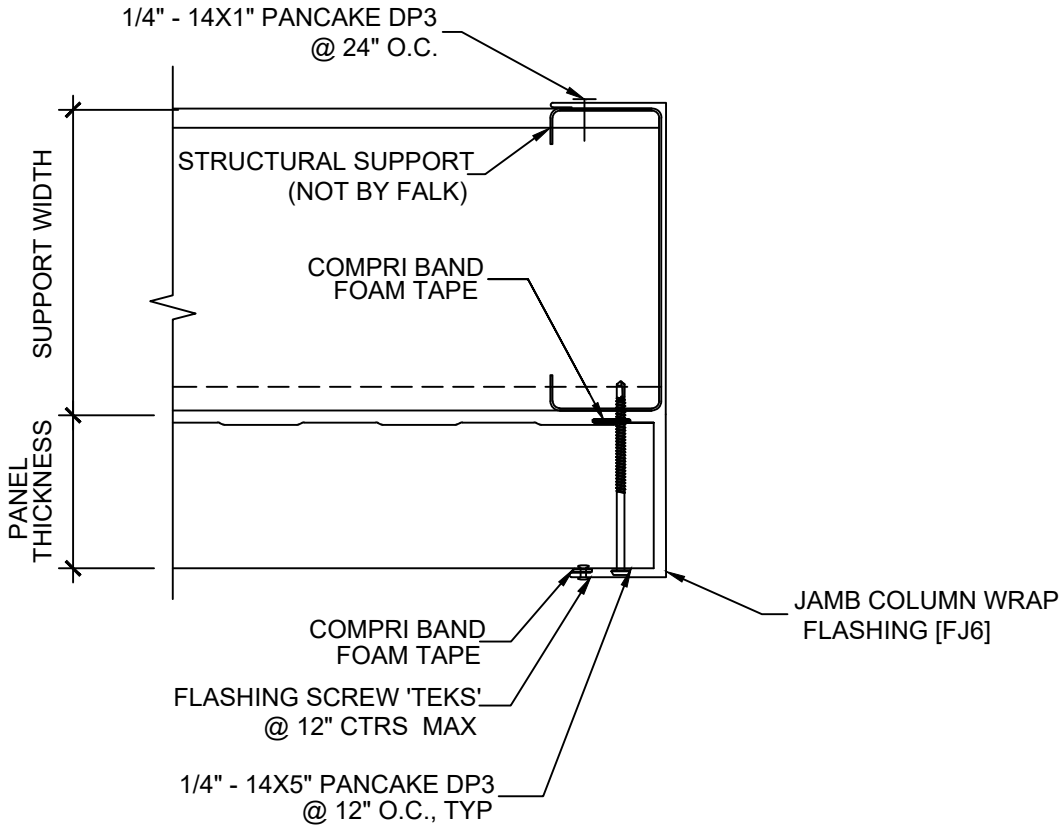
FRAMED OPENING FLAT JAMB TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-FJ-007



FRAMED OPENING FLAT JAMB TRIM W/ COLUMN WRAP DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-FJ-008



INSIDE CORNER BOX TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
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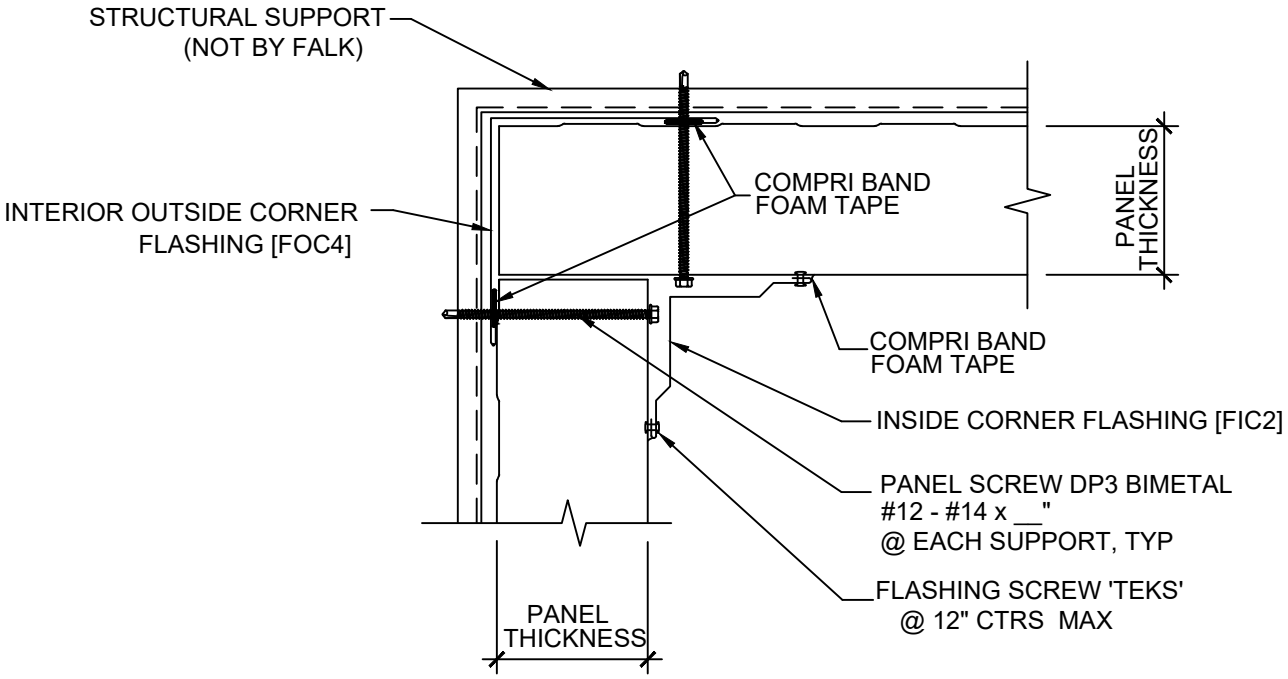
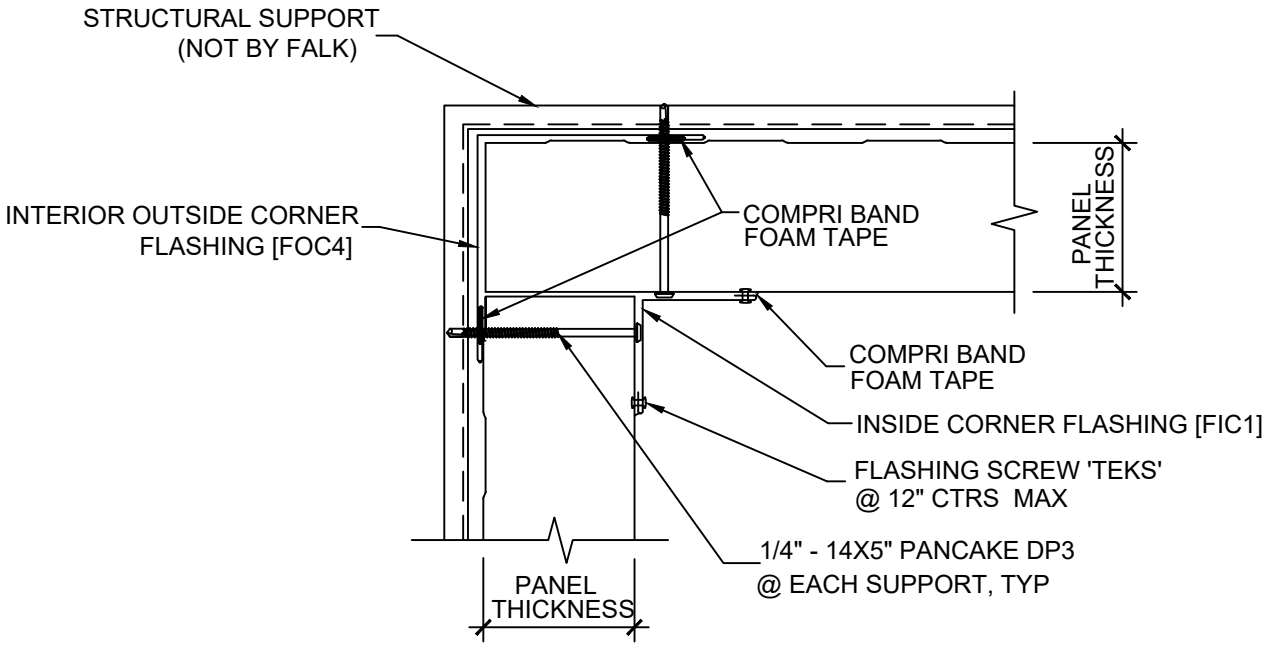


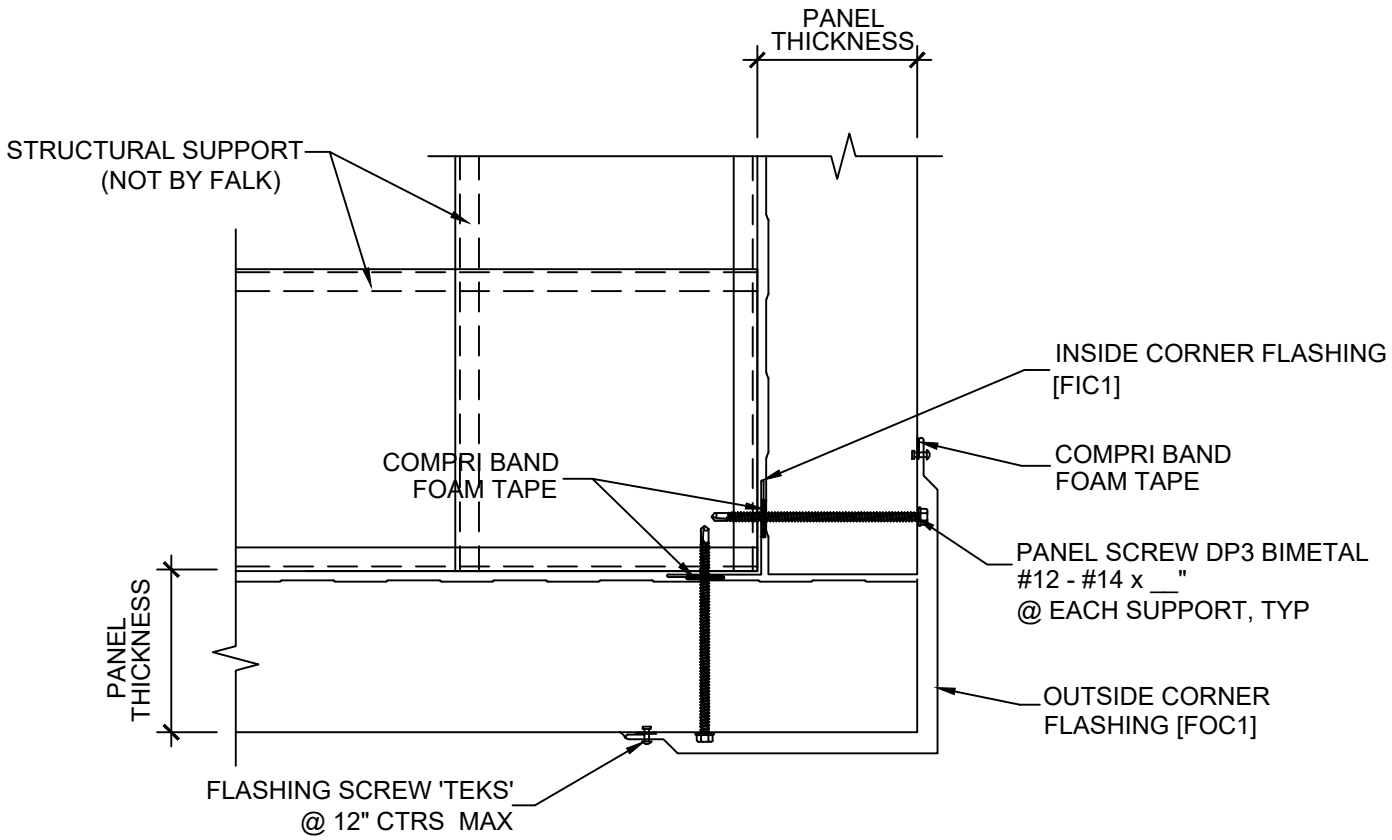
INSIDE CORNER FLAT TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-IC-002



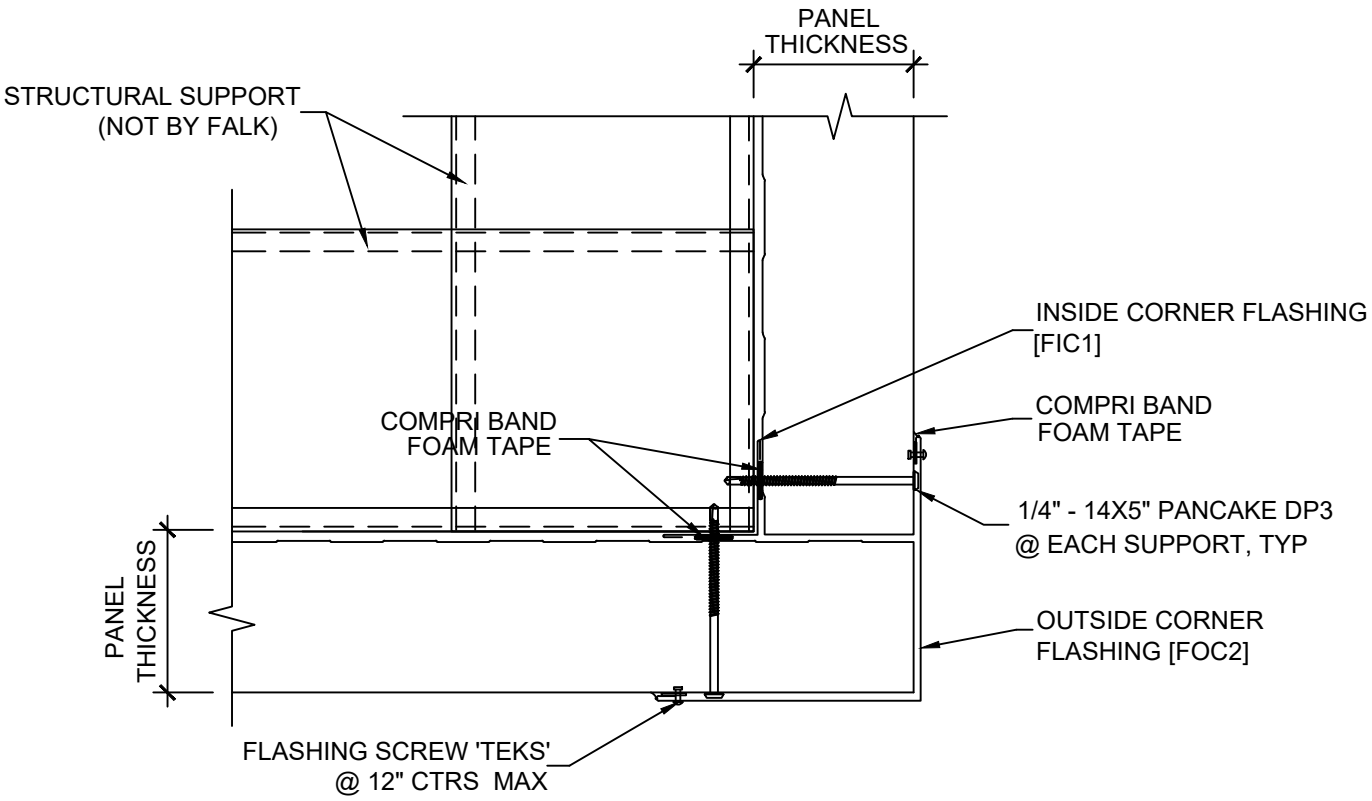
OUTSIDE CORNER BOX TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-OC-001



OUTSIDE CORNER FLAT TRIM DETAIL

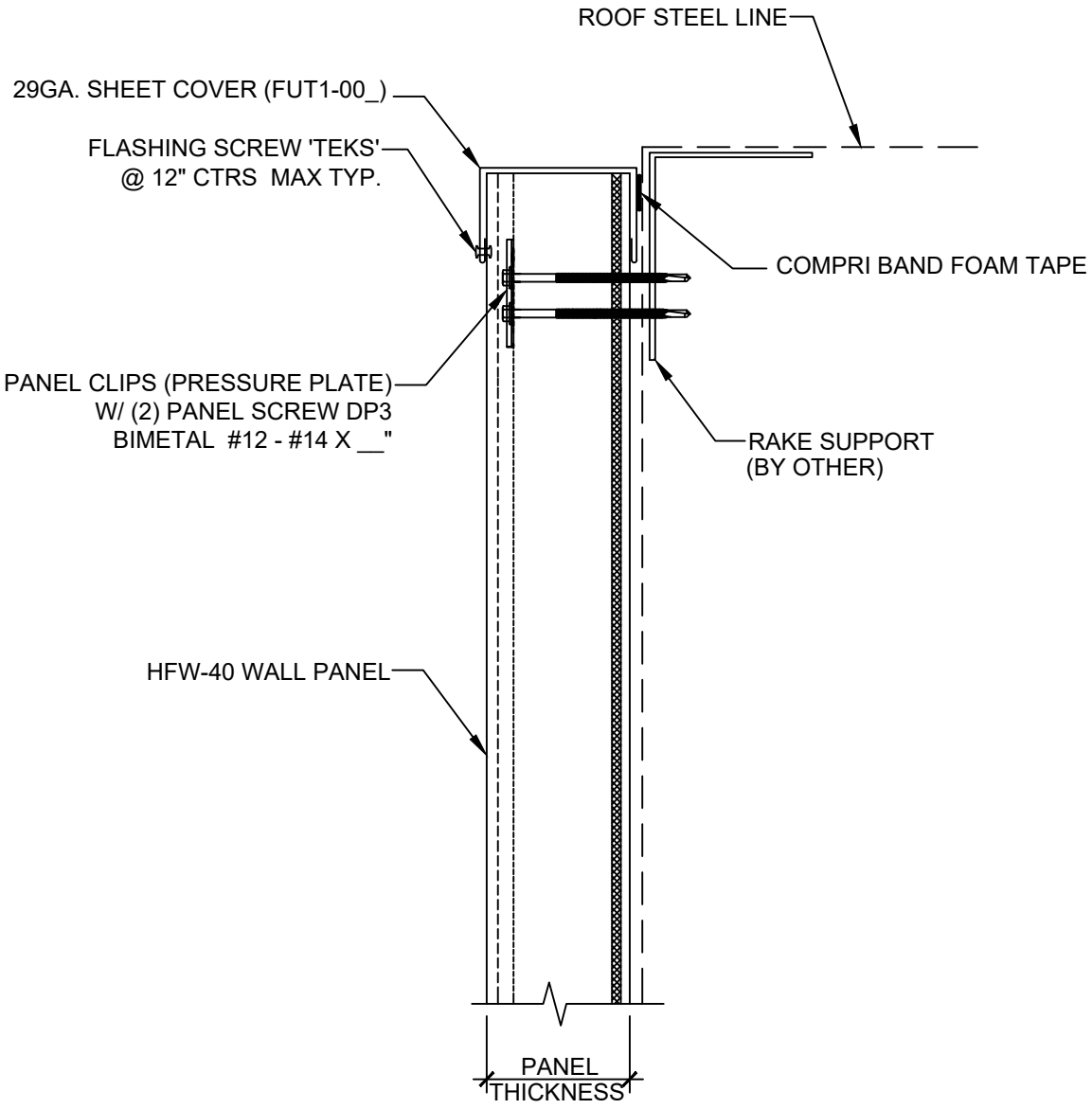
APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-OC-002



RAKE DETAIL

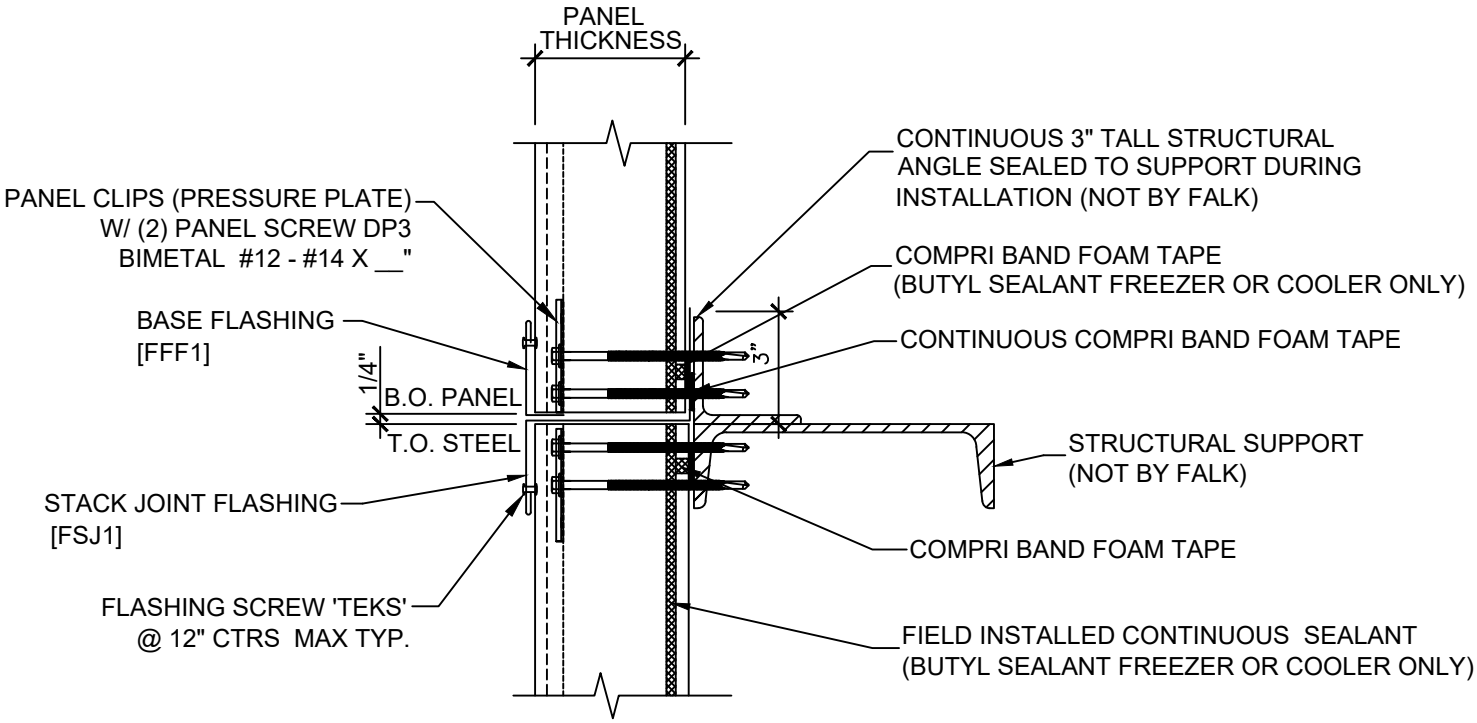
APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-RD-001

U-TRIM TO COVER THE TOP OF THE PANEL FOR PREVENT WATER FROM ENTERING THE PANEL DURING THE INSTALLATION PROCESS.



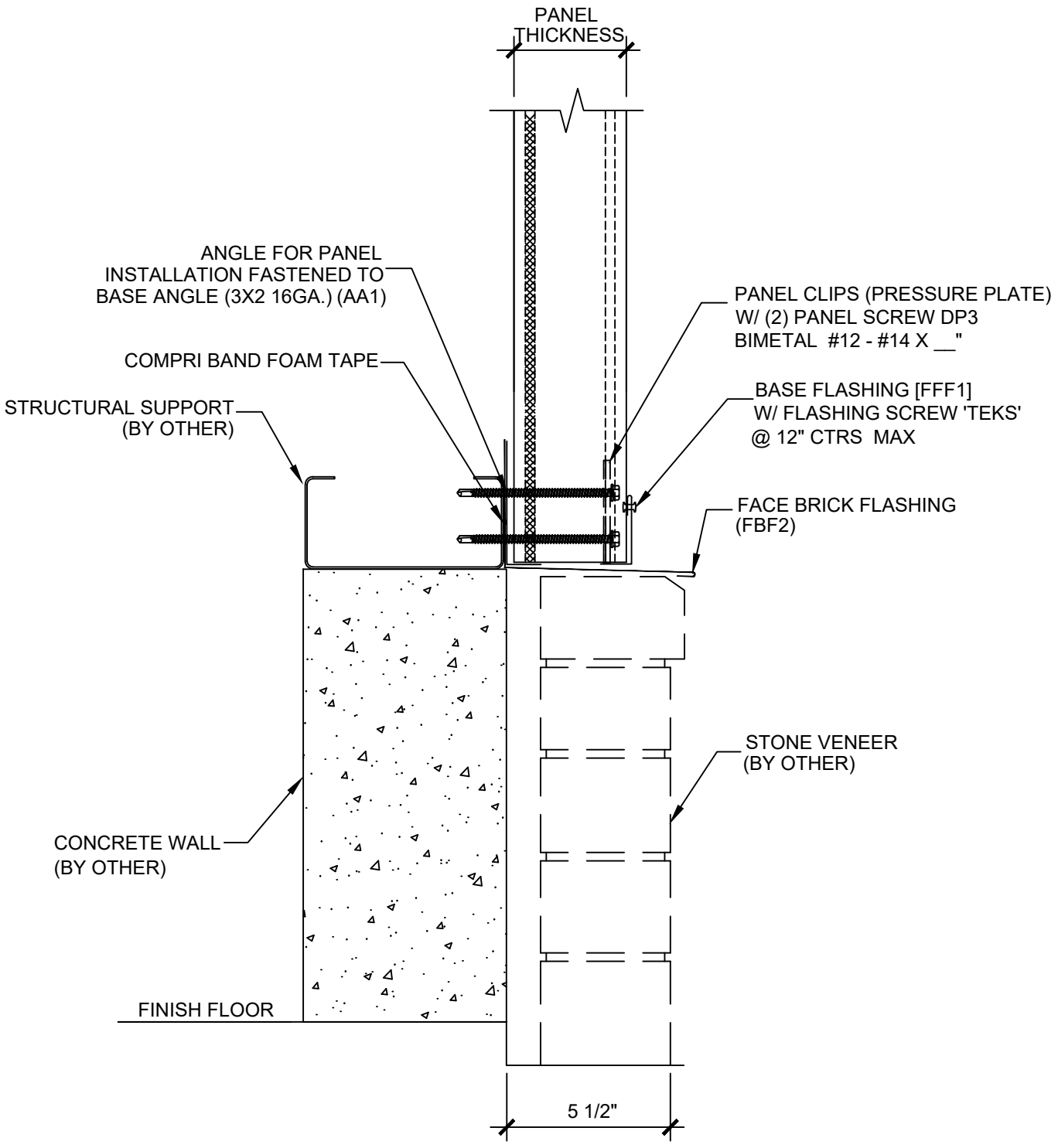
STACK JOINT DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-SJ-001



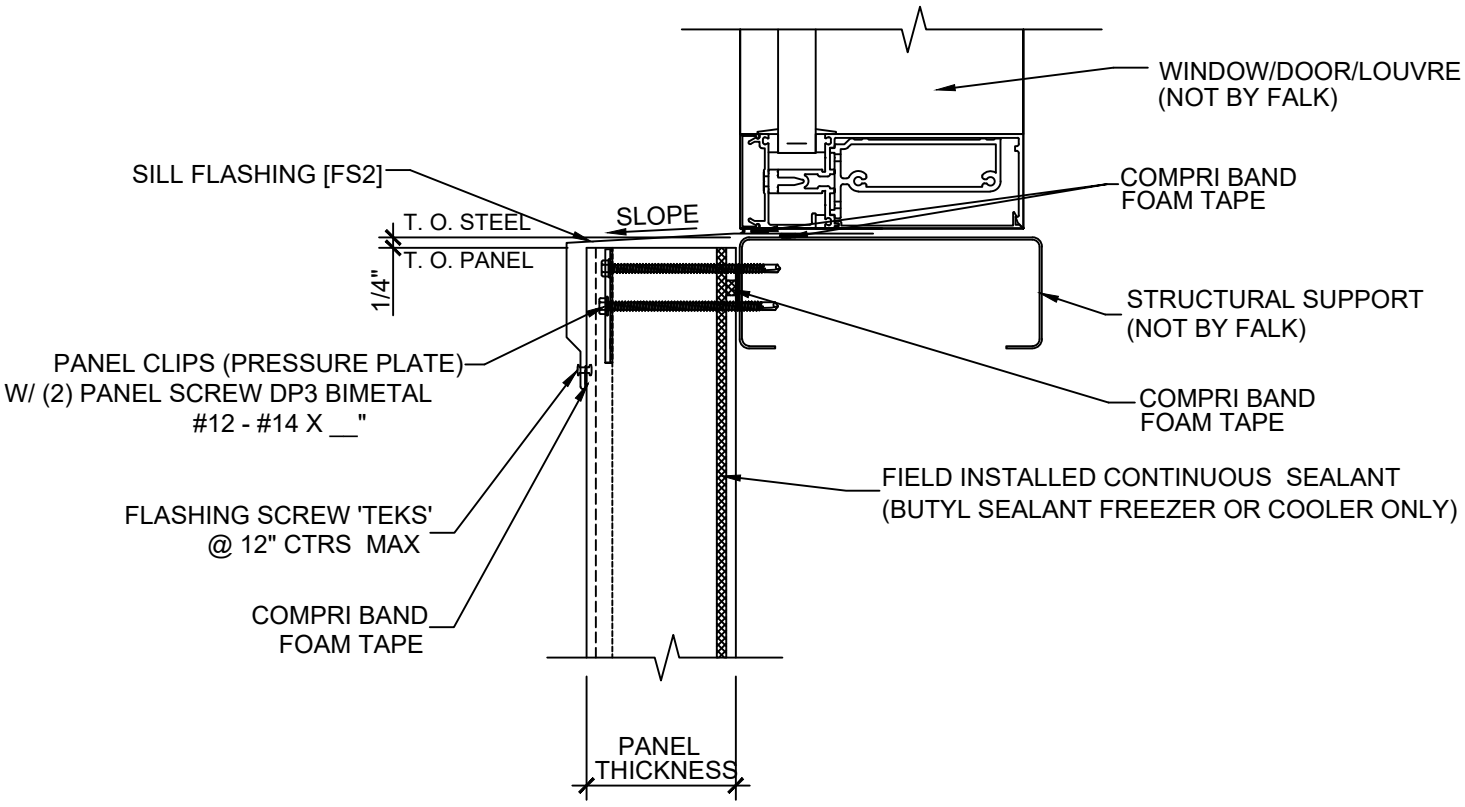
STONE VENEER WALL DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-SV-001



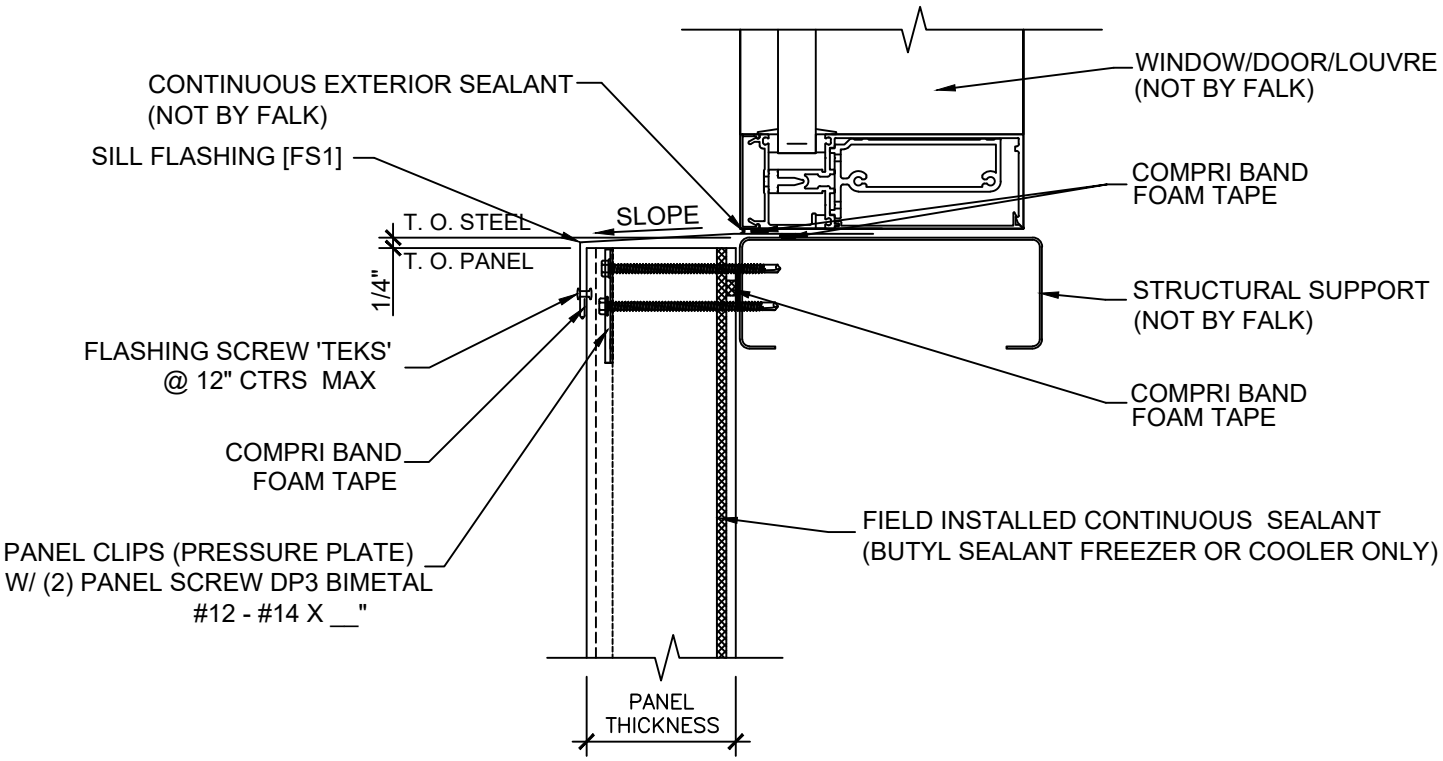
WINDOW SILL BOX TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-WS-001



WINDOW SILL FLAT TRIM DETAIL

APPLICATION: WALL VERTICAL		PANEL TYPE	HFW	ISSUE / REVISION DATE	DETAIL NO.
616.541.4500	www.falkpanel.com	FINISH	STD.	11/20/2023	WV-WS-002



Ottawa County Parcel Report

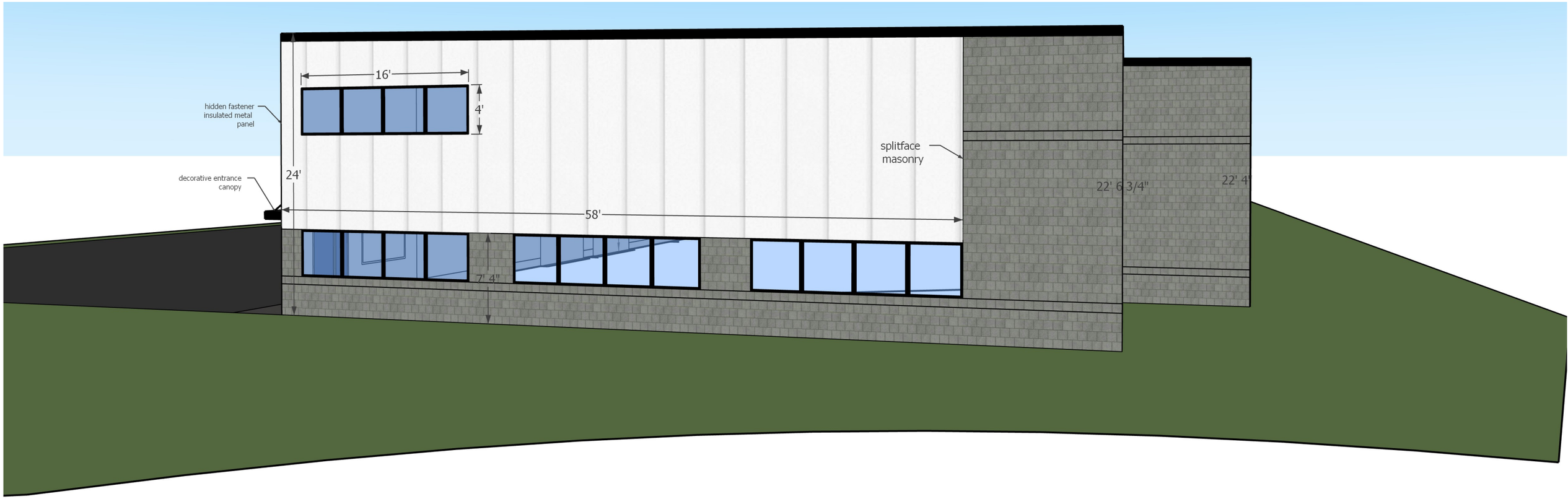
Property Information for 70-09-24-400-047

Legal Owner:	**AIR PARK PARTNERS LLC**		
Site Address:	**4900 ALLEN PARK DR ALLENDALE, MI 49401**		
Government Unit:	**ALLENDALE TOWNSHIP**	Assessed Value:	**$97,300.00**
School District:	**ALLENDALE PUBLIC SCHOOL DIST**	Capped Value:	**$7,999.00**
Property Class:	**INDUSTRIAL-VACANT**	SEV Value:	**$97,300.00**

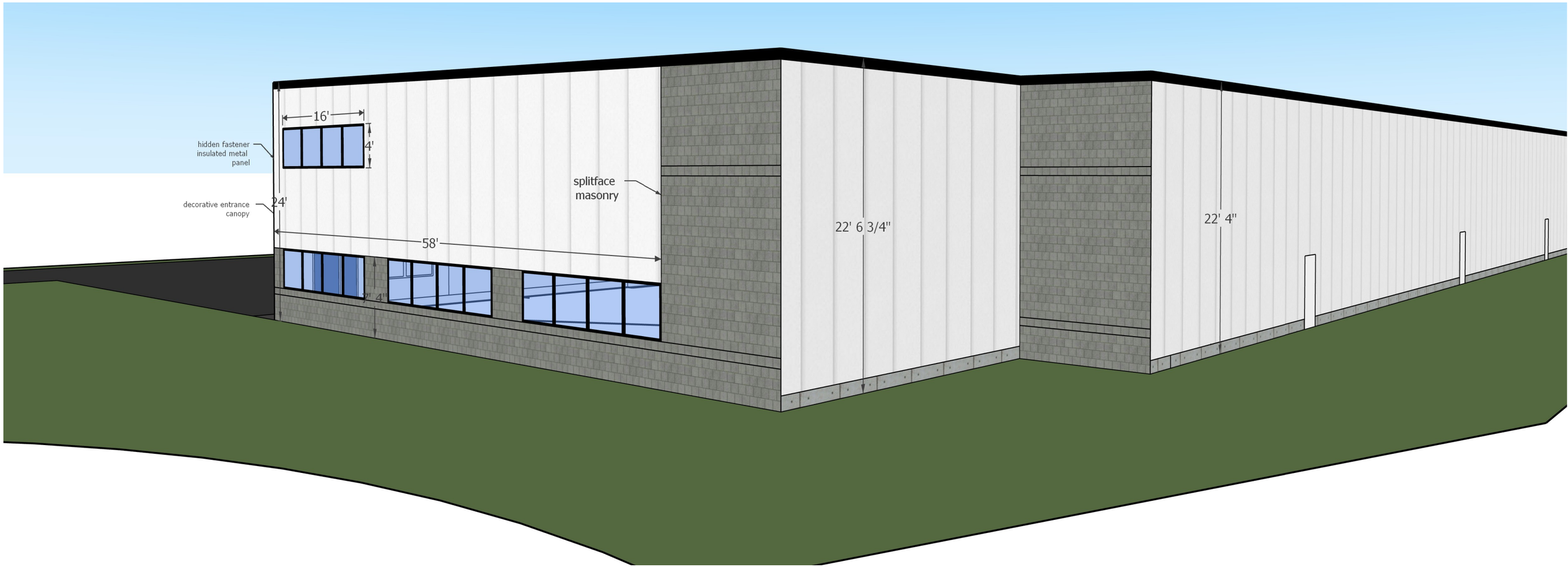
Taxlot Area: 1.54 ac

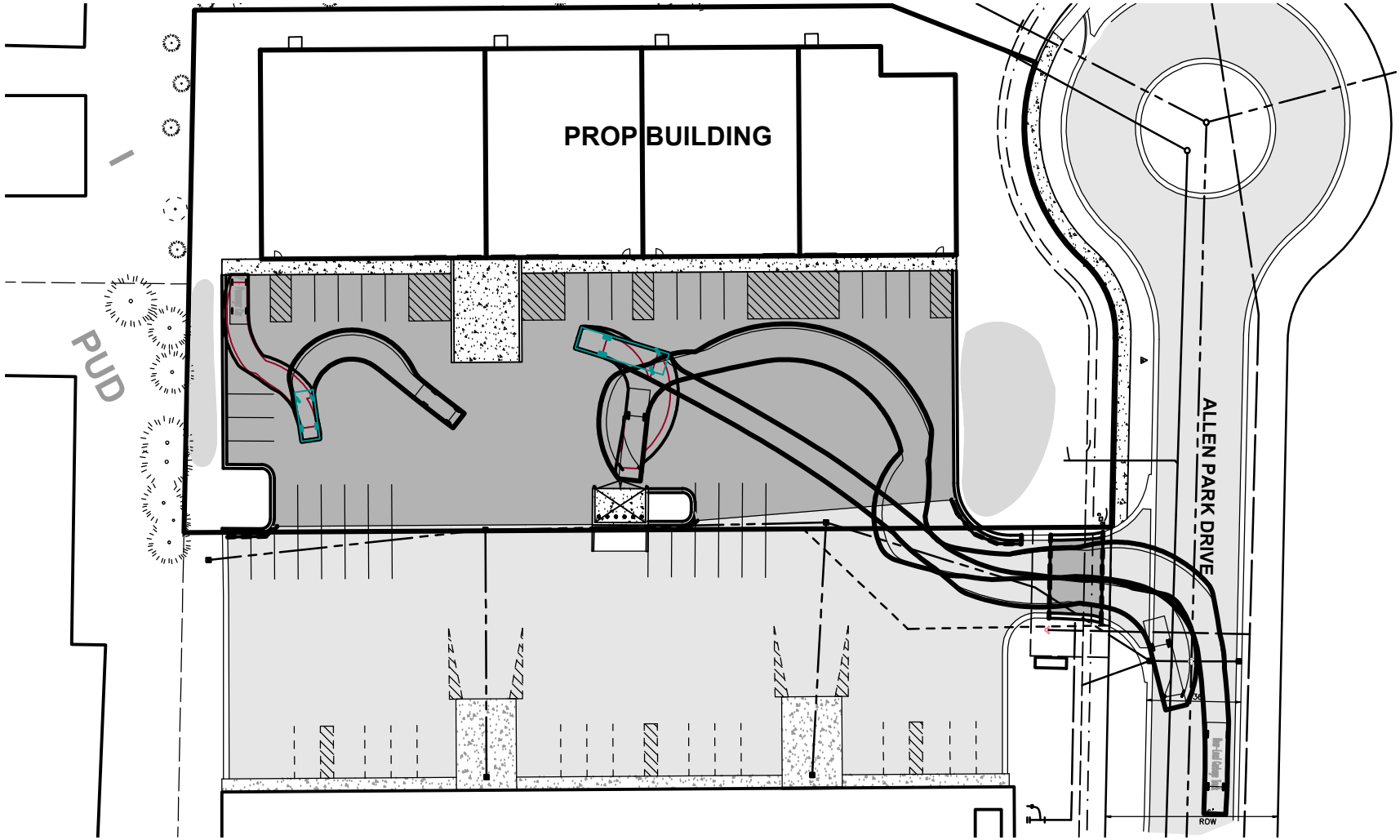
This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

3/31/26 11:03 AM


16'
4'
hidden fastener
insulated metal
panel
splitface
masonry
decorative entrance
canopy
24'
58'
22' 6 3/4"
22' 4"
7' 4"

hidden fastener Insulted metal panel
hidden fastener Insulted metal panel


16'
4'
hidden fastener insulated metal panel
24'
decorative entrance canopy
58'
splitface masonry
22' 6 3/4"
22' 4"



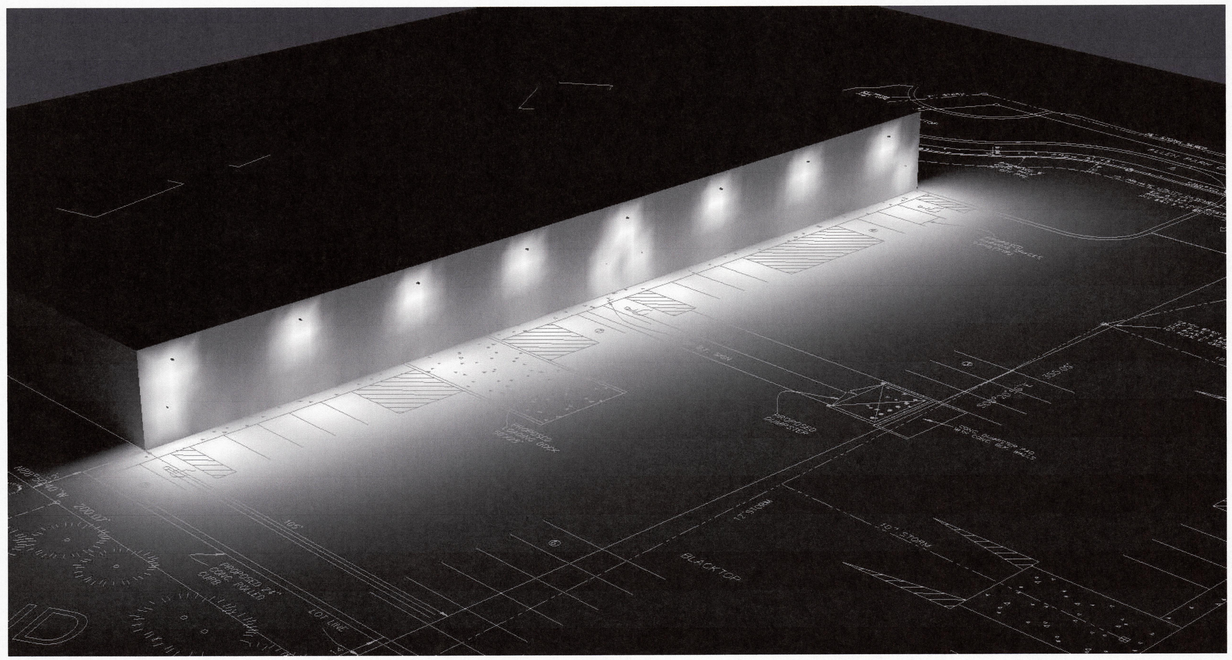
GARBAGE TURNING TEMPLATE #4

SCALE: 1" = 60'

Luminaire Schedule											
Scene: GEN											
Symbol	Qty	Label	Arrangement	LLD	LDD	BF	[MANUFAC]	Description	MNT HEIGHT	MNT TYPE	Ttl Watts
	8	WP12	Single	0.980	0.940	1.000	COOPER - LUMARK	XTOR12B	20	WALL	816
	4	WP2	Single	0.980	0.940	1.000	COOPER - LUMARK	XTOR2B	9	WALL	72.8

Calculation Summary							
Scene: GEN							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING LOT	Illuminance	Fc	2.82	16.9	0.1	28.20	169.00

NOTES:
- CALC AT GRADE



Lumark

DESCRIPTION

The patented Lumark Crosstour™ LED Wall Pack Series of luminaries provides an architectural style with super bright, energy efficient LEDs. The low-profile, rugged die-cast aluminum construction, universal back box, stainless steel hardware along with a sealed and gasketed optical compartment make the Crosstour impervious to contaminants. The Crosstour wall luminaire is ideal for wall/surface, inverted mount for façade/canopy illumination, post/bollard, site lighting, floodlight and low level pathway illumination including stairs. Typical applications include building entrances, multi-use facilities, apartment buildings, institutions, schools, stairways and loading docks test.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Slim, low-profile LED design with rugged one-piece, die-cast aluminum hinged removable door and back box. Matching housing styles incorporate both a small and medium design. The small housing is available in 12W, 18W and 26W. The medium housing is available in the 38W model. Patented secure lock hinge feature allows for safe and easy tool-less electrical connections with the supplied push-in connectors. Back box includes three half-inch, NPT threaded conduit entry points. The universal back box supports both the small and medium forms and mounts to standard 3-1/2" to 4" round and octagonal, 4" square, single gang and masonry junction boxes. Key hole gasket allows for adaptation to junction box or wall. External fin design extracts heat from the fixture surface. One-piece silicone gasket seals door and back box. Minimum 5" wide pole for site lighting application. Not recommended for car wash applications.

Optical
Silicone sealed optical LED chamber incorporates a custom engineered mirrored anodized reflector providing high-efficiency illumination. Optical assembly includes impact-resistant tempered glass and meets IESNA requirements for full cutoff compliance. Available in seven lumen packages; 5000K, 4000K and 3000K CCT.

Electrical
LED driver is mounted to the die-cast housing for optimal heat sinking. LED thermal management system incorporates both conduction and natural convection to transfer heat rapidly away from the LED source. 12W, 18W, 26W and 38W series operate in -40°C to 40°C [-40°F to 104°F]. High ambient 50°C models available. Crosstour luminaires maintain greater than 89% of initial light output after 72,000 hours of operation. Three half-inch NPT threaded conduit entry points allow for thru-branch wiring. Back box is an authorized electrical wiring compartment. Integral LED electronic driver incorporates surge protection, 120-277V 50/60Hz or 347V 60Hz models.

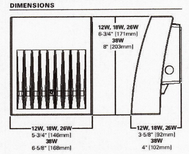
Finish
Crosstour is protected with a Super durable TGIC carbon bronze or summit white polyester powder coat paint. Super durable TGIC powder coat paint finishes withstand extreme climate conditions while providing optimal color and gloss retention of the installed life.

Warranty
Five-year warranty.

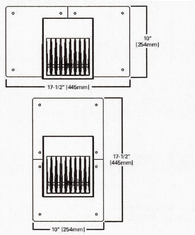
XTOR
CROSSTOUR LED

APPLICATIONS:
WALL / SURFACE
POST / BOLLARD
LOW LEVEL
FLOODLIGHT
INVERTED
SITE LIGHTING

DIMENSIONS



ESCUTCHEON PLATES



CERTIFICATION DATA
Dark Sky Approved (Fixed mount, Full cutoff, and 3000K CCT only)
UL/cUL Wet Location Listed
LM79 / LM80 Compliant
ROHS Compliant
ADA Compliant
NOM Compliant Models
IP66 Ingressed Protection Rated
Title 24 Compliant
DesignLights Consortium® Qualified*

TECHNICAL DATA
40°C Maximum Ambient Temperature
External Supply Wiring 90°C Minimum

EPA
Effective Projected Area (Sq. Ft.):
XTOR1B, XTOR2B, XTOR3B-0.34
XTOR4B-0.45

SHIPPING DATA:
Approximate Net Weight:
3.7 - 5.25 lbs. (1.7 - 2.4 kgs.)

COOPER Lighting Solutions

*www.designlights.org

TD514013EN
March 12, 2020 9:33 AM

SCHEDULES

SCALE: NTS

Filename: S:\GRAND RAPIDS\Layouts\RANDOMS\4900 ALLEN PARK\SITE LIGHTING.AGI

Crites, Tidey, & Assoc., Inc
908C West River Center Dr
Comstock Park MI 49321
PH: 616-647-2400
www.critestidey.com

PHOTOMETRIC EVALUATION
NOT FOR CONSTRUCTION

Based on the information provided, all dimensions and luminaire locations represent a recommended application. The engineer and/or architect must determine the applicability of the layout regarding existing or future field conditions.

This lighting layout represents illumination levels calculated using laboratory data taken under controlled conditions in accordance with The Illuminating Engineering Society (IES) approved method. Actual performance of a manufacturer's luminaires may vary due to changes in electrical voltage, tolerance in LEDs, and other field conditions. Calculations may not include obstructions such as buildings, curbs, landscaping, or other architectural elements. Fixture nomenclature may not include mounting hardware or poles. This layout is for photometric evaluation purposes only and should not be used as a construction document or as a final document for ordering product.

DESIGNED FOR:

Miedema Metal Building Systems
Hudsonville, Michigan 49426

4900 ALLEN PARK DR
ADDRESS

SALES
QUOTES

DATE
5.19.2023

DESIGNER
JEN YONKERS

REVISIONS

DATE	NAME
XX	XX

SHEET
2