Planning Commission

Larry Fox, Chairperson
Michael Mitchell, Vice-Chairperson
Tom Murphy, Secretary
Summer L. McMullen, Trustee
Sue Grissim, Commissioner
Jim Mayer, Commissioner
Matthew Eckman, Commissioner

Planning Commission Meeting Agenda
Hartland Township Hall
Thursday, August 28, 2025
7:00 PM

1. Call to Order
2. Pledge of Allegiance
3. Roll Call
4. Approval of the Agenda
5. Approval of Meeting Minutes
   a. Planning Commission Meeting Minutes of July 24, 2025
6. Call to Public
7. Old and New Business
   a. Site Plan/PD Application #25-015 Chick-fil-A Planned Development (PD) Concept Plan at 10587 Highland Road (former Big Boy)

   b. Site Plan Application #25-005 – Request to amend the approved Final Planned Development (PD) Site Plan for 10081 Highland Road and Amend Planned Development Agreement (Sheetz Fuel Station/Convenience Store)

8. Call to Public
9. Planner's Report
10. Committee Reports
11. Adjournment

HARTLAND TOWNSHIP PLANNING COMMISSION DRAFT MEETING MINUTES

JULY 24, 2025– 7:00 PM

---

1. **Call to Order: Chair Fox called the meeting to order at 7:00 p.m.**

2. **Pledge of Allegiance:**

3. **Roll Call and Recognition of Visitors:**
   Present – Commissioners Eckman, Fox, Grissim, Mayer, McMullen, Mitchell, and Murphy
   Absent – None

4. **Approval of the Meeting Agenda:**
   A Motion to approve the July 24, 2025, Planning Commission Meeting Agenda was made by Commissioner Mitchell and seconded by Commissioner Grissim. Motion carried unanimously.

5. **Approval of Meeting Minutes:**
   a. Planning Commission Regular Meeting Minutes of July 10, 2025.
   A Motion to approve the Planning Commission Regular Meeting Minutes of July 10, 2025, was made by Commissioner Eckman and seconded by Commissioner McMullen. Motion carried unanimously.

6. **Call to the Public:**
   None

7. **Old and New Business**
   a. Site Plan/PD Application #25-008 – Highland Reserve Planned Development (PD)
   Second Amendment to the approved Preliminary PD Site Plan (SP/PD #23-008) and Second Amendment to the Highland Reserve Planned Development Agreement (SP/PD #24-006 Final PD)

   Director Langer stated the following:
   - Gave an overview of the location and scope of the project.
   - East of US 23 near Cundy Road.
   - Original approval excluded an approximate two-acre parcel in the northwest corner of the site. The owner intended to develop it as a commercial use separately. Plan was approved with a potential future commercial use at that location.
   - Applicant came back for Amendment I which included a redesign of a street to a temporary cul-de-sac due to MDOT issues and a redesign of a stormwater detention area. The adjacent property owners have met and have come to an agreement about the Hartland Glen entry design requirements.
   - During that time, it became clear that a future commercial development could have access issues, so the owner worked out an agreement with Highland Reserve to have that portion included in the Highland Reserve PD. They intend to add six additional rental houses at that location, thus Amendment II.

- Two-step process; an amendment to the site plan, which the Planning Commission decides, and an amendment to the Planned Development which the Planning Commission offers a recommendation and the Township Board decides at a future meeting.

The Applicant, Mike West, Green Development Ventures, introduced himself and stated this amendment is about assimilating the northwest corner into Phase 1 of the Planned Development, with six additional rental homes. Everything else is the same. Total number of homes is 108.

Commissioner Grissim stated she is seeing both Preliminary and Final verbiage in the staff report. Director Langer stated both the Preliminary and Final Review have been approved. The Site Plan approval is related to the Preliminary approval, so this is amending the Preliminary Site Plan approval, and the Planned Development amendment is related to the Final Planned Development approval.

Commissioner Grissim asked about the addition of windows on the garage doors. The Applicant stated it was decided during the previous amendment process. The elevation included is an older version. They do intend to include that design modification.

Commissioner Grissim offered the following Motion:

Move to approve Site Plan/PD Application #25-008, a request for a Second Amendment to the approved Preliminary PD Site Plan for Highland Reserve Planned Development, as outlined in the staff memorandum dated July 17, 2025.

Approval is subject to the following conditions:

1. **The applicant shall adequately address the outstanding items noted in the Planning Department's memorandum, dated July 17, 2025, on the Construction Plan Set, subject to an administrative review by Planning staff prior to the issuance of a land use permit.**

2. **Prior to the issuance of a land use permit for the project, the applicant shall secure all applicable permits and approvals from the Michigan Department of Transportation.**

3. **All prior conditions and requirements specified under SP/PD #23-008, SD/PD #24-006, and SD/PD #25-003 shall remain valid.**

4. **The Second Amendment to the Highland Reserve Planned Development Agreement shall be in a recordable format and shall comply with the requirements of the Township Attorney.**

5. **Applicant complies with any requirements of the Township Engineering Consultant, Department of Public Works Director, applicable Fire Code requirements, Michigan Department of Transportation (MDOT), Livingston County Road Commission (LCRC), Livingston County Drain Commission (LCDC), and all other government agencies, as applicable.**

6. **Applicant shall obtain any necessary approvals and permits from the Michigan Department of Environment, Great Lakes, and Energy (EGLE).**

Seconded by Commissioner Mayer. Motion carried unanimously.

Commissioner Eckman offered the following Motion:

Move to recommend approval of the proposed Second Amendment to the Highland Reserve Planned Development Agreement, a request for a Second Amendment to the Highland Reserve Planned Development Agreement, to address the revisions to the approved Preliminary PD Site Plan, as outlined in the staff memorandum dated July 17, 2025.

1. **The Planning Commission has determined the proposed Second Amendment summarizes the proposed revisions to the approved site plan, which includes minor revisions to the development layout, changes to the total number of residential units, and changes to the number of rental units.**

2. **The Planning Commission has determined that the proposed amendment is consistent with the intent of the plans and documents approved under SP/PD #23-008 (Preliminary PD), SP/PD #24-006 (Final PD), and SP/PD #25-003 (Amendment to approved Preliminary PD Site Plan)**

3. **The proposed Second Amendment document shall be revised to address comments provided by the Township Attorney, as applicable.**

Seconded by Commissioner Mitchell. Motion carried unanimously.

b. Site Plan Application #25-009 - Proposed LOC Credit Union with drive-through service at Shops at Waldenwoods PD

Director Langer stated the following:
- Gave an overview of the location and scope of the project.
- West of US 23, north side of M-59 near Target.
- Already a Planned Development.
- Proposing a 2,100 square foot bank with drive-through lanes.
- LOC is currently operating from a store front in Fountain Square. Customers desire a drive-through option, owners would like better visibility for their storefront, so they are building a new building with a drive-through.
- Want to stay in the community.
- Here for Site Plan Approval from the Planning Commission.

The Applicant, Stephen Grech, CEO of LOC Credit Union; Wayne Perry, Desine, Inc.; Mike O'Leary, Lindhout Associates Architects; introduced themselves and stated the following:
- LOC Credit Union has been in Hartland for about 18 years.
- Endcap of the Fountain Square Development.

- When they opened years ago, the storefront visibility was better as the old Speedway building was smaller.

The Applicant displayed a sample board and described some of the proposed materials.

SITE PLAN REVIEW

Off-Street Parking (Sec. 5.8, for Banks, Savings and Loan Offices)

Director Langer stated the following:

- Based on the size of the building, the Ordinance requires 13 spaces, the Applicant is proposing 11.
- The Planning Commission may reduce the number of spaces based on historical knowledge of the actual number needed for a particular use.

The Planning Commission agreed.

Director Langer stated the access drive to the north of the site was approved with the original development and he is unclear if the front setback requirement should be applied in this case as there is no public road frontage. If it is considered a private road, it would meet the 20-foot setback requirement. The Planning Commission must determine if it is acceptable.

Commissioner Murphy asked what the address would be. Chair Fox replied Highland Road.

The Planning Commission agreed.

Commissioner Grissim asked about the geometry of the drive. The Applicant stated historically, the approved PD plans show a potential shared drive on the east side of LOC which is why it is squared off.

Landscaping (Sec. 5.11 – Updated Landscape Ordinance version)

Commissioner Grissim stated the following:

- Landscape looks great.
- There is a new updated ordinance for landscaping, unsure which was used, the design looks really nice but around the trash enclosure, shrubs are no longer required.
- Stone strip along the east and south sides, typically they are about two feet wide to keep it modest.
- Concerned about the type of plants leading up to the front door, may want to consider something that is more salt tolerant.

Lighting (Sec. 5.13)

Director Langer stated the following:

- Exceeds footcandle (fc) value allowed at the main building.
- Exceeds fc value under the canopy.
- Should revise drawing of the light pole and base to state the total height of pole and base.

Staff can work all of that out with the Applicant on the construction drawings.

The Applicant requested to have a higher fc under the drive-through canopy for security purposes.

The Planning Commission discussed permitting a higher fc value under the drive-through with the ATM. Chair Fox asked if the Planning Commission would allow the Planning Staff to work with the Applicant to resolve this issue. The Planning Commission agreed.

Commissioner Mitchell offered the following Motion:

Move to approve Site Plan Application #25-009, a request to construct an approximate 2,100 square foot commercial building for LOC Credit Union, with drive-through service, on a vacant parcel, located in the Shops at Waldenwoods Planned Development, (Parcel ID #4708-20-400-017), as outlined in the staff memorandum dated July 17, 2025.

Approval is subject to the following conditions:

1. **The applicant shall adequately address the outstanding items noted in the Planning Department's memorandum, dated July 17, 2025. Revised plans, if necessary, shall be subject to an administrative review by the Planning staff prior to the issuance of a land use permit.**

2. **A land use permit is required prior to construction.**

3. **Applicant complies with any requirements of the Township Engineering Consultant, Department of Public Works Director, Hartland Deerfield Fire Authority, and all other government agencies, as applicable.**

4. **The applicant shall work with the Planning Department on a revised photometric plan during the construction review.**

Seconded by Commissioner Murphy. Motion carried unanimously.

8. **Public Hearing**

a. Site Plan/PD Application #25-012 Urban Air Adventure Park PD Preliminary Planned Development Site Plan.

Chair Fox explained the process and opened the Public Hearing at 7:38 PM stating all public notice requirements have been met.

Director Langer stated the following:

- Gave an overview of the location and scope of the project.
- East of Old US 23, south of M-59, vacant parcels behind Fountain Square.
- Includes a 38,400 square foot building for rock climbing, trampoline, zip line, laser tag, activities mostly geared toward children.
- Applicant proposed to develop this site using the Planned Development process which is a three-step process; a Concept Plan, Preliminary Plan, and Final Plan are all reviewed by the Planning Commission and the Township Board, with the Planning Commission making a recommendation and the Board having final approval at each step. This project is at the Preliminary Plan Review step.

- Final approval is essentially a rezoning to PD Planned Development.

The Applicant, Shannon Easter White, architect and owner of FUNchitecture LLC, and Nate Sumner, owner, introduced themselves.

Call to the Public
Lacey Cripe, business owner on Old US 23; had questions about water and sewer, concerns about traffic, timing of construction.

Chair Fox closed the Public Hearing at 7:49 PM.

Chair Fox referred to the staff memorandum dated July 17, 2025.

Eligibility Criteria (Section 3.1.18.B.)

The Planning Commission made no comments.

Planned Development Design Standards (Section 3.1.18.C.)

Building Height
Chair Fox stated the proposed building height is 36 feet 6 inches, slightly taller than the 35 feet limit. The Applicant has asked for a waiver.

The Planning Commission granted the waiver.

Parking and Loading
Director Langer stated there is no dedicated loading space shown but many other businesses do not have a dedicated loading space. Typically, trucks do not show up at peak business hours. There is an area near the dumpsters where a truck would logically unload, or they may pull up near the front door at off-peak times.

The Planning Commission had no issues with this item.

Requirements for Preliminary Review (Section 3.1.18.E.ii)

Sewer and Water
Chair Fox stated the Applicant is working with the Department of Public Works (DPW) for access to sewer and water.

Director Langer stated he can respond generally as he does not know which facility the commentor represents off Old US 23. He continued stating the following:

- Site will be served with municipal water and sewer.
- Hartland Township does not have its own sewage treatment facility.
- Sanitary sewer ultimately ends up in Genesee County and there are limits to that capacity.
- Hartland has not yet reached that capacity limit.
- DPW needs more information from the applicant regarding REUs as this is not a common use.

- Once there is a determination as to how many REUs for water and REUs for sewer will be required, the Applicant must purchase those prior to construction approval.
- Hartland Brewing Company experienced some issues with Genesee County Drain Commission due to the yeast involved in their brewing process, if that would end up in the sewer system, and how that might affect the sewage treatment process. The yeast issue required special filters to be installed. Resolving this problem took significantly longer than expected.
- Issues of that nature are not anticipated for this project.

Stormwater and Drainage
Chair Fox encouraged the Applicant to communicate with the State of Michigan Department of Environment, Great Lakes and Energy (EGLE) regarding the wetland.

Commissioner Grissim inquired about plans for a fountain in the sediment basin. The Applicant stated they are still waiting on final engineering for the depth but would like to add a fountain if possible.

The Planning Commission briefly discussed the issue stating it is up to EGLE to determine what can and cannot occur in an area that overflows into or near a wetland area.

Traffic
Director Langer stated the following:

- Applicant provided information from the Institute of Traffic Engineers (ITE) manual.
- Two possible categories as there is not a specific one for Adventure Parks such as this: Land Use Code 435 (Multi-purpose Recreational Facility) and Land Use Code 436 (Trampoline Park).
- Provided PM Peak calculations as this is most likely not a heavy AM Peak use.
- Numbers shown are not significant.
- Applicant's proposal is to primarily use the southern access off Old US 23 through Hartland Town Center.
- The question of traffic cutting through private property is difficult for the Township to address; the Township can only plan for traffic coming and going to the proposed site.
- Applicant needs an easement to connect at the north end and at the southern end through the Hartland Town Center property.
- Any traffic calming devices would need to be added off of this site to address the issue, which is beyond the Township's or the Applicant's purview.
- Layout has been specifically designed for traffic to flow using the southern access.
- The north access is important as it allows better maneuverability for fire trucks as well as a second access.
- Use is primarily for children so the timing would be after school, evenings, and weekends most likely.
- Do not have a good answer for how people drive or what direction they chose to go; the Township has no ability to improve or change anything off of the site.
- There is no information as to when construction will occur for any project; even when there is a timeframe, it seems like those plans are often changed.

Chair Fox stated parking lots are connected by design, it is a big thing in Planning.

The Planning Commission briefly discussed their experiences with traffic at that location.

Site Requirements
Parking Lot / Driveway / Internal Roads Setbacks (Sec. 5.8.3.)

Director Langer stated the following:
- All parking areas meet the setbacks.
- Parking on the west is a shared parking area; thus, parking setbacks here are not required.
- Applicant intends to improve the west shared parking area with some landscape islands and dumpster enclosures all of which are beyond the boundaries of their property, with the neighboring property owner's permission.

Off-Street Parking (Sec. 5.8.4.H – Parking requirements for this use not listed)

Director Langer stated the ordinance states 192 spaces are required; the Applicant has provided information from other facilities showing 154 spaces are adequate. They are proposing 161 spaces.

The Planning Commission made no comments.

Landscaping (Section 5.11 – Updated Landscape Ordinance version)

Commissioner Grissim stated the following:
- Appreciates how the Applicant intends to clean up the parking area to the west.
- Foundation plantings.
  - Some elevations show landscaping next to the building, but those items are not shown on the Landscape Plan.
  - With such a large building, the narrow width of the foundation planting area seems dwarfed and not in scale.
  - There is note that states for a building that is greater than 20 feet, longer than 70 feet, the foundation plantings should be a little larger in size to be in scale with the building.
  - Suggested the Applicant work with the Planning Department to ensure the overall look is pleasing.
- Use of stone mulch.
  - A 2-foot-wide stone maintenance strip is permitted along the foundation wall.
  - Proposed width of stone strip is 4 feet.
  - Suggested the use of bark mulch.
- Some mistakes regarding plant counts and incorrect landscape standards are listed but staff will work with the applicant regarding the corrections to the data for the Construction Plan set.

Commissioner Mayer asked about the height of the flagpole. Commissioner Grissim stated it is 40 feet with a flag sized for that height.

Lighting (Sec. 5.13)
Director Langer mentioned there are areas on the Lighting Plan missing the fc number which can be corrected on the Construction Plan set.

Architecture / Building Materials (Sec. 5.24)
Chair Fox stated rather than get into all the details, he asked if the Planning Commission likes the way the building looks.

The Planning Commission stated they approve the Architecture and Building Materials as proposed.

Chair Fox stated congratulations, it is very creative. The Applicant did well.

Director Langer stated there are a couple of comments about the height of the flagpole and the size of the proposed flags exceeding the requirements. Chair Fox stated it is a big building; standard size flags and poles would look a little wimpy, and it is a PD.

Commissioner Eckman stated he thinks it will look nice along the freeway. The Applicant confirmed that it is common for their sites.

The Planning Commission approved the height of the flagpole and size of the flag.

Easement Plan
Director Langer stated easements are typically part of the Final PD review, but the Applicant has shared a draft. The Township will ask the Applicant to incorporate the landscaping with irrigation for the parking lot islands into the easement.

Signage Packet
Chair Fox stated their signs are a little different than the Planning Commission is used to seeing, which brings him back to the question do you like how they look?

The Planning Commission approved the signage package as proposed.

Director Langer stated a monument sign has been proposed near Old US 23 since the Conceptual review; however, the exact location has not been determined. No information was included for the Preliminary review, so staff has asked the Applicant to provide the monument sign information as part of the Final PD process. The Applicant stated they are in the process of working it out with the property owner.

Commissioner Eckman offered the following Motion:

Move to recommend approval of Site Plan/PD #25-012, the Preliminary Planned Development Site Plan for Urban Air Adventure Park Planned Development, as outlined in the staff memorandum dated July 17, 2025

Approval is subject to the following conditions:

1. **The Preliminary Planned Development Site Plan for Urban Air Adventure Park Planned Development, SP/PD #25-012, is subject to the approval of the Township Board.**

2. **Waiver request for the planned development project area to be less than 20 acres is approved.**

3. **Waiver request for the building height to exceed 35 feet is approved.**

4. **The applicant shall adequately address the outstanding items noted in the Planning Department's memorandum, dated July 17, 2025, on the Construction Plan Set, subject to an administrative review by Planning staff prior to the issuance of a land use permit.**

5. **As part of the Final Plan Review, the applicant shall provide all applicable easement documents. The documents shall be in a recordable format and shall comply with the requirements of the Township Attorney.**

6. **The two (2) parcels that comprise the project area shall be combined prior to the issuance of a land use permit.**

7. **Applicant complies with any requirements of the Township Engineering Consultant, Department of Public Works Director, Hartland Deerfield Fire Authority, and all other government agencies, as applicable.**

8. **Applicant complies with any requirements of the Michigan Department of Environment, Great Lakes, and Energy (EGLE), regarding applicable permits and approvals, if necessary.**

9. **Roof-mounted mechanical units (RTU) should be properly screened or not visible to the Planning Commission's satisfaction, as shown on the Final PD plans.**

10. **Monument signs shall be shown on the Final PD plans.**

Seconded by Commissioner Mayer. Motion carried unanimously.

9. **Call to the Public:**
   None

10. **Planner Report:**
    None

11. **Committee Reports:**
    None

12. **Adjournment:**
    A Motion to adjourn was made by Commissioner Mitchell and seconded by Commissioner Murphy. Motion carried unanimously. The meeting was adjourned at approximately 8:25 PM.

Hartland Township Planning Commission Meeting Agenda Memorandum

Submitted By: Troy Langer, Planning Director

Subject: Site Plan/PD Application #25-015 Chick-fil-A Planned Development (PD) Concept Plan at 10587 Highland Road (former Big Boy)

Date: August 21, 2025

Recommended Action
No formal action shall be taken by the Planning Commission or the Township Board as part of a Planned Development Concept Plan review. The Planning Commission should provide comments to the applicant about the Concept Plan for the proposed restaurant with drive-through service and whether it is indicative of a plan that can and will meet the intent, design standards, and eligibility criteria of the Planned Development process.

Discussion

Applicant: Jordan Chapman

Site Description
The subject property, addressed as 10587 Highland Road, is located north of Highland Road and east of Hartland Road in Section 21 of the Township. It was formerly occupied by Big Boy restaurant from 1979 to around 2023, when the restaurant closed. The existing restaurant building will be removed, and the parking lot will undergo some layout changes as part of the proposed Chick-fil-A. The site is zoned GC (General Commercial) and is approximately 1.65 acres in size (Tax Parcel ID #4708-21-400-062).

This property is considered a corner lot with approximately 200 lineal feet along Highland Road and approximately 327 lineal feet along Hartland Road. There are existing driveways and access into the subject site via Highland Road on the south, Hartland Road on the west, and Rovey Drive on the north.

The Future Land Use Map (FLUM) designates the subject site and adjacent properties to the north, south (south side Highland Road), east, and west as Commercial.

Overview and Background Information

Site Plan Applications #10 (1979)
The Big Boy restaurant was approved on June 19, 1979, under SP Application #10.

Site Plan Application #10A (1979)
On October 16, 1979, SP Application #10A was approved for minor revisions to SP Application #10, including revisions to the parking area, storm drain, and well location.

Site Plan Application #30 (1984)
SP Application #30 was approved on March 15, 1984, for an addition to the front (south) of the building, as a Minor/Major modification of SP Application #10.

Site Plan Application #455 (2008)
This application was related to the improvements on Highland Road (widening of Highland Road) which included the elimination of the west driveway; reworking of the east driveway (on Highland Road); and modifications to the parking lot. SP Application #455 was approved on July 1, 2008.

Site Plan Application #466 (2008)
Modifications to the exterior of the building were approved under SP #455 on October 7, 2008.

ZBA #516 (2008)
Hartland Road and the associated road right-of-way were relocated as part of the overall plan for Hartland Towne Square Planned Development. Changes to the right-of-way for Highland Road also occurred. These changes prompted several variances associated with required setbacks for the existing Big Boy building that included a variance for parking to be located in the front yard along the Hartland Road frontage and a variance for the existing monument sign to be located within the 10-foot setback of the right-of-way of Highland Road. The variances were approved on June 18, 2008.

Site Plan with Special Land Use Application #24-008
In 2024, SP/SUP #24-008 was submitted, as a request to redevelop 10587 Highland Road with the removal of the Big Boy building and the construction of an automobile wash within a completely enclosed building. The application did not proceed to the Planning Commission or Township Board.

Planned Development Procedure
Section 3.1.18 of the Township's Zoning Ordinance provides standards and approval procedures for a Planned Development (PD). Approval of a Planned Development is a three-step process. A Concept Plan, Preliminary Plan, and Final Plan are all reviewed by the Planning Commission and the Township Board, with the Planning Commission making a recommendation and the Board having final approval at each step. The process usually requires a rezoning from the existing zoning district to the Planned Development (PD) zoning district. As part of the rezoning, a public hearing is held before the Planning Commission consistent with the Michigan Zoning Enabling Act; this public hearing is held at the same meeting during which the Planning Commission reviews and makes a recommendation on the Preliminary Plan. Approval of the Final Plan by the Township Board usually constitutes a rezoning of the subject property to PD.

Proposed Concept Plan

A. General
General Layout
The applicant has submitted a Concept PD Plan for the redevelopment of the former Big Boy site and the construction of an approximate 5,027 square foot building for a restaurant with drive-through service for a Chick-fil-A restaurant. The existing Big Boy building will be removed and replaced with a Chick-fil-A building. Outdoor seating (16 seats) is shown on the north side of the building. Seventy (70) seats are available for dining inside the restaurant per the Concept Plan however, a floor plan was not provided.

Sixty-nine (69) parking spaces are located north of the building, in the center of the site and to the north. Two (2) one-way lanes wrap around the building along the perimeter of the site, which are associated with the drive-through service options of the restaurant. Per the Site Data Chart, a total of forty-nine (49) stacking spaces are provided in the drive-through lanes but are not shown on the plans. Two (2) flat-roofed, metal canopy structures are associated with the drive-through lanes, with a canopy structure on the west for placing food orders, and one on the east, for food order pick-up.

Zoning Information
The property is currently zoned GC (General Commercial) which allows for a restaurant with drive-in or drive-through service, as a Special Land Use. Separate standards for Fast Food and Drive-through Restaurants are found in Section 4.28. Standards for Outdoor Seating and Dining are found in Section 4.47. The applicant has decided to pursue the Planned Development option for the proposed Chick-fil-A project.

Parcel Size – PD Requirements
The subject parcel is approximately 1.65 acres per the Township Assessing Department records. Per Section 3.1.18.B.ii, the minimum size for a Planned Development is twenty (20) acres of contiguous land. The Township Board, upon recommendation from the Planning Commission, may permit a smaller Planned Development subject to meeting the requirements in Section 3.1.18.B.ii, such as the project offers unique characteristics and benefits or the parcel in question has unique characteristics that significantly impact development. The applicant is to submit a letter to the Township requesting a waiver of the minimum Planned Development size requirements and explaining the basis for the request. A waiver request was not submitted with this application but would be required for the Preliminary PD Site Plan application; however, the Planning Commission should identify any concerns they may have at this time.

Site Layout and Circulation
The site is accessed via existing driveways on Highland Road and Hartland Road. The site can also be accessed from Rovey Drive on the north via an existing service drive from Rovey Drive into the subject site. The Highland Road driveway accommodates one-way traffic into the site from west bound traffic on Highland Road, and one-way traffic outbound onto Highland Road, with a traffic island in the middle. Highland Road is under the jurisdiction of the Michigan Department of Transportation (MDOT). Hartland Road is a public road, under the jurisdiction of the Livingston County Road Commission (LCRC). Rovey Drive is a private road. Changes are not proposed to any driveway or access point.

Regarding the site layout for the proposed restaurant, the proposed building is positioned in the southern portion of the site, approximately in the same location as the former Big Boy building. The main entrance to the restaurant is on the north side of the building.

Site circulation for drive-through service begins along the west side of the site. The two (2), one-way drive lanes are along the west side of the site and travel north to south. The lanes wrap around the building on the south and east. These lanes are utilized for the drive-through ordering stations and pick-up service options. The width of the drive lane varies from 10.5 feet to 12.5 feet.

Two (2) canopy structures are shown, which are related to the drive-through service use. One canopy is on the west (ordering canopy) and the other is on the east side of the site and building (pick up canopy).

Patrons will pull up under the west canopy structure where digital menu boards are available for ordering food. During busy times, employees are available to take the customer's order directly. The customer then drives around the building to the next canopy (on east side of the building) to the pick-up window where the payment transaction occurs, and the food order is picked up. The customer can then proceed into the parking area and exit the site to Highland Road (right -out only), Rovey Drive, or Hartland Road.

Parking is found in the center of the site, north of the building Several of the existing parking islands are to be retained. The existing curbing that borders the parking area and by the retaining wall on the east are to be retained, where proposed grading activities allow for the preservation of the existing curbing. The existing parking spaces along the west will be removed in order to accommodate the proposed drive-through lanes. The existing retaining walls on the east and west sides of the site will remain as currently configured.

Parking
Sixty-nine (69) off-street parking spaces are provided, including three (3) barrier free spaces. The dimensions of the parking spaces are stated as 9 feet by 20 feet. Parking standards are outlined in Section 5.8. A restaurant (Fast Food) with drive-through window requires twenty-two (22) spaces per 1,000 square feet of usable floor area, plus spaces for employees of a peak shift, plus ten (10) stacking spaces, five (5) of which must be in advance of the order station, and which do not conflict with access to required parking spaces per order pick-up station. A total of forty-nine (49) stacking spaces are provided per the data listed on the plans. The stacking spaces are not shown on the plan but should be shown on the Preliminary PD site plans.

Additional information is required prior to staff being able to calculate the required number of parking spaces, such as a floor plan that states the usable square footage of the building. The plans state there are twenty (20) employees on the peak shift.

Building Elevations
The conceptual building elevations show brick veneer as the dominant façade material in light and dark brown tones. Bronze trim and paint are used for windows and other accents. Façade material percentages are not provided but will be required with Preliminary PD site plans. The building height is stated as 22'-0". The next set of building elevations must show the outline of each roof-mounted mechanical unit. All roof-mounted mechanical units must be screened on all sides by parapet walls.

The metal canopy structure appears to have a bronze finish and is approximately 9'-8" in height, as measured to the underside of the structure.

A material sample board will be required as part of the Preliminary PD Site Plan application.

Setbacks
The required setbacks are outlined in the Zoning Ordinance for structures and parking. Section 3.1.18.C.vi.a. (PD section) provides the minimum yard setbacks for a planned development. Further discussion on this will occur as part of the Preliminary PD Site Plan application. The setbacks listed on the plans are not correct for the front yard setback on Highland Road (south) and Hartland Road (west).

Other
Municipal water and sanitary sewer are available and will be required for this development.

Stormwater management plans were not submitted but may be required as part of the Preliminary PD Site Plan application.

Section 3.1.18.E. has specific requirements for information to be included within a planned development Concept Plan submittal. Based on the submitted plans, the Planning Department feels the information provided is sufficient to consider complete.

B. Proposed Density (Not applicable)

C. Public Road Access
As noted previously, public access to the subject site is via two (2) existing driveways, Highland Road (public, under MDOT) and Hartland Road (public, under LCRC). Access is also possible via an existing service drive from Rovey Drive (private road).

D. Traffic Generation
The applicant has not submitted a traffic impact analysis as part of the Concept Plan submittal. Traffic information will be required as part of the Preliminary PD Site Plan submittal.

E. Internal Vehicular/Pedestrian Circulation
The proposed development is accessed from existing driveways. Internally a looped vehicular circulation system is shown for the drive-through ordering/pick-up lanes, with one-way vehicle traffic around the building. A sidewalk and patio area are shown on the north side of the building (main building entrance).

F. Utilities
The applicant will need to work with the Hartland Township Public Works Department to acquire the necessary Residential Equivalent Units (REU) for this development.

G. Design Details
A Pattern Book with specific design details was not submitted with the Concept Plan. Detailed building elevations and floor plans should be submitted with the Preliminary PD Site Plan application. The building elevations should include a chart listing the façade materials and percentage of each material, for every elevation.

H. Open Space
Section 3.1.18.C requires a Planned Development to include open space; at a minimum that open space should meet the requirements of the site's previous zoning district. In this case, a minimum of 25% open space is required in the GC zoning district. The plans do not show areas designated as open space. An Open Space plan will be required as part of the Preliminary PD Site Plan submittal.

I. Landscaping
A conceptual landscape plan was submitted that shows general green space areas. A detailed landscape plan will be required with the Preliminary PD Site Plan submittal.

J. Dumpster and Enclosure
The existing dumpster enclosure on the north will be removed. Two (2) proposed dumpster enclosures are shown in a proposed landscape area northeast of the building. An enclosed outdoor equipment storage structure is also shown in this location. Detailed drawings of the enclosures and storage structure were not submitted. The façade materials for the dumpster enclosure must match the façade materials of the building and comply with Section 5.7 (Dumpster Enclosure).

K. Exterior Lighting
A lighting plan was not provided but will be required as part of Preliminary PD Site Plan application. Specification sheets for all light fixtures should be submitted at that time.

Recognizable Benefits
One of the eligibility criteria for a planned development is that it "shall result in a recognizable and substantial benefit to the ultimate users of the project and to the community and shall result in a higher quality of development than could be achieved under conventional zoning." It is not clear based on the Concept Plan whether the proposed development satisfies these criteria. It will be ultimately up to the applicant, Planning Commission, and Township Board to come to an agreement on the extent to which a recognizable benefit shall be provided for the proposed development.

The applicant submitted a project and business summary that also provides information on site details (CFA Standard Site Features Narrative).

Other
The Preliminary Site Plan will include more details with respect to traffic impacts, lighting, open space plan, building façade materials (percentages, sample products), and applicable waiver requests. It would be in the Applicant's best interest to provide a summary of design details (amenities, open space, and façade materials) as part of the Preliminary PD Site Plan application.

Hartland Township DPW Review
The Director of the Public Works Department has reviewed the plan and has no comments at this time, according to the email dated August 6, 2025.

Hartland Township Engineer's Review (SDA)
The Township Engineer (SDA) has provided comments in an email dated August 7, 2025.

Hartland Deerfield Fire Authority Review
No comments were submitted.

Attachments:
1. Township DPW email dated 08.06.2025 – PDF version
2. Township Engineer (SDA) email dated 08.07.2025– PDF version
3. CFA Standard Features Narrative from Applicant – PDF version
4. Concept Plans dated 07.24.2025 – PDF version

CC:
SDA, Twp Engineer (via email)
S. Hable, Twp DPW Director (via email)
A. Carroll, Hartland FD Fire Chief (via email)

T:\PLANNING DEPARTMENT\PLANNING COMMISSION\2025 Planning Commission Activity\Site Plan Applications\SP PD #25-015 CFA PD Concept Plan\Staff reports\PC\SP PD #25-015 CFA Concept Plan PC 08.21.2025.docx

Martha Wyatt

To: Martha Wyatt
Subject: FW: Concept Planned Development plan for Chick-fil-A

From: Scott Hable <SHable@hartlandtwp.com>
Sent: Wednesday, August 6, 2025 1:36 PM
To: Martha Wyatt <MWyatt@hartlandtwp.com>;
Cc: Troy Langer <TLanger@hartlandtwp.com>
Subject: RE: Concept Planned Development plan for Chick-fil-A

Public works has no comments at this time.

Thank You –

Scott Hable
Public Works Director
810.632.7498 o
2655 Clark Road
Hartland, MI 48353
www.hartlandtwp.com

Martha Wyatt

To: Martha Wyatt
Subject: FW: Concept Planned Development plan for Chick-fil-A

From: Mark Collins <mcollins@sda-eng.com>
Sent: Friday, August 8, 2025 3:43 PM
To: Troy Langer <TLanger@hartlandtwp.com>; Martha Wyatt <MWyatt@hartlandtwp.com>
Cc:
Subject: FW: Concept Planned Development plan for Chick-fil-A

Good Afternoon Martha and Troy,

Please see our concept review comments below for the plans dated July 4, 2025 (SDA Job HL25108). We previously provided comments for a very similar layout from plans dated Dec 3, 2024. The newest plans provided a different dumpster location and drive-thru layout. Let us know if you have any questions or concerns

1. The subject site is an existing Big Boy building located at 10587 Highland Road east of US-23 in the Hartland Towne Square on the north side of Highland Road.
2. The township records show that there is an existing 12-inch diameter water main along the north side of Highland Road and an existing main on the west side of Hartland Road to serve the site. It is assumed that there is an existing water lead serving the existing site. The plan notes FDC to hydrant issue which should be resolvable during the site plan and engineering plan reviews.
3. The site is within the sanitary sewer service area. There is an existing 15-inch diameter sanitary sewer along the west side of Hartland Road and an 18-inch diameter sanitary sewer north of Highland Road. It is assumed that there is an existing sanitary sewer lead serving the existing site.
4. It is not known at this time how the site stormwater runoff is pre-treated or detained; however, it does not appear that a change in impervious area is proposed. The area may be served by regional stormwater management, but this has not been investigated. The original plans for Hartland Towne Square should be obtained and analyzed. A proposed underground detention basin could be provided and there appears to be enough parking lot footprint to accommodate one.
5. Site access remains unchanged, with three access drives off Rovey Dr, Hartland Rd, and Highland Rd. There is potential for stacking to block the proposed one-way driveway of Hartland Road and potentially causing backups. There are also several canopies blocking the circulation around the perimeter of the building. The Fire Department will need to approved the circulation on site as there is not enough space for a truck to go around the building.
6. Provide a circulation plan for the garbage truck entering and existing both dumpster areas. The location of the dumpster areas could cause backups for the cars entering and exiting the site along Highland Road.
6. The condition of the existing sidewalk and ramps along Hartland Rod and Highland Rd will need to be evaluated and may need to be removed and replaced if found not to be in conformance with the current ADA standards.
7. All work proposed within Hartland Rd will require a permit from Livingston County. All work within Highland Road will require a permit from MDOT.

Thank you,

SPALDING DEDECKER
Engineers | Planners | Surveyors
Landscape Architects

Mark Collins, PE, LEED AP
Project Manager
p: (248) 844-5400 | c: (248) 802-5733
e: mcollins@sda-eng.com | w: www.sda-eng.com
Spalding DeDecker: Locations

STANDARD SITE FEATURES / OPERATIONS

Introduction to Chick-fil-A

- Family-owned and privately-held.
- Devoted to serving the local communities in which we operate, while offering great-tasting food made with high- quality ingredients — including the Original Chick-fil-A® Chicken Sandwich.
- Closed on Sundays, a tradition honored as a day of rest by the founder, S. Truett Cathy.
- Partner with local nonprofits to improve the lives of people in our communities who need help most.
- Chick-fil-A restaurants located in more than 3,000 locations in 48 states, Washington D.C, Puerto Rico and Canada.

Local Ownership / Team Member Experience

- Our business model is built on local owners who come from a variety of backgrounds and work experiences. Most Chick-fil-A franchise owners have only one restaurant, and they live in the community where their restaurant is located.
- Working at Chick-fil-A restaurant means flexible work hours and leadership growth opportunities, competitive wages and benefits, hands-on training and mentoring and the chance to apply for scholarships to support their continuing education
- Since 1973, Chick-fil-A, Inc. has awarded more than $162 million in scholarships to more than 93,000 Team Members.

Giving Back:

- Food Donation - Each time a franchised Chick-fil-A restaurant opens, Chick-fil-A, Inc. donates $25,000 to a LOCAL food bank. In addition, through its Shared Table program, participating Chick-fil-A restaurants donate their surplus food to local shelters, soup kitchens and charities. In just the last few years, our Operators have donated approximately ten million meals.

- Community and People - Through the True Inspiration Awards program, Chick-fil-A, Inc. awards grants to local nonprofit organization working in the areas of education, hunger & environmental stewardship. Many winning organizations are nominated by a local Chick-fil-A restaurant Operator. Since the program began in 2015, $12 million has been awarded to 171 community organizations!

Hours of Operation:

- Monday through Saturday – 5:30am to 11:00pm. Hours of operation are determined by the Owner/Operator based on demand and volume.
- Sunday – Closed

Number of Employees (Typical Shift): 15-20 employees

Number of Company Vehicles: One (1) catering van may be utilized if the owner/operator chooses to use this service

Deliveries / Loading Areas:

- After hours key drop deliveries with WB-62 truck are typically made between 12:00am and 5:00am. Deliveries are dropped inside the building.
- During the normal business day (typically scheduled for off-peak hours) a box truck delivery of fresh bread, produce, etc. will be made.

Parking:

- Parking Space – 9'-0" x 18'-0" typ. min.
- Parking – Typically would like 70+ space for a 5,000 sf building. Parking space count is based on experience at various locations and to allow customers with maximum flexibility and ease of navigation.

Refuse:

- Dumpster Enclosure provides space for two trash containers –Pickup day/time is based on vendor schedule by intended to be completed during off-peak hours.
- Hose bibb provided in the dumpster enclosure to allow for regular cleaning / maintenance
- Enclosed room at dumpster enclosure is locked and utilized to store site related maintenance equipment (ie. Shovels, blower, salt, brooms, extra traffic cones, etc)

Building

- 100% brick in light and dark brown
- Building canopy, columns, dumpster enclosure doors and building trim are dark bronze

Drive-through lane circulation

- Chick-fil-A continues to evolve the way fast food is delivered efficiently to their customers by providing the best customer experience and speed of service. The dual flex drive-through lanes allow for flexibility throughout the day by the restaurant operator based on volume, staffing, weather conditions, etc.
- Volume
    - During COVID: Many of the Michigan locations opened during COVID and thus experienced a huge burden on the drive-through.
    - Today: In-store vs drive-through orders (typical of most locations in Michigan):
        - 40-45% dine-in / third-party (Doordash, Grubhub, etc) / order pickup
        - 55-60% drive-through orders
- Drive-through orders may be taken and fulfilled in a variety of ways:

- Both lanes may be utilized to allow customers to enter either lane and stay in the same lane from the order canopy to pickup canopy
- Either lane may be used for mobile / third-party meal delivery orders only
- Both lanes may be utilized for ordering and funneled down to one lane for order pickup
- Single lane only may be utilized
- Etc.

- Employees deliver orders to both lanes via the meal delivery door.
- The drive-through canopies have been designed to keep the customers and employees sheltered from Michigan's various weather conditions.

Drive-through in Emergency:

- In the event of an emergency in the drive-through lane, employees will direct traffic to empty the lane to allow the vehicle to exit.

Site Lighting:

- 25' light poles are standard height
- Building mounted sconces on either side of entry doors
- Spotlight for flag/flagpole (ground or roof mounted depending on location)



PERSPECTIVE VIEW



PERSPECTIVE VIEW



PERSPECTIVE VIEW



PERSPECTIVE VIEW



EXTERIOR ELEVATION

3/16" = 1'-0"



EXTERIOR ELEVATION

3/16" = 1'-0"



EXTERIOR ELEVATION

3/16" = 1'-0"



EXTERIOR ELEVATION

3/16" = 1'-0"

PROJECT DATA

Prototype Edition: *Acceptable Values: LS, LSR, LE, SE, DT-L, DT-S	SE
Exterior Finish Type: *Acceptable Values: TOWER BRICK, TOWER STUCCO, TOWER BOARD, WRAP BRICK, WRAP STUCCO	TOWER BRICK
Wall Framing Type: *Acceptable Values: WOOD STUD, PRGID STUD, PREFAB METAL STUD, METAL STUD - PREFAB, STEEL FRAME, CMU, VOLUMETRIC MODULAR	WOOD STUD
Kitchen Type: *Acceptable Values: CENTERLINE 2.0, CENTERLINE 3.0	CENTERLINE 3.0
Water Filtration Type: *Acceptable Values: TYPE A, TYPE A+B, TYPE A+C, ETC	TYPE A
Industrialized Construction: *Acceptable Values: YES, NO	YES
Number of Parking Spaces: *Acceptable Values: (Digits)	#
Number of Accessible Parking Spaces: *Acceptable Values: (Digits)	#
Cross Parking: *Acceptable Values:	YES
Menu Board - Interior: *Acceptable Values: YES, NO	YES
Menu Board - Interior - Count: *Acceptable Value: (Digits)	4
Menu Board - Interior - Type: *Acceptable Values: DIGITAL, STATIC, OTHER	DIGITAL
Menu Board - Walk-up: *Acceptable Values: YES, NO	NO
Menu Board - Walk-up - Count: *Acceptable Value: (Digits)	0
Menu Board - Walk-up - Type: *Acceptable Values: DIGITAL, STATIC, OTHER	N/A
Menu Board - Order Point: *Acceptable Values: YES, NO	YES
Menu Board - Order Point - Count: *Acceptable Value: (Digits)	4
Menu Board - Order Point - Type: *Acceptable Values: DIGITAL, STATIC, OTHER	DIGITAL
Planned Classification: *Acceptable Values: BASE, MODIFIED-LOW, MODIFIED-MEDIUM, MODIFIED-HIGH, CUSTOM-LOW, CUSTOM-HIGH	
Playground *Acceptable Values: NO, LARGE, MEDIUM, SMALL, TREEHOUSE	LARGE
Restroom *Acceptable Values: BASE, CALIFORNIA, FLORIDA	BASE
Landscaping Type *Acceptable Values: STANDARD	STANDARD
LEED Rating *Acceptable Values: NOT CERTIFIED, CERTIFIED, SILVER, GOLD, PLATINUM	NOT CERTIFIED
Drive Thru Stack Count: *Acceptable Value: (Digits)	#
Drive Thru Number of Approach Lanes: *Acceptable Values: (Digits)	#
Drive Thru Number of Ordering Lanes: *Acceptable Values: (Digits)	#
Drive Thru Number of Fulfillment Lanes: *Acceptable Values: (Digits)	#
Drive Thru Dedicated Bypass Lane: *Acceptable Values: YES, NO	YES
Drive Thru Door: *Acceptable Values: YES, NO	YES
Canopy Structure: *Acceptable Values: STEEL, CONCRETE	STEEL
Canopy Type - Order Point: *Acceptable Values: (Digits)	DOUBLE
Canopy Type - Meal Delivery: *Acceptable Values: DOUBLE, SINGLE	DOUBLE
Seat Count - Interior: *Acceptable Value: (Digits)	90
Seat Count - Exterior: *Acceptable Value: (Digits)	24
Number of Walk-up Windows: *Acceptable Value: (Digits)	0
Number of Registers: *Acceptable Value: (Digits)	4
Building Area Square Footage: *Acceptable Value: (Digits)	4847

DESIGN APPROVAL

SUP | SD | DD | CD

- NOT APPROVED - REVISE AND RESUBMIT
- APPROVED AS NOTED- REVISE AND RESUBMIT
- APPROVED FOR DESIGN INTENT

INITIAL: DATE:

PROJECT NOTES

*Remove any personal notes with text, views, or schedules.

EXTERIOR FINISHES

BR-A
BRICK VENEER
COLOR: DARK BROWN
SIZE: MODULAR

BR-B
BRICK VENEER
COLOR: LIGHT BROWN
SIZE: MODULAR

SC-1
STUCCO SYSTEM
COLOR: WHITE
FINISH: SAND MEDIUM

SC-2
STUCCO SYSTEM
COLOR: BROWN
FINISH: SAND MEDIUM

EC-1
PREFINISHED METAL COPING
COLOR: MIDNIGHT BRONZE

PT-113
EXTERIOR PAINT
COLOR: DARK BRONZE
FINISH: SEMI-GLOSS

ST-1
STOREFRONT
COLOR: DARK BRONZE

ATTACHED CANOPY SCHEDULE SE

Mark	Description	Count	Overall Width	Overall Depth	Tie Back Mounting (Offset From Top)	Integral Lighting
C1-C	Exterior Canopy	10	6' - 4"	1' - 0"	0' - 0"	No
C3-C	Exterior Canopy	1	15' - 4"	2' - 6"	0' - 0"	Yes
C4-B	Exterior Canopy	2	5' - 4"	4' - 0"	2' - 4"	Yes
C4-L	Exterior Canopy	1	28' - 4"	4' - 0"	2' - 4"	Yes
Grand total		14				

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

SITE ADAPT LOGO AND ADDRESS

PROTOTYPICAL SET

NOT FOR REGULATORY APPROVAL, BIDDING, OR CONSTRUCTION

CHICK-FIL-A HARTLAND

10587 HIGHLAND RD
HARTLAND, MI 48353

FSR#06249

BUILDING TYPE / SIZE: P14 SE BASE
RELEASE: 25.06
PRINTED FOR

REVISION SCHEDULE

NO.	DATE	DESCRIPTION

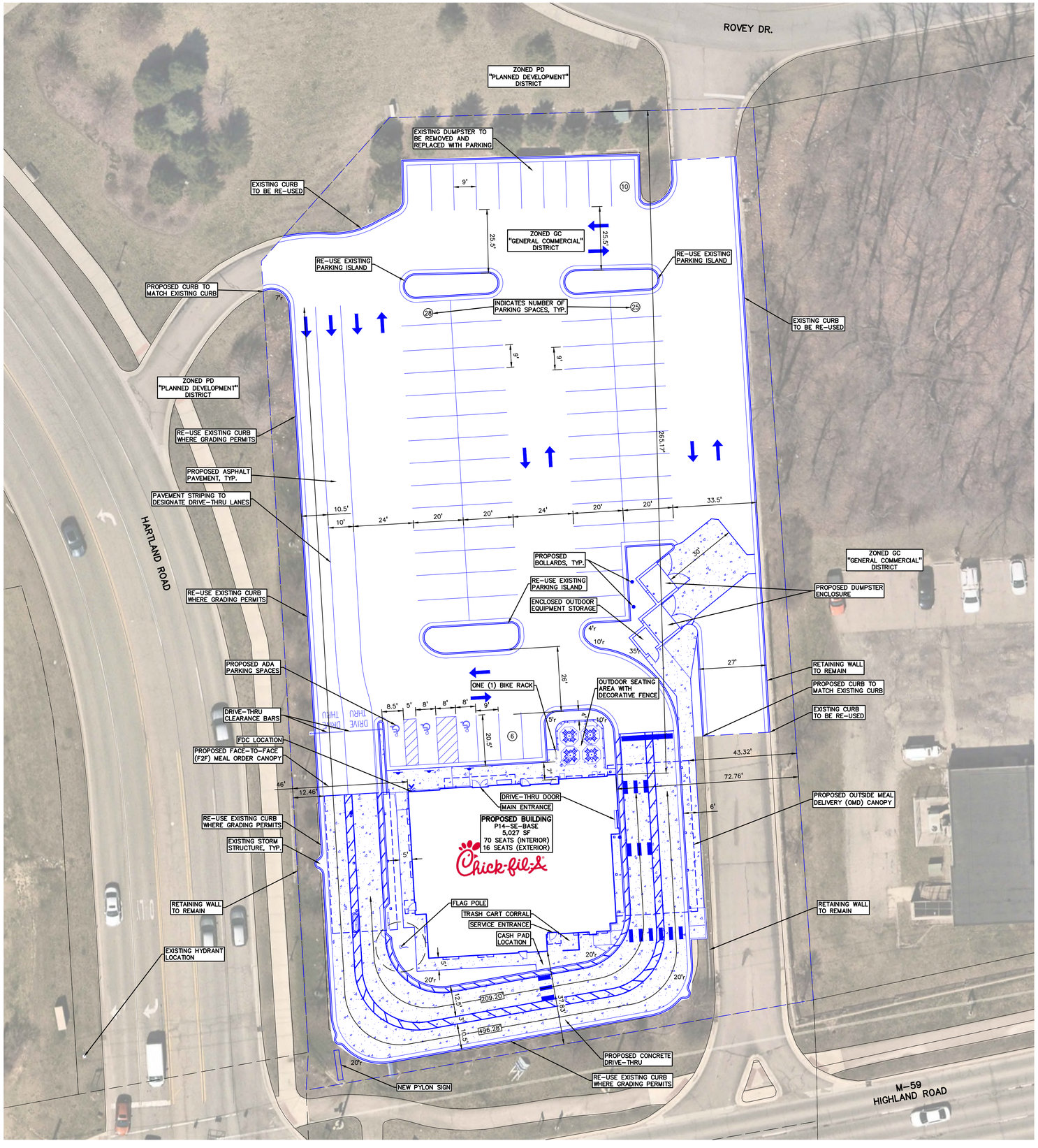
CONSULTANT PROJECT # ####
DATE
DRAWN BY Author

Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET
DESIGN OVERVIEW

SHEET NUMBER
X-900B_SE

6/12/2025 1:20:32 PM R:\Dpt 27 Chick-fil-A\Prototype_Model Assembly\20250618000000_NewStore_SE_ARC_B0B.rvt
XX-SE-00000-X-900B_SE-DESIGN OVERVIEW



LEGEND:

- CONCRETE PAVEMENT (STD DUTY / HEAVY DUTY)
- CONCRETE CURB AND GUTTER
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE

NOTE:
ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, UNLESS OTHERWISE NOTED.

SITE DATA TABLE:

SITE AREA: 1.69 ACRES (73,635 SQ.FT.)

PARCEL ID #: 08-21-400-062

ZONING: GC GENERAL COMMERCIAL

OPEN SPACE REQUIRED: 20.0%
OPEN SPACE PROVIDED: 18.5%
WAIVER REQUESTED

BUILDING INFORMATION:
MAXIMUM ALLOWABLE BUILDING HEIGHT = 35 FEET
PROPOSED BUILDING HEIGHT = 1 STORY

BUILDING FOOTPRINT AREA = 5,027 SQ.FT.

BUILDING LOT COVERAGE = 5,027 / 73,635 = 7.07%

BUILDING SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
NORTH	40'	265.17'
SOUTH	50'	37.83'
EAST	15'	43.32'
WEST	15'	12.46'

WAIVER REQUESTED

PARKING CALCULATIONS:
- REQUIRED: TWENTY-TWO (22) SPACES PER 1,000 SQ.FT. OF USEABLE FLOOR AREA, PLUS SPACES FOR EMPLOYEES ON PEAK SHIFT 22*(1,472/1000)+20 = 53 SPACES
- PROPOSED: 69 SPACES (INCLUDES 3 BARRIER FREE SPACES)

STACKING CALCULATIONS:
- REQUIRED = 10
- PROPOSED = (496.28*2)/20 = 49 SPACES

BIKE RACKS
- REQUIRED: 0
- PROVIDED: 1

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia 30349-2998

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH
0 10 20 40
SCALE: 1" = 20'

NOT FOR REGULATORY APPROVAL, BIDDING, OR CONSTRUCTION

CHICK-FIL-A HARTLAND

10587 HIGHLAND RD
HARTLAND, MI 48353

FSR#06249

BUILDING TYPE / SIZE: P14-SE-BASE
RELEASE: 06.25

REVISION SCHEDULE

NO.	DATE	DESCRIPTION

CONSULTANT PROJECT #	25-0983
PRINTED FOR	CONCEPT
DATE	07/24/2025
DRAWN BY	BV

Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET
CONCEPT PLAN - AERIAL

SHEET NUMBER
SK-1.0



LEGEND:

- CONCRETE PAVEMENT (STD DUTY / HEAVY DUTY)
- CONCRETE CURB AND GUTTER
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE

NOTE:
ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, UNLESS OTHERWISE NOTED.

SITE DATA TABLE:

SITE AREA: 1.69 ACRES (73,635 SQ.FT.)

PARCEL ID #: 08-21-400-062

ZONING: GC GENERAL COMMERCIAL

OPEN SPACE REQUIRED: 20.0%
OPEN SPACE PROVIDED: 18.5%
WAIVER REQUESTED

BUILDING INFORMATION:
MAXIMUM ALLOWABLE BUILDING HEIGHT = 35 FEET
PROPOSED BUILDING HEIGHT = 1 STORY

BUILDING FOOTPRINT AREA = 5,027 SQ.FT.

BUILDING LOT COVERAGE = 5,027 / 73,635 = 7.07%

BUILDING SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
NORTH	40'	265.17'
SOUTH	50'	37.83'
EAST	15'	43.32'
WEST	15'	12.46'

WAIVER REQUESTED

PARKING CALCULATIONS:
- REQUIRED: TWENTY-TWO (22) SPACES PER 1,000 SQ.FT. OF USEABLE FLOOR AREA, PLUS SPACES FOR EMPLOYEES ON PEAK SHIFT 22*(1,472/1000)+20 = 53 SPACES
- PROPOSED: 69 SPACES (INCLUDES 3 BARRIER FREE SPACES)

STACKING CALCULATIONS:
- REQUIRED = 10
- PROPOSED = (496.28*2)/20 = 49 SPACES

BIKE RACKS
- REQUIRED:0
- PROVIDED:1

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia 30349-2998

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH
0 10 20 40
SCALE: 1" = 20'

NOT FOR REGULATORY APPROVAL, BIDDING, OR CONSTRUCTION

CHICK-FIL-A HARTLAND

10587 HIGHLAND RD
HARTLAND, MI 48353

FSR#06249

BUILDING TYPE / SIZE: P14-SE-BASE
RELEASE: 06.25

REVISION SCHEDULE

NO.	DATE	DESCRIPTION

CONSULTANT PROJECT #	25-0983
PRINTED FOR	CONCEPT
DATE	07/24/2025
DRAWN BY	BV

Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET
CONCEPT LANDSCAPE PLAN

SHEET NUMBER
L-1.0



LEGEND:

- CONCRETE PAVEMENT (STD DUTY / HEAVY DUTY)
- CONCRETE CURB AND GUTTER
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE

NOTE:
ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, UNLESS OTHERWISE NOTED.

SITE DATA TABLE:

SITE AREA: 1.69 ACRES (73,635 SQ.FT.)

PARCEL ID #: 08-21-400-062

ZONING: GC GENERAL COMMERCIAL

OPEN SPACE REQUIRED: 20.0%
OPEN SPACE PROVIDED: 18.5%
WAIVER REQUESTED

BUILDING INFORMATION:
MAXIMUM ALLOWABLE BUILDING HEIGHT = 35 FEET
PROPOSED BUILDING HEIGHT = 1 STORY

BUILDING FOOTPRINT AREA = 5,027 SQ.FT.

BUILDING LOT COVERAGE = 5,027 / 73,635 = 7.07%

BUILDING SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
NORTH	40'	265.17'
SOUTH	50'	37.83'
EAST	15'	43.32'
WEST	15'	12.46'

WAIVER REQUESTED

PARKING CALCULATIONS:
- REQUIRED: TWENTY-TWO (22) SPACES PER 1,000 SQ.FT. OF USEABLE FLOOR AREA, PLUS SPACES FOR EMPLOYEES ON PEAK SHIFT 22*(1,472/1000)+20 = 53 SPACES
- PROPOSED: 69 SPACES (INCLUDES 3 BARRIER FREE SPACES)

STACKING CALCULATIONS:
- REQUIRED = 10
- PROPOSED = (496.28*2)/20 = 49 SPACES

BIKE RACKS
- REQUIRED:0
- PROVIDED:1

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia 30349-2998

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH
0 50 100 200
SCALE: 1" = 100'

NOT FOR REGULATORY APPROVAL, BIDDING, OR CONSTRUCTION

CHICK-FIL-A HARTLAND

10587 HIGHLAND RD
HARTLAND, MI 48353

FSR#06249

BUILDING TYPE / SIZE: P14-SE-BASE
RELEASE: 06.25

REVISION SCHEDULE

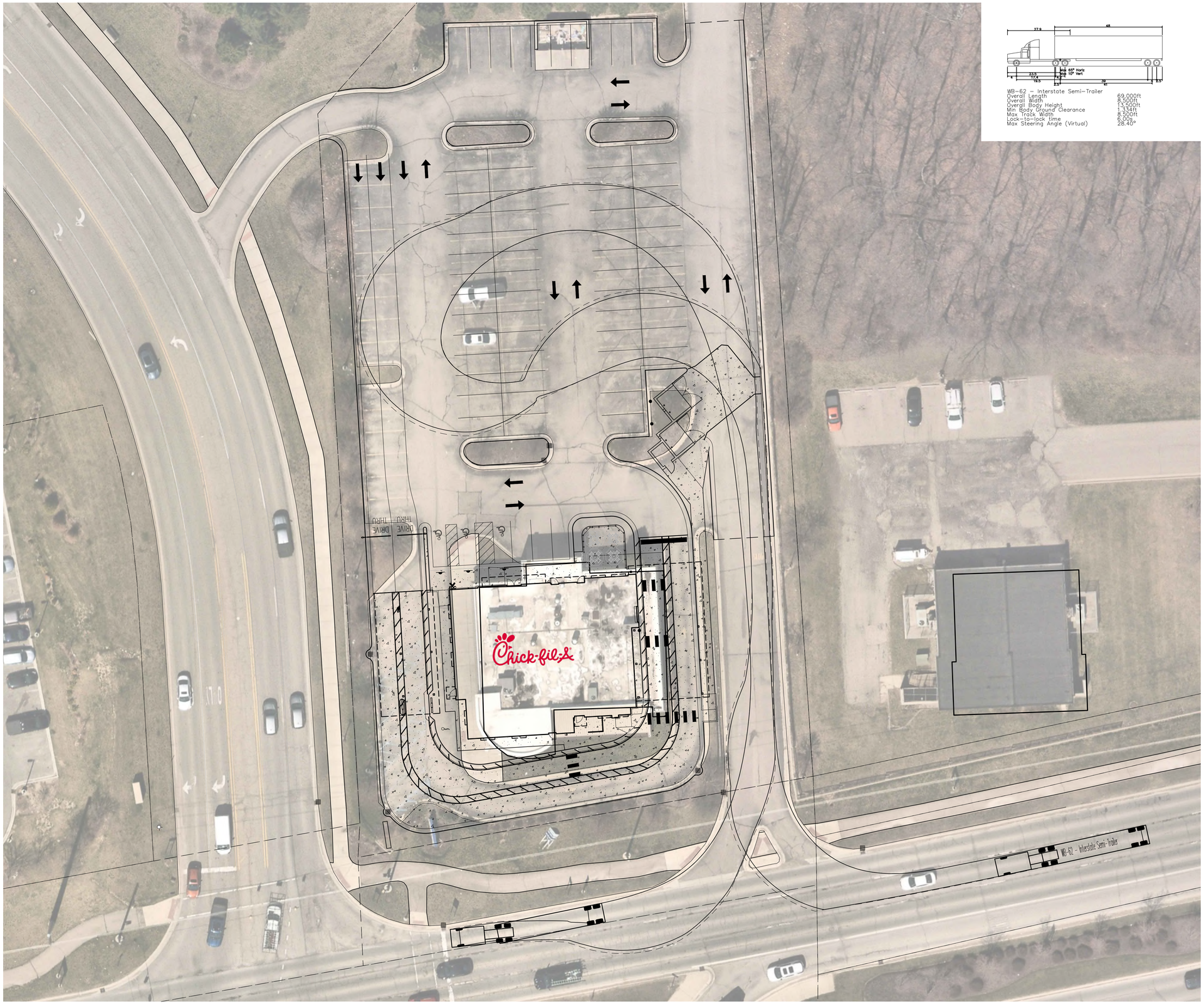
NO.	DATE	DESCRIPTION

CONSULTANT PROJECT #	25-0983
PRINTED FOR	CONCEPT
DATE	07/24/2025
DRAWN BY	BV

Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET
CONCEPT PLAN - OVERALL

SHEET NUMBER
SK-1.2



WB-62 - Interstate Semi-Trailer	
Overall Length	69.000ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia 30349-2998

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH
0 10 20 40
SCALE: 1" = 20'

NOT FOR REGULATORY APPROVAL, BIDDING, OR CONSTRUCTION

CHICK-FIL-A HARTLAND

10587 HIGHLAND RD
HARTLAND, MI 48353

FSR#06249

BUILDING TYPE / SIZE: P14-SE-BASE
RELEASE: 06.25

REVISION SCHEDULE

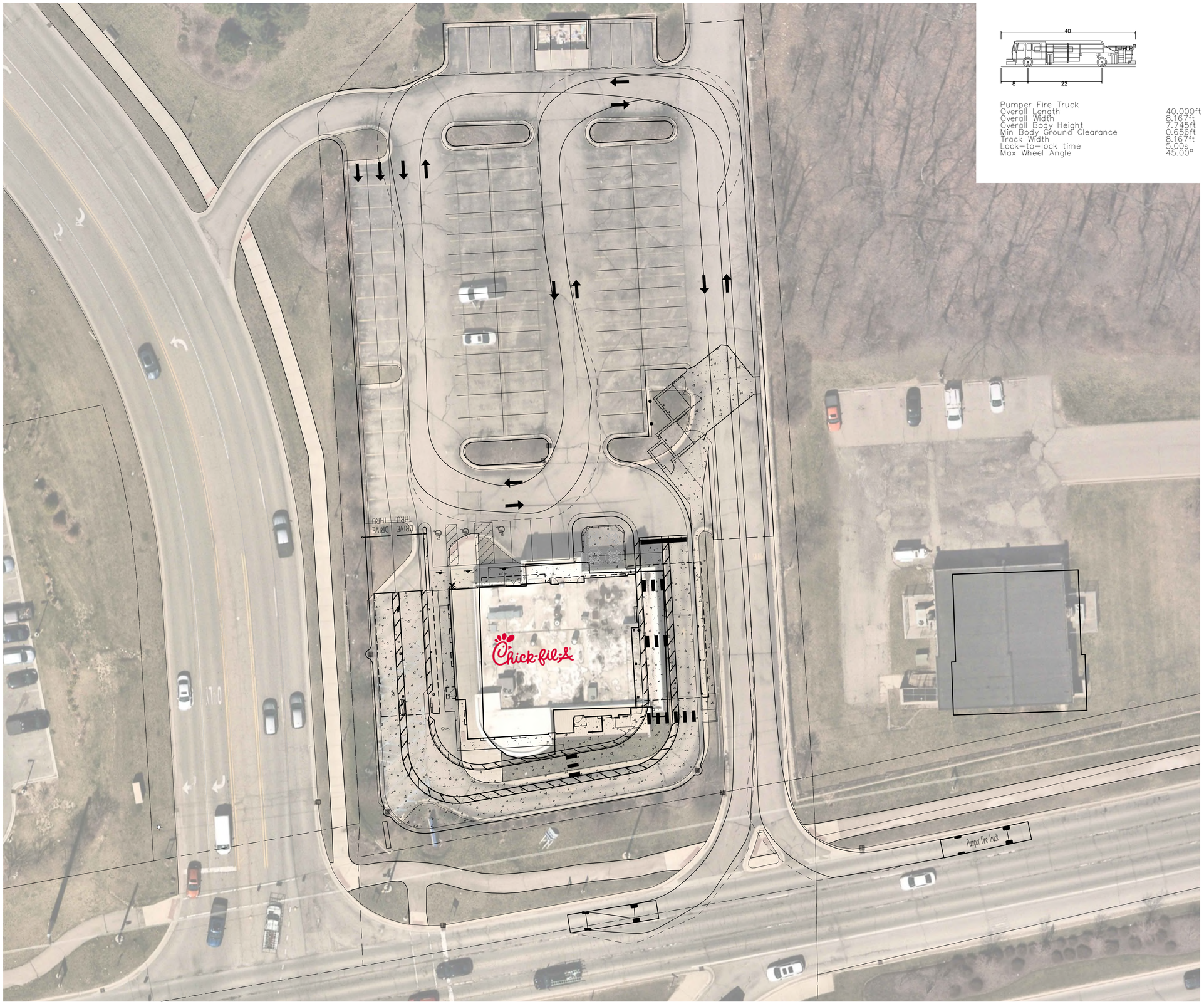
NO.	DATE	DESCRIPTION

CONSULTANT PROJECT #	25-0983
PRINTED FOR	CONCEPT
DATE	07/24/2025
DRAWN BY	BV

Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET
TRUCK TURNING PLAN - WB-62

SHEET NUMBER
TK-1.0



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

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia 30349-2998

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH
0 10 20 40
SCALE: 1" = 20'

NOT FOR REGULATORY APPROVAL, BIDDING, OR CONSTRUCTION

CHICK-FIL-A HARTLAND

10587 HIGHLAND RD
HARTLAND, MI 48353

FSR#06249

BUILDING TYPE / SIZE: P14-SE-BASE
RELEASE: 06.25

REVISION SCHEDULE

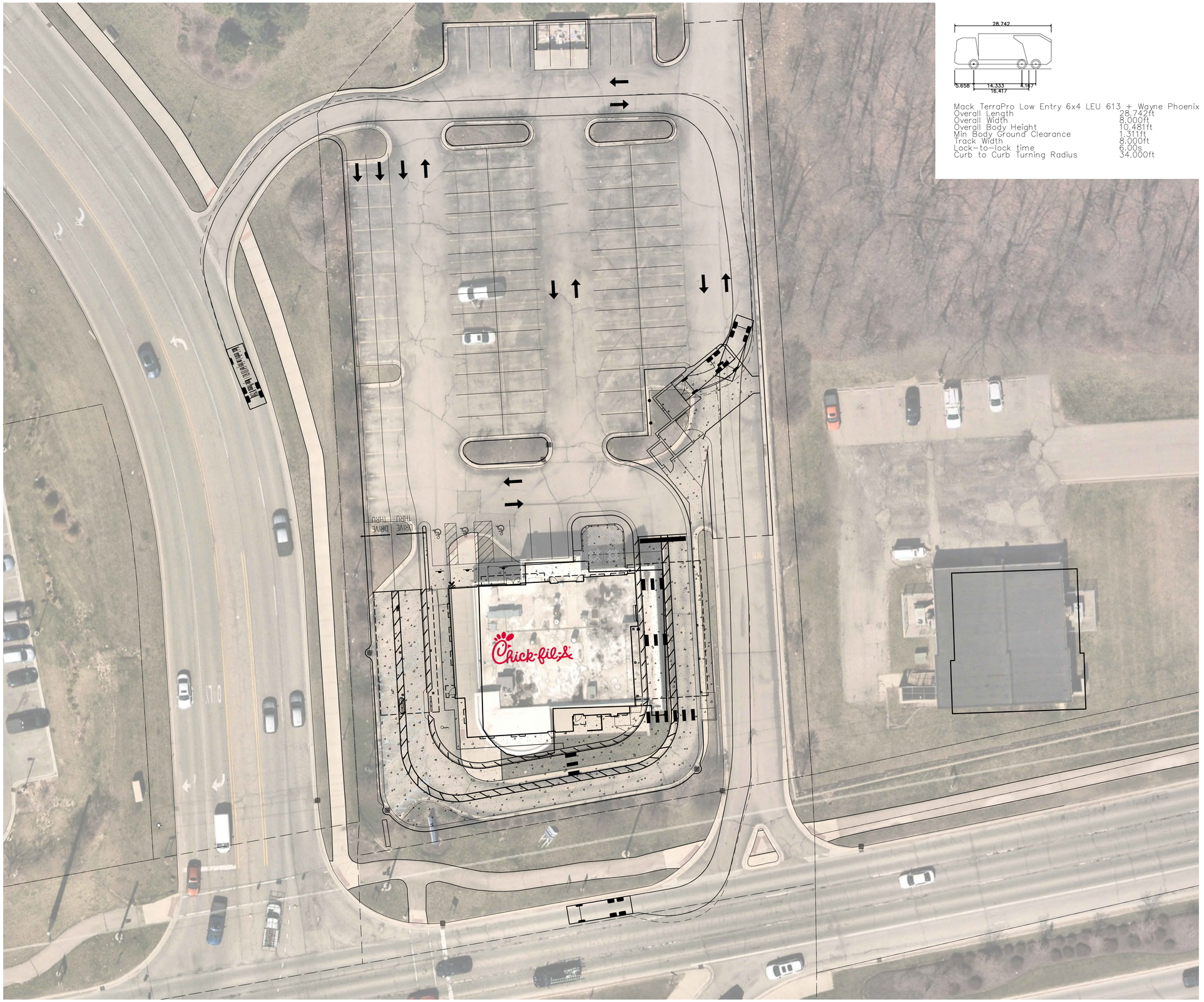
NO.	DATE	DESCRIPTION

CONSULTANT PROJECT #	25-0983
PRINTED FOR	CONCEPT
DATE	07/24/2025
DRAWN BY	BV

Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET
TRUCK TURNING PLAN - FIRE

SHEET NUMBER
TK-1.1



Mack TerraPro Low Entry 6x4 LEU 613 + Wayne Phoenix III 25Yd	
Overall Length	28.742ft
Overall Width	8.000ft
Overall Body Height	10.481ft
Min Body Ground Clearance	1.311ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	34.000ft

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia 30349-2998

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH
0 10 20 40
SCALE: 1" = 20'

NOT FOR REGULATORY APPROVAL, BIDDING, OR CONSTRUCTION

CHICK-FIL-A HARTLAND

10587 HIGHLAND RD
HARTLAND, MI 48353

FSR#06249

BUILDING TYPE / SIZE: P14-SE-BASE
RELEASE: 06.25

REVISION SCHEDULE

NO.	DATE	DESCRIPTION

CONSULTANT PROJECT #	25-0983
PRINTED FOR	CONCEPT
DATE	07/24/2025
DRAWN BY	BV

Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.

SHEET
TRUCK TURNING PLAN - REFUSE

SHEET NUMBER
TK-1.2

Hartland Township Planning Commission Meeting Agenda Memorandum

Submitted By: Troy Langer, Planning Director

Subject: Site Plan Application #25-005 – Request to amend the approved Final Planned Development (PD) Site Plan for 10081 Highland Road and Amend Planned Development Agreement (Sheetz Fuel Station/Convenience Store)

Date: August 21, 2025

Recommended Action

Move to approve Site Plan Application #25-005, a request to amend the previously approved Final Planned Development site plan, at 10081 Highland Road, as outlined in the staff memorandum dated August 21, 2025.

Approval is subject to the following conditions:

1. The applicant shall adequately address the outstanding items noted in the Planning Department's memorandum, dated August 21, 2025, on the Construction Plan Set, subject to an administrative review by Planning staff prior to the issuance of a land use permit.

2. Prior to the issuance of a land use permit for the project, the applicant shall secure all applicable permits and approvals from the Michigan Department of Transportation and the Livingston County Department of Transportation.

3. The First Amendment to the Planned Development Agreement shall be in a recordable format and shall comply with the requirements of the Township Attorney.

4. Applicant complies with any requirements of the Township Engineering Consultant, Department of Public Works Director, the Fire Code requirements, and all other government agencies, as applicable.

5. Applicant shall obtain all applicable approvals and permits from the Bureau of Fire Services and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) regarding the proposed underground storage tanks.

6. Applicant shall obtain all applicable approvals and permits from the Livingston County Road Commission (LCRC) and the Michigan Department of Transportation (MDOT).

7. (Any other conditions the Planning Commission deems necessary).

Move to recommend approval of the proposed First Amendment to the Planned Development Agreement, a request to amend the Planned Development Agreement, as outlined in the staff memorandum dated August 21, 0225.

The recommendation for approval is based on the following findings:

1. The Planning Commission has determined the proposed First Amendment to the Planned Development Agreement, outlines the revisions as related to the proposed project, as in the allowance for the development and use of Parcel A for the Sheetz fuel station, fast-food restaurant, and convenience store, operating twenty-four (24) hours per day; minor revisions to temporary signage allowances; and reference to the current Planned Development Ordinance provisions outlined in Section 3.1.18 of the Township's Zoning Ordinance 76 (as Exhibit 7).

2. The proposed Amendment document shall be revised to address comments provided by the Township Attorney, as applicable.

Discussion

Applicant: Sheetz, Inc.

Site Description

The subject property is at the northeast corner of Highland Road and Old US-23. The subject parcel (Parcel ID #4708-21-305-003) is approximately 2.92 acres in size and zoned PD (Planned Development). The subject property was formerly occupied by Walgreens Pharmacy from approximately 2008 to 2022, when the store closed. The property is designated as Commercial on the 2020-2021 Comprehensive Plan and Future Land Use Map (FLUM) Amendment.

Currently the property is occupied by the former Walgreens Pharmacy building, associated parking areas, and access drives from Old US-23 and Highland Road.

Municipal water and sanitary sewer exist on the site and will be required for this project.

Site History

Site Plan/PD Application #432C (Hartland Walgreens/Chase Bank Planned Development – Conceptual Site Plan)

In 2007, Site Plan application #432C was reviewed by the Township for the request to develop an approximate 4.20-acre parcel of land at the northeast corner of Highland Road and Old US-23 as a Planned Development (PD). The parcel was zoned GC (General Commercial) at that time. The Planned Development (commonly referred to as Diamond Holdings, LLC) included the construction of a Walgreens Pharmacy (approximately 14,900 square feet in size) and Chase Bank (approximately 4,062 square feet in size). Walgreens is labeled as Parcel A and Chase Bank is labeled as Parcel B on the site plans. Each business offered a drive-through service option.

The Planning Commission reviewed SP #432C on May 24, 2007, and made a recommendation to the Township Board to waive the twenty (20) acre requirement for a planned development. On June 19, 2007, the Township Board reviewed the Concept PD application (SP #432C) and approved the request to waive the twenty (20) acre requirement for the proposed planned development.

Site Plan/PD Application #432P (Hartland Walgreens/Chase Bank PD – Preliminary Site Plan)

The Preliminary PD Site Plan for Walgreens/Chase Bank was reviewed by the Planning Commission on August 23, 2007, under SP/PD #432P. A public hearing for the proposed project was held on that date and the Planning Commission recommended approval of SP/PD #432P. The Township Board approved SP/PD #432P at their regular meeting on November 6, 2007.

Rezoning #335
On November 6, 2007, the Township Board approved Rezoning #335, a request to rezone approximately 4.20 acres of land from GC (General Commercial) to PD (Planned Development), for the proposed Walgreens/Chase Bank Planned Development.

Site Plan/PD Application #432 F (Hartland Walgreens/Chase Bank PD – Final Plan)
On March 13, 2008, the Planning Commission reviewed SP/PD #432F and recommended approval. The Township Board approved SP/PD #432F at their regular meeting on April 1, 2008. The Final Site Plan is dated March 13, 2008, and is Exhibit 4 in the Planned Development Agreement document.

After the approval of SP/PD #432F, the 4.20-acre parcel was divided into two (2) parcels to accommodate the construction of Walgreens Pharmacy (Parcel A, 2.92 acres) and Chase Bank (Parcel B, 1.28 acres).

Planned Development Agreement Between Hartland Township and DH-Hartland II, LLC and DH-Hartland, LLC

The Planned Development Agreement, as referenced above, was recorded on July 3, 2008. The PD Agreement outlines the terms and conditions of the Planned Development, including the Permitted Uses (Section 3.1 of the PD Agreement). Per this section the permitted uses in the PD are a Walgreens pharmacy with drive-through window (on Parcel A) and a Chase Bank with drive-through tellers and an ATM (on Parcel B). The document allows for amendments to the PD, subject to the terms provided in the PD Agreement, including amending the Permitted Uses. The proposed First Amendment to the Planned Development Agreement is intended to allow for the proposed use, a Sheetz fuel station and convenience store, with fast-food restaurant, and operating twenty-four (24) hours per day, to be developed on Parcel A.

It should be noted that the Final Site Plan in the PD Agreement, Exhibit 4 shows access to each parcel (Parcel A-Walgreens and Parcel B-Chase Bank) via a full-service driveway from Old US-23 and a split driveway with a median, from Highland Road, that restricts access to right-in and right-out turning movements.

Land Use Permit #7868
On June 13, 2008, Land Use Permit #7868 was approved for the construction of Walgreens Pharmacy, at 10081 Highland Road.

Overview of the Current Request SP #25-005 – Amend Approved Final PD Site Plan and PD Agreement

Site Plan Application #25-005 includes two (2) components. The first component is a request to amend the Final PD Site Plan for Hartland Walgreens/Chase Bank PD, specifically to amend the development plans for Parcel A, the Walgreens Pharmacy site plan. The proposal is to redevelop the site, by removing the existing Walgreens Pharmacy building and applicable existing site elements and constructing an approximate 6,132 square foot Sheetz fuel station with a convenience store that offers fast-food service. The facility will operate twenty-four (24) hours a day.

The second component of the project is a request to amend the Planned Development Agreement to allow the proposed use in the Planned Development. The original Planned Development Agreement for Hartland Walgreens/Chase Bank PD only allowed for a Walgreens Pharmacy and a Chase Bank, as depicted on the Final PD Plan. An automobile fueling and convenience station is not listed in the original PD Agreement.

as a Principal Permitted Use or Special Land Use. The applicant has provided a draft version of the First Amendment to the Planned Development Agreement.

Approval procedure

The proposed site plan for the Sheetz project will be reviewed by the Planning Commission who will make a final decision on the site plan. The plans will be reviewed using the Final Plan (SP #432F) for Walgreens Pharmacy as a reference for setbacks and lot coverage that were established as part of the Final PD plans. All applicable zoning standards in the Zoning Ordinance will be applied as well as Section 4.58 (Automobile Fueling and Convenience Station).

A public hearing will not be required for the proposed use as the intent is to amend the Planned Development Agreement to allow this use by right, as a permitted use. Typically, in traditional zoning as in the GC (General Commercial) zoning district, an automobile fueling and convenience station is considered a Special Land Use, which requires a public hearing. In this case, the project will be reviewed as a site plan application, and not as a Special Land Use. As noted, the Planning Commission will make the final decision on the site plan.

The Planning Commission will also review the proposed First Amendment to the Planned Development Agreement and make a recommendation to the Township Board, who will make the final decision.

The proposed site plan for Sheetz will be discussed in the next section of this memorandum, followed by a separate discussion on the proposed First Amendment to the Planned Development Agreement.

Amend Approved Final Plan PD Site Plan – Overview of Proposed Site Plan for Sheetz

The subject site is a corner lot with frontage along Highland Road (south) and Old US-23 (west). The proposal under SP #25-005 is to remove the existing Walgreens building, fencing and brick pillars on the west and south boundaries, dumpster enclosure, monument sign on the west side of the site, and a portion of the landscaping. The existing brick angled wall and associated landscaping will be retained. Several existing canopy trees on the borders of the site are to be preserved. The existing 2-way driveway on the west, from Old US-23, will be retained as will the split driveway and median on the south, from Highland Road. Internally, vehicular access will be retained between the Sheetz site and Chase Bank.

The site will be redeveloped to construct a Sheetz automobile fueling and convenience station. The proposal includes a convenience store, approximately 6,132 square feet in area, and fueling station with an overhead canopy, with six (6) fuel pump islands (12 fueling stations). The convenience store building is situated near the west property line (Old US-23 side). The main entrance is at the northeast corner of the building. Other access points to the building are on the east and north sides. The convenience store offers self-serve food options as well as menu items that are prepared on-site. Indoor dining is available as well as outdoor dining in the patio area on the north side of the building. Drive-through service is not offered.

The fueling station and overhead canopy are located east of the building, approximately in the middle of the site, with six (6) pump islands, equating to twelve (12) fueling pumps.

The facility will be open twenty-four (24) hours per day, seven (7) days a week. Eight (8) employees are working at the peak shift.

A screened, outdoor sales area (propane locker and ice merchandiser) is shown on the south side of the building. Masonry wing walls, with black fencing on top of the walls, provide screening of this area.

A dumpster enclosure is shown in the northeast corner of the parking lot.

Thirty-six (36) off-street parking spaces are provided, with parking shown on the east and north sides of the building, and along the north and south sides of the parking area. Two (2) air stations are offered at the end of parking space number 35 and 36. Two (2) parking spaces are allotted to each fuel pump totaling an additional twelve (12) parking spaces; however, the plan does not show these spaces. In total, forty-eight (48) parking spaces are offered, which includes the spaces at each fuel pump.

The perimeter sidewalks along the building and the outdoor patio area (on the north) are comprised of brick, with a concrete strip on outer edge of the brick, on the north and east. The sidewalk on the east side of the building is approximately 8.7' wide and is flush with the adjacent parking area. Two (2) bollards are placed at the end of each parking space in this area (abutting the sidewalk). The bollards are 2'-6" tall and are bronze in color. The parking space length is twenty (20) feet when measured from the leading edge of the bollard to the furthest extent of the parking space.

As noted, the existing access drives from Old US-23 and the split drive with a median from Highland Road will remain as currently positioned.

The plans show an underground stormwater detention system on the east side of the building, under the parking lot. Additional details are not provided on the plans but should be as part of the Construction Plan set.

Municipal water and sanitary sewer will be required for this development. The applicant will need to work with the Township and Livingston County regarding municipal water and sanitary sewer. The applicant will also need to work with the Hartland Township Department of Public Works (DPW) to acquire the necessary Residential Equivalency Units (REUs) for this development.

Automobile Fueling and Convenience Station Standards (Section 4.58)

The standards of Section 4.58, Automobile Fueling and Convenience Station, will be applied to the proposed project. Those standards are listed below, followed by staff's findings on each standard.

1. Frontage. Such uses shall have access to and front upon a hard surface, major thoroughfare.

   The subject site complies with this standard, having access from Highland Road, which is a hard surfaced thoroughfare, and having access from Old US-23 which is also a paved thoroughfare.

2. Minimum Lot Width. The minimum lot width required for such uses shall be 200 feet.

   The parcel is approximately 350 feet in width along Old US-23 and approximately 215 feet along Highland Road and complies.

3. Minimum Setbacks. Pump islands shall be a minimum of forty (40) feet from any public right-of-way or lot line. Tanks, propane, and petroleum products shall be set back at least fifteen (15) feet from any lot line. Overhead canopies shall be setback at least twenty (20) feet from the right-of-way with materials consistent with the principal building. The proposed clearance of any canopy shall be noted on the site plan. Details on all lighting under the canopy shall be provided.

   The pump island closest to Highland Road is approximately 137 feet from the ROW line for Highland Road. The fuel island/overhead canopy is approximately 130 feet from the ROW line of Highland Road, as measured from the leading edge of the canopy.

The fuel island canopy has a 16'-8" clearance. The support columns are constructed with brick wrap that matches the building façade materials on the convenience store. A photometric plan and light fixture details are provided.

4. Ingress and Egress. Ingress and egress drives shall be a minimum of thirty (30) feet and a maximum of forty (40) feet in width. No more than one (1) such drive or curb opening shall be permitted for every seventy-five (75) feet of frontage or fraction thereof, along any street. The nearest edge of any such drive shall be located at least twenty-five (25) feet from the nearest point of any property zoned or used for residential purposes. Curb openings for drives shall not be permitted where the drive would create a safety hazard or traffic nuisance because of its location in relation to other ingress and egress drives, its location in relation to the traffic generated by other buildings or uses, or its location near vehicular or pedestrian entrances or crossings.

   Modifications to the existing ingress/egress drives on Old US-23 and Highland Road are not proposed.

5. Layout. Gasoline pumps shall be located so that motor vehicles do not park on or extend over abutting landscaped areas, sidewalks, streets, buildings or adjoining property while being served. Vehicle washing shall occur completely within an enclosed building. Doors/openings shall be oriented so they face away from an abutting residential district or adjacent thoroughfares unless screened.

   The proposal complies with the layout relative to the location of the gasoline pumps. No vehicle washing is proposed.

6. Screening. Where adjoining a residential district, a solid fence or wall six (6) feet in height shall be erected along any common lot line consistent with the applicable standards of Sections 5.11 and 5.20. Such fence or wall shall be continuously maintained in good condition. The Planning Commission may require landscaping, including a berm, as an alternative.

   The site is surrounded by GC (General Commercial) zoned land on the north, PD (Planned Development) on the east (Chase Bank) and fronts on two (2) roads, thus this requirement does not apply.

7. Outdoor Storage. There shall be no outdoor storage or display, except within an area defined on the site plan approved by the Planning Commission and which extends no more than ten (10) feet beyond the building.

   An unroofed outdoor sales area is shown on the south side of the building, screened with wing walls. The area is approximately 8 feet deep by 24 feet in length, with an opening between the walls for access to the propane locker and ice merchandiser. The masonry wing walls are comprised of a 4-foot-high masonry wall with black, spindle fencing on top, for a total height of approximately 7'-8 ½". The façade materials of the screen wall match the building materials (brick).

8. Traffic Impact. An analysis of the traffic impacts shall be provided in conjunction with the site plan.

   The applicant has provided a Traffic Impact Study, complied by Fishbeck, dated December 9, 2024. An executive summary is provided as an attachment to this memorandum.

9. Lighting. A canopy is subject to lighting standards provided in Section 5.13 – Lighting.

A photometric plan has been provided, and details will be discussed within the context of the site plan review.

10. Groundwater Protection. The applicant shall submit a detailed Pollution Incidence Protection Plan (PIPP). The PIPP shall describe measures to prevent groundwater contamination caused by accidental gasoline spills or leakages, such as special check valves, drain back catch basins and automatic shut off valves, as approved by the Fire Department.

    The applicant will be required to provide the PIPP as part of the land use permit for the construction phase of the project. The PIPP will be reviewed by the Hartland Deerfield Fire Authority and the Township's Department of Public Works (DPW) in coordination with State and County agencies.

SITE PLAN REVIEW – Applicable Site Standards

The request is to redevelop Parcel A (formerly Walgreens pharmacy), which is part of an existing Planned Development, and construct an automobile fueling and convenience station, with a restaurant, and no drive-through service. The Final Plan from SP #432F will be used as a general guide for some standards as well as applicable standards in Section 3.1.14 (GC-General Commercial); Section 4.58 of the Zoning Ordinance, as discussed above; and all applicable zoning standards in the Zoning Ordinance.

Impact Assessment

An impact assessment was not provided.

Traffic Generation

A Traffic Impact Study (TIS), dated December 9, 2024, was provided. The study was reviewed by the Michigan Department of Transportation (MDOT) and the Livingston County Road Commission (LCRC). Per the communication from LCRC, the existing driveway approach (on Old US-23) is acceptable for the proposed use subject to the traffic impacts for the change in use can be adequately mitigated and a traffic study is approved. MDOT concurred with LCRC regarding the existing driveway approach on Highland Road. The applicant is working with MDOT and LCRC on this matter.

Dimensional Standards

The Final PD Plan dated March 13, 2008 (SP #432F) established the dimensional, height, setback, and bulk regulations for the Walgreens Pharmacy parcel (Parcel A Final Plan). As is typical with a planned development, deviations from various regulations established in the Zoning Ordinance may occur and be deemed acceptable by the Township in order to achieve certain design objectives for a specific planned development. Essentially, the planned development process allows for the establishment of unique regulations for each project proposal.

In this case, the request is to redevelop Parcel A and construct a Sheetz fueling and convenience station with a restaurant (an approximate 6,132 square foot building), with associated parking and drive aisles. Based on the approved Final Plan for Walgreens/Parcel A, the required building setbacks were based on the GC (General Commercial) standards at that time, which are the same in the current Zoning Ordinance. Sheet C0.1 shows the existing layout of the Walgreens site with an overlay of the proposed site plan for Sheetz. The Sheetz plan generally follows the current site plan with some deviations on the location of the proposed building and parking. The following chart provides a comparison of the two (2) site plans, regarding the setbacks shown for the building and parking. This is in lieu of using specific PD or applicable zoning standards for setbacks.

Building Setbacks

Setback	Walgreens	Sheetz (convenience store bldg.)
Front (south) Highland Road	142.6’	123.7’
Front (west) Old US-23	82.5’	8.9’
Rear (north)	47’	118.7’
Side (east)	43’	143’

Parking Setbacks

Setback	Walgreens	Sheetz
Front (south) Highland Road	70’	76.5’
Front (west) Old US-23	11’	11’
Rear (north)	10’	11’
Side (east)	35’	55’

Building Height (Sec. 3.1.14)

- Required – 35 feet or 2½ stories, whichever is less
- Proposed – 20’ as measured to the top/peak of red cupola
- Meets Requirement? – Yes
- Comment – (none)

Lot Coverage (Sec. 3.1.14)

- Required – Principal structure: 75% max.
- Proposed – 4.8%
- Meets Requirement? – Yes
- Comment – (none)

Site Requirements

Outdoor Seating and Dining (Sec. 4.47)

Section 4.47 outlines outdoor seating and dining standards. These standards apply to the outdoor patio and seating area on the north side of the building. A detailed review of the standards is not provided in this memorandum, but the applicant has been made aware of the standards. All applicable details and information shall be addressed on the Construction Plan set.

Dumpster Enclosure (Sec. 5.7)

- Required – Dumpster designed, enclosed, and screened per requirements; decorative masonry screen wall on 3 sides to match exterior façade materials of the building; and steel reinforced, opaque, lockable wooden gates. Enclosure height sufficient to screen dumpsters; minimum enclosure height is six (6) feet. The bottom surface within the enclosure shall be constructed of eight (8) inch thick, reinforced concrete and shall extend a minimum of ten (10) feet in front of the enclosure.

- Proposed – Dumpster enclosure (16' by 28') with trash and drum storage containers, located on north side of site with a 15' by 33' concrete pad in front of dumpster; 7'-4" high enclosure with brick materials that match the building; dark bronze ACM cap; and gates comprised of composite boards (dark bronze color). Landscaping is provided around the enclosure with trees and lawn.
- Meets Requirement? – Yes
- Comment – (none)

Off-Street Parking (Sec. 5.8.4.H) – Automobile Fueling and Convenience Station; PLUS Restaurant w/carry out or delicatessen with less than 6 tables

- Required –
  Automobile Fueling & Conv. Station
  2 spaces per pump (6 pumps = 12 spaces); PLUS 1 space for every 200 sq. ft. of gross floor area devoted to retail sales (retail sales: 2,472 SF ÷ 200 = 12 sp.); PLUS 1 space for each employee (8 employees) = 8 sp. TOTAL: (12+12+8=32) = 32 spaces
  EQUATES TO: 32 parking spaces REQUIRED for Automobile Fueling & conv. store
  Restaurant w/ carry out or delicatessen w/ less than 6 tables/booths
  Six (6) spaces PLUS 1 space for each employee on peak shift – 5 tables shown; 8 employees
  EQUATES TO: 14 parking spaces REQUIRED restaurant w/ carry out w/ less than 6 tables/booths
  TOTAL PARKING REQUIRED: 32 + 14 = 46 parking spaces
- Proposed – 48 parking spaces TOTAL: 34 standard parking spaces are provided around the building/perimeter areas (10' X 20' in dimension), PLUS 2 barrier-free parking spaces; PLUS 12 spaces at fueling canopy (6 pumps). Two (2) air stations are shown in 2 parking spaces on the north.
- Meets Requirement? – Yes; calculations based on Sheet A111 that shows areas counted as retail sales and seating areas.
- Comment – Employee parking (8 employees = 8 parking spaces) is counted twice, essentially for the same employees, when using the 2 different parking formulas. Required number of parking spaces could be reduced by 8 spaces (Total required = 38 spaces).

Barrier-Free Parking

- Required – 2 barrier-free spaces in a location most accessible to the building entrance, with at least 1 space van-accessible (1 barrier-free space required per 25 parking spaces)
- Proposed – 2 barrier-free spaces, both van accessible, nearest the building entrances (east side of building)
- Meets Requirement? – Yes
- Comment – (none)

Parking Lot / Driveway / Internal Roads Setbacks (Sec. 5.8.3.)

- Required – Off-street parking in commercial districts may only be located in a side or rear yard or non-required front yard; may not be permitted within 20' of a single-family district, nor within 10' of a road ROW, or 25' from a front lot line, nor 10' from a side or rear lot line.

Setback	Required	Proposed	Meets Requirements? (Y / N)
Front (south) – Highland Road	25'	76.5'	Yes
Front (west) – Old US-23	25'	11'	No – but is consistent with Walgreens plan
Rear (north)	10'	11'	Yes
Side (east)	10'	55'	Yes

Meets Requirement? – Yes

- Comment – Although Section 5.8.3 states off-street parking in commercial districts may only be located in a side or rear or non-required front yard, it appears that for prior auto fueling station projects (Mugg and Bopps, Speedway, and Clyde Road/Yatooma gas stations), a 25-foot setback from a front line was applied for off-street parking, even though off-street parking or a portion of was located within the required front yard. In order to be consistent with prior applications of this ordinance standard, staff has applied the same 25-foot setback from the front lot line for this plan, for off-street parking facing Highland Road and Old US-23.

Loading (Sec. 5.9)

- Required – 1 loading space (10' X 50') required for up to 10,000 sq. ft. of floor area (for industrial use)
- Proposed – Loading zone (10' by 50') in the northern section of the site (in drive aisle)
- Meets Requirement? – Yes
- Comment – (none)

Access Management and Non-Residential Driveway Standards (Sec. 5.10)

Revisions are not proposed to the existing split driveway, that provides ingress/egress to the subject site and Chase Bank from Highland Road. Similarly, no changes are proposed to the existing driveway from Old US-23.

Landscaping (Section 5.11 – Updated Landscape Ordinance version)

Applicable sections of Section 5.11 (Landscaping and Screening) will be applied to the plans as outlined below. This site has frontage on Highland Road and Old US-23.

A. Landscape plan requirements (Sec. 5.11.1.D.)
   - Required – Landscape plans are to be prepared by a Registered Landscape Architect (plans with seal and signature).
   - Proposed – Landscape plans are prepared by a Registered Landscape Architect.
   - Meets Requirement? – Yes
   - Comment – (none)

B. Divider Medians (Sec. 5.11.2.A.vii.)
   - Required – Divider median shall be curbed, minimum 10 ft. wide; 1 canopy per initial 25 ft. plus 1 additional canopy or evergreen tree for every increment of 25 ft. Trees no further than 60 ft. center to center. Ground surface coverage 80% minimum with live plant material. Divider median east of fuel canopy, 80 lineal feet. EQUATES TO: 3 canopy trees and ground coverage (80%)
   - Proposed –10 ft. wide median with 3 canopy trees and lawn (80% coverage) on plan); 80% ground surface coverage (lawn/turf)
   - Meets Requirement? – Yes
   - Comment – (none)

C. Irrigation (Sec. 5.11.2.A.viii.)
   - Required – All landscaped areas (including lawns) shall be provided with an automatic, underground or drip irrigation system.
   - Proposed – Irrigation to be provided to all landscaped areas and lawn, using an automated irrigation system, per note on Sheet L1.0. Irrigation plans are provided on Sheet I 1.1.
   - Meets Requirement? – Yes
   - Comment – (none)

D. Greenbelt Landscaping (Sec. 5.11.2. C.)
An existing MDOT site vision line is shown on the plans, at the southwest corner of the site, within the property lines (shown as a diagonal line). Landscaping may not be permitted within this area; thus, the applicant has subtracted 94 lineal feet for the MDOT site vision line for the Greenbelt calculations for each frontage along Old US-23 and Highland Road.

Calculations for Greenbelt along Highland Road (215 lineal ft. - 94 ft. = 121 lineal feet, net frontage)

- Required – Within the first 30 feet of the property, minimum 20-foot-wide area, 1 canopy tree for every 30 lineal feet or portion thereof of lot frontage; Planning Commission may approve up to 50% substitution of canopy trees with evergreen trees; PLUS 3 small deciduous ornamental trees or large deciduous or evergreen shrubs for the initial 40 ft., and 1 per 20 ft. thereafter.

EQUATES TO: 4 canopy trees; 3 ornamental trees, or large deciduous or evergreen shrubs in first 40 ft., plus 4 additional ornamental trees or large deciduous or evergreen shrub, or combination thereof (Total = 4 canopy trees plus 7 ornamental trees/large shrubs) REQUIRED

- Proposed – 4 canopy trees; 3 ornamental trees; and 4 large shrubs
- Meets Requirement? – Yes
- Comment – (none)

Calculations for Greenbelt along Old US-23 (350 lineal ft. - 94 ft. = 256 lineal feet, net frontage)

- Required – Within the first 30 feet of the property, minimum 20-foot-wide area, 1 canopy tree for every 30 lineal feet or portion thereof of lot frontage; Planning Commission may approve up to 50% substitution of canopy trees with evergreen trees; PLUS 3 small deciduous ornamental trees or large deciduous or evergreen shrubs for the initial 40 ft., and 1 per 20 ft. thereafter.

EQUATES TO: 9 canopy trees; 3 ornamental trees, or large deciduous or evergreen shrubs in first 40 ft., plus 11 additional ornamental trees or large deciduous or evergreen shrub, or combination thereof (Total = 9 canopy trees plus 14 ornamental trees/large shrubs) REQUIRED

- Proposed – 2 existing canopy trees; 7 proposed canopy trees; and 14 large shrubs
- Meets Requirement? – Yes
- Comment – (none)

E. Foundation Landscaping (Sec. 5.11.2.D.)

- Required – Length must equal 60% of the front and sides of the building length along front and sides of building where facing road or adjacent parking lot or other areas which provide access to building; must be 8 ft. in width and located adjacent to building, and consist of 1 ornamental or columnar tree, and 6 large or 8 small shrubs for every 30 lineal feet of building length or portion thereof.

  Building perimeter (all sides) = 332 ft total. Foundation perimeter calcs.: 332 ft. X 60% = 199 ft. (199 ÷ 30 = 6.6 to use for plant numbers).

  EQUATES TO: 7 ornamental/columnar trees; PLUS 53 small shrubs or 40 large shrubs REQUIRED
- Proposed – 7 ornamental trees and 53 small shrubs. Some shrubs planted in landscape areas that are not adjacent to the building. Plan states 216 lineal feet provided.
- Meets Requirement? – Yes, for the number of plants. Alternate plant locations are proposed for some of the shrubs.
- Proposed – **TBD**
- Comment – Planning Commission determination required if proposed plan is acceptable for the locations of the shrubs.

F. Parking Lot Landscaping (Sec. 5.11.2.E.i.) – Interior Areas

- Required – Landscaped end caps for parking areas of 10 or more spaces; landscape island required at intervals not to exceed 15 parking spaces; landscape areas in parking lots shall not be less than 10 ft. in any direction, nor less than 180 sq. ft.; 1 canopy tree per 180 sq. ft. of interior area, with parking lot island crowned and covered with lawn or live plant material to meet minimum ground

coverage requirements (80% coverage).
Parking islands TOTAL sq. ft.: 1,794 sq. ft. (stated on Sheet L1.0)
EQUATES TO: 10 canopy trees (1,794 ÷ 180 = 9.9) plus 80% ground coverage

- Proposed – 3 existing canopy trees; 7 proposed canopy trees; and lawn, 80% coverage
- Meets Requirement? – Yes
- Comment – (none)

G. Perimeter Areas – Parking lots (Sec. 5.11.2.E.ii.a.) *North parking area*
- Required – Parking lots shall be effectively screened or buffered from the public right-of-way, private road, or internal roadway with one or more landscaping designs, with a 15-foot-wide perimeter area abutting parking. Landscape berm planted with a combination of evergreen and deciduous shrubs to effectively screen parking lot; or evergreen hedge row a minimum 3 ft. in height; or decorative screen wall.
- Proposed – 11-foot-wide to 30-foot-wide landscape area next to parking spaces with hedgerow of 30 evergreen shrubs (2 different species)
- Meets Requirement – **TBD**
- Comment – Taunton yew and Seagreen juniper shrubs should be a minimum 30" in height at the time of planting. Planning Commission determination required if proposed width is acceptable where less than 15 feet.

H. Perimeter Landscaping (Sec. 5.11.2.E.ii.b.)– For areas not visible from a public road that do not have other screening requirements such as screening between properties – along north property line adjacent to parking area.
- Required – 15-foot-wide perimeter area to include 1 canopy tree with 4 large shrubs or 1 evergreen tree per 30 lineal ft. Lineal feet = 239 ft.
  EQUATES TO: 8 canopy trees PLUS 32 large shrubs; or 8 evergreen trees REQUIRED.
- Proposed – 8 canopy trees, plus 30 evergreen shrubs, and lawn. Landscape planting area varies in width from 11 ft. to 30 ft.
- Meets Requirement? – Yes
- Comment – Shrubs provided for screening of the parking lot can also serve to meet the shrub requirement for this standard.

I. Screening of Ground Mounted Equipment (Sec. 5.11.2.G.iii.)
- Required – Screening on three sides for utility cabinets (if 30 inches or more in height)
- Proposed – Utility cabinets are not proposed or shown.
- Meets Requirement? – **TBD**
- Comment – Should utility cabinets be proposed, the cabinet(s), cabinet height(s), and proposed screening should be shown on the Construction Plan set.

J. Detention/Retention Area Landscaping (Sec. 5.11.2.H.) – NA
Underground detention is proposed.

Other Landscaping and Site Comments

Lighting (Sec. 5.13)

A. Intensity
- Required – Light intensity to be measured at 5 ft. above ground level; max. 0.5 fc along property line adjacent to residential; or max.1.0 fc along property line adjacent to non-residential; average fc between 2.4 and 3.6 in main parking area and an average of 5.0 fc at main building entrance and at exit/entry drive; may not exceed 10 fc at any location. Average lighting for automotive fueling canopies shall not exceed 20 fc and canopy light fixtures shall be installed so that the lens is recessed and adequately shielded.

- Proposed – Footcandle values are measured at 5 ft. above ground level. Photometric plan indicates footcandle values exceed 1.0 footcandle in several spots on the east (3.5 fc) and west (6.0 fc) along each property line. Footcandle value exceeds 10 fc in several spots at the building entrance (NE) with a range of 2.7 fc to 63 fc; and at the south side of the building (range of 1.1 fc to 14.7 fc). Footcandle values under the fuel island canopy ranges from 9 fc to 20 fc and complies.
  Average footcandle value in the paved areas is 2.93 and complies. Average footcandle at building entrances is 9.54 fc and exceeds maximum average value of 5 fc. Average footcandle at entrance and exit drives is 2.70 fc and complies. Average lighting under the canopy is 15.48 fc and complies.
- Meets Requirement? – **No**, for light intensity in several spots. Plan to be revised to comply with lighting intensity standards as noted above.
- Comment – A revised photometric plan shall be submitted as part of the Construction Plan set.

B. Fixture Height
- Required – Lighting fixtures shall not exceed a height of 25', or the height of the principal building, whichever is less, measured from the ground level to the centerline of the light source.
- Proposed – An elevation drawing of the light pole and base, and overall height is not provided.
- Meets Requirement? – **No**
- Comment – Elevation drawing to be provided as part of Construction Plan set.

C. Fixture Type
- Required – Details of all lighting fixtures needed including specifications for shielding, wattage, and illumination.
- Proposed – Technical information on light fixtures was submitted.
- Meets Requirement? – Yes, for specification sheets for building lights and parking lot pole fixture.
- Comment – The canopy overhang at the main entrance (northeast corner) is illuminated with a light bar, that is shielded with an eyebrow lighting bracket at the edge of the curved canopy/overhang, and end caps are shown. A detailed drawing is provided. The light bar (light fixture XM) provides a wash of color on the red awning fascia. Per the applicant the color output from the light bar is red and will not move, flash, or change color when illuminated. This information and statement should be added to the Construction Plan set.

Water Supply and Wastewater Disposal (Sec. 5.16)
The site will be served by municipal water and sanitary sewer.

Architecture / Building Materials (Sec. 5.24)

Architecture Comments:
Façade Materials Calculation – Façade materials must comply with the specifications for Façade Materials Group #1 (Sec. 5.24.14); percentages for each elevation are provided (for convenience store building).

Materials Group #1: Proposed Façade Materials by Percentage by Elevation

Elevation	Stone Cast stone masonry veneer (50% Max.)	Brick Natural Clay (30% Min.)	Glass (50% Max.)	Flat Metal Panels 20% Max.)	Doors Not listed in Ord.	Awnings (10% Max.)	Standing Seam Metal (20% Max.)
East	28.3%	38.8%	15.6%	4.6%	4.5%	5.3%	2.9%
North	19.78%	39.5%	21.39%	5.35%	5.01%	4.05%	4.92%
West	15.9%	54.7%	16.1%	4.5%	0.0%	7.5%	1.3%
South	17.0%	65.5%	7.4%	4.5%	2.2%	3.4%	0.0%

- Colors: Color renderings of the building are provided in the plan set. Specific product information for each façade material is stated on the sample board rendering, entitled Exterior Building Products. Reddish brown and cream tones used for masonry products; red tone colors are used for the canopy and cupola at the main building entrance; dark bronze toned materials are used on the window awnings, doors, metal coping, standing seam roof of secondary cupola, and window/door trim.
- Materials: Percentages are listed for each elevation side as indicated by the table; specifications on all materials are provided. Façade materials comply with the standards outlined in Section 5.24.14.
- The outlines of the roof-mounted mechanical units (RTUs) are shown on Sheet A102 and Sheet A104. The elevations show the RTUs are screened by the parapet walls.
- Meets Requirement? – Yes
- Comment – Each window on the west elevation has faux window reflective film attached to the window, which allows for flexibility in the design of the interior space for the kitchen preparation/other interior areas, while screening the view of the interior from the public side of the building.

Fuel Island Canopy Design

The fueling station and canopy are east of the building. There are six (6) pump islands, for a total of twelve (12) fueling stations. The canopy is approximately thirty-two (32) feet wide and one hundred and forty (140) feet long. The canopy structure is sloped, and the highest point is height is 21'-7¼". The support posts are faced with brick to match the building. The brick material covers the majority of each support post. The canopy fascia color is dark bronze, and the fascia is not illuminated.

Signage

Sign drawings for the monument sign (on Highland Road), wall signs on the building, and signs on the fuel island canopy are provided in the plan set. Based on the information presented, the signs appear to comply with the Zoning Ordinance standards (Section 5.26). Signs will be reviewed separately, by staff, as part of any sign permit application.

Other Requirements-Zoning Ordinance Standards

Nothing at this time.

First Amendment to the Planned Development Agreement (Draft version)

The applicant has provided a draft version of the First Amendment to the Planned Development Agreement between Hartland Township and DH-Hartland II, LLC and DH-Hartland, LLC. The original document was recorded in 2008, as the governing document for the Hartland Walgreens/Chase Bank Planned Development. The original Planned Development Agreement for Hartland Walgreens/Chase Bank PD only

allowed for a Walgreens Pharmacy and a Chase Bank, as depicted on the Final PD Plan. An automobile fueling and convenience station with fast food restaurant, and 24-hour operation are not listed in the original PD Agreement. as a Principal Permitted Use or Special Land Use.

The draft First Amendment proposes revised language for applicable sections of the original PD Agreement as related to the proposed project. Specifically, applicable sections have been revised to allow for the redevelopment of Parcel A (former Walgreens) for a Sheetz fuel station, with fast-food restaurant, operating 24 hours per day. The final document shall be subject to the approval of the Township Attorney.

Hartland Township DPW Review
A review letter is provided from the Hartland Township DPW Director, dated July 8, 2025.

Township Engineer's Review
The Township Engineer (SDA) has reviewed the plans and provided comments in the letter dated June 23, 2025.

Hartland Deerfield Fire Authority Review
The Hartland Deerfield Fire Authority has provided comments in the review letter dated July 9, 2025.

Attachments
1. Hartland Township DPW review letter dated 07.08.2025 – PDF version
2. Township Engineer (SDA) review letter dated 06.23.2025 – PDF version
3. Hartland Deerfield Fire Authority review letter dated 07.09.2025 – PDF version
4. Draft 1st Amendment to PD Agreement – PDF version
5. LCRC email dated 06.23.2025 – PDF version
6. MDOT email dated 06.24.2025 – PDF version
7. Sheetz TIS Executive Summary 12.09.2024 – PDF version
8. Site Plans dated 08.14.2025

CC: SDA, Twp Engineer (via email)
Scott Hable, Twp DPW Director (via email)
A. Carroll, Hartland FD Fire Chief (via email)

T:\PLANNING DEPARTMENT\PLANNING COMMISSION\2025 Planning Commission Activity\Site Plan Applications\SP #25-005 Sheetz at former Walgreens\Staff Reports\PC\SP #25-005 Sheetz staff report PC 08.21.2025.docx

DEPARTMENT OF PUBLIC WORKS

Scott Hable, Public Works Director
2655 Clark Road
Hartland MI 48353
Phone: (810) 632-7498

TO: Planning Department
DATE: 7/8/2025
DEVELOPMENT NAME: Sheetz
APPLICATION #: SP #25-005
REVIEW TYPE: Site Plan

Site Plans for the proposed Sheetz gas station and food service area propose 12 nozzles (6 islands with 2 nozzles on each), in addition to a 6,132 square foot building. REUs are assigned for service stations as 1.0 per premise plus 0.15 per nozzle. For stations with multiple uses, add 0.50 per 1,000 square feet of building area for a mini mart. If Sheetz proposes to prepare and serve takeout food this designation will require 1.5 REU's per 1000sf of restaurant area.

Nozzles	(12): 1.0 + (0.15 * 12) =	2.80
Mini-Mart:	5,100 sf / 1000 sf * 0.50 =	2.55
Restaurant take out:	1.5 per 1000 sf =	1.5
TOTAL:		6.85

	Sewer REUs	Water REUs
Owned	4.50	8.34
Required	6.85	6.85
# REUs Needed	2.35	0
Cost Each	$9,439.20	$0
Total Due Each	$22,182.12	$0
TOTAL REU COST	**$22,182.12**	

Hartland Township Public Works approves the Sheetz site plan subject to inclusion of the following details on the construction plans:

1. Water main material, sizes and connection detail sheet.
2. Water service lead location, size and materials including fittings.
3. Sanitary sewer material and sizes and connection detail sheet
4. Monitoring manhole for sewer connection and location if required
5. Hydrant model (EJ5BR) shown on plans
6. Utility easements noted as public or private.

Appropriate size water meters, horns, and MXU's will need to be purchased from the township at time of installation. Please feel free to contact me with any further questions or comments regarding this matter and thank you for your time.

Scott Hable
Public Works Director

Site Plan Review

June 23, 2025

Troy Langer
Planning Director
Hartland Township, MI

Re: Sheetz – Site Plan Review #2
SDA Review No. HL24-104

Dear Troy:

We have received the preliminary site plan submittal for the above referenced project prepared by Kimley-Hoen dated May 28, 2025, and received by our office on June 12, 2025. The plans were reviewed in accordance with Hartland Township Engineering Standards and the following comments are our observations.

Recommendation
Approval of the Final Site Plan is recommended with the conditions listed below.

Project Summary

- Construction of a Sheetz convenience store and gas station north of Highland Road (M-59) and east of Old US-23 at 10081 Highland Road. Site access would be provided with access drives from Highland Road (M-59) and Old US-23. It is noted that the site is 2.926 acres.
- Water service would be provided from the existing 8-inch water main within the north part of the site. A water service will be provided to serve the Sheetz store.
- Sanitary sewer service would be provided from the existing 15-inch sanitary sewer along Highland Road (M-59). A sanitary service would be provided to serve the Sheetz store.
- Storm water would be collected by two storm sewer collection systems an underground detention basin, out letting to an existing 18-inch storm sewer.

General

1. There are two wells indicated as type II near the site. An EGLE variance would need to be requested for the installation of underground storage tanks within the range and distance required by EGLE based on the type of wells. The applicant stated that they have started the process with the Bureau of Fire Services and EGLE to obtain the appropriate approvals.

Storm Drainage & Site Grading

1. Any redevelopment project with a land disturbance area of 1.0 acre or larger or creates or replaces 0.5 acres of impervious surface will require a permit from Livingston County. LCDC's current standards shall govern all storm and detention improvements within the Township. Confirm that the proposed underground detention system is acceptable as designed. There appears to be an underground space available in the parling lot should the detention footprint require to be increased. During engineering review pre-treatment at each entry point to the underground detention will be required.
2. A drainage plan with subareas indicates the acreage for each catch basin will be required during engineering review.

Traffic

1. The existing site is a Walgreens that has not been in service since 2023 therefore all the Sheetz traffic will be new to the site. A traffic impact study shall be submitted for review

Sanitary Sewer

1. All sanitary sewer design requirements are to follow current Livingston County Drain Commissioner's (LCDC) standards and details. LCDC sanitary sewer detail sheets shall be attached to the proposed plans when applicable.

Permits and Agreements Required

Based on those improvements depicted on the plans, the following permits and agreements may be needed to be provided for review and approval:

- A draft copy of the Storm Drain Agreement.
- A Land Use Permit will be granted after the pre-construction meeting.
- Livingston County Drain Commissioner approval and permit.
- Soil Erosion and Sedimentation permit from Livingston County Drain Commissioner.
- Livingston County Roads permit for any work within the County ROW.
- Genesee County Drain Commissioner's Office IPP Discharge Permit approval.
- NPDES Notice of Coverage Documentation
- MDOT Permit for any work within the Highland Road (M-59) ROW.
- ROW Dedication.

Please be aware that additional comments may arise with the submittal of the requested revisions and/or additional information.

The comments are not to be construed as approvals and are not necessarily conclusive. The final engineering plans for this development are to be prepared in accordance with the Hartland Township Engineering Design Standards and 2021 Hartland Township Standard Details. Sanitary sewer and water benefit fees may be applicable for this project.

If you have any questions regarding this letter, please contact Luisa Amici at (248) 844-5400 with any questions.

Sincerely,

SPALDING DEDECKER

Luisa Amici
Engineer

Mark Collins, PE
Project Manager

cc: Martha Wyatt, Hartland Township Planning Planner - Landscape Architect (via email)
Scott Hable, Hartland Township Public Works Director (via email)
Michael Luce, Hartland Township Manager (via email)

HARTLAND DEERFIELD FIRE AUTHORITY

HARTLAND AREA FIRE DEPT.

3205 Hartland Road
Hartland, MI. 48353-1825

Voice: (810) 632-7676
E-Mail: firemarshal@hartlandareafire.com

July 9, 2025

To: Hartland Township Planning Commission

Re: Sheetz - Hartland

The Fire Department has reviewed the Sheetz gas station plan dated May 29, 2025.

We have the following comments regarding the proposed facility.

1. Ensure turning radius is a minimum of fifty feet.
2. Supra Box installed on the exterior of the building, Fire Department has ordering directions.
3. Ensure isle widths are twenty-six feet face of curb to face of curb.
4. Encourage Automated External Defibrillator (AED) placed in building.

Any revised drawings effecting the Fire Department must be submitted for review.

Jon Dehanke
Fire Marshal

FIRST AMENDMENT
TO
PLANNED DEVELOPMENT AGREEMENT

THIS FIRST AMENDMENT TO PLANNED DEVELOPMENT AGREEMENT ("**Amendment**") is made as of _____, 2025, by and among the Township of Hartland, a Michigan municipal corporation ("**Township**"),whose address is 2655 Clark Road, Hartland, Michigan 48353, DH-Hartland II, LLC, a Michigan limited liability company ("**DH-II**"), whose address is 204 Charing Cross Ct., Bloomfield Hills, MI 48301, and DH-Hartland, LLC, a Michigan limited liability company ("**DH**"), whose address is 204 Charing Cross Ct., Bloomfield Hills, MI 48301. The Township, DH-II and DH may be referred to herein individually as a "**Party**", or collectively as the "**Parties**."

RECITALS:

A. DH is the owner of that certain improved real property located at 10081 Highland Road, Hartland Township, Livingston County, Michigan, which is legally described on the attached **Exhibit A**, and is incorporated herein by reference ("**Parcel A**"). Parcel A was leased and improved with a Walgreen's with a drive-through window pharmacy, which has closed.

B. DH-II is the owner of that certain improved real property located at 10083 Highland Road, Hartland Township, Livingston County, Michigan, which is legally described on the attached **Exhibit B**, and is incorporated herein by reference ("**Parcel B**"). Parcel B was leased and improved with a Chase Bank with drive-through tellers and an ATM. Parcel A and Parcel B may be referred to herein individually as a "**Parcel**" or collectively as the "**Parcels**."

C. Parcel A is described and depicted as Unit 1, and Parcel B is described and depicted as Unit 2 in the Master Deed of the Hartland Retail Site Condominium, and Livingston County Subdivision Plan No 380, recorded on November 8, 2007 as Document #2007R-036709, Livingston County Records.

D. The Parties entered into a certain Planned Development Agreement dated April 28, 2008, recorded on July 3, 2008 in Document #2008R-020851, Livingston County Records, which rezoned the Parcels to Planned Development (PD), and provided for the use and development of the Parcels ("**PD Agreement**").

E. DH desires to redevelop Parcel A with a Sheetz fuel station, fast-food restaurant and convenience store, operating 24-hours per day, as shown on the Parcel A Final Plan as defined below ("**Sheetz Development**").

F. Pursuant to the requirements of Section 3.1.18D of the Township's Zoning Ordinance, on _____, 2025, the Township's Planning Commission, (i) approved the Parcel A Site Plan, and (ii) recommended approval of the proposed amendment to the PD Agreement for the development and use of Parcel A for the Sheetz Development to the Township's Board of Trustees, including the replacement of the prior Parcel A Final Plan with the approved Parcel A Site Plan.

G. Pursuant to the requirements of Section 3.1.18D of the Township's Zoning Ordinance, on _____, 2025, the Township's Board of Trustees granted final approval of the amendment to the PD Agreement.

NOW, THEREFORE, for and in consideration of the agreements, covenants and easements contained herein, and Ten Dollars ($10.00), the sufficiency of which is hereby acknowledged, the Parties hereto do hereby agree as follows:

1. Recitals. The foregoing Recitals are agreed to among the Parties and incorporated into this PD Agreement.

2. New Zoning Ordinance Supersedes Prior Zoning Ordinance. All references in the PD Agreement to Article 29 of the Township's Zoning Ordinance are hereby amended to reference Section 3.1.18 of the Township's Zoning Ordinance 76 currently in effect, which supersedes the prior zoning ordinance of the Township. All references in the PD Agreement to Article 29, Section 29.08 are hereby amended to reference Section 3.1.18H of the Township's Zoning Ordinance currently in effect.

3. Amendments of Exhibits to PD Agreement. The PD Agreement is hereby amended to substitute and replace the following Exhibits attached to the PD Agreement by the like-numbered Exhibits attached to this Amendment, which are incorporated herein by reference:

Exhibit 1 - Parcel A and Parcel B combined legal description
Exhibit 2 – Parcel A legal description
Exhibit 3 – Parcel B legal description
Exhibit 4 – Site plan portion of the Parcel A Final Plan (including existing Parcel B)
Exhibit 7 – Section 3.1.18 of the Township's Zoning Ordinance 76

4. No Phasing. Section 2.1 of the PD Agreement is hereby deleted in its entirety.

5. Permitted Uses. Section 3.1 of the Agreement is hereby deleted in its entirety and replaced with the following:

3.1 **Permitted Uses**. The Development contemplated herein includes the Sheetz Development, consisting of a Sheetz fuel station with a fast-food

restaurant, convenience store and 24-hour operation as shown on the Parcel A Final Plan. The Development contemplated herein, as set forth in the Parcel B Final Plan, includes a Chase Bank with drive-through tellers and an ATM. These uses are consistent with the Comprehensive Plan and the surrounding area and meet the requirements of the Township Zoning Ordinance. All other uses not expressly provided for herein are prohibited, including but not limited to any use involving outdoor display, sale or storage of goods or services unless expressly agreed to herein or by the Township as an amendment to this Agreement pursuant to Section 10 of this Agreement.

6. Parking. The first sentence of Section 5 of the PD Agreement is hereby deleted and replaced with the following: "DH-II agrees that parking areas within Parcel B will be provided in accordance with the parking plan that is included in the approved Parcel B Final Plan, which may be converted to and developed as parking spaces upon review and approval by the Township pursuant to Section 3.1.18H. DH agrees that the parking areas within Parcel A will be provided in accordance with the approved Parcel A Final Plan." The remaining provisions of Section 5 shall remain unchanged.

7. Signage. Section 6.3.1 of the PD Agreement is hereby deleted and replaced in its entirety with the following:

6.3.1 **Temporary Signs**. During construction on Parcel A, only one (1) temporary sign is permitted along M-59 and one (1) temporary sign is permitted along Old US-23 advertising the Sheetz Development. Each of those signs may not exceed 64 square feet in sign area per side, and 10 feet in height. The temporary signs shall otherwise comply with the current sign regulation provisions of the Township's Zoning Ordinance and shall be removed upon completion of the Sheetz Development or not later than _____, whichever occurs sooner.

8. Amendments to Ordinance. Notwithstanding anything in Section 7.4 of the PD Agreement to the contrary, the Parties acknowledge and agree that the Sheetz Development on Parcel A is subject to and in compliance with the PD Planned Development Section 3.1.18, attached hereto at **Exhibit 7**, and all other provisions of the Township's Zoning Ordinance 76 that are in effect on the date of recording of this Amendment, and that the remainder of the Development in existence as of the date hereof pursuant to the PD Agreement remains subject to the Township's Zoning Ordinance in existence on April 28, 2008, the PD Agreement.

9. The fourth sentence of Section 7.4 of the PD Agreement is deleted and replaced with the following:

A copy of the Township's former Planned Development Ordinance provisions in effect as of the date of the PD Agreement, being Article 29 of the Township's prior Zoning Ordinance, is attached here at **Exhibit 6** and made a part of this Agreement. A copy of the Township's current Planned Development Ordinance provisions in

effect as of the date of this Amendment, being Section 3.1.18 of the Township's Zoning Ordinance 76, is attached here at **Exhibit 7** and made a part of this Agreement.

The remaining provisions of Section 7.4 shall remain unchanged.

10. Compliance With Laws. The first sentence of Section 10 of the PD Agreement is deleted and replaced with the following:

In developing the Sheetz Development on Parcel A, except as otherwise provided above, DH and/or its successors in title, shall adhere to all codes, Ordinances and design standards in effect as of the date of the recording of this Amendment that are not in conflict with this Agreement, as amended by the Amendment. In developing Parcel B, except as otherwise provided above, DH-II and/or its successors in title, shall adhere to all codes, Ordinances and design standards not in conflict with this Agreement or any site plan heretofore or hereafter approved.

The remaining provisions of Section 10 shall remain unchanged.

11. Integration. The first sentence of Section 12 of the PD Agreement is hereby deleted and replaced with the following: "This Agreement, as amended by the Amendment, contains the entire agreement between the parties." The remaining provisions of Section 12 shall remain unchanged.

12. Termination. Section 19 of the PD Agreement is hereby deleted in its entirety.

13. Notices. Section 24 of the PD Agreement is hereby amended to provide that any notices to DH shall be delivered to the following address:

DH-Hartland, LLC
204 Charing Cross Ct.
Bloomfield Hills, MI 48301

With a copy to:

Sheetz, Inc.
Attn: Real Estate Counsel
351 Sheetz Way
Clayburg, PA 16625

14. Ratification. The Township, DH and DH-II ratify the PD Agreement as amended hereby, and confirm that the PD Agreement shall continue in full force and effect as amended by this Amendment. The Township represents and warrants to DH and DH-II that such Parties are in compliance with the terms and conditions of the PD Agreement as of the date hereof.

15. Transfer Taxes. This instrument is exempt from Michigan real estate transfer tax pursuant to MCL 207.526(a). This instrument is exempt from county real estate transfer tax pursuant to MCL 207.505(a).

[signatures on following pages]

The Parties execute this First Amendment to Planned Development Agreement as of the date set forth above.

HARTLAND TOWNSHIP ,
a Michigan municipal corporation

By:_____
William Fountain,
Supervisor

By:_____
Larry Ciofu,
Township Clerk

ACKNOWLEDGEMENT

STATE OF MICHIGAN)
) ss
COUNTY OF LIVINGSTON)

The foregoing First Amendment to Planned Development Agreement was acknowledged before me this _____ day of _____, 2025, by William Fountain, the duly elected Supervisor, and Larry Ciofu, the duly elected Clerk of Hartland Township, a Michigan municipal corporation, on behalf of the corporation.

_____
_____, Notary Public
Livingston County, Michigan
My Commission Expires: _____
Acting in Livingston County

[Signatures continue on the following page]

DH- HARTLAND II, LLC,
a Michigan limited liability company

By:_____
Shannon Shaya,
Manager

ACKNOWLEDGEMENT

STATE OF MICHIGAN)
) ss
COUNTY OF _____)

The foregoing First Amendment to Planned Development Agreement was acknowledged before me this _____ day of _____, 2025, by Shannon Shaya, the Manager of DH-HARTLAND II, LLC, a Michigan limited liability company, on behalf of the company.

_____
_____, Notary Public
_____County, Michigan
My Commission Expires: _____
Acting in _____ County

[Signatures continue on the following page]

DH- HARTLAND, LLC,
a Michigan limited liability company

By:_____
Shannon Shaya,
Manager

ACKNOWLEDGEMENT

STATE OF MICHIGAN)
) ss
COUNTY OF _____)

The foregoing First Amendment to Planned Development Agreement was acknowledged before me this _____ day of _____, 2025, by Shannon Shaya, the Manager of DH-HARTLAND, LLC, a Michigan limited liability company, on behalf of the company.

_____
_____, Notary Public
_____County, Michigan
My Commission Expires: _____
Acting in _____ County

Drafted by and when recorded return to:

John D. Gaber
Williams, Williams, Rattner & Plunkett, P.C.
380 N. Old Woodward Avenue, Suite 300
Birmingham, Michigan 48009
(248) 642-0333

EXHIBIT 1

Parcel A and Parcel B Combined Legal Description

Unit 1 and Unit 2 of Hartland Retail Site Condominium, according to the Master Deed recorded in Document No. 2007R-036709 and amendments thereto, and designated as Livingston County Condominium Subdivision Plan No. 380, together with rights in general common elements and limited common elements as set forth in above Master Deed, and as described in Act 59 of the Public Acts of 1978, as amended.

EXHIBIT 2

Parcel A Legal Description

Unit 1 of Hartland Retail Site Condominium, according to the Master Deed recorded in Document No. 2007R-036709 and amendments thereto, and designated as Livingston County Condominium Subdivision Plan No. 380, together with rights in general common elements and limited common elements as set forth in above Master Deed, and as described in Act 59 of the Public Acts of 1978, as amended.

Commonly Known As: 10081 Highland Road, Hartland Township, Michigan

Tax Parcel No.: 08-21-305-003

EXHIBIT 3

Parcel B Legal Description

Unit 2 of Hartland Retail Site Condominium, according to the Master Deed recorded in Document No. 2007R-036709 and amendments thereto, and designated as Livingston County Condominium Subdivision Plan No. 380, together with rights in general common elements and limited common elements as set forth in above Master Deed, and as described in Act 59 of the Public Acts of 1978, as amended.

Commonly Known As: 10083 Highland Road, Hartland Township, Michigan

Tax Parcel No.: _____

EXHIBIT 4

Overall Development Site Plan

EXHIBIT 7

Section 3.1.18 of Township Zoning Ordinance

Troy Langer

From: Troy Langer
Sent: Monday, June 23, 2025 1:16 PM
To: Troy Langer
Subject: FW: Sheetz at former Walgreens

From: Mike Goryl <mgoryl@livingstonroads.org>
Sent: Monday, June 23, 2025 12:47 PM
To: Troy Langer <TLanger@hartlandtwp.com>
Cc: Craig Heidelberg (HeidelbergC@michigan.gov) <heidelbergc@michigan.gov>; Fournier, Laurent (MDOT) <FournierL@michigan.gov>
Subject: RE: Sheetz at former Walgreens

Troy,

The existing driveway approach on Old 23 is acceptable provided traffic impacts for the change in use can be adequately mitigated and a traffic study approved.

Mike

Troy Langer

From: Troy Langer
Sent: Tuesday, June 24, 2025 9:51 AM
To: Troy Langer
Subject: FW: Sheetz at former Walgreens

From: Heidelberg, Craig (MDOT) <HeidelbergC@michigan.gov>
Sent: Tuesday, June 24, 2025 9:25 AM
To: Troy Langer <TLanger@hartlandtwp.com>; Mike Goryl <mgoryl@livingstonroads.org>
Cc: Fournier, Laurent (MDOT) <FournierL@michigan.gov>
Subject: RE: Sheetz at former Walgreens

Troy,

MDOT's response is the same.

The existing driveway approach on M-59 is acceptable provided traffic impacts for the change in use can be adequately mitigated and a traffic study approved.

Thank you
Craig

From: Mike Goryl <mgoryl@livingstonroads.org>
Sent: Monday, June 23, 2025 12:47 PM
To: Troy Langer <TLanger@hartlandtwp.com>
Cc: Craig Heidelberg (HeidelbergC@michigan.gov) <heidelbergc@michigan.gov>; Fournier, Laurent (MDOT) <FournierL@michigan.gov>
Subject: RE: Sheetz at former Walgreens

Troy,

The existing driveway approach on Old 23 is acceptable provided traffic impacts for the change in use can be adequately mitigated and a traffic study approved.

Mike

Hartland Sheetz
Traffic Impact Study

Skilken Gold Co

Project No. 241633
December 9, 2024

REVIEW DRAFT

fishbeck
Engineers | Architects | Scientists | Constructors

fishbeck
Engineers | Architects | Scientists | Constructors

39500 MacKenzie Drive, Suite 100
Novi, Michigan 48377

248.324.2090 | fishbeck.com

Hartland Sheetz
Traffic Impact Study

Prepared For:
Skilken Gold Co
Columbus, Ohio

December 9, 2024
Project No. 241633

Review Draft

Executive Summary

Fishbeck has completed a traffic impact study (TIS) related to a proposed Sheetz Gas Station that will be in the northeast quadrant of M-59 (Highland Road) and Old US-23 in Hartland Township (Township), Livingston County, Michigan. The parcel currently contains a vacant retail building and a Chase Bank. The existing retail building will be demolished and replaced by the Sheetz Gas Station. The Chase Bank will remain. The development will utilize the existing right-in right-out (RIRO) driveway on M-59 (Highland Road) and the existing full movement driveway on Old US-23. The development will be completed in one phase, assumed to be open and fully operational in 2025.

This study was conducted according to the methodologies and guidance published by the Institute of Transportation Engineers (ITE), the American Association of State Highway and Transportation Officials (AASHTO), the Michigan Department of Transportation (MDOT), the Livingston County Road Commission (LCRC), and the Township. MDOT standards and guidelines were referenced where local standards/guidelines are not defined.

Vehicular Turning Movement Counts (TMC) were collected at the study intersections on Tuesday, October 22, 2024, during the weekday morning (7 a.m. to 9 a.m.) and afternoon (4 p.m. to 6 p.m.) peak periods for the roadway network.

There is one known development in the site vicinity that will open prior to the proposed Sheetz Gas Station that will add additional traffic volumes or alter traffic patterns within the study network. The following development was included:

- Completion of the "Shops at Waldenwoods."

Site-generated traffic was forecast using the information and methodologies specified in the ITE *Trip Generation Manual*. Existing traffic volumes, site layout, and engineering judgement were used to develop a trip distribution model for the a.m. and p.m. peak hours for the new traffic that would be generated by the proposed development. A portion of the site-generated trips are anticipated to be "pass-by" in nature, meaning they already exist on the adjacent road network and are interrupted to visit the site.

Operational analyses were conducted for existing, background, and total future conditions based on the *Highway Capacity Manual* (HCM) 6th Edition and HCM 2000 methodologies using Synchro traffic analysis software. Synchro network models were also simulated using SimTraffic to evaluate network operations including intersection queueing.

Based on the findings of the HCM operational analyses and site traffic generation, Table 1 has the recommended existing, background, and future improvements to the study intersections to mitigate traffic operation impacts.

Table 1 – Proposed Improvements

Intersection	Existing	Background	Future
M-59 (Highland Road) and US-23 Interchange (SPUI)	-	• Complete signal timing offset optimization in the a.m. peak hour. • Complete signal timing split and offset optimization in the p.m. peak hour (cycle length to remain the same).	
M-59 (Highland Road) and Old US-23	• Change the NB and SB left-turn phasing from protected only to permitted/protected. • Install right-turn overlap phasing on all approaches.	• Complete signal timing split and offset optimization in both peak hours (cycle length to remain the same).	

Table 1 – Proposed Improvements

Intersection	Existing	Background	Future
	• Complete signal timing split and offset optimization in both peak hours (cycle length to remain the same).		

NB northbound
SB southbound
SPUI single-point urban interchange

The opinions, findings, and conclusions expressed in this TIS are those of Fishbeck and not necessarily those of the Owner/Applicant, Skilken Gold Co, Sheetz, MDOT, LCRC, or Hartland Township.

Prepared By:

Alyssa Wambold, PE, PTOE – Fishbeck

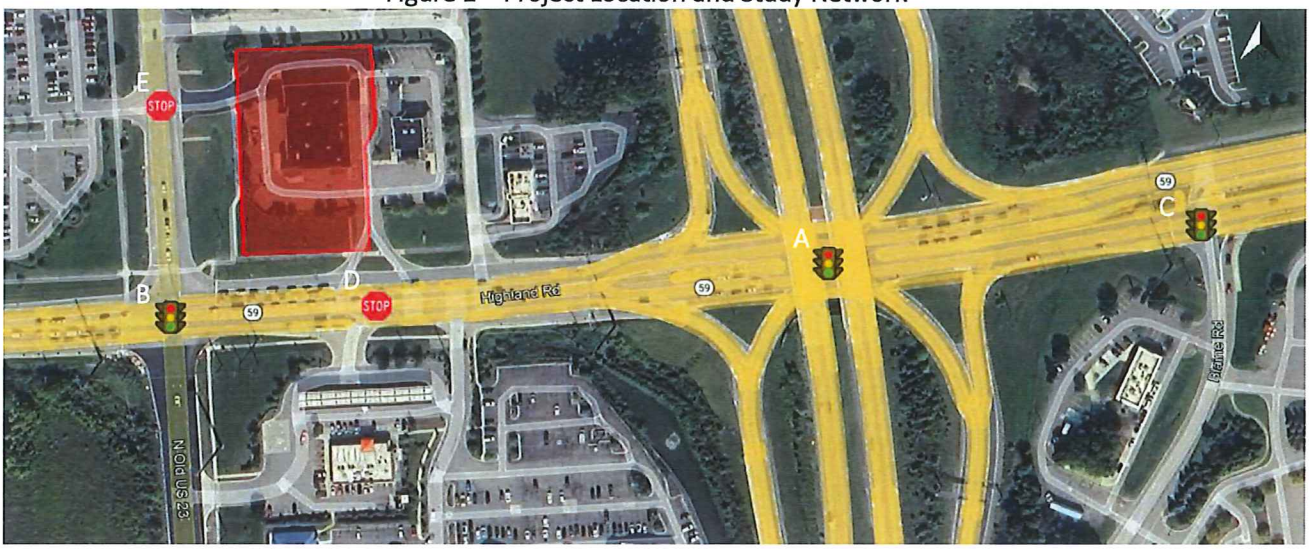
Jill Bauer, PE, PTOE
Project Manager – Fishbeck

1.0 Introduction

1.1 Project Overview

On behalf of Skilken Gold Co, Fishbeck has completed a TIS for a proposed Sheetz Gas Station located in the northeast quadrant of M-59 (Highland Road) and Old US-23 in Hartland Township (Township), Livingston County, Michigan. The parcel currently contains a vacant retail building and a Chase Bank. The existing retail building will be demolished and replaced by the Sheetz Gas Station. The Chase Bank will remain. The development will utilize the existing RIRO driveway on M-59 (Highland Road) and the existing full movement driveway on Old US-23. The development will be completed in one phase, assumed to be open and fully operational in 2025. The project location and study intersections are displayed in Figure 1.

Figure 1 – Project Location and Study Network



A. M-59 (Highland Road) and US-23 Interchange	D. M-59 (Highland Road) and Speedway/Site Driveway
B. M-59 (Highland Road) and Old US-23	E. Old US-23 and Site Driveway/Kroger Driveway
C. M-59 (Highland Road) and Blaine Road	

1.2 Study Methodology

The objectives of this TIS were to determine what impacts the proposed project would have on adjacent roadway traffic operations, and to develop recommendations for any improvements necessary to mitigate the project impacts on the studied intersections. Study analyses were completed relative to typical weekday a.m. and p.m. peak periods.

This study was conducted according to the methodologies and guidance published by ITE, AASHTO, MDOT, LCRC, and the Township. MDOT standards and guidelines were referenced where local standards/guidelines are not defined.

1.3 Intersection Characteristics

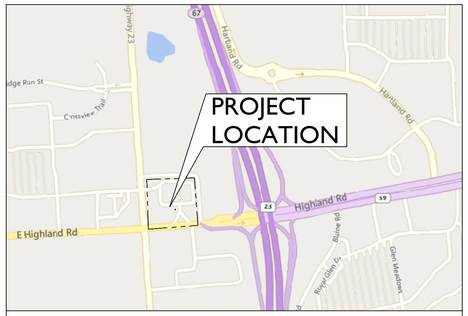
Based on the type and size of the proposed development, the likely area of influence for the site trips, and input from MDOT, traffic operations were analyzed for the following intersections:

- M-59 (Highland Road) and US-23 Interchange (signalized SPUI).

- M-59 (Highland Road) and Old US-23 (signalized).
- M-59 (Highland Road) and Blaine Road (signalized).
- M-59 (Highland Road) and Speedway/Site Driveway (existing unsignalized RIRO driveway).
- Old US-23 and Site Driveway/Kroger Driveway (existing unsignalized driveway).

The existing intersection lane configurations, traffic controls, and posted speed limits are displayed in Figure 2.

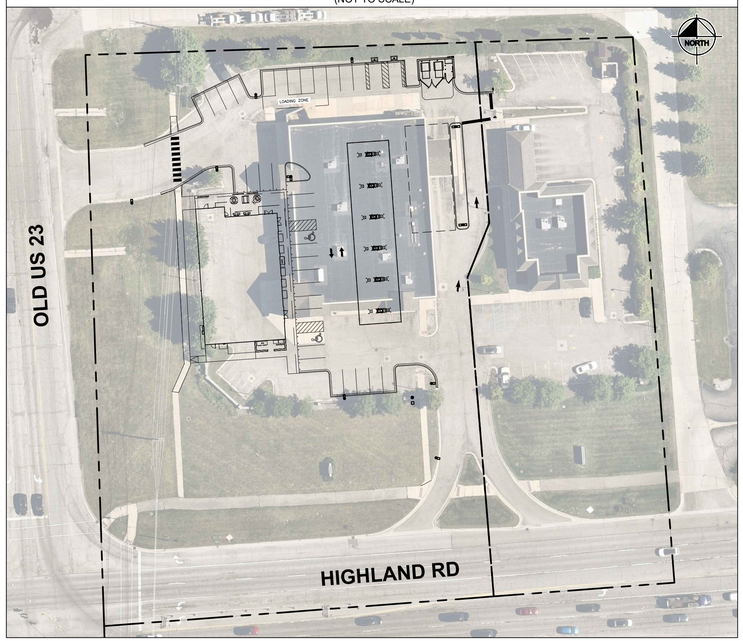
Drawing name: K:\DFT_DO\268593004_Sliken Gold_ Sheetz Old US 23_ Hartland_MI\2 Design\CAD\PlanSheets\C0.0-TITLE SHEET.dwg C0.0 COVER SHEET Aug 19, 2025 7:56am by LaurenFalzarano
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



VICINITY MAP
(NOT TO SCALE)

SITE PLAN
SHEETZ - HARTLAND
10081 HIGHLAND RD
HARTLAND, MI 48353

PROJECT MAP
(NOT TO SCALE)



LIVINGSTON COUNTY

CONSTRUCTION OF A SHEETZ CONVENIENCE STORE AND GAS STATION ON ±2.926 AC. PROJECT IS IN SECTION 21 OF T3N, R6E IN HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

PROJECT TEAM

DEVELOPER/OWNER
SHEETZ
351 SHEETZ WAY
CLAYSBURG, PA 16625
TEL: (740) 497-2326
CONTACT: DAVID BRUCKELMEYER

CIVIL ENGINEER
KIMLEY-HORN OF MICHIGAN, INC.
3000 TOWN CENTER, SUITE 2600
SOUTHFIELD, MI 48075
(313) 548-7081
CONTACT: TYLER SMITH, P.E.

LANDSCAPE ARCHITECT
KIMLEY-HORN OF MICHIGAN, INC.
3000 TOWN CENTER, SUITE 2600
SOUTHFIELD, MI 48075
TEL: (313) 548-7109
CONTACT: AUTUMN MCNINCH
CONTACT: JOHN ACKERMAN, PLA

LAND SURVEYOR ENGINEER
MONUMNET ENGINEERING GROUP ASSOCIATES, INC.
298 VETERANS DRIVE
FOWLERVILLE, MI 48836
TEL: (517) 223-3512

LEGAL DESCRIPTION

(PER TITLE AGENCY: CHICAGO TITLE INSURANCE COMPANY. TITLE COMMITMENT NO: 471236761NTS, EFFECTIVE DATE: AUGUST 15, 2024)

EXHIBIT A DESCRIPTION:

LAND SITUATED IN THE STATE OF MICHIGAN, COUNTY OF LIVINGSTON, TOWNSHIP OF HARTLAND.

UNIT 1 OF HARTLAND RETAIL SITE CONDOMINIUM, ACCORDING TO THE MASTER DEED RECORDED IN DOCUMENT NO.2007R-036709 AND AMENDMENTS THERETO, AND DESIGNATED AS LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 380, TOGETHER ITH RIGHTS IN GENERAL COMMON ELEMENTS AND LIMITED COMMON ELEMENTS AS SET FORTH IN ABOVE MASTER DEED, AND AS DESCRIBED IN ACT 59 OF THE PUBLIC ACTS OF 1978, AS AMENDED.

Sheet List Table

Sheet Number	Sheet Title
C0.0	COVER SHEET
V1.0	ALTA SURVEY
V1.1	ALTA SURVEY
C0.1	NATURAL FEATURES PLAN
C1.0	DEMOLITION PLAN
C2.0	SITE PLAN
C2.1	TRUCK TURN PLAN
C3.0	UTILITY PLAN
C4.0	GRADING & DRAINAGE PLAN
C5.0	CONSTRUCTION DETAILS
C5.1	MASONRY SPECIFICATIONS
L1.0	LANDSCAPE PLAN
I1.1	IRRIGATION PLAN
I1.1	IRRIGATION PLAN
A1.0	PHOTOMETRIC PLAN
A1.1	PHOTOMETRIC PLAN
A1.2	PHOTOMETRIC PLAN
A100	EXTERIOR ELEVATIONS
A101	EXTERIOR ELEVATIONS
A102	EXTERIOR ELEVATIONS
A103	EXTERIOR ELEVATIONS
A104	EXTERIOR ELEVATIONS
A110	BUILDING MATERIALS
A111	BUILDING MATERIALS
A112	BUILDING MATERIALS
A200	TRASH ENCLOSURE
A201	SIGNAGE PLAN
A202	SIGNAGE PLAN
A203	SIGNAGE PLAN
A204	SIGNAGE PLAN
A210	TRASH ENCLOSURE
A211	SIDEWALK PLAN
A212	FLOOR PLAN
A213	COLOR FLOOR PLAN
A220	RENDERINGS
A221	RENDERINGS
A222	RENDERINGS
A223	RENDERINGS

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

No.	REVISIONS	DATE	BY
1.	REV PER TWP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEWW	6/12/25	LDF
4.	REVISED PARKING CALCULATIONS	7/30/25	LDF
5.	ADD FLAG POLE AND BASE	08/14/25	LDF

Kimley»Horn of Michigan, Inc.
©2025 KIMLEY-HORN OF MICHIGAN
3000 TOWN CENTER, SUITE 2600
SOUTHFIELD, MI 48075
PHONE: 630-487-3550
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: TES
DRAWN BY: LDF
CHECKED BY: JA

STATE OF MICHIGAN
TYLER SMITH
ENGINEER
No. 6201068975
LICENSED PROFESSIONAL ENGINEER

SHEETZ

COVER SHEET

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

ORIGINAL ISSUE: 12/11/2024
KHA PROJECT NO. 268593004
SHEET NUMBER
C0.0

LEGAL DESCRIPTION (AS PROVIDED)

(PER TITLE AGENCY: CHICAGO TITLE INSURANCE COMPANY, TITLE COMMITMENT NO: 471236761NTS, EFFECTIVE DATE: AUGUST 15, 2024)

EXHIBIT A DESCRIPTION:

LAND SITUATED IN THE STATE OF MICHIGAN, COUNTY OF LIVINGSTON, TOWNSHIP OF HARTLAND.

UNIT 1 OF HARTLAND RETAIL SITE CONDOMINIUM, ACCORDING TO THE MASTER DEED RECORDED IN DOCUMENT NO. 2007R-036709 AND AMENDMENTS THERETO, AND DESIGNATED AS LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 380, TOGETHER WITH RIGHTS IN GENERAL COMMON ELEMENTS AND LIMITED COMMON ELEMENTS AS SET FORTH IN ABOVE MASTER DEED, AND AS DESCRIBED IN ACT 59 OF THE PUBLIC ACTS OF 1978, AS AMENDED.

BEARING REFERENCE

BEARINGS ARE BASED ON PROJECT COORDINATE SYSTEM:
MICHIGAN STATE PLANE COORDINATE SYSTEM, NAD83 (CONUS) (MOL) (GRS80), SOUTH ZONE 2113, INTERNATIONAL FEET, GROUND.
(LAT: 42°38'01.07" N, LON: 83°45'08.49" W, ELEV: 975, SCALE FACTOR: 1.0001308).

SCHEDULE B-SECTION II EXCEPTIONS

TITLE AGENCY: CHICAGO TITLE INSURANCE COMPANY
TITLE COMMITMENT NO: 471236761NTS
EFFECTIVE DATE: AUGUST 15, 2024

(6.) HIGHWAY EASEMENT RELEASE IN FAVOR OF THE STATE OF MICHIGAN RECORDED JULY 22, 1939 IN LIBER 187, PAGE 343 AND IN LIBER 187, PAGE 344.
(PLOTTED & SHOWN HEREIN)

(7.) RIGHT(S) OF WAY AND/OR EASEMENT(S) AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: THE TOWNSHIP OF HARTLAND, LIVINGSTON COUNTY, MICHIGAN, A MICHIGAN COMMON LAW TOWNSHIP RECORDING NO: LIBER 1174, PAGE 285 AND IN LIBER 3218, PAGE 239.
(PLOTTED & SHOWN HEREIN)

(10.) RIGHT(S) OF WAY AND/OR EASEMENT(S) AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: THE DETROIT EDISON COMPANY, A MICHIGAN CORPORATION
RECORDING NO: DOCUMENT NO. 2008R-026048.
(PLOTTED & SHOWN HEREIN)

SHEET INDEX

1. ALT-1 = ALTA COVER
2. ALT-2 = ALTA SURVEY

MISCELLANEOUS NOTES

1. THERE IS DIRECT ACCESS TO THE SUBJECT PROPERTY VIA HIGHLAND ROAD (M-59), & OLD US-23, BOTH ARE PUBLIC RIGHT-OF-WAYS.
2. THE PROPERTY SURVEYED AND SHOWN HEREON IS THE SAME PROPERTY DESCRIBED IN EXHIBIT A OF TITLE AGENCY: CHICAGO TITLE INSURANCE COMPANY, TITLE COMMITMENT NO: 471236761NTS, EFFECTIVE DATE: AUGUST 15, 2024.

TABLE A NOTES

(FOR TABLE "A" ITEMS NOT LISTED BELOW, SEE PLAN VIEW ON ALT-2 SHEET FOR MORE INFORMATION)

ITEM 2: THE POSTED ADDRESS ON SITE IS 10081 HIGHLAND ROAD.

ITEM 3: FLOOD ZONE
FEMA MAP SCALES DO NOT SUPPLY SUFFICIENT LEVEL OF DETAIL TO PLOT ACCURATELY. ZONES IF PLOTTED HEREIN ARE APPROXIMATE.

BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THE SUBJECT PROPERTY APPEARS TO LIE ENTIRELY IN ZONE (X) AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD PLAIN ACCORDING TO THE FLOOD INSURANCE RATE MAP FOR THE COUNTY OF LIVINGSTON, COMMUNITY PANEL NO. (26093C0219D), EFFECTIVE DATE: 9/17/2008.

ITEM 6(a) and 6(b): ZONING

A ZONING REPORT OR LETTER WAS NOT PROVIDED TO THE SURVEYOR AS REQUIRED BY 2021 ALTA/NSPS STANDARDS TABLE A ITEMS 6(A) & 6(B).

THIS ZONING INFORMATION SHOWN HEREIN WAS TAKEN FROM THE HARTLAND TOWNSHIP ZONING ORDINANCE, EFFECTIVE DATE: DECEMBER 14, 2012.

ZONING CLASSIFICATION: (PD) (PLANNED DEVELOPMENT)
BUILDING SETBACKS:

3.1.18.C.vi.a Minimum Yard Requirements		
Yard Location	Type of Use	
	Residential	Non-Residential
Along perimeter adjacent to public road	50 ft.	75 ft.
Along perimeter, but not adjacent to a road	40 ft.	40 ft.
Along an internal collector or local road	40 ft.	50 ft.
Along an internal thoroughfare road	50 ft.	75 ft.
Between parking lot and property line and adjacent to road	40 ft.	20 ft.
Between parking lot and property line but not adjacent to road	50 ft.	20 ft.

MAX. BUILDING HEIGHT = 35'

FOR FURTHER INTERPRETATION OF THE BUILDING SETBACK REQUIREMENTS OR OTHER APPLICABLE ZONING REGULATIONS, PLEASE REFER TO THE LOCAL ZONING AUTHORITY LISTED ABOVE.

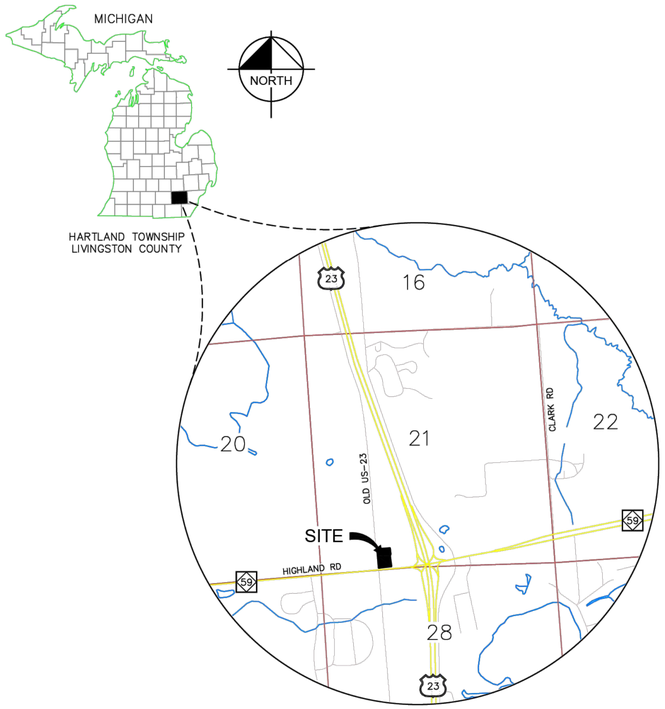
ITEM 9: EXISTING PARKING NUMBER AND TYPE (E.G., DISABLED, MOTORCYCLE, REGULAR, AND OTHER MARKED SPECIALIZED TYPES) OF CLEARLY IDENTIFIABLE PARKING SPACES ON SURFACE PARKING AREAS, LOTS, AND IN PARKING STRUCTURES. STRIPING OF CLEARLY IDENTIFIABLE PARKING SPACES ON SURFACE PARKING AREAS AND LOTS.

45 REGULAR SPACES (XX) REGULAR SPACES
4 BARRIER FREE SPACES (XX) BARRIER FREE SPACES
49 TOTAL PARKING SPACES

ITEM 16: AT THE TIME OF THIS SURVEY "EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK" WAS NOT OBSERVED.

ITEM 17: AT THE TIME OF THIS SURVEY, INFORMATION REGARDING PROPOSED CHANGES TO RIGHT OF WAY LINES WAS NOT MADE AVAILABLE BY THE CONTROLLING JURISDICTION. EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS WAS NOT OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.

ITEM 19: CERTIFICATE OF INSURANCE TO BE FURNISHED UPON REQUEST, BUT THIS ITEM SHALL NOT BE ADDRESSED ON THE FACE OF THE PLAT OR MAP.



LOCATION MAP

UTILITY/REFERENCE INFO

WM: HARTLAND TOWNSHIP
PHONE: 517-861-7889
RECEIVED: 10/2/24

SAN: LIVINGSTON CO. DRAIN COMMISSION ~ HARTLAND TWP.
PHONE: 517-404-2573 ~ 517-861-7889
RECEIVED: 9/23/24 ~ 10/2/24

STORM: MDOT ~ HARTLAND TOWNSHIP
PHONE: N/A ~ 517-861-7889
RECEIVED: 10/2/24 ~ 10/2/24

GAS: CONSUMERS ENERGY
PHONE: 800-778-9140
RECEIVED: 9/30/24

ELEC: DTE ENERGY
PHONE: 313-407-5364
RECEIVED: 10/2/24

PHONE/CABLE: AT&T
PHONE: 616-881-2268
RECEIVED: 9/24/24

PHONE/CABLE: COMCAST
PHONE: 855-962-8525
RECEIVED: 9/23/24

FIBER: LIVINGSTON COUNTY FIBER OPTICS
PHONE: 517-540-8780
RECEIVED: 9/19/24

UTILITY NOTES

1. ALL UTILITIES SHOWN ARE BASED ON:
   A. BLOOD HOUND MARKINGS LOCATED AT TIME OF SURVEY, OR;
   B. MISS DIG MARKINGS LOCATED AT TIME OF SURVEY, OR;
   C. UTILITY MAPS PROVIDED TO THE SURVEYOR AT THE TIME OF THE SURVEY.
2. MISCELLANEOUS MANHOLE STRUCTURES SHOWN HEREIN WAS FULL OF DIRT AT TIME OF SURVEY AND UNABLE TO DETERMINE UTILITY STRUCTURE TYPE OR CONNECTIONS.
3. THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CERTIFICATION

TO: CHICAGO TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6(a), 7(a), 7(a1), 7(c), 8, 9, 11, 13, 14, 16, 17, 18 & 19 OF TABLE A THEREOF.

THE FIELD WORK WAS COMPLETED ON 2/12/2025.

MARC E. BUDZINSKI, PS
PROFESSIONAL SURVEYOR
NO. 4001053492

2/12/2025
DATE OF PLAT OR MAP:

THIS SURVEY PLAT WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON, PERSONS, OR ENTITY NAMED IN THE CERTIFICATION HEREON. SAID CERTIFICATION DOES NOT EXTEND TO ANY UNNAMED THIRD PERSON WITHOUT AN EXPRESS RECERTIFICATION BY THE SURVEYOR NAMING SAID THIRD PERSON.

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS
Monument Engineering Group Associates, Inc.
298 VETERANS DRIVE
FOWLERVILLE,
MICHIGAN 48836
(OFFICE) 517-223-3512
MONUMENTENGINEERING.COM
SERVICE DISABLED VETERAN OWNED SMALL BUSINESS (SDVOSB)

Call MISS DIG
3 full working days before you dig:
Michigan's One-Call — Utility Notification Organization
1-800-482-7171
www.missdig.org
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

THIS SURVEY PREPARED FOR:

Kimley»Horn
KIMLEY-HORN OF MICHIGAN, INC.
3000 TOWN CENTER, SUITE 2600,
SOUTHFIELD, MI 48075,
PHONE: 313-572-1560
WWW.KIMLEY-HORN.COM

ALTA/NSPS LAND TITLE SURVEY

10081 HIGHLAND ROAD
TAX IDs: 4708-21-305-002 & 4708-21-305-002
PART OF SW 1/4, SEC. 21, T3N-R6E
HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
REVISED FOR TREE SURVEY	2/12/25

ORIGINAL ISSUE DATE: 10/18/2024

PROJECT NO: 24-163

SCALE: N/A
0 1/2" 1"

FIELD: AH, MJ, JM, RZ
DRAWN BY: DC
DESIGN BY:
CHECK BY: MB

V1.0

BENCHMARKS

SITE BENCHMARKS:
(LOCATIONS SHOWN ON SURVEY)

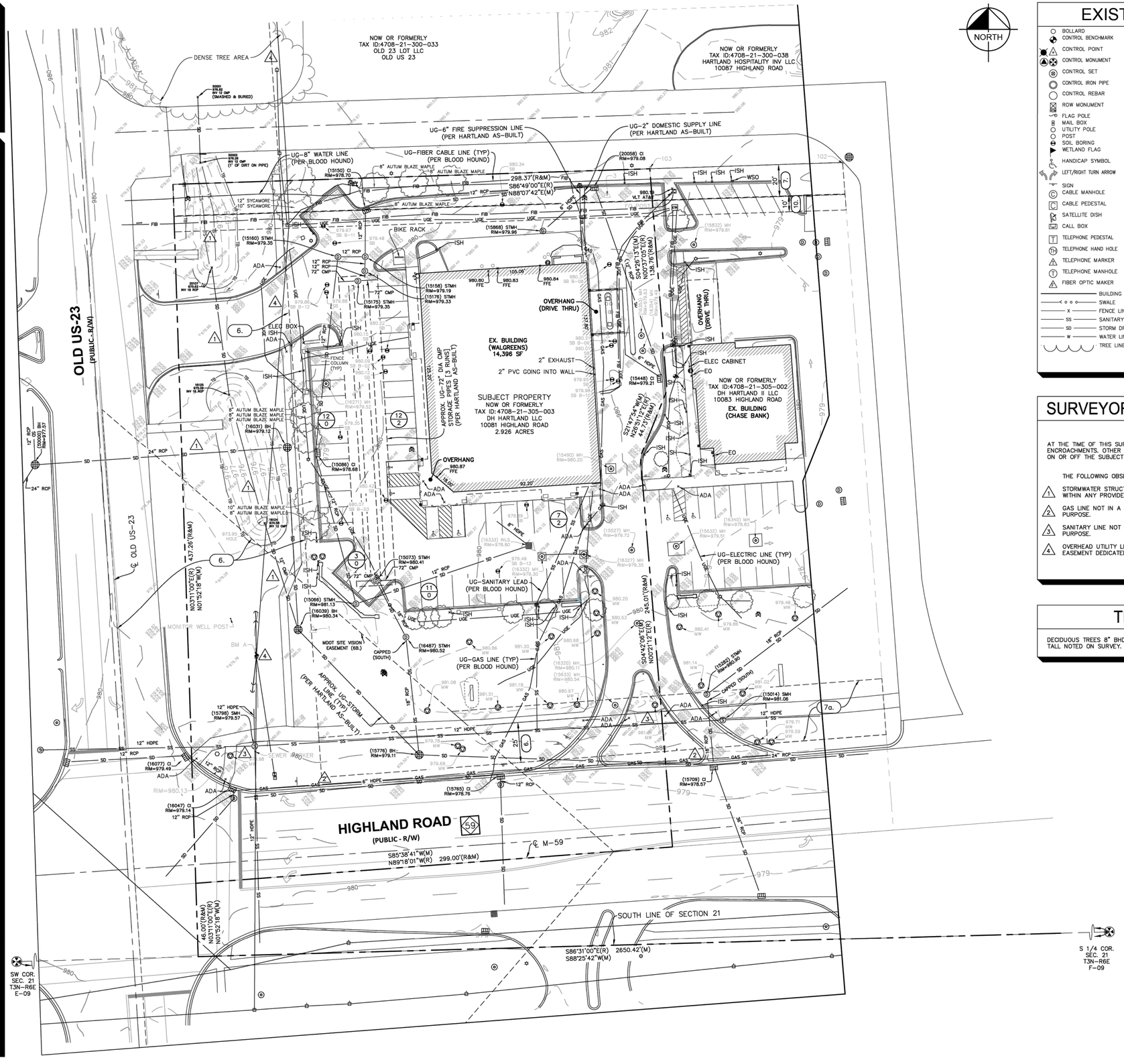
BM A: RAILROAD SPIKE IN EAST SIDE UTILITY POLE, 56'± EAST FROM BACK OF CURB FOR OLD US-23 & 83'± NORTH FROM BACK OF CURB FOR HARTLAND ROAD (M-59).
ELEVATION= 981.20

BM B: SET "X" IN WEST SIDE LIGHT POLE BASE, 6'± EAST FROM BACK OF CURB ALONG WEST PROPERTY LINE OF SUBJECT PARCEL & 241'± NORTH FROM BACK OF CURB FOR HARTLAND ROAD (M-59).
ELEVATION= 980.92

STRUCTURE SCHEDULE

EX. STRUCTURE TABLE	
STRUCTURE:	DETAILS:
(15066) STMH	EX. STORM MH RIM: 981.13 IE=974.21(12"RCP N) IE=974.26(12"RCP E)
(15073) STMH	EX. STORM MH RIM: 980.41 IE=969.70(72"CMP W) IE=969.88(72"CMP E)
(15086) CI	EX. CURB INLET RIM: 978.68 IE=973.71(12"RCP N) IE=973.71(12"RCP S)
(15150) CI	EX. CURB INLET RIM: 978.70 IE=974.92(12"RCP S) IE=974.79(12"RCP E)
(15158) STMH	EX. STORM MH RIM: 979.19 IE=973.17(12"RCP W) IE=972.96(12"RCP S) IE=974.43(12"RCP N)
(15160) STMH	EX. STORM MH RIM: 979.35 IE=973.38(12"RCP S) IE=973.30(12"RCP E)
(15175) STMH	EX. STORM MH RIM: 979.35 IE=970.43(72"CMP W) IE=970.35(72"CMP E)
(15176) STMH	EX. STORM MH RIM: 979.33 IE=972.21(12"RCP S) IE=972.73(12"RCP N)
(15282) STMH	EX. STORM MH RIM: 980.90 IE=968.18(18"RCP NE)
(15448) CI	EX. CURB INLET RIM: 979.21 IE=974.96(12"RCP N) IE=975.96(6"HDPE NW)
(15709) CI	EX. CURB INLET RIM: 978.57 IE=966.34(24"RCP E) IE=964.90(36"RCP S) IE=967.55(18"RCP N)
(15765) CI	EX. CURB INLET RIM: 978.76 IE=975.95(6"HDPE W) IE=975.26(12"RCP S)
(15776) BH	EX. YARD INLET RIM: 979.11 IE=969.49(18"RCP N)
(15868) STMH	EX. STORM MH RIM: 979.96	FULL OF DIRT
(16031) BH	EX. YARD INLET RIM: 979.12	T/WATER= 977.12 B/STRUCTURE= 967.42
(16039) BH	EX. YARD INLET RIM: 980.34 IE=973.26(12"CMP N)
(16047) CI	EX. CURB INLET RIM: 979.14 IE=975.23(12"RCP NW) IE=975.04(12"RCP S)
(16077) CI	EX. CURB INLET RIM: 979.49 IE=975.20(12"RCP W) IE=975.29(12"RCP SE)
(16333) INLS	EX. INLET RIM: 978.80 IE=975.26(12"RCP W) IE=976.73(8"HDPE NW)
(16487) STMH	EX. STORM MH RIM: 980.52 IE=969.47(18"RCP NW) IE= SOUTH (CAPPED)
(20058) CI	EX. CURB INLET RIM: 979.08 IE=974.96(12"RCP W) IE=975.51(6"HDPE SW) IE=974.86(12"RCP S)
(50000) BH	EX. YARD INLET RIM: 977.57 IE=969.22(24"RCP SW) IE=970.37(12"RCP N) IE=969.12(24"RCP E)

EX. STRUCTURE TABLE	
STRUCTURE:	DETAILS:
(15014) SMH	EX. SANITARY MH RIM: 981.06 IE=963.01(12"HDPE W) IE=963.06(12"HDPE E)
(15798) SMH	EX. SANITARY MH RIM: 979.57 IE=964.37(12"HDPE W) IE=963.97(12"HDPE S) IE=964.11(12"HDPE N) IE=963.65(12"HDPE E)



EXISTING LEGEND

- BOLLARD
- CONTROL BENCHMARK
- CONTROL POINT
- CONTROL MONUMENT
- CONTROL SET
- CONTROL IRON PIPE
- CONTROL REBAR
- ROW MONUMENT
- FLAG POLE
- MAIL BOX
- UTILITY POLE
- POST
- SOIL BORING
- WETLAND FLAG
- HANDICAP SYMBOL
- LEFT/RIGHT TURN ARROW
- SIGN
- CABLE MANHOLE
- CABLE PEDESTAL
- SATELLITE DISH
- CALL BOX
- TELEPHONE PEDESTAL
- TELEPHONE HAND HOLE
- TELEPHONE MARKER
- TELEPHONE MANHOLE
- FIBER OPTIC MAKER
- ACCESS COVER
- FUEL TANK LID
- MISC LID
- MONITOR WELL
- GAS MARKER
- GAS METER
- GAS VALVE
- OIL MARKER
- AC UNIT
- AREA LIGHT
- CROSSWALK SIGNAL
- DUCT BANK
- ELECTRICAL BOX
- ELECTRICAL HAND HOLE
- ELECTRICAL METER
- ELECTRICAL MANHOLE
- ELECTRICAL MARKER
- ELECTRICAL RISER
- ELECTRICAL TRANSFORMER
- ELECTRICAL VAULT
- GUY POLE/WIRE
- POWER POLE
- PEDESTRIAN PUSHBUTTON
- TRAFFIC SIGNAL POLE
- TRAFFIC MANHOLE
- YARD LIGHT
- SANITARY CLEANOUT
- SANITARY MANHOLE
- VENT PIPE
- STEAM MANHOLE
- STORM CLEANOUT
- STORM CURB INLET
- STORM INLET
- STORM ROOF DRAIN
- STORM DRAIN MANHOLE
- STORM YARD DRAIN
- FIRE DEPT CONNECTION
- FIRE HYDRANT
- IRRIGATION VALVE
- POST INDICATOR VALVE
- WELL
- WATER METER
- WATER MANHOLE
- WATER VALVE
- TREE / STUMP

- BUILDING
- SWALE
- FENCE LINE
- SANITARY SEWER
- STORM DRAIN
- WATER LINE
- TREE LINE
- TOE OF SLOPE
- TOP OF BANK
- UNDERGROUND FIBER OPTIC
- UNDERGROUND CABLE
- OVERHEAD CABLE
- UNDERGROUND TELEPHONE
- UNDERGROUND FUEL
- UNDERGROUND GAS
- OVERHEAD ELECTRICAL

SURVEYOR'S OBSERVATIONS

AT THE TIME OF THIS SURVEY, EVIDENCE WAS OBSERVED OF POTENTIAL ENCROACHMENTS. OTHER ENCROACHMENTS MAY OR MAY NOT STILL EXIST ON OR OFF THE SUBJECT PROPERTY.

THE FOLLOWING OBSERVATIONS WERE MADE AT THE TIME OF SURVEY:

1. STORMWATER STRUCTURES AND DRAINAGE FEATURES DO NOT LIE WITHIN ANY PROVIDED EASEMENT DEDICATED TO THIS PURPOSE.
2. GAS LINE NOT IN A PROVIDED EASEMENT DEDICATED TO THIS PURPOSE.
3. SANITARY LINE NOT IN A PROVIDED EASEMENT DEDICATED TO THIS PURPOSE.
4. OVERHEAD UTILITY LINES AND POLES NOT WITHIN A PROVIDED EASEMENT DEDICATED TO THIS PURPOSE.

TREE NOTE

DECIDUOUS TREES 8" BHD OR GREATER AND EVERGREEN TREES OVER 8' TALL NOTED ON SURVEY. ALL OTHERS ARE ORNAMENTAL.

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

Monument Engineering Group Associates, Inc.
MEGA

298 VETERANS DRIVE
FOWLERVILLE,
MICHIGAN 48836
(OFFICE) 517-223-3512
MONUMENTENGINEERING.COM

SERVICE DISABLED VETERAN OWNED SMALL BUSINESS (SDVOSB)

Call MISS DIG
3 full working days before you dig:
Michigan's One-Call — Utility Notification Organization
1-800-482-7171
www.missdig.org

THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO WARRANTY IS MADE OR SHOULD BE IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

THIS SURVEY PREPARED FOR:

Kimley»Horn
KIMLEY-HORN OF MICHIGAN, INC.

3000 TOWN CENTER, SUITE 2600,
SOUTHFIELD, MI 48075
PHONE: 313-572-1560
WWW.KIMLEY-HORN.COM

ALTA/NSPS LAND TITLE SURVEY

10081 HIGHLAND ROAD
TAX IDs: 4708-21-305-002 & 4708-21-300-033
PART OF SW 1/4, SEC. 21, T3N-R6E
HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE
REVISED FOR TREE SURVEY	2/12/25

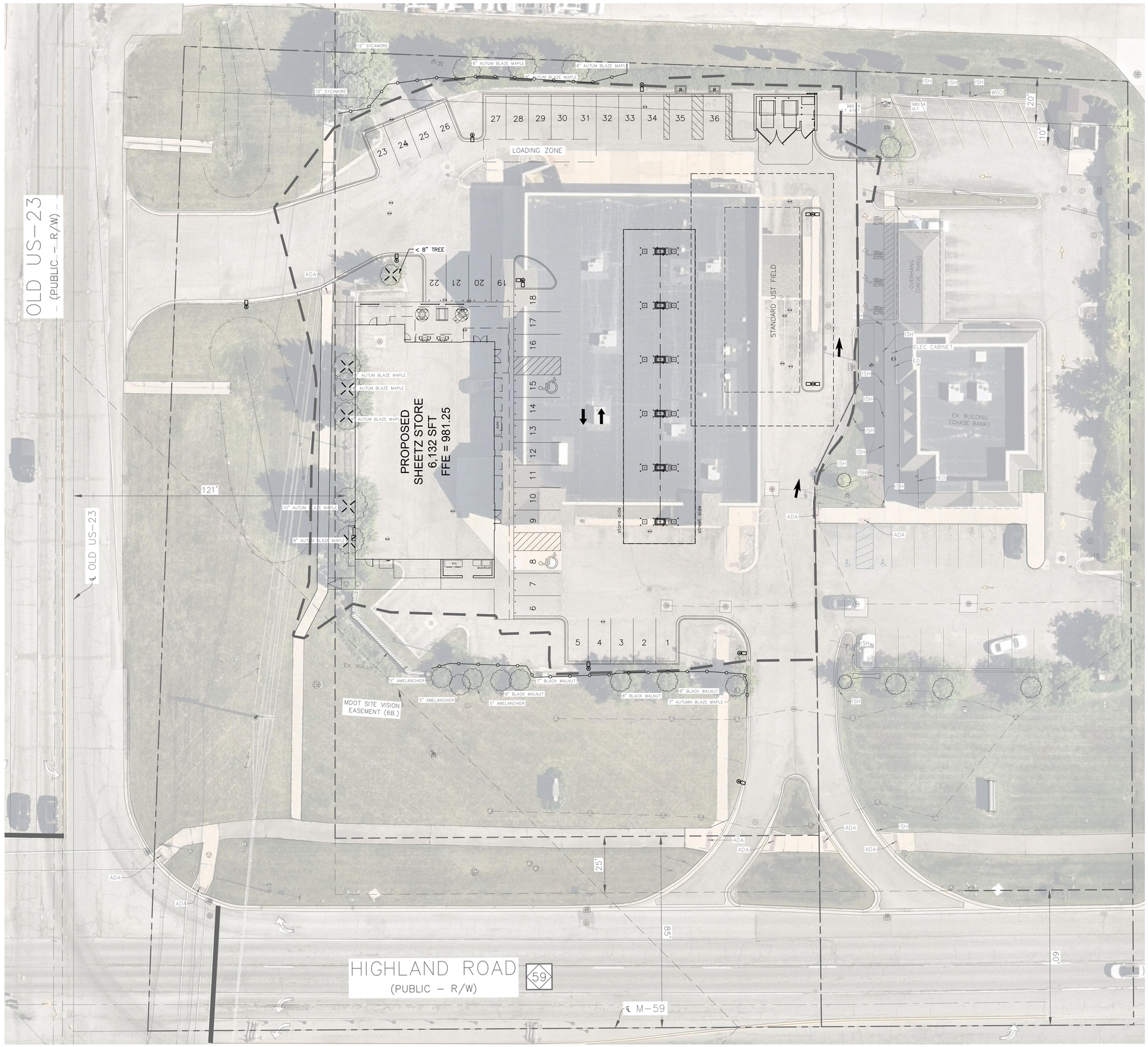
ORIGINAL ISSUE DATE: 10/18/2024

PROJECT NO: 24-163

SCALE: 1" = 30'
0 1/2" 1"

FIELD: AH, MJ, JM, RZ
DRAWN BY: DC
DESIGN BY:
CHECK BY: MB

V1.1



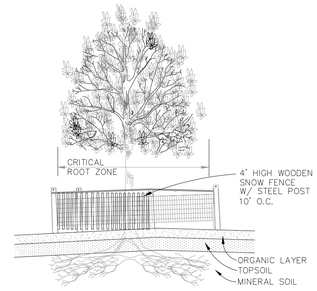
Drawing name: K:\DET_DS\268593004_Sklkwn Gold_Sheetz Old US 23_ Hartland_MI\2 Design\CAD\PlanSheets\C0.2 NATURAL FEATURES PLAN.dwg C0.1 May 29, 2025 2:27pm by Lauren.Fitzpatrick
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

NORTH

GRAPHIC SCALE IN FEET
0 10' 20' 40'

TREE LEGEND

- TREE/BUSH
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- GRADING LIMITS



PROVIDE FENCE AROUND CRITICAL ROOT ZONE OF TREE. FENCE SHALL BE PLACED IN A CIRCLE WITH A RADIUS OF 1' PER 1" DIAMETER OF THE TREE MEASURED AT 4.5' ABOVE GROUND FOR INDIVIDUAL TREES OR STANDS OF TREES.

TREE PROTECTION
N.T.S.

NO.	REVISIONS	DATE	BY
1.	REV PER TMP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEW	5/29/25	LDF

Kimley»Horn of Michigan, Inc.
3200 W. ENTERPRISE DR., SUITE 240
SOUTHFIELD, MI 48075
PHONE: 630-487-3550
WWW.KIMLEY-HORN.COM

©2025 KIMLEY-HORN OF MICHIGAN

SCALE: AS NOTED
DESIGNED BY: TES
DRAWN BY: LDF
CHECKED BY: JA

SHEETZ

NATURAL FEATURES PLAN

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

ORIGINAL ISSUE:
12/11/2024

KHA PROJECT NO.
268593004

SHEET NUMBER
C0.1

Drawing name: K:\DET_DO\268593004_Sitken Gold_Sheetz_Old US 23_ Hartland_MI\2 Design\C400\PlanSheets\C0.1-DEMOLITION PLAN.dwg C1.0 May 29, 2025 2:28pm by Lauren Falcarano
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

OLD US-23
(PUBLIC - R/W)

HIGHLAND ROAD 59
(PUBLIC - R/W)

S86°49'00"E(R) 298.37'(R&M)
N88°07'42"E(M)

S04°26'13"E(M)
N00°37'05"E(R)
138.76'(R&M)

S21°47'54"W(M)
N26°51'12"E(R)
44.73'(R&M)

S04°42'06"E(M)
N00°21'12"E(R) 245.01'(R&M)

N03°11'00"E(R) 437.26'(R&M)
N01°52'18"W(M)

S85°38'41"W(M)
N89°18'01"W(M) 299.00'(R&M)

REMOVE UNDERGROUND STORM DETENTION SYSTEM

GCP 700
GCP 701
GCP 702
GCP 703
GCP 704

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

NORTH

GRAPHIC SCALE IN FEET
0 10' 20' 40'

DEMOLITION LEGEND

A.	- - - -	SAWCUT LINE
B.	/ / / / / / / /	CURB REMOVAL
C.	X X X X X	UTILITY REMOVAL
D.		FULL-DEPTH ASPHALT PAVEMENT REMOVAL
E.		CONCRETE REMOVAL
F.		BUILDING REMOVAL
G.		FENCE REMOVAL
H.		ITEM TO BE REMOVED
I.		ITEM TO REMAIN, PROTECT THROUGHOUT DURATION OF CONSTRUCTION

No.	REVISIONS	DATE	BY
1.	REV PER TMP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEW	5/29/25	LDF

Kimley»Horn of Michigan, Inc.

SCALE: AS NOTED
DESIGNED BY: TES
DRAWN BY: LDF
CHECKED BY: JA

©2025 KIMLEY-HORN OF MICHIGAN
3001 W. BIG BEAVER, SUITE 624
TROY, MI 48084-3101
PHONE: 248-645-2500
WWW.KIMLEY-HORN.COM

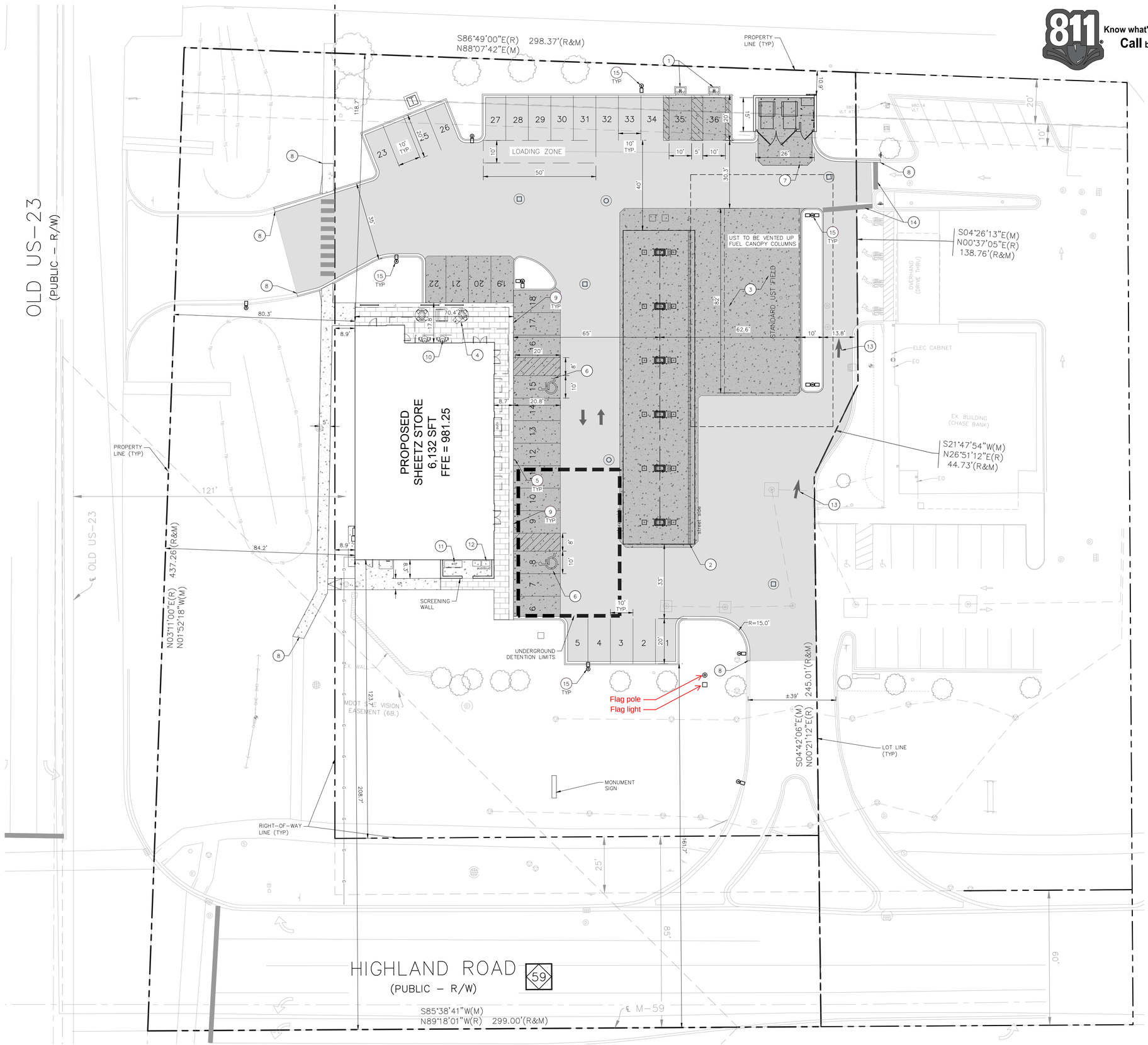
SHEETZ

DEMOLITION PLAN

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

ORIGINAL ISSUE: 12/11/2024
KHA PROJECT NO. 268593004
SHEET NUMBER
C1.0

Drawing name: K:\DET_DS\268593004_Sklkwn Orld_ Sheetz Old US 23_ Hartland_MV2 Design\CADD\PlanSheets\C1.0 SITE PLAN.dwg C2.0 SITE PLAN Aug 14, 2025 11:21am by: Lauren Falcone
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



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

GRAPHIC SCALE IN FEET
0 10' 20' 40'

NORTH

PAVING LEGEND

- HEAVY DUTY ASPHALT PAVEMENT SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- HEAVY DUTY CONCRETE PAVEMENT SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- CONCRETE SIDEWALK SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- BRICK PAVER WALK
- CURB AND GUTTER

KEY NOTES

1. AIR STATION, PER SHEETZ, STANDARD DETAIL
2. FUEL STATIONS AND CANOPY
3. UNDERGROUND STORAGE TANK AREA
4. PATIO AREA
5. STOREFRONT BUMPER POST, TYP. PER SHEETZ DETAIL #01 ON SHEET C5.0
6. ADA PARKING SPACE
7. CONCRETE DUMPSTER PAD, PER SHEETZ STANDARD DETAIL
8. CONNECT TO EXISTING WALK, CURB, PAVEMENT
9. WALK TO BE CONSTRUCTED FLUSH WITH PAVEMENT, PER SHEETZ DETAIL #01 ON SHEET C5.0
10. OUTDOOR SEATING
11. ICE MERCHANDISER
12. PROPANE LOCKER
13. DIRECTIONAL PAVEMENT MARKING
14. STOP BAR WITH STOP SIGN
15. LIGHT POLE (TYP.) SHOWN FOR REFERENCE ONLY. REFER TO LIGHTING PLAN FOR DETAILS
16. 30' TALL FLAG POLE AND LIGHT (SEE SHEETZ STANDARD DETAILS #11-14)

SITE SUMMARY

PARCEL INFORMATION:
ADDRESS: 10081 HIGHLAND ROAD
ID: 4708-21-305-003

SITE AREA: 2.926 ACRES (127,457 SF.) NET AND GROSS
1.23 ACRES (53,578 SF) OF OPEN SPACE WITHIN PARCEL

ZONING:
EXISTING: PD – PLANNED DEVELOPMENT
PROPOSED: PD – PLANNED DEVELOPMENT

EXISTING USE: COMMERCIAL, PHARMACY
PROPOSED USE: CONVENIENCE, RESTAURANT, FUEL STATION

BUILDING INFORMATION:
BUILDING FOOTPRINT AREA = 6,132 SF
USABLE FLOOR AREA = 5,744 SF
BUILDING LOT COVERAGE = 4.8%

SETBACK REQUIREMENTS FROM RIGHT-OF-WAY (PUD):

	PROPOSED BUILDING:
FRONT (OLD US-23):	8.9'
FRONT (HIGHLAND RD):	123.7'
SIDE:	118.7'
REAR:	N/A
RESIDENTIAL:	N/A
	PROPOSED LANDSCAPE:
FRONT (OLD US-23):	8.3'
FRONT (HIGHLAND RD):	123.7'
SIDE:	9.7'
REAR:	N/A

PARKING CALCULATIONS:
RESTAURANT WITH LESS THAN SIX TABLES = 6 SPACES PLUS 1 SPACE FOR EACH EMPLOYEE ON PEAK SHIFT

GAS STATION = 2 SPACES FOR EVERY PUMP PLUS 1 PER 200 SQ FT OF GROSS FLOOR AREA DEDICATED TO RETAIL. PLUS ONE SPACE PER EMPLOYEE.

TOTAL PARKING REQUIRED=
6 SPACES + 8 EMPLOYEES = 14
8 EMPLOYEES @ 1 SPACE PER EMPLOYEE = 8
2,472 SF (USABLE FLOOR AREA RETAIL)/200 = 12
6 GAS PUMPS x 2 = 12
= 46 SPACES

TOTAL PROPOSED PARKING SPACES = 48 SPACES, INCLUDING 2 H/C SPACES

SITE NOTES

1. CONTRACTOR SHALL REFER TO THE SHEETZ ARCHITECTURAL PLANS FOR THE EXACT LOCATION OF UTILITY ENTRANCES, BUILDING DIMENSIONS, ROOF LEADERS, EXIT DOORS, EXIT RAMPS, AND PORCHES.
2. ALL DIMENSIONS ARE TO BUILDING FACE, FACE OF CURB, OR EDGE OF SIDEWALK UNLESSS NOTED OTHERWISE. ALL ANGLES ARE 90 DEGREES UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL FOR THE INSTALLATION OF TRAFFIC SIGNAGE AND PAVEMENT MARKINGS AS SHOWN ON CONSTRUCTION PLANS.
4. ALL NON-LANDSCAPED ISLANDS SHALL BE PAINTED WITH STRIPES 4" WIDE AT 45° AND 2 FEET O.C.
5. ALL STRIPING SHALL BE 4" WIDE UNLESS NOTES OTHERWISE.
6. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF THE SHEETZ MAIN FREESTANDING SIGN WITH THE SHEETZ CONSTRUCTION MANAGER
7. CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THE CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION
8. ALL DIMENSIONS SHOWN ON THIS PLAN SHALL BE FIELD VERIFIED BY CONTRACTOR RIOR TO CONSTRUCITON. CONTRACTOR SHALL NOTIFY SHEETZ REPRESENTATIVE AND DESIGN ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLAN AND FIELD CONDITIONS. CONTRACTOR IS REPONSIBLE FOR ALL DIMENSIONS AT THE PROJECT SITE.
9. SEE DETAIL SHEETS FOR ADDITIONAL CONSTRUCTION INFORMATION.
10. CONTRACTOR SHALL NEATLY SAW-CUT ALL JOINTS WHERE PROPOSED CONSTRUCTION MEETS EXISTING PAVEMENT AND CONCRETE.

No.	REVISIONS	DATE	BY
1.	REV PER TMP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEWW	6/12/25	LDF
4.	REVISED PARKING CALCULATIONS	7/30/25	LDF
5.	ADD FLAG POLE AND BASE	08/14/25	LDF

Kimley»Horn of Michigan, Inc.
©2025 KIMLEY-HORN OF MICHIGAN
2601 CAMBRIDGE COURT, SUITE 240
SOUTHFIELD, MI 48075
PHONE: 630-487-5550
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: TES
DRAWN BY: LDF
CHECKED BY: JA

STATE OF MICHIGAN
TYLER SMITH
ENGINEER
No. 6201068975
LICENSED PROFESSIONAL ENGINEER

SHEETZ

PRELIMINARY SITE PLAN

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

ORIGINAL ISSUE: 12/11/2024
KHA PROJECT NO. 268593004
SHEET NUMBER
C2.0

Drawing name: K:\DET_PS\268593004_Sitken Detz_ Sheetz Old US 23_ Hartland_MI\2 Design\CADD\PlanSheets\C0.1 TRUCK TURN PLAN.dwg C2.1 May 29, 2025 2:28pm by: Lauren.Fetzerino
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

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

NORTH

GRAPHIC SCALE IN FEET
0 10' 20' 40'

S86°49'00"E(R) 298.37'(R&M)
N88°07'42"E(M)

OLD US-23
(PUBLIC – R/W)

LOADING ZONE

PROPOSED
SHEETZ STORE
6,132 SFT
FFE = 981.25

STANDARD UST FIELD

OVERHANG
(DRIVE THRU)

ELEC CABINET

EX. BUILDING
(CHASE BANK)

EX. WALL

MDOT SITE VISION
EASEMENT (6B.)

store side

street side

S21°47'54"W(M)
N26°51'12"E(R)
44.73'(R&M)

S04°26'13"E(M)
N00°37'05"E(R)
138.76'(R&M)

S04°12'06"E(M)
N00°21'12"E(R) 245.01'(R&M)

N03°11'00"E(R) 437.26'(R&M)
N01°52'18"W(M)

121'

25'

85'

60'

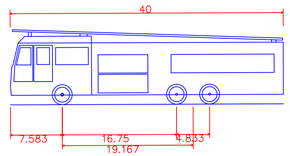
E-ONE HP100 Aerial

HIGHLAND ROAD
(PUBLIC – R/W)
59

S85°38'41"W(M)
N89°18'01"W(R) 299.00'(R&M)

℄ M-59

℄ OLD US-23



E-ONE HP100 Aerial	
Overall Length	40.000ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

No.	REVISIONS	DATE	BY
1.	REV PER TMP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEW	5/29/25	LDF

Kimley»Horn of Michigan, Inc.

©2025 KIMLEY-HORN OF MICHIGAN
3001 W. BIG BEAVER RD., SUITE 2600
TROY, MI 48084-3156
PHONE: 630-487-3550
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: TES
DRAWN BY: LDF
CHECKED BY: JA

SHEETZ

PRELIMINARY
TRUCK TURN
PLAN

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

ORIGINAL ISSUE:
12/11/2024

KHA PROJECT NO.
268593004

SHEET NUMBER
C2.1

Drawing name: K:\DET_DO\268593004_Sikkert Gold_Sheetz Old US 23_ Hartland_MI\2 Design\CAD\PlanSheets\C2.0 UTILITY PLAN.dwg C3.0 UTILITY PLAN May 29, 2025 2:28pm by: Lauren.Fetzerana
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

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

NORTH

GRAPHIC SCALE IN FEET
0 10' 20' 40'

OLD US-23
(PUBLIC – R/W)

PROPOSED SHEETZ STORE
6,132 SFT
FFE = 981.25

UG-8" WATER LINE (PER BLOOD HOUND)
EXISTING HYDRANT
CONNECT TO EXISTING 8" WATER
PROPOSED TRANSFORMER
CONNECT TO EXISTING ELECTRIC
UG-FIBER CABLE LINE (TYP) (PER BLOOD HOUND)
PROPOSED STORM INLET (TYP)
STR. 16
PROPOSED OIL WATER SEPARATOR
99 LF OF 12" HDPE
STR. 01
STR. 02
39 LF OF 12" HDPE
11 LF OF 8" PVC
STR. 13
4" PVC CONDUIT FOR TELEPHONE AND COMMUNICATIONS
38 LF OF 15" HDPE
22 LF OF 8" PVC
6 LF OF 8" PVC
STR. 03
85 LF OF 12" HDPE
STANDARD UST FIELD
OVERHANG (DRIVE THRU)
EX. CURB INLET RIM=979.21
IE=974.96(12"RCP N)
IE=975.96(6"HDPE NW)
PROPOSED TRENCH DRAIN
STR. 15
ELEC CABINET
79 LF OF 15" HDPE
STR. 04
EX. BUILDING (CHASE BANK)
PROPOSED U.G. DETENTION SYSTEM ±11,500 CFT
67 LF OF 15" HDPE
STR. 11
9 LF OF 12" RCP
PROPOSED GREASE INTERCEPTOR
STR. 06
EX. INJECTOR WELL (TYP.)
CLEANOUT, TYP
UG-ELECTRIC LINE (TYP) (PER BLOOD HOUND)
EX. WALL
45 LF OF 12" RCP
MDOT SITE VISION EASEMENT (68.)
EX. STORM MH RIM=980.52
IE=969.47(18"RCP NW)
IE=969.49(18"RCP S)
CAPPED (SOUTH)
STR. EX. MH-1
EX. YARD INLET RIM=979.12 IE=972.24(12"CMP N)
PROPOSED SANITARY
APPROX. EX INJECTOR WELL LINES (TYP)
EX. SAN. MH RIM=979.57
IE=964.37(12"HDPE W)
IE=963.97(12"HDPE S)
IE=964.11(12"HDPE N)
IE=963.65(12"HDPE E)
CONNECT TO EXISTING SANITARY
EX. STORM MH RIM=980.90
IE=968.18(18"RCP NE)
CAPPED (SOUTH)
EX. SANITARY MH RIM=981.06
IE=963.01(12"HDPE W)
IE=963.06(12"HDPE E)
EX. YARD INLET RIM=979.11
IE=969.49(18"RCP N)
EX. CURB INLET RIM=979.49
IE=975.20(12"RCP W)
IE=975.29(12"RCP SE)
EX. CURB INLET RIM=979.14
IE=975.23(12"RCP NW)
IE=975.04(12"RCP S)
CONNECT TO EXISTING GAS
EX. CURB INLET RIM=978.57
IE=966.34(24"RCP E)
IE=964.90(36"RCP S)
IE=967.55(18"RCP N)
HIGHLAND ROAD 59
(PUBLIC – R/W)
M-59

UTILITY LEGEND

- PROPOSED UNDERGROUND ELECTRIC LINE
- PROPOSED GAS LINE (BY GAS COMPANY)
- PROPOSED PHONE LINE
- PROPOSED ROOF DRAIN LINE
- PROPOSED UNDERDRAIN
- PROPOSED SWALE
- PROPOSED STORM SEWER LINE
- STR XX — STRUCTURE ID
- PROPOSED STORM STRUCTURES
- PROPOSED SANITARY SEWER LINE
- PROPOSED SANITARY LATERAL LINE
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM/SANITARY CLEANOUT
- PROPOSED WATER LINE
- PROPOSED FIRE PROTECTION LINE
- PROPOSED WATER VALVE BOX, PIV, METER FIRE HYDRANT, FIRE DEPT CONN. & VAULT
- PROPOSED WATER BENDS & TEE
- PROPOSED LIGHT POLE
- PROPOSED TRANSFORMER PAD (BY OTHERS)

No.	REVISIONS	DATE	BY
1.	REV PER TMP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEW	5/29/25	LDF

Kimley»Horn of Michigan, Inc.
©2025 KIMLEY-HORN OF MICHIGAN
2601 CAMBRIDGE COURT, SUITE 2600
SOUTHFIELD, MI 48075
PHONE: 630-487-5550
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED | DESIGNED BY: TES | DRAWN BY: LDF | CHECKED BY: JA

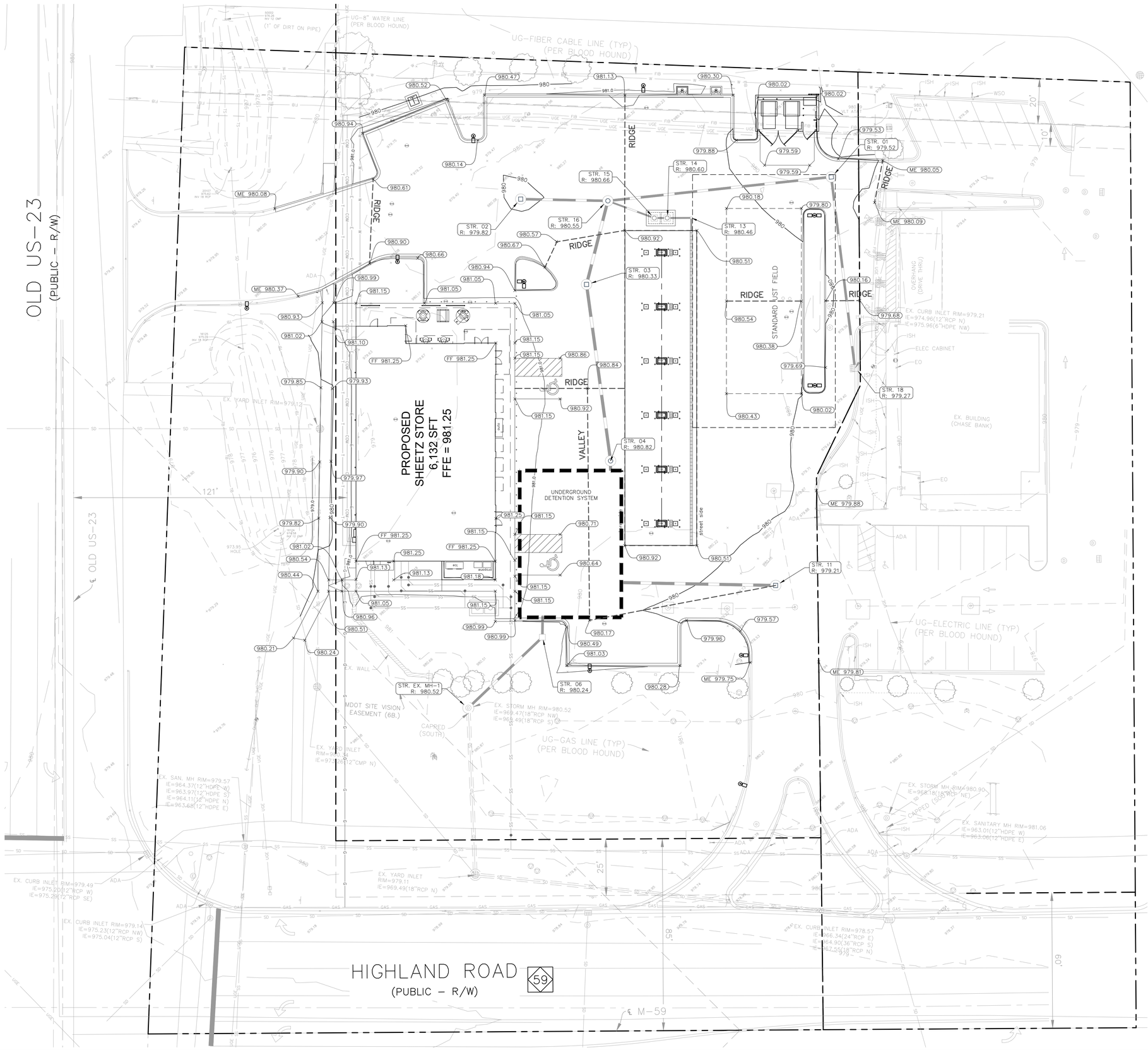
STATE OF MICHIGAN
TYLER SMITH
ENGINEER
No. 6201068975
LICENSED PROFESSIONAL ENGINEER

SHEETZ

PRELIMINARY UTILITY PLAN

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

ORIGINAL ISSUE: 12/11/2024
KHA PROJECT NO. 268593004
SHEET NUMBER
C3.0



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

NORTH

GRAPHIC SCALE IN FEET
0 10' 20' 40'

GRADING LEGEND

XXX.XX	FINISHED GRADE SPOT ELEVATION
TC XXX.XX / BC XXX.XX	TOP OF CURB / BOTTOM OF CURB SPOT ELEVATION
FL XXX.XX	FLOW LINE SPOT ELEVATION
ME XXX.XX	MATCH EXISTING SPOT ELEVATION
FF XXX.XX	FINISHED FLOOR SPOT ELEVATION
FG XXX.XX	FINISHED GRADE NEAR BUILDING SPOT ELEVATION
TW XXX.XX	TOP OF WALL SPOT ELEVATION
BW XXX.XX	BOTTOM OF WALL SPOT ELEVATION
R XXX.XX	RIM ELEVATION
STR XX R XXX.XX	STRUCTURE ID & RIM ELEVATION
STR XX INV XXX.XX	STRUCTURE ID & INVERT ELEVATION
620	PROPOSED CONTOUR
RIDGE	RIDGE LINE
X.X%	SLOPE AND FLOW DIRECTION
	100-YEAR OVERLAND OVERFLOW ROUTE
	DETENTION BASIN 100-YEAR EMERGENCY
	PROPOSED SWALE
	PROPOSED STORM SEWER
	PROPOSED STORM STRUCTURES
	PROPOSED SANITARY MANHOLE
	PROPOSED STORM/SANITARY CLEANOUT
	PROPOSED WATER STRUCTURES
	PROPOSED LIGHT POLES
	PROPOSED TRANSFORMER PAD

GRADING NOTES

1. CONTRACTOR TO VERIFY ALL EXISTING TOPOGRAPHY AND STRUCTURES ON THE SITE AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING WORK.
2. ALL PAVEMENT SPOT GRADE ELEVATIONS AND RIM ELEVATIONS WITHIN OR ALONG CURB AND GUTTER REFER TO EDGE OF PAVEMENT ELEVATIONS UNLESS OTHERWISE NOTED.
3. ALL ELEVATIONS SHOWN DEPICT FINISHED GRADE OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED. GENERAL CONTRACTOR TO COORDINATE WITH EXCAVATION, LANDSCAPE AND PAVING SUBCONTRACTORS REGARDING TOPSOIL THICKNESS FOR LANDSCAPE AREAS AND PAVEMENT SECTION THICKNESS FOR PAVED AREAS TO PROPERLY ENSURE ADEQUATE CUT TO ESTABLISH SUBGRADE ELEVATIONS.
4. NO EARTHEN SLOPE SHALL BE GREATER THAN 3:1, UNLESS OTHERWISE NOTED.
5. MAXIMUM SLOPE IN ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL NOT EXCEED 2.0% IN ALL DIRECTIONS.
6. MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL NOT EXCEED 2% ON ALL SIDEWALKS AND ACCESSIBLE ROUTES UNLESS OTHERWISE NOTED.
7. WHEN NATURAL FLOW OF DRAINAGE IS AWAY FROM CURB, CONTRACTOR TO INSTALL REVERSE GUTTER PITCH.
8. MATCH EXISTING ELEVATIONS AT THE PROPERTY LIMITS.
9. ALL STOOPS OR PEDESTRIAN EGRESS POINTS FROM THE BUILDING(S) SHALL BE NO GREATER THAN 2% FOR THE FIRST 5'.

NO.	REVISIONS	DATE	BY
1.	REV PER TWP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEW	5/29/25	LDF

Kimley»Horn of Michigan, Inc.
©2025 KIMLEY-HORN OF MICHIGAN
3001 LAFAYETTE, SUITE 2600
SOUTHFIELD, MI 48075
PHONE: 630-487-3550
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED | DESIGNED BY: TES | DRAWN BY: LDF | CHECKED BY: JA

STATE OF MICHIGAN
TYLER SMITH
ENGINEER
No. 6201068975
LICENSED PROFESSIONAL ENGINEER

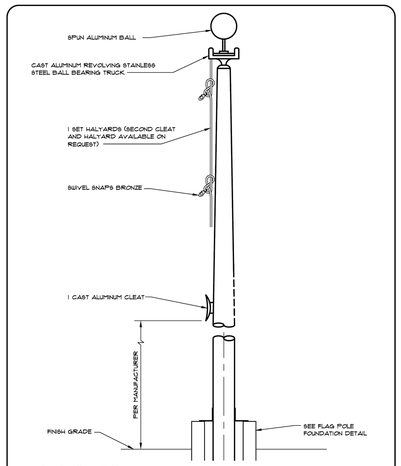
SHEETZ

PRELIMINARY GRADING & DRAINAGE PLAN

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

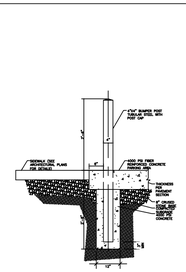
ORIGINAL ISSUE: 12/11/2024
KHA PROJECT NO. 268593004
SHEET NUMBER
C4.0

Drawing name: K:\DET_DS\268593004_Sikkem Gold_ Sheetz Old US 23_ Hartland_MI\2 Design\CADD\PlanSheets\C3.0 GRADING & DRAINAGE PLAN.dwg C4.0 May 29, 2025 2:28pm by Lauren.Falzarano
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



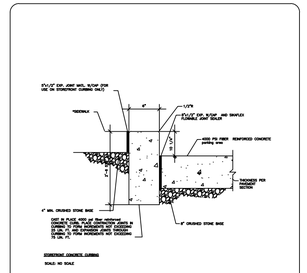
FLAGPOLE DETAIL
SCALE: NO SCALE

SHEETZ | FLAGPOLE DETAIL | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 11



STOREFRONT BUMPER POST FLUSH SIDEWALK
SCALE: NO SCALE

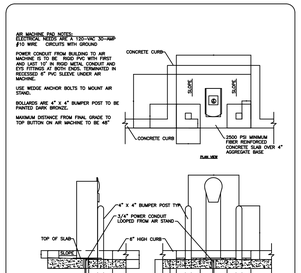
SHEETZ | STOREFRONT BUMPER POST DETAIL | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 01



STOREFRONT CONCRETE CURBING
SCALE: NO SCALE

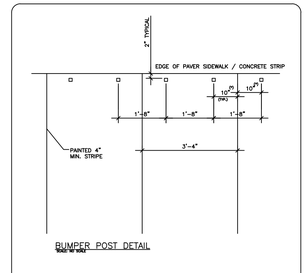
PS SEE ARCHITECTURAL PLANS FOR ADDITIONAL DETAILS ON BRICK READY CONCRETE CURB CONNECTION

SHEETZ | STOREFRONT CONCRETE CURBING DETAIL | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 02



AIR MACHINE PAD
SCALE: NO SCALE

SHEETZ | AIR MACHINE PAD DETAILS | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 05

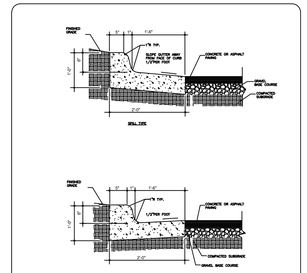


BUMPER POST DETAIL
SCALE: NO SCALE

* 2'-3" FOR 9.5' WIDE PARKING SPACE, 2'-0" FOR 9.0' WIDE PARKING SPACE

USE THIS DETAIL IF PAVEMENT IS PAVED UP TO TOP OF SIDEWALK

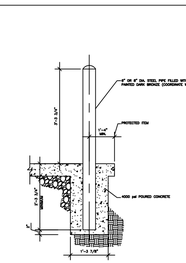
SHEETZ | BUMPERPOST LAYOUT DETAIL AT PAVER SIDEWALK | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 08



CURB AND GUTTER DETAIL
SCALE: NO SCALE

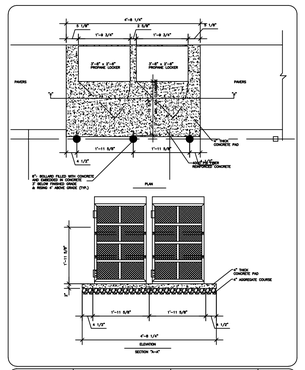
NOTE:
1. CONTRACTION JOINTS TO BE PLACED 10'±0.5'.
2. EXPANSION JOINTS TO BE PLACED 30'±0.5'.
3. ALL JOINTS SHALL BE SEALED WITH SELF-LEVELING CONCRETE JOINT SEALANT.
4. CONCRETE SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE PLANS.
5. EXPANSION JOINTS SHALL BE PLACED AT THE P.C. AND P.T. OF CURVES AND ADJACENT TO ASPHALT/CONCRETE PAVEMENT SECTION.
6. SLOPES THE SLOPE TO BE ADJUSTED WITHIN ACCESSIBLE PARKING SPACES TO MATCH SLOPE BETWEEN SPOT ELEVATIONS

SHEETZ | CURB AND GUTTER DETAIL | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 15



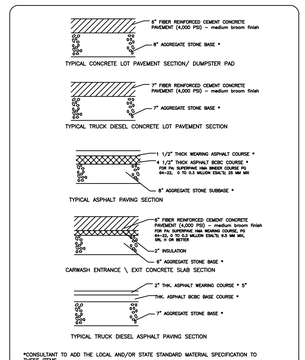
6" DIA. 8" DIA. PIPE BOLLARD
SCALE: NO SCALE

SHEETZ | 6" OR 8" PIPE BOLLARD DETAIL | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 17



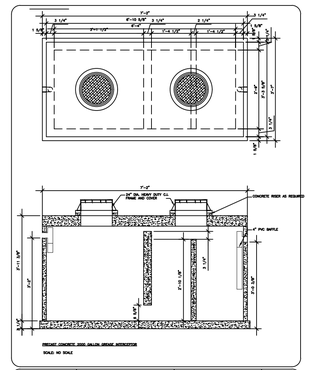
PROPANE LOCKER (AT BUILDING)
SCALE: NO SCALE

SHEETZ | PROPANE LOCKER (AT BUILDING) | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 19



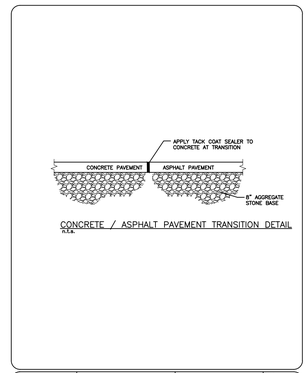
SITE PAVEMENT DETAILS
SCALE: NO SCALE

SHEETZ | SITE PAVEMENT DETAILS | SCALE: | DATE: 10/16/2024 | DRAWN BY: DAH | 20



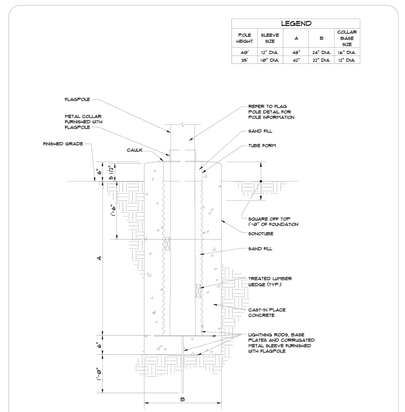
2000 GALLON GREASE INTERCEPTOR
SCALE: NO SCALE

SHEETZ | 2000 GALLON GREASE INTERCEPTOR | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 21



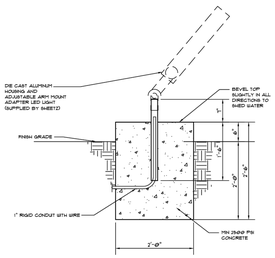
CONCRETE / ASPHALT PAVEMENT TRANSITION DETAIL
N.T.S.

SHEETZ | ASPHALT PAVING DETAILS | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 27



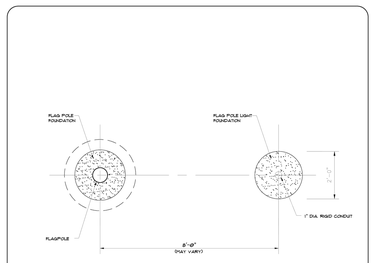
FLAGPOLE FOUNDATION
SCALE: NO SCALE

SHEETZ | FLAGPOLE FOUNDATION | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 12



FLAGPOLE LIGHT FOUNDATION
SCALE: NO SCALE

SHEETZ | FLAGPOLE LIGHT FOUNDATION | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 13



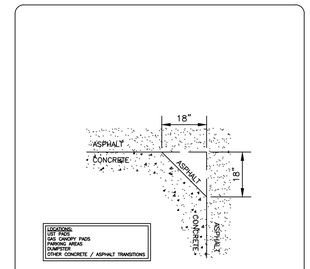
NOTE: CONTRACTOR/INSTALLER SHALL LOCATE LIGHT FIXTURE SO AS TO SHINE AWAY FROM ADJACENT ROADS AND/OR PROPERTIES

FLAGPOLE LIGHT FOUNDATION PLAN
SCALE: NO SCALE

SHEETZ | FLAGPOLE AND LIGHT FOUNDATION LAYOUT PLAN | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 14



FAUX WINDOW EXAMPLE
(REFER TO ARCH PLANS FOR DETAILS)



CONCRETE / ASPHALT chamfer
SCALE: NO SCALE

SHEETZ | CONCRETE/ASPHALT CHAMFER DETAIL | SCALE: | DATE: 11/10/2023 | DRAWN BY: DAH | 28

No.	REVISIONS	DATE	BY
1.	REV PER TMP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEW	6/12/25	LDF
4.	REVISED PARKING CALCULATIONS	7/30/25	LDF
5.	ADD FLAG POLE AND BASE	08/14/25	LDF

SCALE: AS NOTED
DESIGNED BY: TES
DRAWN BY: LDF
CHECKED BY: JA

Kimley»Horn of Michigan, Inc.
2723 South State Street, Suite 200
Ann Arbor, MI 48104
PHONE: 734-369-1000
FAX: 734-369-1001
WWW.KIMLEY-HORN.COM
©2025 KIMLEY-HORN OF MICHIGAN

SHEETZ

CONSTRUCTION DETAILS

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

ORIGINAL ISSUE:
12/11/2024

KHA PROJECT NO.
268593004

SHEET NUMBER
C5.0

Drawing name: K:\DET_DCS\268593004_Skillken Gold_ Sheetz Out US 23_ Hartland_MI\2 Design\C400\PlanSheets\C7.0 CONSTRUCTION DETAILS.dwg Layout1 Aug 14, 2025 11:16am by Lauren.Falzarano
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Drawing name: K:\DET_DS\268593004_Silken Gold - Streets Out I-75 23- Hartland MI\2 Design\CAD\PlanSheets\C7.1 Masonry Specs.dwg Layout1 May 29, 2025 2:29pm by LaurenFalzarano
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

BRICK INDUSTRY ASSOCIATION
TECHNICAL NOTES on Brick Construction
1950 Centennial Park Drive, Suite 301, Reston VA 20191 | www.gobrick.com | 703-620-0010

Technical Notes 3A - Brick Masonry Material Properties
December 1992

Abstract: Brick masonry has a long history of reliable structural performance. Standards for the structural design of masonry which are periodically updated such as the *Building Code Requirements for Masonry Structures* (ACI 530/ASCE 5/TMS 402) and the *Specifications for Masonry Structures* (ACI 530.1/ASCE 6/TMS 602) advance the efficiency of masonry elements with rational design criteria. However, design of masonry structural members begins with a thorough understanding of material properties. This *Technical Notes* is an aid for the design of brick and structural clay tile masonry structural members. Clay and shale units, mortar, grout, steel reinforcement and assemblage material properties are presented to simplify the design process.

Key Words: brick, grout, material properties, mortar, reinforcement, structural clay tile.

INTRODUCTION

The Masonry Standards Joint Committee (MSJC) has developed the *Building Code Requirements for Masonry Structures* (ACI 530/ASCE 5/TMS 402) and the *Specifications for Masonry Structures* (ACI 530.1/ASCE 6/TMS 602). In this *Technical Notes*, these documents will be referred to as the MSJC Code and the MSJC Specifications, respectively. Their contents are reviewed in *Technical Notes* 3. The MSJC Code and Specifications are periodically revised by the MSJC and together provide design and construction requirements for masonry. The MSJC Code and Specifications apply to structural masonry assemblages of clay, concrete or stone units.

This *Technical Notes* is a design aid for the MSJC Code and Specifications. It contains information on clay and shale units, mortar, grout, steel reinforcement and assemblage material properties. These are used in the initial stages of a structural design or analysis to determine applied stresses and allowable stresses. Material properties are explained to aid the designer in selection of materials and to provide a better understanding of the structural properties of the masonry assemblage based on the materials selected.

CONSTITUENT MATERIAL PROPERTIES

Because brick masonry is bonded into an integral mass by mortar and grout, it is considered to be a homogeneous construction. It is the behavior of the combination of materials that determines the performance of the masonry as a structural element. However, the performance of a structural masonry element is dependent upon the properties of the constituent materials and the interaction of the materials as an assemblage. Therefore, it is important to first consider the properties of the constituent materials: clay and shale units, mortar, grout and steel reinforcement. This will be followed by a discussion of the behavior of their combination as an assemblage.

Clay and Shale Masonry Units

There are many variables in the manufacturing of clay and shale masonry units. Primary raw materials include surface clays, fire clays, shales or combinations of these. Units are formed by extrusion, molding or dry-pressing and are fired in a kiln at temperatures between 1600°F and 2100° (980°C and 1150°C). These variables in manufacturing produce units with a wide range of colors, textures, sizes and physical properties. Clay and shale masonry units are most frequently selected as a construction material for their aesthetics and long-term performance. Consequently, material standards for clay and shale masonry units contain requirements to ensure that units meet a level of durability and visual and dimensional consistency. Clay and shale masonry units used in structural elements of building constructions are brick and structural clay tile. Material standards for brick and structural clay tile include: ASTM C 216 (facing brick), ASTM C 62 (building brick), ASTM C 652 (hollow brick), ASTM C 212 (structural clay facing tile) and ASTM C 34 (structural clay load-bearing tile).

While brick and structural clay tile are both visually appealing and durable, they are also well-suited for many structural applications. This is primarily due to their variety of sizes and very high compressive strength. The material properties of brick and structural clay tile which have the most significant effect upon structural performance of the masonry are compressive strength and those properties affecting bond between the unit and mortar, such as rate of water absorption and surface texture.

Unit Compressive Strength. The compressive strength of brick or structural clay tile is an important material property for structural applications. In general, increasing the compressive strength of the unit will increase the masonry assemblage compressive strength and elastic modulus. However, brick and structural clay tile are frequently specified by material standard rather than by a particular minimum unit compressive strength. ASTM material standards for brick and structural clay tile require minimum compressive strengths to ensure durability, which may be as little as one-fifth the actual unit compressive strength. A recent Brick Institute of America survey of United States brick manufacturers resulted in a data base of unit properties [6]. A subsequent survey of structural clay tile manufacturers was conducted. The compressive strengths of brick and structural clay tile evaluated in these surveys are presented in Table 1. As is apparent, all types of brick and structural clay tile typically exhibit compressive strengths considerably greater than the ASTM minimum requirements. Compressive strength of brick and structural clay tile is determined in accordance with ASTM C 67 Method of Sampling and Testing Brick and Structural Clay Tile.

TABLE 1
Brick and Structural Clay Tile Unit Compressive Strengths

Unit Type			Mean Unit Compressive Strength, psi (Mpa)	Standard Deviation of Compressive Strength, psi (MPa)
Solid brick	Forming Method	Extruded	11305 (77.9)	4464 (30.8)
		Molded	5293 (36.5)	1822 (12.6)
	Raw Material[1]	Fire clay	15346 (105.8)	5065 (34.9)
		Shale	11258 (77.6)	3487 (24.0)
		Other[2]	9169 (63.2)	3988 (27.5)
Hollow Brick[3]			6736 (46.4)	2447 (16.9)
Structural clay tile[3]		Vertical coring	10057 (69.3)	5578 (38.5)
		Horizontal coring	5119 (35.3)	2067 (14.3)

[1]Extruded only.
[2]Made from other materials or a combination of materials.
[3]Based on gross area.

Unit Texture and Absorption. Unit texture and absorption are properties which affect the bond strength of the masonry assemblage. In general, mortar bonds better to roughened surfaces, such as wire cut surfaces, than to smooth surfaces, such as die skin surfaces. Cores or frogs provide a means of mechanical interlock. The bond strength of sanded surfaces is dependent upon the amount of sand on the surface, the sand's adherence to the unit and the absorption rate of the unit at the time of laying.

In practically all cases, mortar bonds best to a unit whose suction at the time of laying is less than 30 g/min/30 in^2 (1.55 kg/min/m^2). Generally, molded units will exhibit a higher initial rate of absorption than extruded or dry-pressed units. Unit absorption at the time of laying is an alterable property of brick and structural clay tile. In accordance with the MSJC Specifications, units with initial rate of absorption in excess of 30 g/min/30 in.^{2} (1.55 kg/min/m^2) should be wetted to reduce the rate of water absorption of the unit prior to laying. In addition, suction of very absorptive units may be accommodated by using highly water-retentive mortars.

Mortar

The material properties of mortar which influence the structural performance of masonry are compressive strength, bond strength and elasticity. Because the compressive strength of masonry mortar is less important than bond strength, workability and water retentivity, the latter properties should be given principal consideration in mortar selection. Mortar materials, properties and selection of masonry mortars are discussed in *Technical Notes* 8 Series. Mortar should be selected based on the design requirements and with due consideration of the MSJC Code and Specifications provisions affected by the mortar selected.

Laboratory testing indicates that masonry constructed with portland cement-lime mortar exhibit greater flexural bond strength than masonry constructed with masonry cement mortar or air-entrained portland cement-lime mortar of the same Type. This behavior is reflected in the MSJC Code allowable flexural tensile stresses for unreinforced masonry, which are based on the mortar Type and mortar materials selected. In addition, masonry cement mortars may not be used in Seismic Zones 3 and 4.

Other MSJC Code and Specifications provisions are the same for portland cement-lime mortars, masonry cement mortars and air-entrained portland cement-lime mortars of the same Type. These include the modulus of elasticity of the masonry, allowable compressive stresses for empirical design and the unit strength method of verifying that the specified compressive strength of masonry is supplied. Following is a general description of the structural properties of each Type of mortar permitted by the MSJC Code and Specifications.

Type N Mortar. Type N mortar is specifically recommended for chimneys, parapet walls and exterior walls subject to severe exposure. It is a medium bond and compressive strength mortar suitable for general use in exposed masonry above grade. Type N mortar may not be used in Seismic Zones 3 and 4.

Type S Mortar. Type S mortar is recommended for use in reinforced masonry and unreinforced masonry where maximum flexural strength is required. It has a high compressive strength and has a high tensile bond strength with most brick units.

Type M Mortar. Type M mortar is specifically recommended for masonry below grade and in contact with earth, such as foundation walls, retaining walls, sewers and manholes. It has high compressive strength and better durability in these environments than Type N or S mortars.

For compliance with the MSJC Specifications, mortars should conform to the requirements of ASTM C 270 Specification for Mortar for Unit Masonry. Field sampling of mortar for quality control should follow the procedures given in ASTM C 780 Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry. Test procedures for masonry mortars are covered in *Technical Notes* 39 Series.

Grout

Grout is used in brick masonry to fill cells of hollow units or spaces between wythes of solid unit masonry. Grout increases the compressive, shear and flexural strength of the masonry element and bonds steel reinforcement and masonry together. For compliance with the MSJC Specifications, grout which is used in brick or structural clay tile masonry should conform to the requirements of ASTM C 476 Specification for Grout for Masonry. Grout proportions of portland cement or blended cement, hydrated lime or lime putty, and coarse or fine aggregate are given in Table 2.

TABLE 2
ASTM C 476 Grout Proportions by Volume

Grout Type	Portland Cement or Blended Cement	Hydrated Lime or Lime Putty	Fine Aggregate[1]	Coarse Aggregate[1]
Fine	1	0 to 1/10	2 1/4 to 3 times the sum of the volumes of the cementitious materials	NONE
Coarse	1	0 to 1/10	2 1/4 to 3 times the sum of the volumes of the cementitious materials	1 to 2 times the sum of the volumes of the cementitious materials

[1]Aggregate measured by volume in a damp, loose condition.

The amount of mixing water and its migration from the grout to the brick or structural clay tile will determine the compressive strength of the grout and the amount of grout shrinkage. Tests indicate that the total amount of water absorbed from grout by hollow clay units appears to be more dependent on the initial water content of the grout than the absorption properties of the unit [3]. Grouts with high initial water content exhibit more shrinkage than grouts with low initial water contents. Consequently, use of a non-shrink grout admixture is recommended to minimize the number of flaws and shrinkage cracks in the grout while still producing a grout slump of 8 to 11 in. (200 to 280 mm), unless otherwise specified.

The MSJC Specifications require grout compressive strength to be at least equal to the specified compressive strength of masonry, f'_m, but not less than 2,000 psi (13.8 MPa) as determined by ASTM C 1019 Method of Sampling and Testing Grout. Test procedures for grout are explained in more detail in *Technical Notes* 39 Series. In general, the compressive strength of ASTM C 476 grout by proportions will be greater than 2,000 psi (13.8 MPa). Prediction of the compressive strength of grout which is proportioned in accordance with ASTM C 476 is difficult because of the many possible combinations of materials, types of materials and construction conditions. However, ASTM C 476 grout proportions produce a rich mix which is recommended to complement the high compressive strength of brick and structural clay tile.

Steel Reinforcement

Steel reinforcement for masonry construction consists of bars and wires. Reinforcing bars are used in masonry elements such as walls, columns, pilasters and beams. Wires are used in masonry bed joints to reinforce individual masonry wythes or to tie multiple wythes together. Bars and wires have approximately the same modulus of elasticity, which is stated in the MSJC Code as 29,000 ksi (200,000 MPa). In general, wires tend to achieve greater ultimate strength and behave in a more brittle manner than reinforcing bars. Common bar and wire sizes and their material properties are given in Table 3. As stated in the MSJC Specifications, steel reinforcement for masonry structural members should comply with one of the material standards given in Table 4.

TABLE 3
Steel Reinforcement Material Properties[1]

Type	ASTM Specification	Grade or Type	Minimum Yield Strength, ksi (Mpa)	Minimum Tensile Strength, ksi (Mpa)
Bars	A 615	40	40 (276)	70 (483)
	A 615	60	60 (414)	90 (620)
	A 616	50	50 (345)	80 (552)
	A 616	60	60 (414)	90 (620)
	A 617	40	40 (276)	70 (483)
	A 617	60	60 (414)	90 (620)
	A 706	60	60 (414)	80 (552)
Wires	A 82	Smooth	70 (483)	80 (552)
	A 496	Deformed	75 (517)	85 (586)

[1]From reference [5].

TABLE 4
ASTM Material Standards for Steel Reinforcement

Steel Reinforcement Type	ASTM Specification
Deformed bars	A 615, A 616, A 617 or A 706
Joint reinforcement	A 82
Deformed wire	A 496
Wire fabric	A 185 or A 497
Anchors, ties and accessories	A 36, A 366, A 185 or A 82
Stainless steel	A 167 - Type 304

ASSEMBLAGE MATERIAL PROPERTIES

The properties of the constituent materials discussed previously combine to produce the brick or structural clay tile masonry assemblage properties. Following is a discussion of the material properties of the masonry assemblage.

Compressive Strength

Perhaps the single most important material property in the structural design of masonry is the compressive strength of the masonry assemblage. The specified compressive strength of the masonry assemblage, f'_m, is used to determine the allowable axial and flexural compressive stresses, shear stresses and anchor bolt loads given in the MSJC Code.

The compressive strength of the masonry assemblage can be evaluated by the properties of each constituent material, termed in the MSJC Specifications the "Unit Strength Method," or by testing the properties of the entire masonry assemblage, termed the "Prism Testing Method." These methods are not to be used to establish design values; rather, they are used by the contractor to verify that the masonry achieves the specified compressive strength, f'_m.

Unit Strength Method. A benefit of verifying compliance of the compressive strength of masonry by unit, mortar and grout properties is the elimination of prism testing. Each of the materials in the masonry assemblage must conform to ASTM material standards mentioned in previous sections of this *Technical Notes*. For compliance with these material standards, the compressive strength of the unit and the proportions or properties of the mortar and grout must be evaluated. Not surprisingly, there have been attempts by numerous researchers to accurately correlate the assemblage compressive strength with unit, mortar and grout compressive strengths. Testing an assemblage of three materials produces a large scatter of compressive strengths covering all possible combinations of materials. Therefore, estimates of the masonry assemblage compressive strength based on unit, mortar and grout properties are necessarily conservative. The correlations provided in the MSJC Specifications, shown in Table 5, between unit compressive strength, mortar type and the masonry assemblage compressive strength represent a lower-bound to experimental data. In addition, the MSJC Specifications unit strength method does not directly address variable grout strength, multi-wythe construction or the influence of joint reinforcement on the compressive strength of the masonry assemblage. Consequently, compliance with the specified compressive strength of masonry by prism testing will always produce a more accurate and optimum use of brick or structural clay tile masonry's compressive strength than the unit strength method.

The conservative nature of Table 5 should not be overlooked by the designer. A comparison of the predicted assemblage compressive strength by the unit strength method in the MSJC Specifications and a data base of actual brick masonry prism test results [1] reveals this conservatism. The average compressive strength of prisms of solid brick units was found to be about 1.7 times the masonry compressive strength predicted by Table 5. The average compressive strength of prisms of hollow units ungrouted and grouted was found to be 1.9 and 1.4 times the compressive strengths predicted by Table 5, respectively.

TABLE 5
Unit Strength Method of f'_m Compliance in the MSJC Specifications[1]

Net Area Unit Compressive Strength, Psi (MPa)		Net Area Assemblage Compressive Strength, psi (MPa)
Type M or S Mortar	Type N Mortar	
2400 (16.6)	3000 (20.7)	1000 (6.9)
4400 (30.3)	5500 (37.9)	1500 (10.3)
6400 (44.1)	8000 (55.2)	2000 (13.8)
8400 (57.9)	10500 (72.4)	2500 (17.2)
10400 (71.7)	13000 (89.7)	3000 (20.7)
12400 (85.5)	-----	3500 (24.1)
14400 (99.3)	-----	4000 (27.6)

[1]Linear Interpolation is permitted.

Prism Test Method. Prism testing of brick or structural clay tile masonry provides a number of advantages over constituent material testing alone. The primary benefit of prism testing is a more accurate estimation of the compressive strength of the masonry assemblage. Another benefit of prism testing is that it provides a method of measuring the quality of workmanship throughout the course of a project. Low prism strengths may indicate mortar mixing error or poor quality grout.

The MSJC Specifications permit testing of masonry prisms to show conformance with the specified compressive strength of masonry, f'_m. In addition, the material components must meet the appropriate standards of quality. Masonry prisms are tested in accordance with ASTM E 447 Test Methods for Compressive Strength of Masonry Prisms, Method B as modified by the MSJC Specifications. At least three prisms are required by the MSJC Specifications for each combination of materials. The average of the three tests must exceed f'_m. Further explanation of prism testing procedures is provided in *Technical Notes* 39B.

Shear Strength

The shear strength of a masonry assemblage may be separated into four parts: 1) the shear strength of the unit, mortar and grout assemblage, 2) the effect of the shear span-to-depth ratio, M/Vd, 3) the enhancement of shear strength due to compressive stress, and 4) the contribution of shear reinforcement in the masonry assemblage. All four phenomenon are represented in the allowable shear stresses provided in the MSJC Code. However, only the first and fourth items are controlled by material properties. Items two and three vary with member size and applied loads.

The shear strength of the masonry assemblage is directly related to the properties of the unit, mortar and grout. Shear failure of a unit-mortar assemblage is by splitting of units, step-cracking in mortar joints, or a combination of the two. Unit splitting strength is increased by increasing the compressive strength of the unit. In general, unit splitting is not a common shear failure mode of brick or structural clay tile masonry. Unit splitting occurs in masonry assemblages of weak units and strong mortar and may also occur in shear walls which are heavily axially loaded. Cracking in mortar joints is the more common shear failure mode for brick and structural clay tile masonry assemblages. Mortar joint failure occurs by sliding along bed joints and separation of head joints. Mortar joint shear failure is affected by bond strength and the frictional characteristics between the mortar and the unit. In general, a unit-mortar combination which provides greater bond strength will also provide greater shear strength. Grouting the masonry assemblage will also increase shear strength by providing a shear key between courses. The shear strength of a masonry assemblage may be evaluated in accordance with ASTM E 519 Test Method for Diagonal Tension (Shear) in Masonry Assemblages. The contribution of unit, mortar and grout to the allowable shear stresses stated in the MSJC Code are based on ASTM E 519 tests of masonry assemblages.

Steel reinforcement may be added to the masonry assemblage to increase shear strength. Shear reinforcement should be provided parallel to the direction of applied shear force. The MSJC Code also requires a minimum amount of reinforcement perpendicular to the shear reinforcement of one-third the area of shear reinforcement. When shear reinforcement is provided in accordance with the MSJC Code, allowable shear stresses given in the MSJC Code for reinforced masonry are increased three times for flexural members and one and one-half times for shear walls.

Flexural Tensile Strength

Reinforced brick and structural clay tile masonry is considered cracked under service loads and the flexural tensile strength of the masonry is neglected in design. However, cracking of an unreinforced brick or structural clay tile masonry member constitutes failure and must be avoided. Thus, flexural tensile strength is an important design consideration for unreinforced masonry. Flexural tensile strength is the bond strength of masonry in flexure. It is a function of the type of unit, type of mortar, mortar materials, percentage of grouting of hollow units and the direction of loading. Workmanship is also very important for flexural tensile strength, as unfilled mortar joints or dislodged units have no mortar-to-unit bond strength.

Allowable flexural tensile stresses stipulated in the MSJC Code for unreinforced masonry are given in Table 6. The allowable flexural tensile stresses for portland cement-lime mortars are based on full-size wall tests in accordance with ASTM E 72 Method of Conducting Strength Tests of Panels for Building Construction. Values for masonry cement and air-entrained portland cement-lime mortars are based on reductions obtained with comparative testing. Flexural tensile strength may be evaluated by testing small-scale prisms in accordance with ASTM E 518 Test Method for Flexural Bond Strength of Masonry or ASTM C 1072 Test Method for Measurement of Masonry Flexural Bond Strength, but these results may not directly correlate to the allowable flexural tensile stresses in the MSJC Code.

TABLE 6
MSJC Code Allowable Flexural Tensile Stress for Unreinforced Masonry, psi (MPa)

		Mortar Type			
		Portland cement-lime		Masonry cement and air-entrained portland cement-lime	
Direction of Stress	Masonry Type	M or S	N	M or S	N
Normal to bed joints	Solid units	40 (0.28)	30 (0.21)	24 (0.17)	15 (0.10)
	Hollow units ungrouted	23 (0.17)	15 (0.10)	15 (0.10)	9 (0.06)
	Hollow units fully grouted[1]	66 (0.47)	54 (0.40)	61 (0.28)	26 (0.18)
Parallel to bed joints	Solid units	80 (0.55)	60 (0.41)	48 (0.33)	30 (0.21)
	Hollow units ungrouted and partially grouted	50 (0.34)	38 (0.26)	30 (0.21)	19 (0.13)
	Hollow units fully grouted	80 (0.55)	60 (0.41)	48 (0.33)	30 (0.21)

[1]For partially grouted masonry allowable stresses shall be determined on the basis of linear interpolation between hollow units which are fully grouted or ungrouted and hollow units based on amount of grouting.

Elastic Modulus

The elastic modulus of the masonry assemblage, in combination with the moment of inertia of the section, determines the stiffness of a brick or structural clay tile masonry structural element. Elastic modulus is the ratio of applied load (stress) to corresponding deformation (strain). The elastic modulus is roughly proportional to the compressive strength of the masonry assemblage. Testing of brick masonry prisms indicates that the elastic modulus of brick masonry falls between 700 and 1200 times the masonry prism compressive strength [4]. If the Unit Strength Method is used to show compliance with the specified compressive strength of masonry, f'_m, an accurate estimation of the actual compressive strength of the masonry assemblage may not be known. Consequently, the elastic modulus of the masonry assemblage is determined by the mortar type and the unit compressive strength. See Table 7. The data in Table 1 can be used to estimate the modulus of elasticity of the masonry assemblage for the type of unit selected.

The elastic modulus of grout is computed as 500 times the compressive strength of the grout in accordance with the MSJC Code. In general, the elastic modulus of grout and the elastic moduli of brick or structural clay tile and mortar masonry assemblages are comparable and are often considered equal for design calculations. However, the MSJC Code recommends that the method of transformation of areas based on relative elastic moduli be used for computation of stresses in grouted masonry elements.

TABLE 7
Elastic Moduli of Clay and Shale Masonry Assemblages[1]

Net Area Compressive Strength of Units, psi (MPa)	Assemblage Elastic Modulus, psi (MPa) x 10^3		
	Type M mortar	Type S mortar	Type N mortar
12000 (82.7) and >	3.5 (24.1)	3.0 (20.7)	2.6 (19.3)
10000 (68.9)	3.3 (26.7)	2.9 (20.0)	2.4 (16.5)
8000 (55.2)	2.8 (19.3)	2.4 (16.6)	2.0 (13.8)
6000 (41.4)	2.2 (15.2)	1.9 (13.1)	1.6 (11.0)
4000 (27.6)	1.6 (11.0)	1.4 (9.7)	1.2 (8.3)
2000 (13.8)	1.0 (6.9)	0.9 (6.2)	0.8 (5.5)

[1]MSJC Code Table 5.5.1.2.

Dimensional Stability

Dimensional stability is also an important property of the masonry assemblage. Expansion and contraction of the brick or structural clay tile masonry may exert restraining stresses on the masonry and surrounding elements. Material properties which affect dimensional stability of clay and shale unit masonry are moisture expansion, creep and thermal movements. Effects of these phenomenon may be evaluated by the coefficients provided in the MSJC Code, which are listed in Table 8. The coefficients in Table 8 represent average quantities for moisture expansion and thermal movements and an upper-bound value for creep. Moisture expansion and thermal expansion and contraction are independent and may be added directly. The magnitude of creep of clay or shale unit masonry will depend upon the amount of load applied to the masonry element.

TABLE 8
MSJC Code Dimensional Stability Coefficients for Clay and Shale Unit Masonry

Material Property	Coefficient
Irreversible Moisture Expansion	3×10^{-4} in./in. (3×10^{-4}mm/mm)
Creep	0.7×10^{-7} in./in./psi (1×10^{-5} mm/mm/MPa)
Thermal Expansion and Contraction	4×10^{-6} in./in./°F (1×10^{-6}mm/mm/°C)[1]

[1]Conversion based on equivalent deformation at 100 °F (38 °C).

SUMMARY

This *Technical Notes* contains information about the material properties of brick and structural clay tile masonry. This information may be used in conjunction with the MSJC Code and Specifications to design and analyze structural masonry elements. Typical material properties of clay and shale masonry units, mortar, grout, reinforcing steel and combinations of these are presented.

The information and suggestions contained in this *Technical Notes* are based on the available data and the experience of the engineering staff of the Brick Institute of America. The information contained herein must be used in conjunction with good technical judgment and a basic understanding of the properties of brick masonry. Final decisions on the use of the information contained in this *Technical Notes* are not within the purview of the Brick Institute of America and must rest with the project architect, engineer and owner.

REFERENCES

1. Atkinson, R.H., "Evaluation of Strength and Modulus Tables for Grouted and Ungrouted Hollow Unit Masonry," Atkinson-Noland and Associates, Inc., Boulder, CO, November 1990, 47 pp.

2. *Building Code Requirements for Masonry Structures and Commentary* (ACI 530/ASCE 5/TMS 402-92) and *Specifications for Masonry Structures and Commentary* (ACI 530.1/ASCE 6/TMS 602-92), American Concrete Institute, Detroit, MI, 1992.

3. Kingsley, G.R., et al., "The Influence of Water Content and Unit Absorption Properties on Grout Compressive Strength and Bond Strength in Hollow Clay Unit Masonry," *Proceedings 3rd North American Masonry Conference*, The Masonry Society, Boulder, CO, June 1985, pp. 7:1-12.

4. Plummer, H.C., *Brick and Tile Engineering*, Brick Institute of America, Reston, VA, 1977, 466 pp.

5. "Steel Reinforcement Properties and Availability," Report of ACI Committee 439, *Journal of the American Concrete Institute*, Vol. 74, Detroit, MI, 1977, p. 481.

6. Subasic, C.A., Borchelt, J.G., "Clay and Shale Brick Material Properties - A Statistical Report," submitted for inclusion, *Proceedings 6th North American Masonry Conference*, The Masonry Society, Boulder, CO, June 1993, 12 pp.

NO.	REVISIONS	DATE	BY
1.	REV PER TMP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEW	5/29/25	LDF

SCALE: AS NOTED
DESIGNED BY: TES
DRAWN BY: LDF
CHECKED BY: JA

Kimley»Horn of Michigan, Inc.
©2025 KIMLEY-»HORN OF MICHIGAN
3200 W. ELIZABETH LAKE RD., SUITE 2600
SOUTHFIELD, MI 48075
PHONE: 630-487-3550
WWW.KIMLEY-HORN.COM

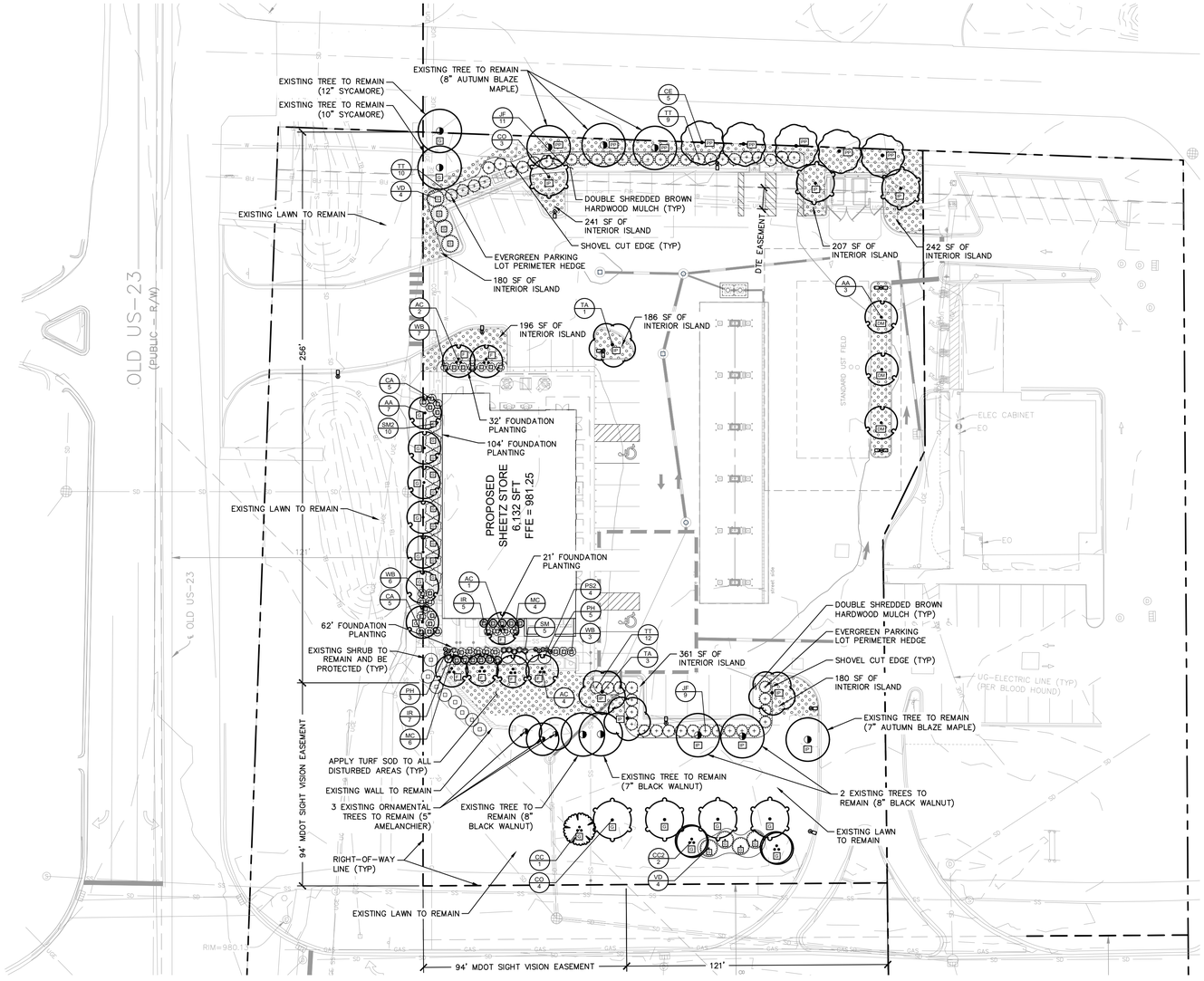
SHEETZ

MASONRY SPECIFICATIONS

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

ORIGINAL ISSUE: 12/11/2024
KHA PROJECT NO. 268593004
SHEET NUMBER
C5.1

Drawing name: K:\DET_DS\268593004-Skillken Gold_ Sheetz Old US 23_ Hartland_MI\2 Design\CADD\PlanSheets\L1.0 LANDSCAPE PLAN.dwg PLAN May 29, 2025 2:28pm by: Lauren.Falzarano
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



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

NORTH

GRAPHIC SCALE IN FEET
0 15' 30' 60'

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
CANOPY TREES						
	AA	10	ACER X FREEMANII 'ARMSTRONG' ARMSTRONG MAPLE	B & B	3" CAL. MIN.	12' HT. MIN.
	CE	5	CARPINUS BETULUS 'JFS-KW1CB' EMERALD AVENUE® EUROPEAN HORNBEAM	B & B	3" CAL. MIN.	12' HT. MIN.
	CO	7	CELTIS OCCIDENTALIS COMMON HACKBERRY	B & B	3" CAL. MIN.	12' HT. MIN.
	EXT	13	EXISTING TREE TO REMAIN AND PROTECT	-		
	TA	4	TILIA AMERICANA AMERICAN LINDEN	B & B	3" CAL. MIN.	12' HT. MIN.
ORNAMENTAL TREES						
	AC	7	AMELANCHIER CANADENSIS CANADIAN SERVICEBERRY (MULTI STEM)	B & B	2" CAL. MIN.	6' HT. MIN.
	CC2	2	CERCIS CANADENSIS EASTERN REDBUD (SINGLE STEM)	B & B	2" CAL. MIN.	6' HT. MIN.
	CC	1	CRATAEGUS CRUS-GALLI COCKSPUR HAWTHORN (SINGLE STEM)	B & B	2" CAL. MIN.	6' HT. MIN.
SYMBOL	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**CONT**	**SPACING**	**SIZE**
SHRUBS						
	MC	10	ARONIA MELANOCARPA 'MORTON' TM IROQUOIS BEAUTY BLACK CHOKEBERRY	5 GAL.	SEE PLAN	18" HT. MIN.
	CA	10	CEANOTHUS AMERICANUS NEW JERSEY TEA	5 GAL.	SEE PLAN	18" HT. MIN.
	EXS	8	EXISTING SHRUB TO REMAIN	-		
	PS2	4	PHYSOCARPUS OPULIFOLIUS 'SEWARD' SUMMER WINE NINEBARK	5 GAL.	SEE PLAN	30" HT. MIN.
	SM	5	SPIRAEA JAPONICA 'WALBUMA' MAGIC CARPET JAPANESE SPIREA	5 GAL.	SEE PLAN	18" HT. MIN.
	SM2	10	SYRINGA MEYERI 'PALIBIN' DWARF KOREAN LILAC	5 GAL.	SEE PLAN	30" HT. MIN.
	VD	8	VIBURNUM DENTATUM ARROWWOOD VIBURNUM	5 GAL.	SEE PLAN	30" HT. MIN.
	WB	16	WEIGELA FLORIDA 'BRAMWELL' TM FINE WINE WEIGELA	5 GAL.	SEE PLAN	18" HT. MIN.
EVERGREEN SHRUBS						
	IR	12	ILEX GLABRA 'STONG BOX' STONG BOX INKBERRY HOLLY	5 GAL.	SEE PLAN	18" HT. MIN.
	JF	20	JUNIPERUS CHINENSIS 'SEA GREEN' SEA GREEN JUNIPER	5 GAL.	SEE PLAN	30" HT. MIN.
	TT	31	TAXUS X MEDIA 'TAUNTONII' TAUNTON YEW	5 GAL.	SEE PLAN	30" HT. MIN.
ORNAMENTAL GRASSES						
	PH	8	PANICUM VIRGATUM 'HEAVY METAL' HEAVY METAL SWITCH GRASS	1 GAL.		
SYMBOL	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**			
GROUND COVERS						
	TS		TURF SOD			

LETTER DESIGNATIONS FOR ORDINANCE REQUIRED MATERIAL:

- DM DIVIDER MEDIAN PLANTINGS
- PP PERIMETER PARKING LOT PLANTINGS
- IP INTERIOR PARKING LOT PLANTINGS
- G GREENBELT PLANTINGS
- F FOUNDATION PLANTINGS

NOTE:
IRRIGATION TO BE PROVIDED IN ALL LANDSCAPED AREAS AND LAWN. IRRIGATION IS TO BE AN AUTOMATIC SYSTEM.

HARTLAND, MI - LANDSCAPE CODE REQUIREMENTS

ZONING ORDINANCE	REQUIRED	PROPOSED
SEC. 5.11.2.A.vii - LANDSCAPING OF DIVIDER MEDIANS		
WHERE TRAFFIC ON DRIVEWAYS, MANEUVERING LANES, PRIVATE ROADS, OR SIMILAR VEHICLE ACCESS WAYS ARE SEPARATED BY A DIVIDER MEDIAN, THE MEDIAN SHALL BE A MINIMUM WIDTH OF TEN (10) FEET. A MINIMUM OF ONE (1) CANOPY OR EVERGREEN TREE SHALL BE PLANTED FOR THE INITIAL TWENTY FIVE (25) FEET OR PORTION THEREOF PLUS ONE (1) ADDITIONAL CANOPY TREE OR EVERGREEN TREE FOR EVERY INCREMENT OF TWENTY FIVE (25) LINEAL FEET.	DIVIDER MEDIAN ON EAST SIDE OF SITE: 80 LF 1 TREE REQUIRED FOR FIRST 25 LF 80 LF - 25 = 55 55 / 25 = 2.2 2 ADDITIONAL TREES REQUIRED FOR REMAINING LF **3 CANOPY TREES REQUIRED IN DIVIDER MEDIAN**	**3 CANOPY TREES PROVIDED IN DIVIDER MEDIAN**
SEC. 5.11.2.C.- GREENBELT		
THE GREENBELT SHALL INCLUDE ONE (1) CANOPY TREE FOR EVERY THIRTY (30) LINEAR FEET OR PORTION THEREOF OF LOT FRONTAGE	HIGHLAND ROAD: 215 LF 215 LF - 94 LF OF MDOT SIGHT VISION LINE = 121 LF 121 LF / 30 = 4.03 **4 GREENBELT CANOPY TREES REQUIRED ALONG HIGHLAND ROAD** OLD US-23: 350 LF 350 LF - 94 LF OF MDOT SIGHT VISION LINE = 256 LF 256 LF / 30 = 8.5 **9 GREENBELT CANOPY TREES REQUIRED ALONG OLD US-23**	**4 GREENBELT CANOPY TREES PROVIDED ALONG HIGHLAND ROAD** **2 EXISTING TREES TO REMAIN, 7 GREENBELT CANOPY TREES PROVIDED ALONG OLD US-23**
THE GREENBELT SHALL INCLUDE THREE (3) SMALL DECIDUOUS ORNAMENTAL TREES OR LARGE DECIDUOUS OR EVERGREEN SHRUBS FOR THE INITIAL FORTY (40) LINEAR FEET OR PORTION THEREOF OF LOT FRONTAGE. THEREAFTER, ONE (1) ADDITIONAL SMALL DECIDUOUS ORNAMENTAL TREE OR LARGE DECIDUOUS OR EVERGREEN SHRUB SHALL BE REQUIRED FOR EVERY TWENTY (20) FEET OR PORTION THEREOF OF LOT FRONTAGE	HIGHLAND ROAD: 215 LF 215 LF - 94 LF OF MDOT SIGHT VISION LINE = 121 LF 3 ORNAMENTAL TREES/LARGE SHRUBS REQUIRED FOR INITIAL 40 LF 121 LF - 40 = 81 81 / 20 = 4.05 4 ORNAMENTAL TREES/LARGE SHRUBS REQUIRED FOR REMAINING LF **7 GREENBELT ORNAMENTAL TREES/LARGE DECIDUOUS SHRUBS REQUIRED ALONG HIGHLAND ROAD** OLD US-23: 350 LF 350 LF - 94 LF OF MDOT SIGHT VISION LINE = 256 LF 3 ORNAMENTAL TREES/LARGE SHRUBS REQUIRED FOR INITIAL 40 LF 256 LF - 40 = 216 216 / 20 = 10.8 11 ORNAMENTAL TREES/LARGE SHRUBS REQUIRED FOR REMAINING LF **14 GREENBELT ORNAMENTAL TREES/LARGE DECIDUOUS SHRUBS REQUIRED**	**3 GREENBELT ORNAMENTAL TREES AND 4 LARGE DECIDUOUS SHRUBS PROVIDED ALONG HIGHLAND ROAD** **14 LARGE DECIDUOUS SHRUBS PROVIDED ALONG OLD US-23**

SEC. 5.11.2.D.- FOUNDATION LANDSCAPING		
THE LENGTH OF THIS PLANTING AREA MUST EQUAL AT LEAST 60% OF FRONT AND SIDES OF THE BUILDING LENGTH ALONG THE FRONT AND SIDES OF BUILDINGS WHICH FACE A PUBLIC OR PRIVATE ROAD, IS ADJACENT TO A PARKING LOT OR OTHER AREAS WHICH PROVIDE ACCESS TO THE BUILDING OR ADJACENT TO A DEVELOPABLE SITE OR AREA	BUILDING PERIMETER: 332 LF 332 LF * 0.60 = 199.2 **199 LF OF FOUNDATION PLANTING REQUIRED**	**216 LF OF FOUNDATION PLANTING PROVIDED**
PLANTINGS SHALL CONTAIN A MINIMUM OF ONE (1) DECIDUOUS ORNAMENTAL TREE OR COLUMNAR TREE AND SIX (6) LARGE SHRUBS OR EIGHT (8) SMALL SHRUBS FOR EVERY THIRTY (30) LINEAL FEET OF BUILDING LENGTH OR PORTION THEREOF	199 LF / 30 = 6.6 **7 ORNAMENTAL BUILDING FOUNDATION TREES REQUIRED** 6.6 * 6 LARGE SHRUBS = 39.6 OR 6.6 * 8 SMALL SHRUBS = 52.8 **40 LARGE OR 53 SMALL BUILDING FOUNDATION SHRUBS REQUIRED**	**7 ORNAMENTAL BUILDING FOUNDATION TREES PROVIDED** **53 SMALL BUILDING FOUNDATION SHRUBS PROVIDED**
SEC. 5.11.2.E.- PARKING LOT LANDSCAPING		
INTERIOR AREAS: A MINIMUM OF ONE (1) CANOPY TREE SHALL BE PLANTED PER ONE HUNDRED EIGHTY (180) SQUARE FEET OR FRACTION THEREOF OF INTERIOR LANDSCAPED ENDCAPS, ISLANDS, OR MEDIANS	1,794 SF OF INTERIOR ISLANDS 1,794 / 180 = 9.9 10 INTERIOR PARKING LOT TREES **10 INTERIOR PARKING LOT TREES REQUIRED**	**3 EXISTING TREES, 7 INTERIOR PARKING LOT TREES PROVIDED**
PERIMETER AREAS: CHOICE (2)- EVERGREEN HEDGE ROW A MINIMUM OF THREE (3) FEET IN HEIGHT PLANTED IN A ROW OR STAGGERED TO CREATE CONTINUOUS SCREENING PERIMETER AREAS NOT VISIBLE FROM A PUBLIC ROAD SHALL BE LANDSCAPED WITH A MINIMUM OF ONE (1) CANOPY OR EVERGREEN TREE FOR EVERY THIRTY (30) LINEAL FEET OF PORTION THEREOF.	**PARKING AREA PERIMETER EVERGREEN HEDGE REQUIRED AROUND PARKING LOT CURB** 239 LF / 30 = 7.9 **8 PERIMETER PARKING LOT TREES REQUIRED ALONG NORTHERN PROPERTY BOUNDARY**	**PARKING AREA PERIMETER EVERGREEN HEDGE PROVIDED ALONG PARKING LOT CURB** **8 PERIMETER PARKING LOT TREES PROVIDED ALONG NORTHERN PROPERTY BOUNDARY**

No.	REVISIONS	DATE	BY
1.	REV PER TWP REVIEW	2/19/25	TES
2.	SITE PLAN SUBMITTAL	3/14/25	TES
3.	REVISED PER SITE PLAN REVIEW	5/29/25	LDF

Kimley»Horn of Michigan, Inc.
©2025 KIMLEY-HORN OF MICHIGAN
500 CITY CENTER DR. SUITE 2000
SOUTHFIELD, MI 48075
PHONE: (248) 645-2500
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: TES
DRAWN BY: LDF
CHECKED BY: JA

STATE OF MICHIGAN
JOHN ACKERMAN
LANDSCAPE ARCHITECT
No. 3901001320
PROFESSIONAL LANDSCAPE ARCHITECT

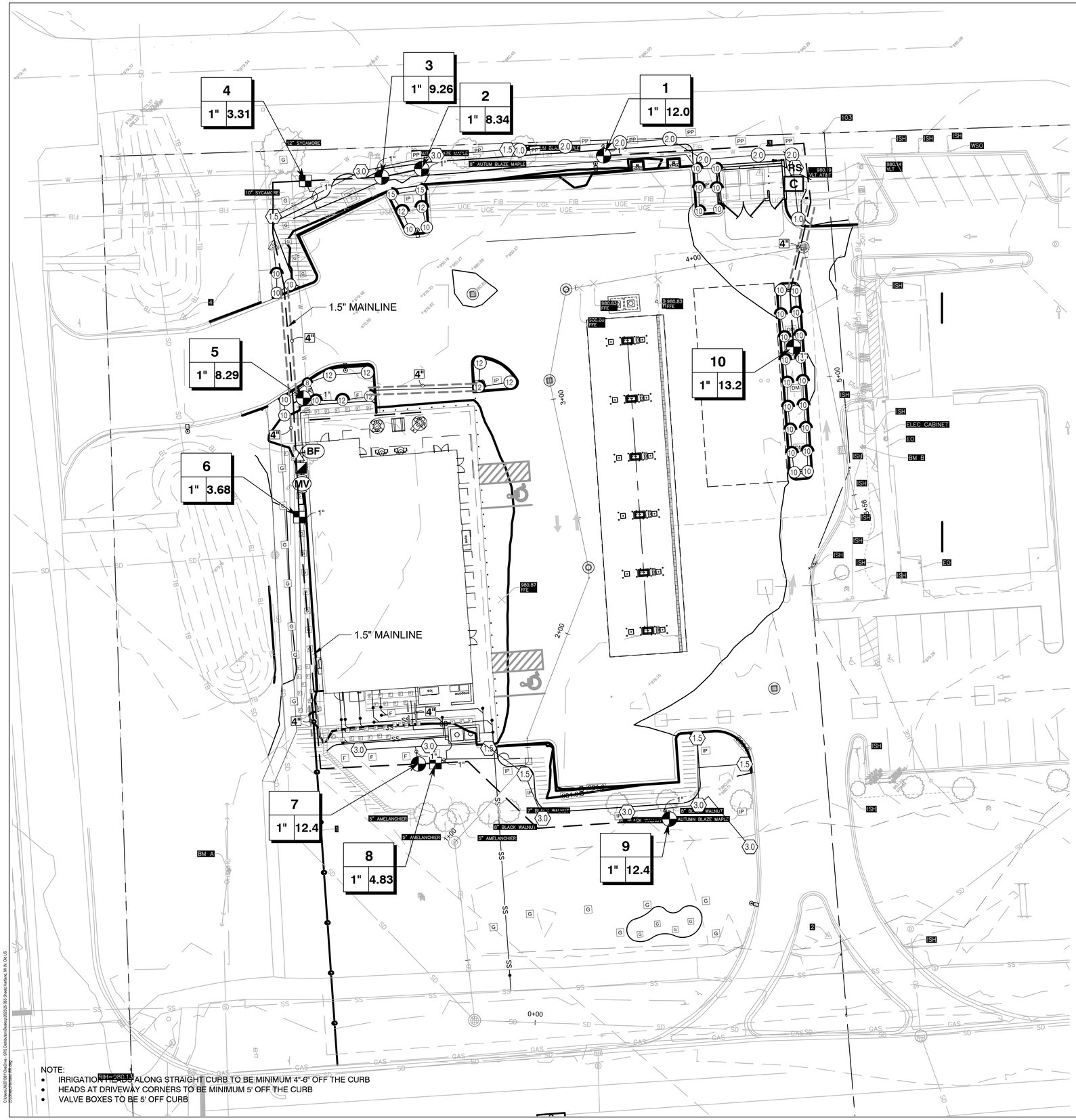
SHEETZ

PRELIMINARY LANDSCAPE PLAN

SHEETZ - HARTLAND
10081 HIGHLAND RD
PARCEL ID: 4708-21-305-003

ORIGINAL ISSUE: 12/11/2024
KHA PROJECT NO. 268593004

SHEET NUMBER
L1.0



NOTE:
- IRRIGATION HEADS ALONG STRAIGHT CURB TO BE MINIMUM 4"-6" OFF THE CURB
- HEADS AT DRIVEWAY CORNERS TO BE MINIMUM 5' OFF THE CURB
- VALVE BOXES TO BE 5' OFF CURB

IRRIGATION SCHEDULE

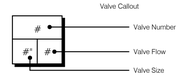
SYMBOL	MANUFACTURER/MODEL
EST LCS RCS CST SST	Rain Bird 1804 15 Strip Series
Q T H F	Rain Bird 1804 8 Series MPR
Q T H F	Rain Bird 1804 10 Series MPR
Q T H F	Rain Bird 1804 12 Series MPR
Q T H F	Rain Bird 1804 15 Series MPR
08HE-VAN 12HE-VAN 10HE-VAN 15HE-VAN	Rain Bird 1804 ADJ

SYMBOL	MANUFACTURER/MODEL
1.0	Rain Bird 3504-PC 1.0
2.0	Rain Bird 3504-PC 2.0
1.5	Rain Bird 5004-PC, FC 1.5
3.0	Rain Bird 5004-PC, FC 3.0

SYMBOL	MANUFACTURER/MODEL
	Rain Bird XCZPGA-100-PRF
	Area to Receive Dripline Rain Bird XFD-06-18 (22)

SYMBOL	MANUFACTURER/MODEL
	Rain Bird PGA Globe
	Rain Bird 5-RC
	Nibco T-113-K
MV	Rain Bird PGA Globe 1"
BF	Zurn 375 1"
C	Rain Bird ESPLXME2
RS	Rain Bird RSD-BEx
	Irrigation Lateral Line: PVC Class 200 SDR 21
	Irrigation Mainline: PVC Class 200 SDR 21
	Pipe Sleeve: PVC Schedule 40

Valve Callout



North

20 0 20 40 60

SCALE: 1" = 20'

WC3 DESIGN
Irrigation Design & Consulting
www.wc3design.com
Tel: (844) 231-7042
Columbus, OH • Louisville, KY
Pittsburgh, PA

DEBBIE BEDWAY 28014 COMMERCIAL

SHEETZ
HIGHLAND RD
HARTLAND, MI

Revisions:
REVISED 6/10/2025

Project Number:

Drawn by:
JM
Checked by:
DB
Date:
11/14/2024

Sheet Name:
IRRIGATION PLAN

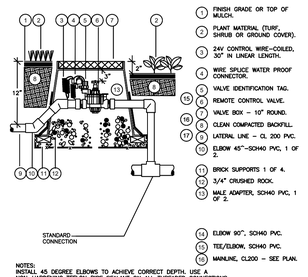
Submission:

Sheet Number:
I 1.1

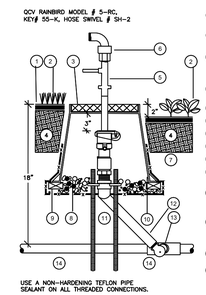
Copyright 2015 by WC3 Design. All rights reserved. No part of these drawings may be copied or reproduced in whole or part without the express written consent of owner.

IRRIGATION NOTES

1. THE IRRIGATION SYSTEM DESIGN IS BASED ON 70 STATIC PRESSURE (PSI) AND MAXIMUM FLOW OF 16 GALLONS PER MINUTE(GPM). THE IRRIGATION CONTRACTOR SHALL VERIFY THE PRESSURE AND FLOW PRIOR TO COMMENCEMENT OF CONSTRUCTION. REPORT TO THE OWNER OR OWNER'S REPRESENTATIVE ANY DIFFERENCES BETWEEN THE PRESSURE INDICATED AND THE ACTUAL PRESSURE READING AT THE POINT OF CONNECTION.
2. THE PIPE ROUTING SHOWN IS DIAGRAMMATIC ONLY. ALL PIPING, VALVES, HEADS, ETC SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY. PRESSURE LOSS CALCULATIONS ARE BASED ON THE PIPE ROUTING AS SHOWN. SIGNIFICANT DEVIATIONS FROM THE ROUTING SHOWN SHOULD BE AVOIDED.
3. DO NOT WILLINGLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES, OR DIFFERENCES IN THE DIMENSIONS OF THE CONSTRUCTED AREAS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE IRRIGATION DESIGN OR CHANGES HAVE OCCURRED IN THE SITE PLAN. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE IRRIGATION DESIGNER AND THE GENERAL CONTRACTOR IMMEDIATELY. SHOULD THE IRRIGATION CONTRACTOR PROCEED WITH THE INSTALLATION WITHOUT NOTIFYING THE IRRIGATION DESIGNER AND THE GENERAL CONTRACTOR, THE IRRIGATION CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ANY AND ALL REVISIONS / RECONSTRUCTION NECESSARY.
4. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF / HERSELF WITH THE SITE, ALL GRADE DIFFERENCES, LOCATIONS OF WALLS, AND INSTALLED UTILITIES. COORDINATE WORK WITH THE OWNER OR GENERAL CONTRACTOR AND OTHER SUBCONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES UNDERNEATH PAVEMENT AND THROUGH WALLS.
5. DUE TO THE SCALE OF THE DRAWING, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, JOINTS, ETC. WHICH MAY BE REQUIRED. THE IRRIGATION CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISHED CONDITIONS AFFECTING ALL OF HIS/HER WORK AND PLAN HIS/HER WORK ACCORDINGLY, FURNISHING SUCH FITTINGS, ETC. AS MAY BE REQUIRED TO MEET SUCH CONDITIONS. ALL WORK SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID CONFLICTS BETWEEN IRRIGATION SYSTEM COMPONENTS, LANDSCAPE PLANTING, AND ARCHITECTURAL FEATURES.
6. FLUSH ALL LINES AND HEADS PRIOR TO INSTALLING NOZZLES. ADJUST NOZZLE SPRAY ARC AND RADIUS FOR OPTIMUM PERFORMANCE TO PREVENT OVERSPRAY ONTO PAVED SURFACES OR FACE OF BUILDING AS MUCH AS POSSIBLE TO FIT THE SITE CONDITIONS. THROTTLE FLOW CONTROL AT EACH VALVE FOR OPTIMUM OPERATING PRESSURE FOR EACH ZONE.
7. ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISHED GRADE OF THE AREA TO BE IRRIGATED UNLESS OTHERWISE NOTED.
8. WHEN VERTICAL OBSTRUCTIONS (POLES, SIGNS, TREES, HYDRANTS, ETC) INTERFERE WITH THE SPRAY PATTERN OF THE HEADS SO AS TO PREVENT PROPER COVERAGE, THE CONTRACTOR SHALL FIELD ADJUST THE SPRINKLER SYSTEM BY INSTALLING A QUARTER, THIRD, OR HALF CIRCLE HEAD AT THE SIDES OF THE OBSTRUCTION SO AS TO PROVIDE PROPER COVERAGE. ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST.
9. USE TEFLON TAPE ON ALL MALE PIPE THREADS ON PVC PIPE, SWING JOINTS, AND VALVE ASSEMBLIES.
10. INSTALL VALVE BOXES 18-INCHES FROM AND PERPENDICULAR TO WALKS, CURBS, BUILDING, OR LANDSCAPE FEATURES. AT MULTIPLE VALVE BOX GROUPS, EACH BOX SHALL BE INSTALLED A MINIMUM OF 12-INCHES APART.
11. ALL VALVES SHALL BE PLACED IN VALVE BOXES AS SHOWN IN THE DETAILS AND ALL ELECTRICAL CONNECTIONS SHALL BE SEALED WITH WATERPROOF CONNECTORS.
12. 120-VOLT ELECTRICAL POWER AT THE CONTROLLER SHALL BE PROVIDED BY OTHERS. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO MAKE THE FINAL HOOK-UP FROM THE POWER PROVIDED TO THE CONTROLLER.
13. PROVIDE AS-BUILT DRAWINGS WITHIN 21 DAYS UPON COMPLETION OF THE IRRIGATION INSTALLATION.
14. THERE SHALL BE NO SUBSTITUTIONS OR CHANGES TO THE IRRIGATION DESIGN ALLOWED WITHOUT DIRECT, WRITTEN APPROVAL FROM THE IRRIGATION CONSULTANT OR THE LANDSCAPE ARCHITECT. CONTACT WC3 DESIGN FOR INFORMATION.
15. ALL SPRINKLERS, VALVES AND VALVE BOXES SHALL BE PLACED 5' AWAY FROM ANY RADIUS OF CURB AS SHOWN IN DETAILS.
16. IRRIGATION CONTRACTOR SHALL PROVIDE THE FIRST WINTERIZATION BLOW OUT. IN ADDITION, HE SHALL PROVIDE THE SPRING TURN ON . ALL NECESSARY HEAD ADJUSTMENTS SHALL BE MADE AT THAT TIME AND REPLACE OR REPAIR ANY WARRANTY ITEMS. THESE ITEMS SHALL BE INCLUDED WITH BID.
17. SLEEVING BY GENERAL CONTRACTOR.

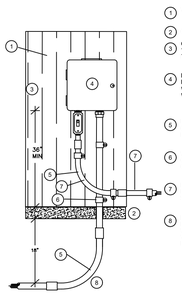


1 RAINBIRD PGA ELECTRIC VALVE
NTS SECTION

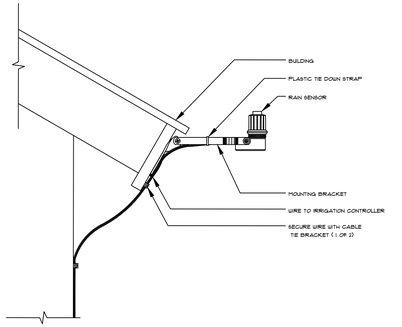


2 RAINBIRD QUICK COUPLER VALVE
NTS SECTION

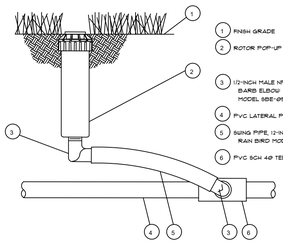
POWER TO THE CONTROLLER SHALL BE THE ELECTRICIAN ON SITE. FINAL HOOK UP FROM THE ELECTRIC TO THE CONTROLLER SHALL BE BY IRRIGATION CONTRACTOR.



3 RAINBIRD ESP CONTROLLER
NTS SECTION



4 RAINBIRD RAIN SENSOR
NTS SECTION

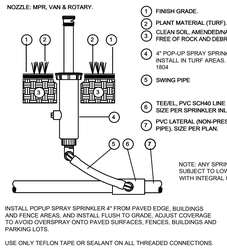


NOTE

FOR FLOWS ABOVE 4 GPM USE A SWING JOINT INSTEAD OF SWING PIPE OR SWING ASSEMBLY.

NOTE: ANY SPRINKLERS INSTALLED AT LOW POINTS AND SUBJECT TO LOW-DRAIN DRAINAGE ARE TO BE FITTED WITH INTEGRAL CHECK VALVES

5 RAINBIRD ROTOR
NTS SECTION

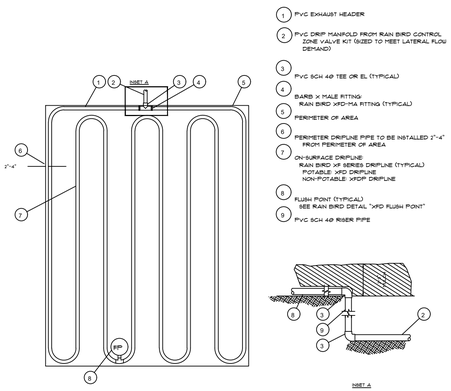


NOTE: ANY SPRINKLERS INSTALLED AT LOW POINTS AND SUBJECT TO LOW-DRAIN DRAINAGE ARE TO BE FITTED WITH INTEGRAL CHECK VALVES

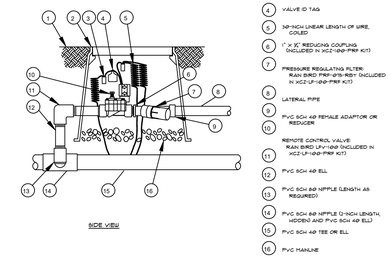
INSTALL POPUP SPRAY SPRINKLER 4" FROM PAVED EDGE, BUILDINGS AND FENCE AREAS, AND INSTALL FLUSH TO GRADE. ADJUST COVERAGE TO AVOID OVERSPRAY ONTO PAVED SURFACES, FENCES, BUILDINGS AND PARKING LOTS.

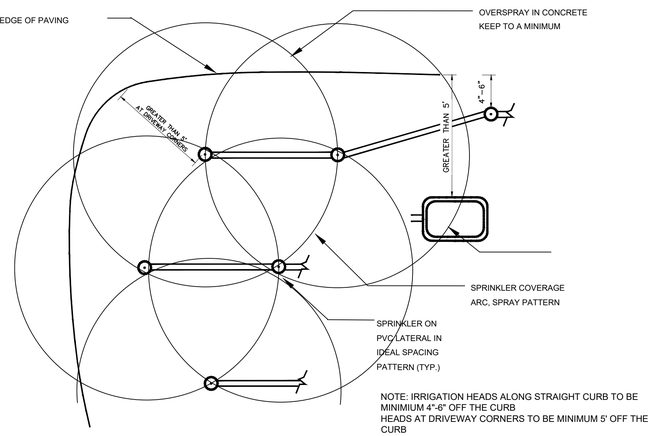
USE ONLY TEFLON TAPE OR SEALANT ON ALL THREADED CONNECTIONS.

6 RAINBIRD 1804 4" POP UP SPRAY
NTS SECTION



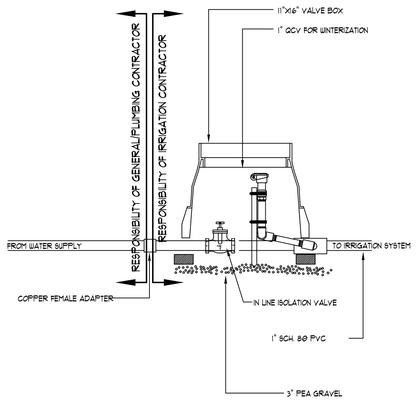
7 RAINBIRD XFD-.6 X 18" DRIP ZONE
NTS SECTION





NOTE: IRRIGATION HEADS ALONG STRAIGHT CURB TO BE MINIMUM 4"-6" OFF THE CURB
HEADS AT DRIVEWAY CORNERS TO BE MINIMUM 5' OFF THE CURB

8 SPRINKLER PLACEMENT ALONG CURB
NTS SECTION



9 1" POINT OF CONNECTION
NTS

WC3 DESIGN
Irrigation Design & Consulting
www.wc3design.com
Tel: (844) 231-7042
Columbus, OH • Louisville, KY
Pittsburgh, PA

GREENSCAPE BY DEBBIE BEDWAY 28014 NC LICENSED COMMERCIAL

SHEETZ
HIGHLAND RD
HARTLAND, MI

Revisions:

Project Number:

Drawn by:
JM
Checked by:
DB
Date:
11/14/2024

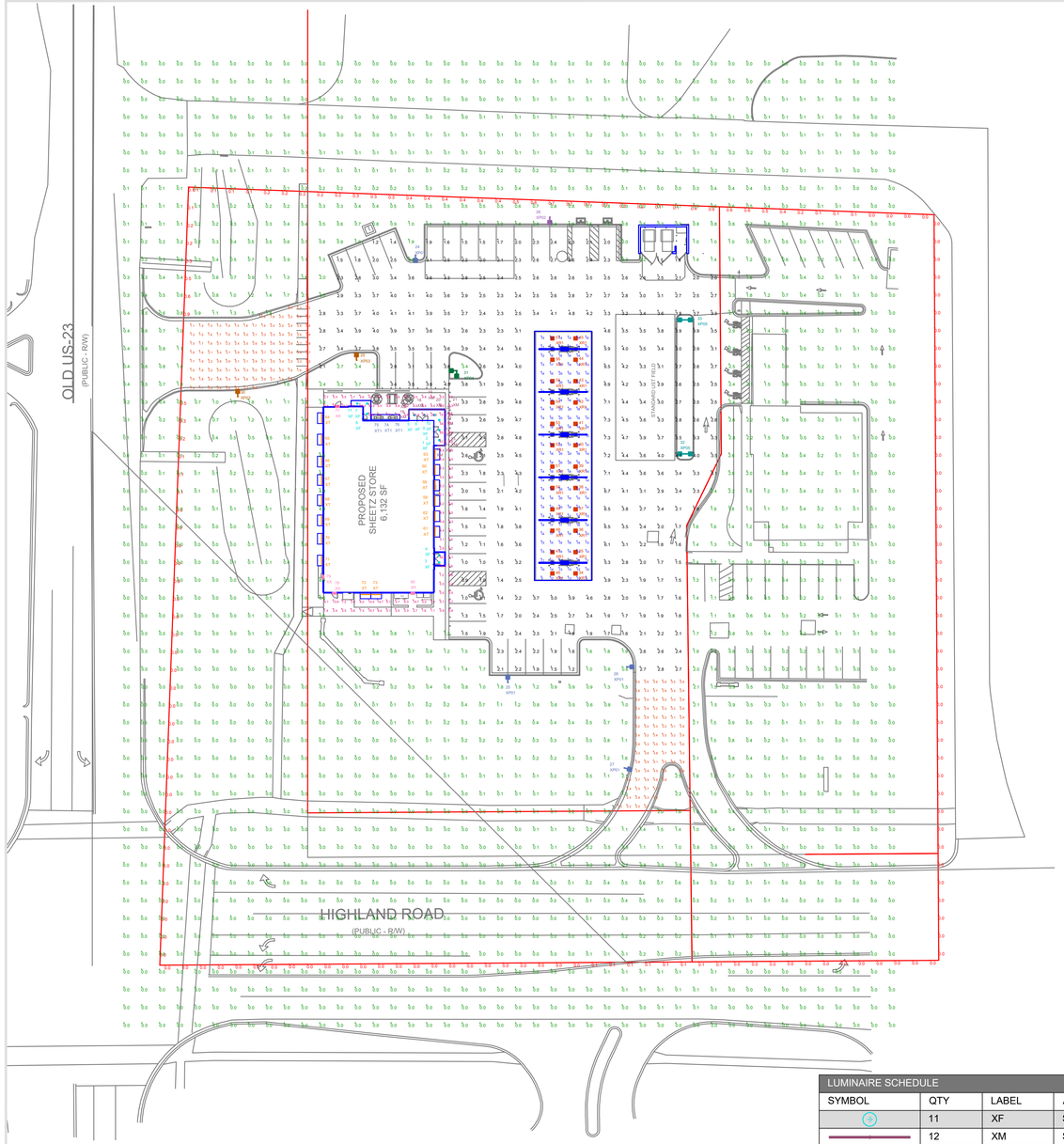
Sheet Name:
IRRIGATION PLAN

Submission:

Sheet Number:
I1.1

Copyright 2015 by WC3 Design. All rights reserved. No part of these drawings may be copied or reproduced in whole or part without the express written consent of owner.

C:\Users\MD0109\OneDrive - DBS Sterlits\Jon\Desktop\Sheetz Hartland, MI IN\ I1.1 IRRIGATION PLAN.dwg



LUMINAIRE LOCATION SUMMARY			
LUM NO.	LABEL	MTG. HT.	Tilt
1-11	XF	11.33	0
12-23	XM	12	0
24-27	XP01	23	0
28	XP02	23	0
29-30	XP03	23	0
31	XP04	23	0
32-33	XP05	23	0
34-45	XR1	18.83	0
46-57	XR1	17.67	0
58-73	XT	13.5	0
74-76	XT1	13.5	0
77-80	XX	10.33	0

NOTE:
- AREA LIGHTS ON NEW 20 FT. POLES MOUNTED ON 3 FT. CONCRETE BASES,
- FOOTCANDLE LEVELS CALCULATED AT GRADE USING INITIAL LUMEN VALUES UNLESS NOTED OTHERWISE.
- PROPERTY LINE CALCULATIONS MEASURED AT 5 FT. ABOVE GRADE.
- BUILDING ENTRANCE CALCULATIONS MEASURED AT 5 FT. ABOVE GRADE.
- ENTRANCE AND EXIT DRIVE CALCULATIONS MEASURED AT 5FT. ABOVE GRADE.
- XT & XT1: FIXTURE HEAD FACTORY SET TO 50 DEGREE TILT AWAY FROM BLDG.

THIS SITE IS LOCATED IN A REGION WHERE
LIGHTING IS REGULATED BY LOCAL ORDINANCES

ILLUMINATION LEVELS ARE THE RESULT OF CONDITIONS OR REQUESTS BY OTHERS
RED LEONARD ASSOCIATES IS NOT RESPONSIBLE
FOR INCIDENTS CAUSED BY INSUFFICIENT LIGHTING
AND DOES NOT RECOMMEND THESE LEVELS FOR
SECURITY AND SAFETY REASONS

CALCULATION SUMMARY					
LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
BUILDING ENTRANCES	9.54	63.0	0.4	23.85	157.50
CANOPY	15.48	20	9	1.72	2.22
ENTRANCE AND EXIT DRIVES	2.70	4.1	1.1	2.45	3.73
PAVED AREA	2.93	7.3	0.9	3.26	8.11
PROPERTY LINE	0.11	0.9	0.0	N.A.	N.A.
UNDEFINED	0.33	8.6	0.0	N.A.	N.A.

LUMINAIRE SCHEDULE											
SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	LLF	DIMMING FACTOR	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	CATALOG LOGIC
	11	XF	Single	1037	1.000	1.000	N.A.	10	110	Amerlux, LLC	ORDX4-10-409-M-CSTM-RB-UDM
	12	XM	SINGLE	136	1.000	0.700	N.A.	4.12	49.44	Blair Companies	LB-110-00-XX-025-RD[1]FR4-15 (BY OTHERS, SHOWN FOR CONTRIBUTION)
	4	XP01	Single	11129	1.040	1.000	B2-U0-G3	93.04	372.16	Lithonia Lighting	DSX0 LED P4 40K 70CRI T3M MVOLT SPA FAO DXXXX
	1	XP02	Single	9647	1.040	1.000	B1-U0-G3	94	94	LITHONIA LIGHTING	DSX0 LED P4 40K 70CRI T3M MVOLT SPA FAO HS DXXXX
	2	XP03	Single	11295	1.040	1.000	B2-U0-G3	93.04	186.08	Lithonia Lighting	DSX0 LED P4 40K 70CRI T4M MVOLT SPA FAO DXXXX
	1	XP04	2 @ 90 degrees	11295	1.040	0.840	B2-U0-G3	74	148	Lithonia Lighting	DSX0 LED P4 40K 70CRI T4M MVOLT SPA FAO DXXXX (SW. POS. 6)
	2	XP05	Back-Back	11129	1.040	1.000	B2-U0-G3	93.04	372.16	Lithonia Lighting	DSX0 LED P4 40K 70CRI T3M MVOLT SPA FAO DXXXX
	24	XR1	Single	4322	1.040	1.000	B2-U0-G1	31.6865	760.476	Lithonia Lighting	RCNY LED ALO1 50K 90CRI SYMF MVOLT BZS DWHXD (SW. POS. 3)
	16	XT	Single	1840	1.000	1.000	N.A.	20	320	SPI Lighting Inc.	SEW12146 | 5FT-L20W[AN08] | 120-277V | 4000K | PSE | SMA | OAP[6.00in.]
	3	XT1	Single	1472	1.000	1.000	N.A.	16	48	SPI Lighting Inc.	SEW12146 | 4FT-L16W[AN08] | 120-277V | 4000K | PSE | SMA | OAP[6.00in.]
	4	XX	Single	1921	1.000	1.000	B1-U0-G0	16	64	WILLIAMS OUTDOOR	VWM-H-L17/840-TL-DBZ-CGL-DIM-UNV (BRONZE COLOR 80CRI)

REDLEONARD ASSOCIATES
1340 Kemper Meadow Dr, Forest Park, OH 45240
513-574-9500 | redleonard.com

REV.	BY	DATE	DESCRIPTION
R1	JSC	5/15/25	CALCULATION SUMMARY UPDATED PER REQUEST
R2	JAN	6/9/25	REVISED PER UPDATED SITE PLAN
R3	JAN	8/13/25	REMOVED PARAPET LIGHTING, ADDED WALLPACK
.	.	.	.

DISCLAIMER
ANY SITE PLAN(S), FLOOR PLAN(S), RENDERING(S), LIGHTING LAYOUT(S) AND PHOTOMETRIC PLAN(S) INCLUDING BUT NOT LIMITED TO ANY PROJECT(S) CREATED/PRODUCED BY RED LEONARD ASSOCIATES INC., ARE ONLY INTENDED FOR ILLUSTRATION AND QUOTING PURPOSES ONLY. RED LEONARD ASSOCIATES HAS THE RIGHT TO USE THIRD PARTY LASERS, SCANNERS, AND CAMERAS BUT ACTUAL PROJECT CONDITIONS, DIMENSIONS, AND ACCURACY OF MEASUREMENTS MAY DIFFER FROM THESE OR ANY PARAMETERS. RED LEONARD ASSOCIATES INC. ASSUMES NO LIABILITY FOR WHAT IS CREATED/PRODUCED IN THESE RECREATIONS. THIS INCLUDES BUT IS NOT LIMITED TO THE USE OF, INSTALLATION OF AND/OR INTEGRITY OF EXISTING BUILDING(S), SURROUNDING AREA FOR PRODUCT(S) SUCH AS EXISTING POLE(S), ANCHOR BOLT(S), BASE(S), ARCHITECTURAL AND SIGNAGE STRUCTURE(S), LANDSCAPING PLAN(S), LIGHTING PLAN(S), FIXTURE SELECTION(S) AND PLACEMENT, MATERIAL(S), COLOR ACCURACY, TEXTURE(S), AND ANYTHING ATTRIBUTED TO PHOTO REALISM THAT IS CREATED. FURTHERMORE, RED LEONARD ASSOCIATES INC., DOES NOT ASSUME LIABILITY WHATSOEVER FOR ANY PURCHASES MADE BY CLIENT BEFORE, DURING, OR AT THE CONCLUSION OF THE PUBLISHED WORK. THE CUSTOMER, ITS RELATIVE AFFILIATES, AS WELL AS ANY OTHER PERSON(S) IN VIEWING OF THIS PRODUCT IS RESPONSIBLE FOR VERIFYING COMPLIANCE WITH ANY BUT NOT LIMITED TO ALL CODES, PERMITS, RESTRICTIONS, INSTRUCTIONS, PURCHASES, AND INSTALLATIONS OF OBJECTS VIEWED WITHIN THIS DOCUMENT(S) OR PROJECT(S). SYMBOLS ARE NOT DRAWN TO SCALE. SIZE IS FOR CLARITY PURPOSES ONLY. SIZES AND DIMENSIONS ARE APPROXIMATE, ACTUAL MEASUREMENTS MAY VARY. DRAWINGS ARE NOT INTENDED FOR ENGINEERING OR CONSTRUCTION USE. THIS DOCUMENT, ANY RED LEONARD DRAWING(S), OR PROJECT(S) IS NOT TO BE USED AND/OR INTENDED FOR ENGINEERING OR CONSTRUCTION PURPOSES, BUT FOR ILLUSTRATIVE PURPOSES ONLY. ANY LOCATIONS OF EMERGENCY LIGHTING SHOWN WERE PROVIDED BY OTHERS. RED LEONARD ASSOCIATES IS NOT RESPONSIBLE FOR INSUFFICIENT LIGHTING DURING AN EMERGENCY EVENT. ANY USE OF THIS DOCUMENTATION AND/OR OTHER ARTICLES PRODUCED BY RED LEONARD WITHOUT WRITTEN AUTHORIZATION FROM JAYME J. LEONARD IS STRICTLY PROHIBITED.

SCALE: 1" = 40'
LAYOUT BY: JAN
DWG SIZE: D
DATE: 3/13/25

PROJECT NAME:
SHEETZ
HARTLAND, MI
DRAWING NUMBER:
A1.0

FRESH FOOD SHEETZ MADE TO ORDER

	QTY	LABEL	DESCRIPTION
DOWNLIGHT	11	XF	ORDX4-10-409-M-CSTM-RB-UDM



ORDX4

Open Rated Exterior Downlight



Project:

Features and Specs

Construction:
- Cast aluminum top housing with integral driver.
- Dust and water tight (IP66) sealed optical chamber.
- Die-cast aluminum trim and faceplate.
- Stainless steel hardware.

Finish:
- Architectural Grade Polyester Powder Coat.

Optics:
- Beam Spread: 15°, 24°, 36°
- CCT: 2700K, 3000K, 4000K
- CRI: 80 or 90+ typ
- Polycarbonate TIR optic with white backing for maximum efficacy.

Electrical:
- Integral LED driver included, 120-277V.
- Primary wiring compartment with power supply.
- Standard driver supports (4) different dimming protocols - TRIAC/ELV/0-10V/PWM.
- Dimming percentage less than 1% - All dimming methods.

Mounting:
- Swing out pressure fit stainless steel mounting clips.
- Adjustable from 0.07" to 1.25" ceiling thickness.
- Ceiling cutout: 4.65" dia.

Lifespan:
- Estimated 50,000+ hour LED lifespan based on IES LM-80 results and TM-21 calculations.

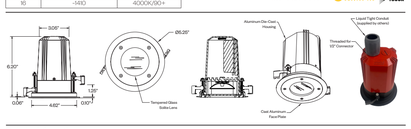
Listings:
- UL listed for wet locations (suitable for use in open or uncovered applications)

Performance Data (with Medium beam)

Wattage	Delivered Lumens	Color Temp/CRI
10	~1040	4000K/80+
16	~1440	4000K/90+

Assembled in the USA

5 year limited warranty



Ordering Information

ORDX4 - [1] - [2] - [3] - [4] - [5] - **UDM** - [6]

1 Model	2 Wattage	3 CCT/CRI	4 Beam Spread	5 Finish	6 Driver
ORDX4	10 10W 16 16W	27 2700K/80+CRI 30 3000K/80+CRI 40 4000K/80+CRI 279 2700K/90+ CRI 309 3000K/90+ CRI 409 4000K/90+ CRI	BP spot 15° N narrow 24° M medium 36°	BLK black SLV silver BRZ bronze CSTM-RB custom red/black	UDM universal 4 in 1 dimming TRIAC/ELV/0-10V/PWM

Amerlux reserves the right to change details that do not affect overall function and performance.

Amerlux® LLC • 178 Bauer Drive, Oakland, NJ 07436 • P: 973-882-9000 F: 973-882-0800 • amerlux.com

LIT-ED2002 • 03/14/25 • Page 1 of 1

amerlux
A Delta Group Company

	QTY	LABEL	DESCRIPTION
WALL MOUNTED	12	XM	LB-110-00-XX-025-RD[1]FR4-15 (BY OTHERS, SHOWN FOR CONTRIBUTION)

WHITE LIGHTNING FIXTURES

LightBar Wash

LightBar

LENGTH	15 LEDs / ft — 10', 4' — Field cutable every 6", trimmable every 1"
COLORS	Green, Red, Blue, Amber
LIGHT OUTPUT	415 cd/m²
POWER SUPPLY	Primary voltage: 120, 240, 277 VAC available Secondary voltage: 24 VDC Built-in active PFC function, Class 2, Suitable for Dry, Damp, and Wet locations Protections: Short circuit, Over current, Over voltage, Over temperature

STANDARD ORDER CODES

LB	110	-	00	120	030	-	RD	-	FR4	15

- **Series** — **LB** - LightBar
- **Optical Distribution** — **110-** 110 Degree
- **Lens Material** — **PC** - Polycarbonate; **00** - None
- **Length** — **Length in Inches**
- **Drive Current** — **010** - 10mA; **015** - 15mA; **020** - 20mA; **025** - 25mA; **030** - 30mA
- **LED Color** — **GR** - Green; **RD** - Red; **BL** - Blue; **AM** - Amber
- **PCB Material** — **FR4** - Fiberglass PCB
- **LED Density** — **15**- 15 LEDs per Foot

TECHNICAL SPECIFICATIONS

MECHANICAL

LENS	= Polycarbonate (UV Stabilized), V-0 flame rated, 0.1" thick (not applicable for 00 lens option)
LEDs	= Cree premium chip, Short circuit protection
HOUSING	= Alloy 6063-T52 aluminum
MOUNTING	= Five mounting clips per 10 ft section

ELECTRICAL

POWER CONSUMPTION	=		RED, AMBER			GREEN, BLUE			
			20mA	30mA	15mA	20mA	25mA	30mA	
		15 LED/FT	1.2W	1.4W	0.9W	1.2W	1.5W	1.8W	
DC CABLE	= 18 AWG, Wet location cable & overmolded connector, UV resistant & FT-4 Fire Rated								

ENVIRONMENTAL

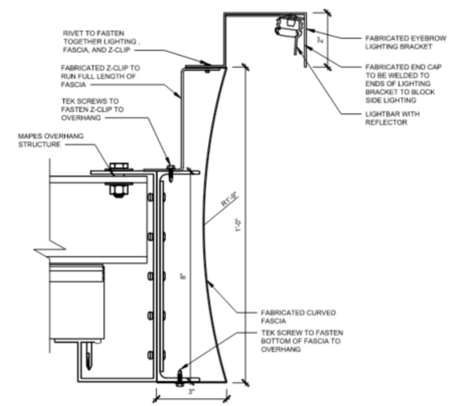
AMBIENT TEMP. RANGE	= O perating -22°F to 140°F (-30°C to 60°C) Storage -40°F to 185°F (-40°C to 85°C)
CERTIFICATION	= UL [E560069], cUL, CE & JET Compliant
INGRESS PROTECTION	= Electronics IP65 LENS IP65

DRAWING

FIG.1 PROFILE DRAWING

FIG.2 FAR FIELD PATTERN | BN-01-GS

LISTED E560069



21 MAPES FABRICATED CURVED FASCIA (BY OTHERS)
8" = 1'-0"

	QTY	LABEL	DESCRIPTION
AREA	4	XP01	DSX0 LED P4 40K 70CRI T3M MVOLT SPA FAO DXXXX
	1	XP02	DSX0 LED P4 40K 70CRI T3M MVOLT SPA FAO HS DXXXX
	2	XP03	DSX0 LED P4 40K 70CRI T4M MVOLT SPA FAO DXXXX
	1	XP04	DSX0 LED P4 40K 70CRI T4M MVOLT SPA FAO DXXXX (SW. POS. 6)
	2	XP05	DSX0 LED P4 40K 70CRI T3M MVOLT SPA FAO DXXXX



ADDITIONAL FIXTURE INFO



D-Series Size 0

LED Area Luminaire

10 yr Warranty

Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 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 70% 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:** DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature*	Color Rendering Index*	Distribution	Voltage	Mounting
DSX0 LED	**Forward optics** P1 P5 P2 P6 P3 P7 P4 **Rotated optics** P10* P12* P11* P13*	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 80CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T2R Type II medium T3LG Type III low glare* T3M Type III medium T4LG Type IV low glare* TFTM Forward Throw medium T5M Type V medium T5LG Type V low glare* T5W Type V wide BLC3 Type III backlight control* BLC4 Type IV backlight control* LCCO Left corner cutoff* RCCO Right corner cutoff*	MVOLT (120V-277V)* HVOLT (347V-480V)* XVOLT (277V-480V)* 120 *, ^ 208 *, ^ 240 *, ^ 277 *, ^ 347 *, ^ 480 *, ^	**Shipped included** SPA Square pole mounting (#5 drilling, 3.5" min. SQ pole)* RPA Round pole mounting (#5 drilling, 2" min. RND pole)* SPA5 Square pole mounting (#5 drilling, 3" min. SQ pole)* RPA5 Round pole mounting (#5 drilling, 2" min. RND pole)* SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole)* WBA Wall bracket * MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)*

Control options	Other options	Finish (required)
Shipped installed NLTAIR2 PIRHN Nightlight PIR low (<40' mounting height, ambient sensor enabled at 2fc) *, ^, ** ^ PIR High/low, motion sensor (<40' mounting height, ambient sensor enabled at 2fc) *, ^, ** ^ PER NEMA twist-lock receptacle only (controls ordered separately) ^ PER5 Five-pin receptacle only (controls ordered separately) *, ^	PE87 Seven-pin receptacle only (controls ordered separately) *, ^ FAO Field adjustable output *, ^ BL30 Bi-level switched dimming, 30% *, ^ BL50 Bi-level switched dimming, 50% *, ^ DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) ^	**Shipped installed** HS Houseside shield (black finish standard) *, ^ L90 Left rotated optics * R90 Right rotated optics * CCE Coastal Construction *, ^ HA 50°C ambient operation ^ BAA Buy American Act Compliant SF Single fuse (120, 277, 347V) ^ DF Double fuse (208, 240, 480V) ^ **Shipped separately** EGSR External Glare Shield (reversible; field install required; matches housing finish) HSSR Side Spikes (field install 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

LITHONIA LIGHTING
COMMERCIAL OUTDOOR

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com
© 2011-2024 Acuity Brands Lighting, Inc. All rights reserved.

DSX0 LED
Rev. 03/24/24
Page 1 of 9

	QTY	LABEL	DESCRIPTION
CANOPY	24	XR1	RCNY LED ALO1 50K 90CRI SYMF MVOLT BZS DWHXD (SW. POS. 3)



ADDITIONAL FIXTURE INFO

RCNY LED

Recessed Canopy/Ceiling Luminaire

Specifications

RCNY LED

Width:	11.5"
Height:	5.9"
Length:	11.5"
Weight:	14lbs

Introduction

The RCNY LED recessed luminaire is designed to provide exceptional energy savings and versatility in one fixture. With a compact design the RCNY provides superior illumination while blending into the canopy space seamlessly. The RCNY is unique in that as a recessed canopy it can be installed in both 12" and 16" canopy decks. Features such as Adjustable Lumen Output Dial with 8 Settings and forward throw distribution (ASYC) option make the RCNY one of the most versatile gas station canopies in the market. Lumen dial and driver are both accessible from below. With up to 160 LPW the RCNY 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 RCNY LED luminaire provides significant maintenance savings over traditional luminaires. Class 1 Division 2 also available. Wet location junction box available upon request.

Ordering Information **EXAMPLE:** RCNY LED ALO2 50K 70CRI SYMC MVOLT BZS DWHXD

RCNY LED

Series	Package	Color Temperature	CRI	Lens
RCNY LED	ALO1 5,000-10,000 Lumens* ALO2 10,000-20,000 Lumens	30K 3000K 40K 4000K 50K 5000K 57K 5700K	70CRI 80CRI 90CRI*	SYMC Symmetric Clear Lens ASYC Asymmetric Clear Lens SYMF Symmetric Frost lens

Voltage	Trim	Trim Finish	Option
MVOLT 120-277V HVOLT 347-480V	BZS 11.5" Square Bezel	DWHXD White DBLXD Black DBRXD Bronze DNAXD Natural Aluminum	CCE Coastal Protection SPD10KV 10K Surge Protection

NOTES
1. 90CRI not available with 57K.

Accessories

Ordered and shipped separately.

Catalog	Description	Use	Dimensions
RPUMA-A	RCNY Backplate for 12" Decks	Covers Existing Hole if Larger than Fixture	15.5" x 14" x 10GA Galv Steel
RPUMA-B	RCNY Backplate for 16" Decks	Covers Existing Hole if Larger than Fixture	15.5" x 14" x 10GA Galv Steel
BPUMW-A	RCNY 12" Boxtopplate	Covers Existing Footprint of Existing Fixture	18" x 18" x 16GA Aluminum
BPUMW-B	RCNY 16" Boxtopplate	Covers Existing Footprint of Existing Fixture	24" x 24" x 16GA Aluminum

LITHONIA LIGHTING

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com
© 2024 Acuity Brands Lighting, Inc. All rights reserved

RCNY LED
Rev. 08/01/24

INSTALL INSTRUCTIONS



	QTY	LABEL	DESCRIPTION
WALL MOUNTED	16	XT	SEW12146 | SFT-L20W[AN08] | 120-277V | 4000K | PSE | SMA |OAP [6.00IN.]



Styk Exterior Wall - Stem

SEW12146 2.20 in

SPI LIGHTING
PROJECT DETAILS

JOB NAME: SHEETZ
TYPE: 5' Awning Light
NOTES: Fixture head to be fixed at a 5o degree angle down away from the building.

ORDERING CODE: SEW12146 | SFT-L20W[AN08] | 120-277V | 4000K | PSE | SMA | OAP[6.00in.]
Please Note: Default specifications " DF_XXX " will not appear in the ordering code.

DESCRIPTION

Styk was built to provide the most lumens with the smallest luminaire package, while optimizing life. Not limited to decorative lighting, effective functional lighting is provided through the optimal light control in this minimal package. It's three optical offerings enable tremendous flexibility including wall washing, wall grazing, and asymmetric lighting solutions. It is excellent at lighting signs and facades. The family features wall, ceiling, and pendant models in a variety of stylish, clean mounting options. Available in 1' to 8' lengths, Styk can be mounted individually or configured in runs.



MADE IN USA BABA EMR IP66 WET LED

FEATURES & BENEFITS
- Sleek 1.5" diameter housing
- A forward throw optic, for even wall wash illumination, is standard
- Symmetrical optic options are available for more volumetric illumination
- Lamp body can be rotated up to 330° and locks into position for precise fixture alignment
- Up to 1,450 lumens per foot delivered (with Forward Throw distribution)
- Up to 18" projection with no vertical support needed
- Anodized finish provides durable corrosion protection
- All visible fasteners are flush mounted, providing a clean design
- Handcrafted in USA, BABA Compliant

SPECIFICATIONS
- **LIGHT SOURCE:** IP66 white LED light engine
- **CRI:** 80+ or 90+
- **LUMEN MAINTENANCE:** L70 = >50,000 Hrs.
- **EFFICACY:** 102 lm/W delivered (with Forward Throw distribution)
- **CCT:** 2700K, 3000K, 3500K, 4000K, 5000K
- **VOLTAGE:** 120-277V standard
- **DRIVER:** Includes one remote damp listed Class 2 power supply and either a damp location or wet location enclosure, except 8FT-L113W which has two. Black power cord standard unless otherwise specified. Max distance to the driver (including OAP) is: #18 AWG = 50', #16 AWG = 75', #14 AWG = 100'. For extended distances, contact factory.
- **DIMMING:** 0-10V controls standard to 1%
- **CONTROLS:** Contact factory for control options (e.g., Lutron Athena, Current NX, nLight, Enlighted, Encelium, Wattstopper, WaveLinx, or Casambi).
- **EMERGENCY:** Remote battery option is provided with 10W Constant Power Battery back-up, providing 90 Minutes of Emergency operation. Contact factory for other Emergency options.
- **INTEGRATED SURGE PROTECTION:** LED components are protected against minor surge events
- **CONSTRUCTION:** Extruded aluminum construction provides durable protection for internal components and is recyclable
- **FINISH:** Housing available in anodized finishes only. End caps and mounting components painted to match.
- **MODIFICATIONS:** Consult factory for all modification requests, including RGB and static LED colors
- **APPROVALS:** ETL listed to UL standards (US and Canada) for use in wet locations

21 MAPES FABRICATED CURVED FASCIA (BY OTHERS)
8" = 1'-0"

Ordering Information

Accessories

Ordered and shipped separately.

BU2SFX LI SF	Pendant - UL-twist-lock (120-277V) *
BU2HFX LI DB_IG	Pendant - UL-twist-lock (347V) *
BU4BEF LI DB_IG	Pendant - UL-twist-lock (480V) *
DSHEXT SBK	Mounting stem
BSWA14	Square pole universal arm/cap (specify finish)
BSWA19	Pole-to-pole arm kit
DUSRA 3TMSSC	Round pole adapter kit (drilling; specify finish)
DUSRA2 3TMSSC	Round pole adapter kit (drilling; specify finish)
DUSRA3 3TMSSC	Square pole adapter kit (drilling; specify finish)
DUSSC28 3TMSSC	External glare shield (specify finish)
DUSHS28 3TMSSC	Back glare shield (specify finish)

NOTES
1. Polished 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. T5W not available with option BL30, BL50, DMG, or PIR.
5. HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
6. HVOLT not available with package P1, P2 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
7. XVOLT not available with package P1, P2, P10, or P11.
8. XVOLT not available in packages P1, P2 or P10. XVOLT not available with fusing (SF or DF).
9. Not available with NLTAIR2 PIRHN, PIR, PIR5, PER5, PER7, BL30, or BL50.
10. WBA cannot be combined with Type 5 distributions plus photocell (PER).
11. Not available with NLTAIR2 PIRHN, PIR, PIR5, PER5, PER7, BL30, BL50, or nLight Air 2.
12. NLTAIR2 PIRHN not available with other controls including PIR, PIR5, PER5, PER7, TAQ, BL30, BL50 and DMG. NLTAIR2 PIRHN not available with P1, P2 and P10. NLTAIR2 PIRHN not available with P3 and P13 using XVOLT. NLTAIR2 PIRHN not available with P11 using XVOLT. NLTAIR2 PIRHN not available with P4 using MVOLT.
13. PIR and PIR5 not available with P1, P2 and P10. PIR not available with P3 and DMG. PIR not available with P11, P12 and P13 using XVOLT. PIR not available with P4 using MVOLT.
14. PER/PER5/PER7 not available with NLTAIR2, PIR, BL30, BL50. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See Accessories information.
15. FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PIR5, PER7, BL30, BL50, or DMG.
16. BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO and DMG. BL30 or BL50 must specify T2D, DT, or 347V. Consult tech support.
17. DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50 and FAO.
18. Not available with P1, P2, P3, P4, P10, P11, P12, P13 when ordered with HS.
19. Reference Controls Options table on page 4.
20. Not available with P1, P2, P3, P4, P10, P11, P12, P13, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
21. CCE option not available with options BS and EGSR. Consult Technical Support for availability.
22. Option HA not available with performance packages P6, P7, P12 and P13.
23. Single fuse (SF) requires 120V, 277V or 347V. Not available with P4, P7, P10, P12 or P13. Consult Controls Table on page 4.
24. 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)

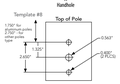


House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION
(from top of pole)





Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single (std)	2 @ 180	2 @ 90	2 @ 90	3 @ 120	4 @ 90
2 3/8"	RPA	AS23-190	AS23-280	AS23-290	AS23-390	AS23-320	AS23-490
2 7/8"	RPA	AS25-190	AS25-280	AS25-290	AS25-390	AS25-320	AS25-490
4"	RPA	AS35-190	AS35-280	AS35-290	AS35-390	AS35-320	AS35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side-S	Side-S & D	Side-S & C	Side-S, C & D	Round Pole Only	Side-A, B, C & D
Drill Pattern/Quiver	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS

		Minimum Acceptable Variable Pole Dimensions					
EPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#5	3"	3"	3"	3"	3"	3"
SPA	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX0 Area Luminaire - EPA

Effective Projected Area (sq ft) calculated including arm. Orientations shown in drawings below. Shielding, brackets or other accessories are not included in the EPA data.

Fixture Quantity & Mounting Configuration	Single (SPA1)	2 @ 180 (AS23)	2 @ 90 (AS25)	3 @ 90 (AS35)	3 @ 120 (RPA1)	4 @ 90 (SPA4)
Mounting Type						
DSX0 with SPA	0.44	0.88	0.96	1.18	—	1.16
DSX0 with SPA5, SPA8N	0.51	1.02	1.06	1.26	—	1.29
DSX0 with RPA, RPA5	0.51	1.02	1.06	1.26	1.24	1.29
DSX0 with WA	0.64	1.28	1.24	1.67	1.70	1.93

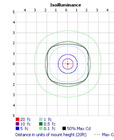
LITHONIA LIGHTING
COMMERCIAL OUTDOOR

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com
© 2011-2024 Acuity Brands Lighting, Inc. All rights reserved.

DSX0 LED
Rev. 03/24/24
Page 2 of 9

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

SYMMETRIC CLEAR LENS



ASYMMETRIC CLEAR LENS



Performance Data

Symmetric Frost Lens (SYMF)

Performance Package	Setting	System Watts	50K 80CRI		50K 90CRI	
			Lumens	LPW	Lumens	LPW
ALO2	1	26	3,879	151	3,516	137
ALO2	2	45	6,759	149	6,119	135
ALO2	3	64	9,515	149	8,610	135
ALO2	4	81	12,099	148	10,946	134
ALO2	5	99	14,631	148	13,226	134
ALO2	6	113	16,775	148	15,173	134
ALO2	7	127	18,866	148	17,063	134
ALO2	8	136	20,024	147	18,100	133

Symmetric Clear Lens (SYMC)

Performance Package	Setting	System Watts	50K 80CRI		50K 90CRI	
			Lumens	LPW	Lumens	LPW
ALO2	1	26	4,207	164	3,755	146
ALO2	2	45	7,337	162	6,541	145
ALO2	3	64	10,332	162	9,206	144
ALO2	4	81	13,141	161	11,706	144
ALO2	5	99	15,892	161	14,155	143
ALO2	6	113	18,223	161	16,229	143
ALO2	7	127	20,495	161	18,251	143
ALO2	8	136	21,762	160	19,368	142

Actual Lumens May Vary +/- 7%

LITHONIA LIGHTING

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com
© 2024 Acuity Brands Lighting, Inc. All rights reserved

RCNY LED
Rev. 08/01/24

REDLEONARD ASSOCIATES
1340 Kemper Meadow Dr, Forest Park, OH 45240
513-574-9500 | redleonard.com

ANY SITE PLAN(S), FLOOR PLAN(S), RENDERING(S), LIGHTING LAYOUT(S) AND PHOTOMETRIC PLAN(S) INCLUDING BUT NOT LIMITED TO ANY PROJECT(S) CREATED/PRODUCED BY RED LEONARD ASSOCIATES INC., ARE ONLY INTENDED FOR ILLUSTRATION AND QUOTING PURPOSES ONLY. RED LEONARD ASSOCIATES HAS THE RIGHT TO USE THIRD PARTY LASERS, SCANNERS, AND CAMERAS BUT ACTUAL PROJECT CONDITIONS, DIMENSIONS, AND ACCURACY OF MEASUREMENTS MAY DIFFER FROM THESE OR ANY PARAMETERS. RED LEONARD ASSOCIATES INC. ASSUMES NO LIABILITY FOR WHAT IS CREATED/PRODUCED IN THESE RECREATIONS. THIS INCLUDES BUT IS NOT LIMITED TO THE USE OF, INSTALLATION OF AND/OR INTEGRITY OF EXISTING BUILDING(S), SURROUNDING AREA FOR PRODUCT(S) SUCH AS EXISTING POLE(S), ANCHOR BOLT(S), BASE(S), ARCHITECTURAL AND SIGNAGE STRUCTURE(S), LANDSCAPING PLAN(S), LIGHTING PLAN(S), FIXTURE SELECTION(S) AND PLACEMENT, MATERIAL(S), COLOR ACCURACY, TEXTURE(S), AND ANYTHING ATTRIBUTED TO PHOTO REALISM THAT IS CREATED. FURTHERMORE, RED LEONARD ASSOCIATES INC., DOES NOT ASSUME LIABILITY WHATSOEVER FOR ANY PURCHASES MADE BY CLIENT BEFORE, DURING, OR AT THE CONCLUSION OF THE PUBLISHED WORK. THE CUSTOMER, ITS RELATIVE AFFILIATES, AS WELL AS ANY OTHER PERSON(S) IN VIEWING OF THIS PRODUCT IS RESPONSIBLE FOR VERIFYING COMPLIANCE WITH ANY BUT NOT LIMITED TO ALL CODES, PERMITS, RESTRICTIONS, INSTRUCTIONS, PURCHASES, AND INSTALLATIONS OF OBJECTS VIEWED WITHIN THIS DOCUMENT(S) OR PROJECT(S). SYMBOLS ARE NOT DRAWN TO SCALE. SIZE IS FOR CLARITY PURPOSES ONLY. SIZES AND DIMENSIONS ARE APPROXIMATE. ACTUAL MEASUREMENTS MAY VARY. DRAWINGS ARE NOT INTENDED FOR ENGINEERING OR CONSTRUCTION USE. THIS DOCUMENT, ANY RED LEONARD DRAWING(S), OR PROJECT(S) IS NOT TO BE USED AND/OR INTENDED FOR ENGINEERING OR CONSTRUCTION PURPOSES, BUT FOR ILLUSTRATIVE PURPOSES ONLY. ANY USE OF THIS DOCUMENTATION AND/OR OTHER ARTICLES PRODUCED BY RED LEONARD WITHOUT WRITTEN AUTHORIZATION FROM JAYME J. LEONARD IS STRICTLY PROHIBITED.

PROJECT NAME:
SHEETZ
HARTLAND, MI
DRAWING NUMBER:
A1.1

FRESH FOOD SHEETZ MADE TO ORDER

	QTY	LABEL	DESCRIPTION
WALL MOUNTED	3	XT1	SEW12146 | 4FT-L16W[AN08] | 120-277V | 4000K | PSE | SMA |OAP [6.00IN.]



	QTY	LABEL	DESCRIPTION
WALL MOUNTED	3	XX	VWM-H-L17/840-TL-DBZ-CGL-DIM-UNV (BRONZE COLOR 80CRI)



Styk Exterior Wall - Stem

SEW12146 2.20 in

SPI LIGHTING
PROJECT DETAILS

JOB NAME: SHEETZ
TYPE: 4' Awning Light
NOTES: Fixture head to be fixed at a 5o degree angle down away from the building.

ORDERING CODE: SEW12146 | 4FT-L16W[AN08] | 120-277V | 4000K | PSE | SMA | OAP[6.00in.]
*Please Note: Default specifications " **DF_XXX** " will not appear in the ordering code.*

DESCRIPTION

Styk was built to provide the most lumens with the smallest luminaire package, while optimizing life. Not limited to decorative lighting, effective functional lighting is provided through the optimal light control in this minimal package. It's three optical offerings enable tremendous flexibility including wall washing, wall grazing, and asymmetric lighting solutions. It is excellent at lighting signs and facades. The family features wall, ceiling, and pendant models in a variety of stylish, clean mounting options. Available in 1' to 8' lengths, Styk can be mounted individually or configured in runs.



MADE IN USA · EMR · IP66 · WET · LED

FEATURES & BENEFITS

- Sleek 1.5" diameter housing
- A forward throw optic, for even wall wash illumination, is standard
- Symmetrical optic options are available for more volumetric illumination
- Lamp body can be rotated up to 330° and locks into position for precise fixture alignment
- Up to 1,450 lumens per foot delivered (with Forward Throw distribution)
- Up to 18" projection with no vertical support needed
- Anodized finish provide durable corrosion protection
- All visible fasteners are flush mounted, providing a clean design
- Handcrafted in USA, BABA Compliant

SPECIFICATIONS

- **LIGHT SOURCE:** IP66 white LED light engine
- **CRI:** 80+ or 90+
- **LUMEN MAINTENANCE:** L70 = >50,000 Hrs.
- **EFFICACY:** 102 lm/W delivered (with Forward Throw distribution)
- **CCT**: 2700K, 3000K, 3500K, 4000K, 5000K
- **VOLTAGE:** 120-277V standard
- **DRIVER:** Includes one remote damp listed Class 2 power supply and either a damp location or wet location enclosure, except 8FT-L113W which has two. Black power cord standard unless otherwise specified. Max distance to the driver (including OAP) is: #18 AWG = 50', #16 AWG = 75', #14 AWG = 100'. For extended distances, contact factory.
- **DIMMING:** 0-10V controls standard to 1%
- **CONTROLS:** Contact factory for control options (e.g., Lutron Athena, Current NX, nLight, Enlighted, Encelium, Wattstopper, WaveLinx, or Casambi).
- **EMERGENCY:** Remote battery option is provided with 10W Constant Power Battery back-up, providing 90 Minutes of Emergency operation. Contact factory for other Emergency options.
- **INTEGRATED SURGE PROTECTION:** LED components are protected against minor surge events
- **CONSTRUCTION:** Extruded aluminum construction provides durable protection for internal components and is recyclable
- **FINISH:** Housing available in anodized finishes only. End caps and mounting components painted to match.
- **MODIFICATIONS:** Consult factory for all modification requests, including RGB and static LED colors
- **APPROVALS:** ETL listed to UL standards (US and Canada) for use in wet locations

Shimstone Design Studio
LIGHTING DESIGN

SHEETZ 2.0

VWM LED Voltaire Mini Architectural Wall Pack

Williams

CATALOG #:
TYPE:
PROJECT:





VWM-H Front view
Weight: 6.5 Lbs

FEATURES

- Designed to illuminate sidewalks, entrances, and exterior walls. Intended for use in both uplight and downlight applications.
- Delivers up to 80% energy compared to HID systems.
- Blends seamlessly with a variety of architectural styles.
- Available on QuickShip
- Made-Right Here® in the USA

SPECIFICATIONS

- HOUSING – Die-cast aluminum enclosure.
- THERMAL MANAGEMENT – Integral die-cast aluminum housing and heat sinks provide passive thermal management. Rated ambient operating temperature (Ta) is 104°C (-40°C to 40°C / -40°F to 104°F).
- OPTICAL SYSTEM – General output delivered by high-
- LED SOURCE – 4,000 3000K, 4000K, or 5000K CCT, 70 or 80 CRI LEDs. LED light engine design: 570 & 577 Chip on board.
- LED DRIVER – 0-10V dimming.
- ELECTRICAL – 120-277V, 50/60Hz input range. 50-60Hz power factor >.90, THD <20% at full load. FCC Class A compliant. Quick-connect terminals. Surge protection tested UL 1449 Third Edition.
- FINISH – Super durable polyester powder coat finish provides corrosion-free, multi-stage prefinished metal, meets and exceeds AAMA 2604 specifications for architectural finishes.
- MOUNTING – Surface mounts directly over a 4" maximum outlet box. Must be mounted to a flat surface. Includes (3) 1/2" cable support fixture weight (6.5 Lbs).
- LISTINGS
  - Luminaire is wet listed as luminaire suitable for wet locations.
  - IDA Dark Sky approved (downlight configuration only).
  - RoHS compliant.
  - IP65 rated.
  - Title 24 compliant with PC option.
- WARRANTY – 5-year limited warranty, see complete warranty.

ORDERING EXAMPLE: VWM-H – L20/740 – T3 – DBZ – SDGL – OPTIONS – DIM – UNV

ORDERING INFO

SERIES	TYPE [1]	LUMENS [2]	CRI/CCT	DISTRIBUTION [3]
VWM	H horizontal	L10 1,000lm	70 3000K	TL Lunbertian distribution [10]
	V vertical	L17 1,700lm [4]	730 3500K	T3 Type III [10]
		L20 2,000lm	740 4000K	
		80 CRI	750 5000K	
		L10 1,000lm	830 3000K	
		L17 1,700lm	840 4000K	

FINISH OPTIONS [7]

BLK	Black (BAL-PF070)
DBZ	Dark Bronze
DBR	Medium bronze
GRA	Graphite
SLV	Satin Aluminum (BAL-PF009)
WHT	White (BAL-PF072)

SHIELDING

SDGL	Micro-prismatic tempered glass lens
CGL	Clear tempered glass lens.

OPTIONS

PC	Button-style photocell [8]
SRG	Basic 10kV surge protection
TP	Tamper-resistant Torx head screws [9]

CONTROL

DIM	Dimming driver provised for 0-10V low voltage applications.

VOLTAGE

120	120V
277	277V
UNV	120-277V

ACCESSORIES

TPTA 25 TOOL Tamper-resistant tool for Torx head screws [9]

QUICKSHIP

VWM-L10/840-TL-DBZ-CGL-DIM-UNV
VWM-L17/840-TL-DBZ-CGL-DIM-UNV

NOTES

1. Scroll page 3 for FIXTURE DETAILS.
2. Lumen output based on 5000 CCT. Actual lumens may vary +/-5%, see page 2 for FIXTURE PERFORMANCE DATA.
3. See page 2 for DISTRIBUTION DETAILS.
4. Available with 700 CRI CCT only.
5. L10 & L17 only.
6. Not available.
7. See page 3 for FINISH OPTIONS.
8. Factory-installed. 120V, 208V, or 277V only; must specify voltage. See page 3 for FIXTURE DETAILS. Left side when viewed from behind fixture.
9. Tamper-resistant Torx head screws only. Safety screws providing added support to the lens are not tamper-resistant (lens is sealed to the fixture via adhesive). Requires a tamper-resistant tool, see accessories.
10. Tamper-resistant tool must be ordered separately. Please specify quantity required per project.

Information contained herein is subject to change without notice
RN 91094214

SOS PROJECT #: 0609.0 **MODEL #:** REFER TO LIGHTING FIXTURE SCHEDULE FOR MODEL NUMBER AND DESCRIPTION **TYPE: XS2**

Shimstone Design Studio
LIGHTING DESIGN

SHEETZ 2.0

VWM LED Voltaire Mini Architectural Wall Pack

FIXTURE PERFORMANCE DATA

					CLEAR GLASS (CGL)		SOLITE GLASS (SDGL)		
	LED PACKAGE	DISTRIBUTION	WATTAGE	CCT	DELIVERED LUMENS	EFFICACY/LM/W	DELIVERED LUMENS	EFFICACY (lm/w)	BUG RATINGS
VWM-H	L10	TL	13	3000	1322	102	1259	97	B1-U0-G2
				4000	1376	107	1365	107	
				5000	1376	107	1365	107	
	L17		16	3000	1826	110	1615	99	
				4000	2521	108	1607	69	
				5000	2537	125	2512	124	
	L20	T3	27	3000	2594	108	2539	107	B1-U0-G1
				4000	2594	108	2539	107	
				5000	2650	115	2534	114	
VWM-V	L10	TL	13	3000	1467	86	1405	86	B1-U0-G2
				4000	1555	92	1534	91	
				5000	1555	92	1534	91	
	L17		16	3000	1672	102	1670	102	
				4000	1565	67	1724	107	
				5000	1664	114	1662	114	
	L20	T3	26	3000	2529	98	2469	95	B1-U0-G1
				4000	2529	98	2469	95	
				5000	2529	98	2680	103	

- Wattage shown is average for 120V through 277V input.
- Efficacy/lumen output shown is average based on voltage input of 120V through 277V.
- Photometrics tested in accordance with IESNA LM-79. Results shown are based on 25°C ambient temperature.

LUMEN MAINTENANCE

AMBIENT TEMP	ESTIMATED LTL*/HOURS (TM-21)	
25°C	>60,000	* Projected lumen maintenance calculated from LED manufacturer IES LM-80 data and in-situ temperature measurement.
35°C	>60,000	** Reported L70 hours in accordance with IES TM-21
45°C	>60,000	
55°C	>55,000	
65°C	>55,000	
45°C	>55,000	

DISTRIBUTION DETAILS

VWM-H TL



VWM-V TL



VWM-H T3



Clear Glass (CGL)

VWM-V T3

Sotite Glass (SDGL)

Information contained herein is subject to change without notice
RN 91094214

SOS PROJECT #: 0609.0 **MODEL #:** REFER TO LIGHTING FIXTURE SCHEDULE FOR MODEL NUMBER AND DESCRIPTION **TYPE: XS2**

SPI LIGHTING P:262.242.1420 | SPIteam@spilighting.com | Last Revised: 1/24/2025 | Design Rights Reserved | SEW12146 | 2 of 8

REDLEONARD ASSOCIATES
1340 Kemper Meadow Dr, Forest Park, OH 45240
513-574-9500 | redleonard.com

ANY SITE PLAN(S), FLOOR PLAN(S), RENDERING(S), LIGHTING LAYOUT(S) AND PHOTOMETRIC PLAN(S) INCLUDING BUT NOT LIMITED TO ANY PROJECT(S) CREATED/PRODUCED BY RED LEONARD ASSOCIATES INC., ARE ONLY INTENDED FOR ILLUSTRATION AND QUOTING PURPOSES ONLY. RED LEONARD ASSOCIATES HAS THE RIGHT TO USE THIRD PARTY LASERS, SCANNERS, AND CAMERAS BUT ACTUAL PROJECT CONDITIONS, DIMENSIONS, AND ACCURACY OF MEASUREMENTS MAY DIFFER FROM THESE OR ANY PARAMETERS. RED LEONARD ASSOCIATES INC. ASSUMES NO LIABILITY FOR WHAT IS CREATED/PRODUCED IN THESE RECREATIONS. THIS INCLUDES BUT IS NOT LIMITED TO THE USE OF, INSTALLATION OF AND/OR INTEGRITY OF EXISTING BUILDING(S), SURROUNDING AREA FOR PRODUCT(S) SUCH AS EXISTING POLE(S), ANCHOR BOLT(S), BASE(S), ARCHITECTURAL AND SIGNAGE STRUCTURE(S), LANDSCAPING PLAN(S), LIGHTING PLAN(S), FIXTURE SELECTION(S) AND PLACEMENT, MATERIAL(S), COLOR ACCURACY, TEXTURE(S), AND ANYTHING ATTRIBUTED TO PHOTO REALISM THAT IS CREATED. FURTHERMORE, RED LEONARD ASSOCIATES INC., DOES NOT ASSUME LIABILITY WHATSOEVER FOR ANY PURCHASES MADE BY CLIENT BEFORE, DURING, OR AT THE CONCLUSION OF THE PUBLISHED WORK. THE CUSTOMER, ITS RELATIVE AFFILIATES, AS WELL AS ANY OTHER PERSON(S) IN VIEWING OF THIS PRODUCT IS RESPONSIBLE FOR VERIFYING COMPLIANCE WITH ANY BUT NOT LIMITED TO ALL CODES, PERMITS, RESTRICTIONS, INSTRUCTIONS, PURCHASES, AND INSTALLATIONS OF OBJECTS VIEWED WITHIN THIS DOCUMENT(S) OR PROJECT(S). SYMBOLS ARE NOT DRAWN TO SCALE. SIZE IS FOR CLARITY PURPOSES ONLY. SIZES AND DIMENSIONS ARE APPROXIMATE, ACTUAL MEASUREMENTS MAY VARY. DRAWINGS ARE NOT INTENDED FOR ENGINEERING OR CONSTRUCTION USE. THIS DOCUMENT, ANY RED LEONARD DRAWING(S), OR PROJECT(S) IS NOT TO BE USED AND/OR INTENDED FOR ENGINEERING OR CONSTRUCTION PURPOSES, BUT FOR ILLUSTRATIVE PURPOSES ONLY. ANY USE OF THIS DOCUMENTATION AND/OR OTHER ARTICLES PRODUCED BY RED LEONARD WITHOUT WRITTEN AUTHORIZATION FROM JAYME J. LEONARD IS STRICTLY PROHIBITED.

PROJECT NAME:
SHEETZ
HARTLAND, MI
DRAWING NUMBER:
A1.2

FRESH FOOD SHEETZ MADE TO ORDER

SHEETZ

SHEETZ, INCORPORATED
5700 SIXTH AVENUE
ALTOONA, PA 16602
(814) 946-3611

NEW SHEETZ STORE "HARTLAND"

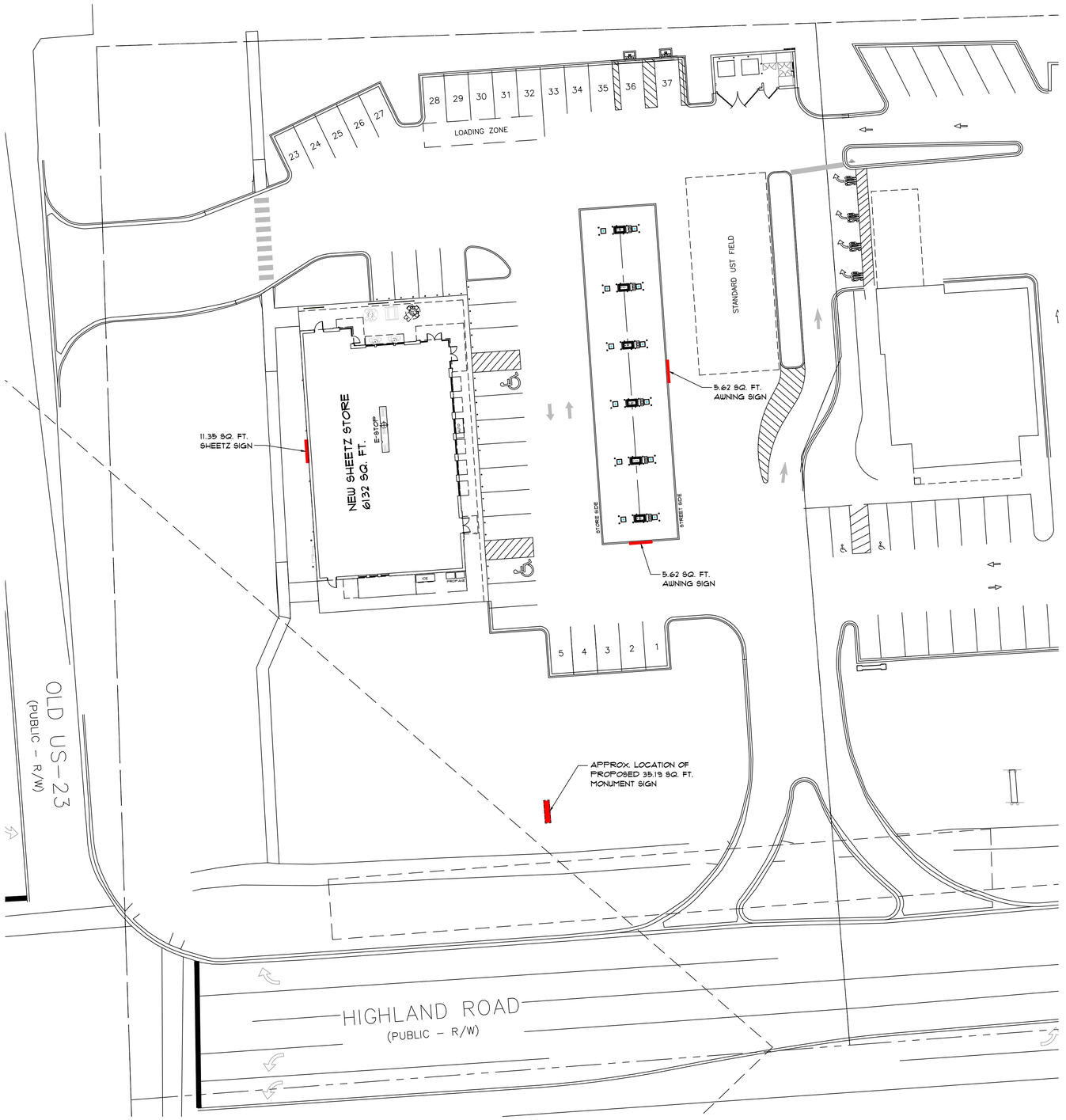
INT. OF OLD U.S. 23 AND HIGHLAND ROAD HARTLAND, MICHIGAN

SIGNAGE SQUARE FOOTAGE BREAKDOWN

BUILDING ELEVATIONS	SHEETZ SIGN = 11.35 SQ. FT. X 1 = 11.35 SQ. FT.		
	TOTAL = 11.35 SQ. FT.		11.35 SQ. FT.
GAS PRICE MONUMENT SIGN	SHEETZ SIGN = 16.17 SQ. FT. X 1 = 16.17 SQ. FT.		
	GAS PRICE SIGN = 19.02 SQ. FT. X 1 = 19.02 SQ. FT.		
	TOTAL = 35.19 SQ. FT.		35.19 SQ. FT.
GAS CANOPY AWNING	SHEETZ SIGN AREA = 5.62 SQ. FT. X 2 = 11.24 SQ. FT.		
	FUEL OFFERING FLAG AREA = 2.76 SQ. FT. X 12 = 33.12 SQ. FT.		
	TOTAL = 44.36 SQ. FT.		44.36 SQ. FT.

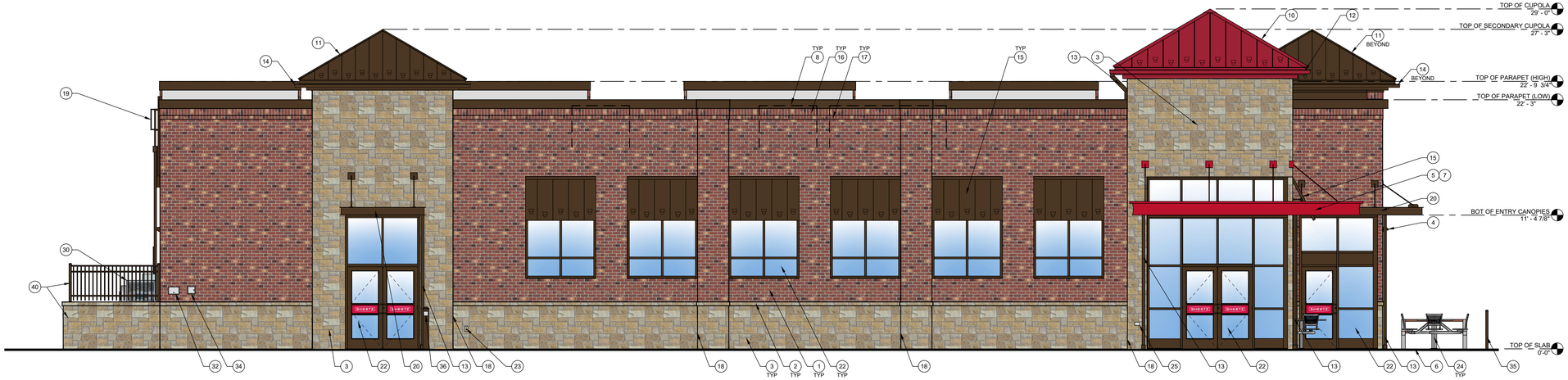
UPDATED 02-10-2025

SIGN LOCATIONS



SHEET NUMBER
A100

G:\Sites\under-contract\MI-214657-Hartland- Old US 23\Sign Package\MI-Hartland-Old 23 -coversheet.dwg, 2/10/2025 10:10:48 AM, DWG To PDF.pc3



1 EAST ELEVATION
1/4" = 1'-0"

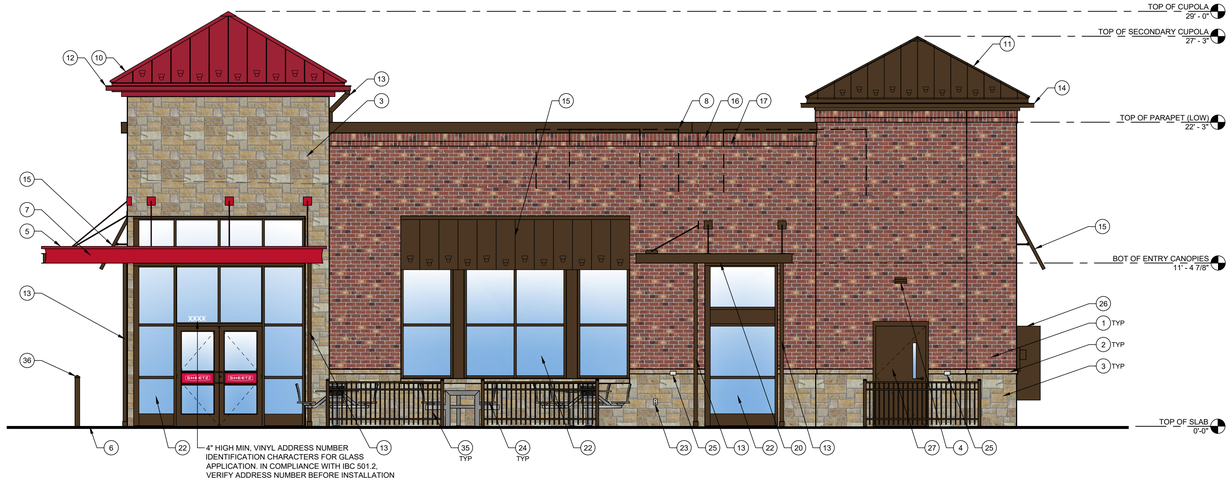
EAST ELEVATION = 2,551.39 SQ FT			
DESCRIPTION	MATERIAL GROUP	AREA (SQ FT)	% OF COVERAGE
STONE	1A	722.38	28.3%
BRICK, NATURAL CLAY	1A	990.12	38.8%
GLASS	1A	397.91	15.6%
FLAT METAL PANELS	1A	116.57	4.6%
DOORS	1A	116.48	4.5%
AWNINGS	1A	1.35	5.3%
STANDING SEAM METAL	1A	72.93	2.9%

TYPICAL EXTERIOR ELEVATION NOTES:

- ALL LIGHTS SHOWN ABOVE AND/OR BELOW DOORS OR WINDOWS ARE TO BE CENTERED ON THE DOOR OR WINDOW UNLESS NOTED OTHERWISE.
- FIXTURES/EQUIPMENT BETWEEN TWO DOORS OR WINDOWS ARE TO BE CENTERED EQUALLY.
- EXTERIOR SEALANT FOR STONE SHALL COMPLY WITH SECTION 07 9005 JOINT SEALANTS, GENERAL BUILDING FASCADE WEATHER SEALANT AND SHALL MATCH THE COLOR OF THE STONE.

EXTERIOR ELEVATION KEYNOTES:

1. BRICK VENEER, COLOR: 680 BY CONTINENTAL BRICK COMPANY. SEE MASONRY SPEC
2. CAST STONE SILL, COLOR: CRAB ORCHARD. SEE MASONRY SPEC
3. ANCHORED CAST STONE MASONRY VENEER, COLOR: CRAB ORCHARD. SEE MASONRY SPEC
4. EXTERIOR LIGHT FIXTURE, REFER TO ELECTRICAL DRAWINGS
5. ARCHITECTURAL CANOPY, COLOR: REGAL RED, PREMIUM TWO-COAT KYNAR FINISH
6. BRICK PAVER WALKWAY
7. LIGHTED CURVED FASCIA CANOPY ATTACHMENT
8. METAL COPING, COLOR: DARK BRONZE
9. WALL MOUNTED BUILDING SIGN, SEE SHEET A200.
10. STANDING SEAM METAL ROOF, COLOR: BRITE RED
11. STANDING SEAM METAL ROOF, COLOR: BRONZE
12. GUTTER, COLOR TO MATCH CUPOLA COLOR
13. DOWNSPOUT, COLOR: DARK BRONZE
14. GUTTER, COLOR TO MATCH CUPOLA COLOR
15. METAL STANDING SEAM SHED STYLE AWNING AND FRAME ASSEMBLY, ROOF COLOR: BRONZE, FRAME COLOR: DARK BRONZE
16. BRICK SOLDIER COURSE, COLOR: 680 BY CONTINENTAL BRICK COMPANY. SEE MASONRY SPEC
17. BRICK ROWLOCK COURSE, COLOR: 680 BY CONTINENTAL BRICK COMPANY. SEE MASONRY SPEC
18. CONTROL JOINT, SEE MASONRY SPEC
19. STEEL ROOF LADDER AND CRANKY POST, COLOR: DARK BRONZE
20. ARCHITECTURAL CANOPY, COLOR: BRONZE, PREMIUM TWO-COAT KYNAR FINISH
21. OVERFLOW SCUPPER
22. ALUMINUM STOREFRONT SYSTEM, SEE A600
23. EXTERIOR HOSE BIB, REFER TO PLUMBING DRAWINGS
24. OUTDOOR FURNITURE
25. ELECTRICAL RECEPTACLE, REFER TO ELECTRICAL DRAWINGS
26. ELECTRICAL EQUIPMENT, REFER TO ELECTRICAL DRAWINGS
27. HM DOOR AND FRAME, COLOR: DARK BRONZE
28. EMERGENCY WATER CONNECTION, REFER TO PLUMBING DRAWINGS
29. SEAMLESS ALUM PANEL SYSTEM WITH EXPOSED FASTENERS, COLOR: DARK BRONZE
30. PROPANE LOCKER
31. ICE MERCHANDISER
32. RTI FILLPORT
33. NOT USED
34. CO2 FILLPORT
35. DECORATIVE ALUMINUM FENCE, COLOR DARK BRONZE
36. AUTOMATIC DOOR PUSH PLATE AND BOLLARD, BOLLARD COLOR: DARK BRONZE
37. GAS METER AND RISER, REFER TO CIVIL UTILITY PLAN, COLOR: DARK BRONZE
38. NOT USED
39. NOT USED
40. ICE MERCHANDISER AND PROPANE ENCLOSURE
41. FAUX WINDOWS WITH BLACK REFLECTIVE FILM



2 NORTH ELEVATION
1/4" = 1'-0"

NORTH ELEVATION = 1,482.45 SQ FT			
DESCRIPTION	MATERIAL GROUP	AREA (SQ FT)	% OF COVERAGE
STONE	1A	293.22	19.8%
BRICK, NATURAL CLAY	1A	585.64	39.5%
GLASS	1A	317.06	21.4%
FLAT METAL PANELS	1A	79.26	5.4%
DOORS	1A	74.34	5%
AWNINGS	1A	60	4%
STANDING SEAM METAL	1A	72.93	4.9%



TYPICAL OF ONE
PROJECTS 9" OFF FACE OF BUILDING

A WALL MOUNTED CHANNEL LETTER "SHEETZ" BUILDING SIGN
1/2" = 1'-0"

*C*onvenience *A*rchitecture
and *Design* P.C.
351 Sheetz Way, Claysburg, PA 16625
phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:
NEW SHEETZ STORE

HARTLAND

Int. of Old US 23
and Highland Road
Hartland, MI 48353

OWNER:
SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

CONSULTANT

PROFESSIONAL

KEYPLAN

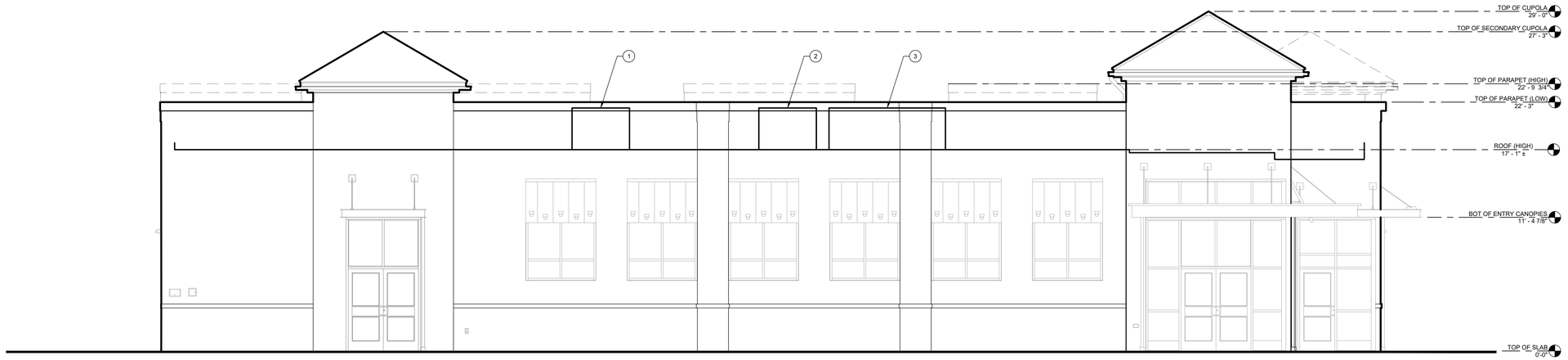
MARK	DATE	DESCRIPTION

ISSUE:	**05.08.2025**
SITE ID NO:	**214657**
AUTHOR BY:	**AMM/DLN**
REVIEW BY:	**RJH**
VERSION:	**6132R_v1.7**

EXTERIOR ELEVATIONS

A101

PRELIMINARY ELEVATIONS

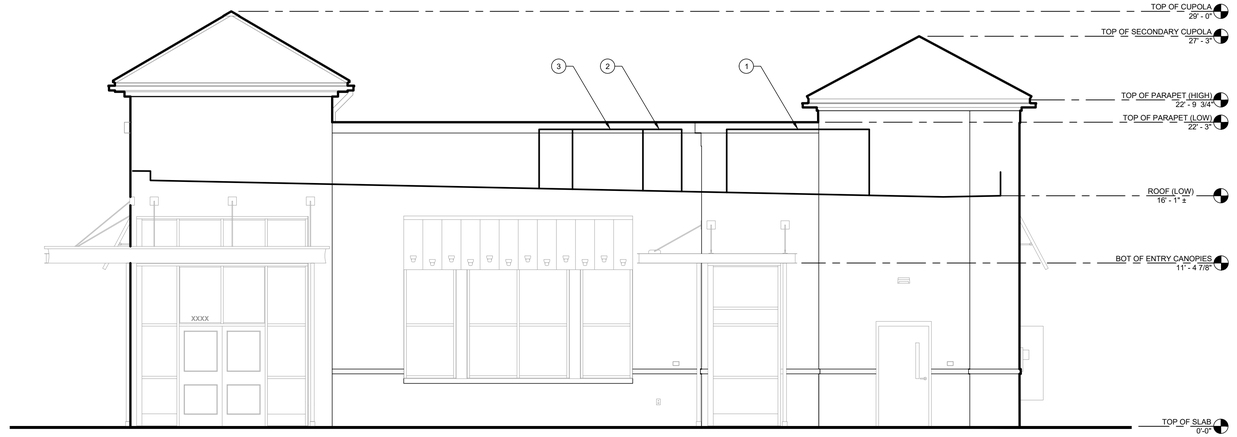


1 EAST ELEVATION
1/4" = 1'-0"

EAST ELEVATION = 2,447.18 SQ FT		
DESCRIPTION	AREA (SQ FT)	% OF COVERAGE
STONE	722.38	29.5%
BRICK	990.12	40.5%
GLAZING	397.91	16.3%
FASCIA	26.25	1.0%
DOORS	116.48	4.8%
AWNINGS	135	5.5%
COPING	59.04	2.4%

EXTERIOR ELEVATION KEYNOTES:

1. RTU: AC1
2. RTU: AC2
3. RTU: AC3



2 NORTH ELEVATION
1/4" = 1'-0"

EAST ELEVATION = 1378.24 SQ FT		
DESCRIPTION	AREA (SQ FT)	% OF COVERAGE
STONE	293.22	21.25%
BRICK	585.64	42.49%
GLAZING	317.06	23.01%
FASCIA	22.1	1.60%
DOORS	74.34	5.42%
AWNINGS	60	4.35%
COPING	25.88	1.88%

*C*onvenience *A*rchitecture
and *Design* P.C.
351 Sheetz Way, Claysburg, PA 16625

phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:
NEW SHEETZ STORE

HARTLAND

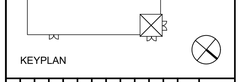
Int. of Old US 23
and Highland Road
Hartland, MI 48353

OWNER:
SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

CONSULTANT

PROFESSIONAL



KEYPLAN

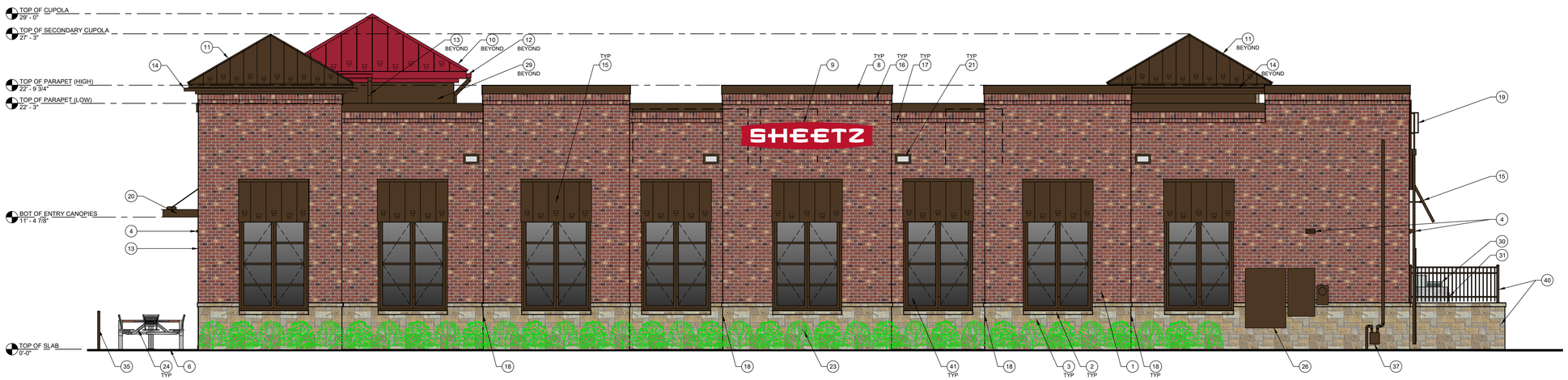
MARK	DATE	DESCRIPTION

ISSUE:	07.09.2025
SITE ID NO:	214657
AUTHOR BY:	AMM/DLN
REVIEW BY:	RJH
VERSION:	6132R_v1.7

EXTERIOR
ELEVATIONS

A102

PRELIMINARY ELEVATIONS



3 WEST ELEVATION
1/4" = 1'-0"

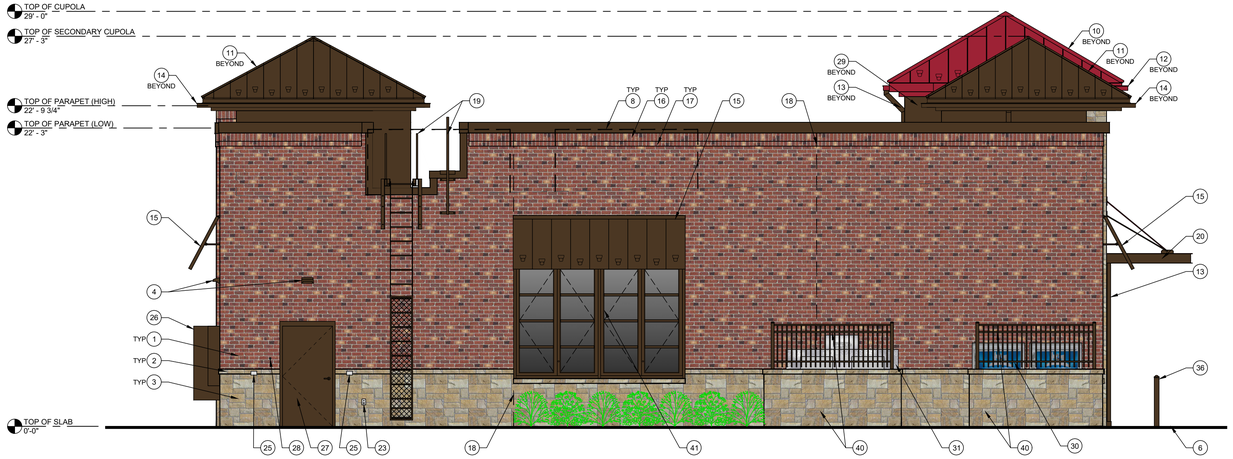
WEST ELEVATION = 2,412.6 SQ FT			
DESCRIPTION	MATERIAL GROUP	AREA (SQ FT)	% OF COVERAGE
STONE	1A	384.69	15.9%
BRICK, NATURAL CLAY	1A	1320.32	54.7%
GLASS	1A	387.56	16.1%
FLAT METAL PANELS	1A	108.63	4.5%
DOORS	1A	0	0%
AWNINGS	1A	179.9	7.5%
STANDING SEAM METAL	1A	31.5	1.3%

TYPICAL EXTERIOR ELEVATION NOTES:

- ALL LIGHTS SHOWN ABOVE AND/OR BELOW DOORS OR WINDOWS ARE TO BE CENTERED ON THE DOOR OR WINDOW UNLESS NOTED OTHERWISE.
- FIXTURES/EQUIPMENT BETWEEN TWO DOORS OR WINDOWS ARE TO BE CENTERED EQUALLY.
- EXTERIOR SEALANT FOR STONE SHALL COMPLY WITH SECTION 07 9005 JOINT SEALANTS, GENERAL BUILDING FASCADE WEATHER SEALANT AND SHALL MATCH THE COLOR OF THE STORE.

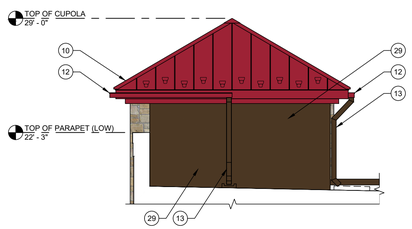
EXTERIOR ELEVATION KEYNOTES:

1. BRICK VENEER, COLOR: 680 BY CONTINENTAL BRICK COMPANY. SEE MASONRY SPEC
2. CAST STONE SILL, COLOR: CRAB ORCHARD. SEE MASONRY SPEC
3. ANCHORED CAST STONE MASONRY VENEER, COLOR: CRAB ORCHARD. SEE MASONRY SPEC
4. EXTERIOR LIGHT FIXTURE, REFER TO ELECTRICAL DRAWINGS
5. ARCHITECTURAL CANOPY, COLOR: REGAL RED, PREMIUM TWO-COAT KYNAR FINISH
6. BRICK PAVER WALKWAY
7. LIGHTED CURVED FASCIA CANOPY ATTACHMENT
8. METAL COPING, COLOR: DARK BRONZE
9. WALL MOUNTED BUILDING SIGN, SEE SHEET A200.
10. STANDING SEAM METAL ROOF, COLOR: BRITE RED
11. STANDING SEAM METAL ROOF, COLOR: BRONZE
12. GUTTER, COLOR TO MATCH CUPOLA COLOR
13. DOWNSPOUT, COLOR: DARK BRONZE
14. GUTTER, COLOR TO MATCH CUPOLA COLOR
15. METAL STANDING SEAM SHED STYLE AWNING AND FRAME ASSEMBLY, ROOF COLOR: BRONZE, FRAME COLOR: DARK BRONZE
16. BRICK SOLDIER COURSE, COLOR: 680 BY CONTINENTAL BRICK COMPANY. SEE MASONRY SPEC
17. BRICK ROWLOCK COURSE, COLOR: 680 BY CONTINENTAL BRICK COMPANY. SEE MASONRY SPEC
18. CONTROL JOINT, SEE MASONRY SPEC
19. STEEL ROOF LADDER AND CRANKY POST, COLOR: DARK BRONZE
20. ARCHITECTURAL CANOPY, COLOR: BRONZE, PREMIUM TWO-COAT KYNAR FINISH
21. OVERFLOW SCUPPER
22. ALUMINUM STOREFRONT SYSTEM, SEE A600
23. EXTERIOR HOSE BIB, REFER TO PLUMBING DRAWINGS
24. OUTDOOR FURNITURE
25. ELECTRICAL RECEPTACLE, REFER TO ELECTRICAL DRAWINGS
26. ELECTRICAL EQUIPMENT, REFER TO ELECTRICAL DRAWINGS
27. HM DOOR AND FRAME, COLOR: DARK BRONZE
28. EMERGENCY WATER CONNECTION, REFER TO PLUMBING DRAWINGS
29. SEAMLESS ALUM PANEL SYSTEM WITH EXPOSED FASTENERS, COLOR: DARK BRONZE
30. PROPANE LOCKER
31. ICE MERCHANDISER
32. RTI FILLPORT
33. NOT USED
34. CO2 FILLPORT
35. DECORATIVE ALUMINUM FENCE, COLOR DARK BRONZE
36. AUTOMATIC DOOR PUSH PLATE AND BOLLARD, BOLLARD COLOR: DARK BRONZE
37. GAS METER AND RISER, REFER TO CIVIL UTILITY PLAN, COLOR: DARK BRONZE
38. NOT USED
39. NOT USED
40. ICE MERCHANDISER AND PROPANE ENCLOSURE
41. FAUX WINDOWS WITH BLACK REFLECTIVE FILM

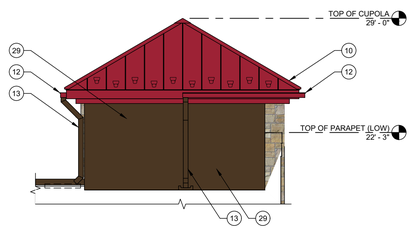


4 SOUTH ELEVATION
1/4" = 1'-0"

SOUTH ELEVATION = 1,313.76 SQ FT			
DESCRIPTION	MATERIAL GROUP	AREA (SQ FT)	% OF COVERAGE
STONE	1A	223.34	17%
BRICK, NATURAL CLAY	1A	860.70	65.5%
GLASS	1A	96.88	7.4%
FLAT METAL PANELS	1A	59.32	4.5%
DOORS	1A	28.42	2.2%
AWNINGS	1A	45.10	3.4%
STANDING SEAM METAL	1A	0	0%



5 MAIN RED CUPOLA ELEVATION FROM ROOF
1/4" = 1'-0"



6 MAIN RED CUPOLA ELEVATION FROM ROOF
1/4" = 1'-0"

*C*onvenience *A*rchitecture
and *Design* P.C.
351 Sheetz Way, Claysburg, PA 16625

phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:
NEW SHEETZ STORE

HARTLAND

Int. of Old US 23
and Highland Road
Hartland, MI 48353

OWNER:
SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

CONSULTANT

PROFESSIONAL

KEYPLAN

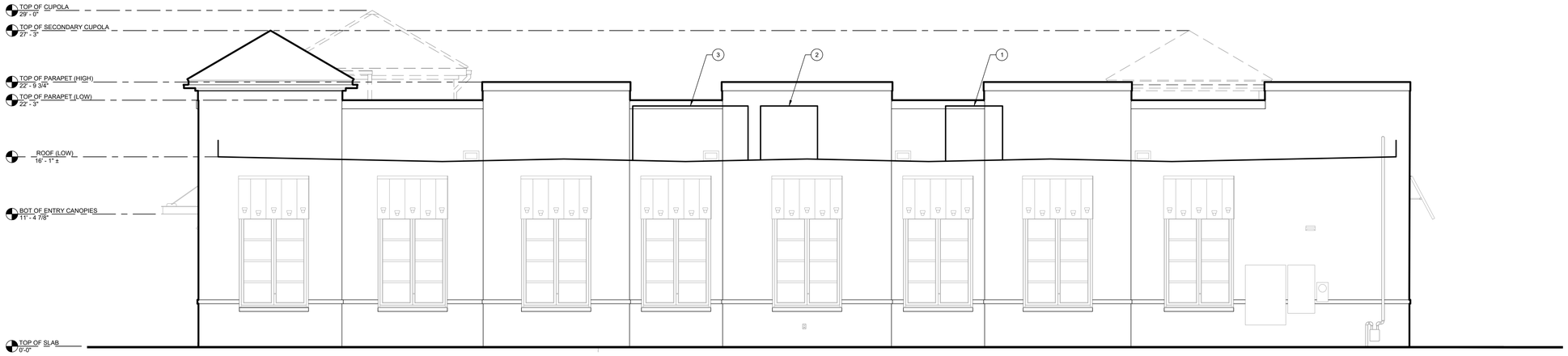
MARK	DATE	DESCRIPTION

ISSUE:	**05.08.2025**
SITE ID NO:	**214657**
AUTHOR BY:	**AMM/DLN**
REVIEW BY:	**RJH**
VERSION:	**6132R_v1.7**

EXTERIOR ELEVATIONS

A103

PRELIMINARY ELEVATIONS

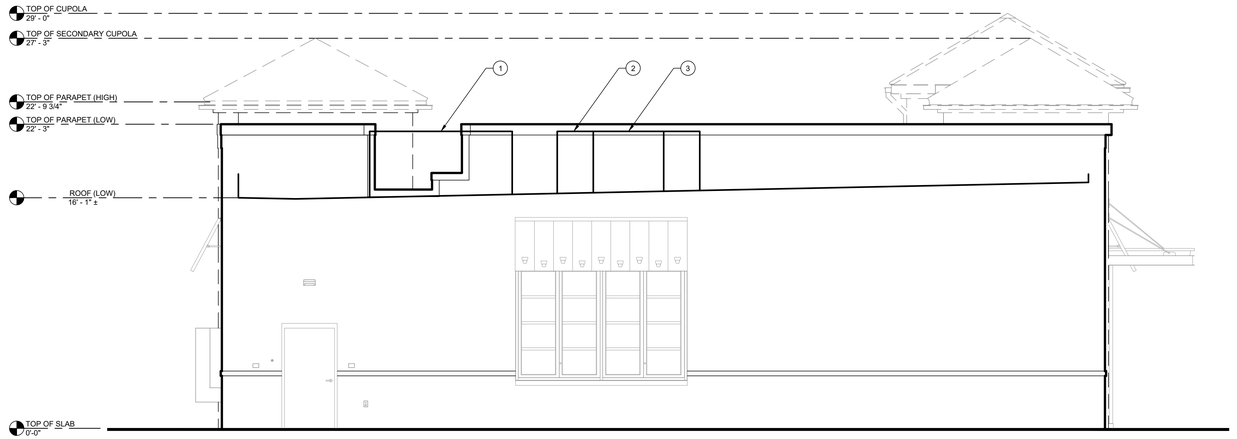


3 WEST ELEVATION
1/4" = 1'-0"

EAST ELEVATION = 2,364.9 SQ FT		
DESCRIPTION	AREA (SQ FT)	% OF COVERAGE
STONE	384.69	16.3%
BRICK	1,320.32	55.8%
GLAZING	387.56	16.4%
FASCIA	22.78	1.0%
DOORS	0	0%
AWNINGS	179.9	7.6%
COPING	69.65	2.9%

EXTERIOR ELEVATION KEYNOTES:

1. RTU: AC1
2. RTU: AC2
3. RTU: AC3



4 SOUTH ELEVATION
1/4" = 1'-0"

SOUTH ELEVATION = 1,313.76 SQ FT		
DESCRIPTION	AREA (SQ FT)	% OF COVERAGE
STONE	223.34	17%
BRICK	860.70	65.5%
GLAZING	96.88	7.4%
FASCIA	16.95	1.3%
DOORS	28.42	2.2%
AWNINGS	45.10	3.4%
COPING	42.37	3.2%

*C*onvenience *A*rchitecture
and *Design* P.C.
351 Sheetz Way, Claysburg, PA 16625

phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:
NEW SHEETZ STORE

HARTLAND

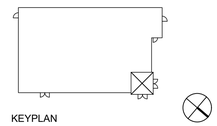
Int. of Old US 23
and Highland Road
Hartland, MI 48353

OWNER:
SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

CONSULTANT

PROFESSIONAL



KEYPLAN

MARK	DATE	DESCRIPTION

ISSUE:	**07.09.2025**
SITE ID NO:	**214657**
AUTHOR BY:	**AMM/DLN**
REVIEW BY:	**RJH**
VERSION:	**6132R_v1.7**

EXTERIOR
ELEVATIONS

A104

PRELIMINARY ELEVATIONS

HARTLAND, MI (OLD US 23): MATERIAL CALCULATIONS

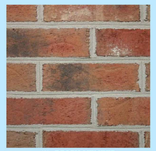
East Elevation = 2,551.39 SQ FT			
Description	**Material Group**	**Area (SQ FT)**	**% of coverage**
Stone	#1A	722.38 SQ FT	28.3%
Brick, Natural Clay	#1A	990.12 SQ FT	38.8%
Glass	#1A	397.91 SQ FT	15.6%
Flat Metal Panels	#1A	116.57 SQ FT	4.6%
Doors	#1A	116.48 SQ FT	4.5%
Awnings	#1A	135 SQ FT	5.3%
Standing Seam Metal	#1A	72.93 SQ FT	2.9%

North Elevation = 1,482.45 SQ FT			
Description	**Material Group**	**Area (SQ FT)**	**% of coverage**
Stone	#1A	293.22 SQ FT	19.78%
Brick, Natural Clay	#1A	585.64 SQ FT	39.5%
Glass	#1A	317.06 SQ FT	21.39%
Flat Metal Panels	#1A	79.26 SQ FT	5.35%
Doors	#1A	74.34 SQ FT	5.01%
Awnings	#1A	60 SQ FT	4.05%
Standing Seam Metal	#1A	72.93 SQ FT	4.92%

West Elevation = 2,412.6 SQ FT			
Description	**Material Group**	**Area (SQ FT)**	**% of coverage**
Stone	#1A	384.69 SQ FT	15.9%
Brick, Natural Clay	#1A	1,320.32 SQ FT	54.7%
Glass	#1A	387.56 SQ FT	16.1%
Flat Metal Panels	#1A	108.63 SQ FT	4.5%
Doors	#1A	0 SQ FT	0%
Awnings	#1A	179.9 SQ FT	7.5%
Standing Seam Metal	#1A	31.5 SQ FT	1.3%

South Elevation = 1,313.76 SQ FT			
Description	**Material Group**	**Area (SQ FT)**	**% of coverage**
Stone	#1A	223.34 SQ FT	17%
Brick, Natural Clay	#1A	860.70 SQ FT	65.5%
Glass	#1A	96.88 SQ FT	7.4%
Flat Metal Panels	#1A	59.32 SQ FT	4.5%
Doors	#1A	28.42 SQ FT	2.2%
Awnings	#1A	45.10 SQ FT	3.4%
Standing Seam Metal	#1A	0 SQ FT	0%

Exterior Building Products:



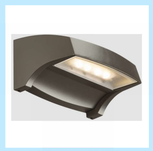
(1): BRICK VENEER
MANUFACTURER:
CONTINENETAL BRICK CO.
FINISH: 0/S 680 MOD
GROUP: #1A, BRICK, NATURAL CLAY



(2): CAST STONE SILL
MANUFACTURER: ADAMS, AN OLDCASTLE COMPANY
FINISH: CRAB ORCHARD
GROUP: #1A, STONE



(3): CAST STONE MASONRY VENEER
MANUFACTURER: ADAMS, AN OLDCASTLE COMPANY
FINISH: CRAB ORCHARD
MATERIAL: AGGREGATES
GROUP: #1A, STONE



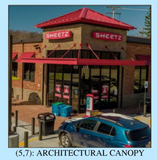
(4) LED VOLTAIRE MINI
ARCHITECTURAL WALL PACK
MANUFACTURER: H.E. WILLIAMS
FINISH: DARK BRONZE
SPECS: INTEGRAL LED, 4000K, CRI 80+, 1700 LUMENS (16W)

https://hew.com/products/VWMH

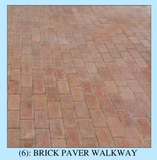


(4) STYK EXTERIOR WALL - STEM
MANUFACTURER: SPI LIGHTING
FINISH: ANODIZED BLACK ALUMINUM
SIZES: 5 FT LENGTHS AND 4 FT LENGTHS

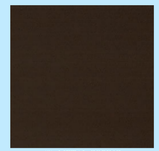
https://www.spilighting.com/SEW12146



(5,7): ARCHITECTURAL CANOPY
WITH LIGHTED CURVED FASCIA
MANUFACTURER: MAPES
FINISH: REGAL RED, PREMIUM TWO-COAT KYNAR
GROUP: #1A, FLAT METAL PANELS



(6): BRICK PAVER WALKWAY
MANUFACTURER: CLOUD CERAMICS
FINISH: CUSTOM SHEETZ BLEND, CHEROKEE
GROUP: #1A, BRICK, NATURAL CLAY

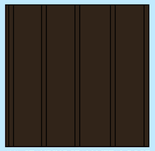


(8): METAL COPING
FINISH: DARK BRONZE
GROUP: #1A, FLAT METAL PANELS

(9): WALL MOUNTED CHANNEL LETTER SHEETZ BUILDING SIGN
PROJECTS 9" OFF FACE OF BUILDING
SIZE: 2'-3 3/4" X 11'-4 1/2"



(10): STANDING SEAM METAL ROOF
MANUFACTURER: PAC-CLAD PETERSON, A CARLISLE COMPANY
FINISH: CARDINAL RED
GROUP: #1A, STANDING SEAM METAL



(11): STANDING SEAM METAL ROOF
MANUFACTURER: PAC-CLAD PETERSON, A CARLISLE COMPANY
FINISH: DARK BRONZE
GROUP: #1A, STANDING SEAM METAL



(12): GUTTER
FINISH: CARDINAL RED
GROUP: #1A, FLAT METAL PANELS



(13): DOWNSPOUT
FINISH: DARK BRONZE
GROUP: #1A, FLAT METAL PANELS



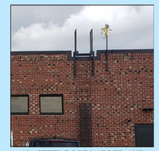
(15): SHED-STYLE AWNING AND FRAME ASSEMBLY
MANUFACTURER: INTERNAL
FINISH: AWNING - DARK BRONZE
FRAME - DARK BRONZE
GROUP: #1A, AWNINGS



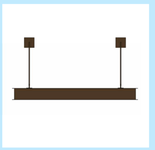
(16): BRICK SOLDIER COURSE
MANUFACTURER: CONTINENTAL BRICK CO.
FINISH: 0/S 680 MOD
GROUP: #1A, BRICK, NATURAL CLAY



(17): BRICK ROWLOCK COURSE
MANUFACTURER: CONTINENTAL BRICK CO.
FINISH: 0/S 680 MOD
GROUP: #1A, BRICK, NATURAL CLAY



(19): STEEL ROOF LADDER AND CRANKY POST
FINISH: DARK BRONZE



(20): ARCHITECTURAL CANOPY
MANUFACTURER: MAPES
FINISH: DARK BRONZE
GROUP: #1A, FLAT METAL PANELS



(22): ALUMINUM STOREFRONT SYSTEM, DARK BRONZE
GROUP: #1A, GLASS



(27): HOLLOW METAL DOOR AND FRAME
FINISH: DARK BRONZE
GROUP: #1A, DOORS



(24) CUSTOM 4 SEAT CLUSTER
MANUFACTURER: BENCHMARK DESIGN GROUP
#: A940-RND-C2
FINISH: ICE SILVER + CLEAR COAT
SIZE: 6'-6" X 6'-6" X 2'-6"



(24) CUSTOM 3 SEAT CLUSTER
MANUFACTURER: BENCHMARK DESIGN GROUP
#: A930-PND-C42
FINISH: ICE SILVER + CLEAR COAT
SIZE: 6'-6" X 6'-6" X 2'-6"



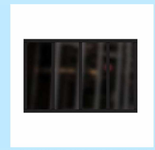
(24) CUSTOM 2 SEAT CLUSTER
MANUFACTURER: BENCHMARK DESIGN GROUP
#: A940-RND-C2
FINISH: ICE SILVER + CLEAR COAT
SIZE: 5'-2" X 5'-2" X 2'-6"



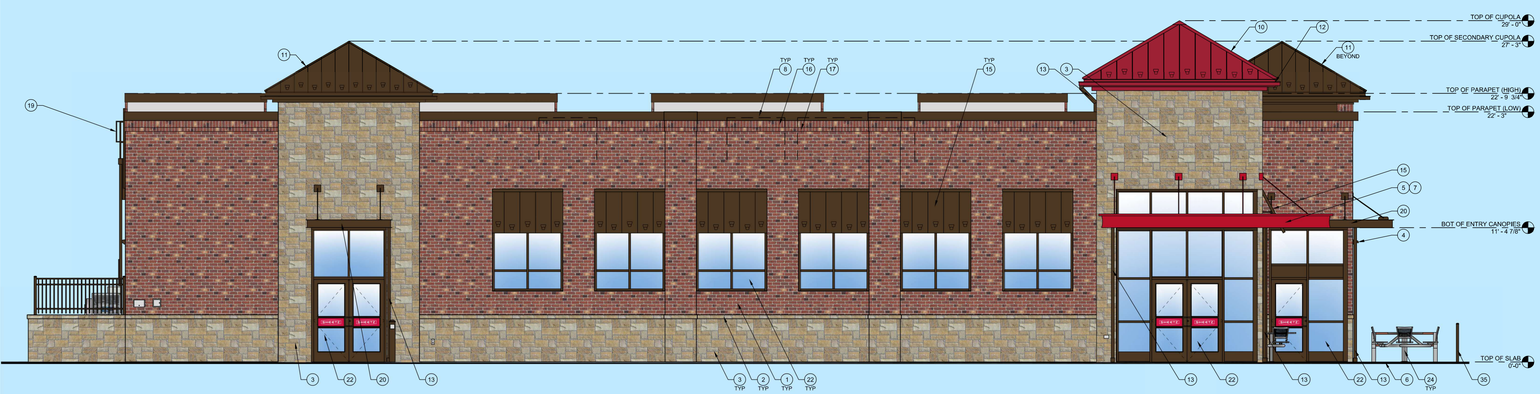
(24) ALUMINUM PICNIC TABLE
MANUFACTURER: BENCHMARK DESIGN GROUP
#: A940-RND-C2
FINISH: ICE SILVER + CLEAR COAT
SIZE: 5'-1 1/2" X 5'-7 1/4" X 2'-6"



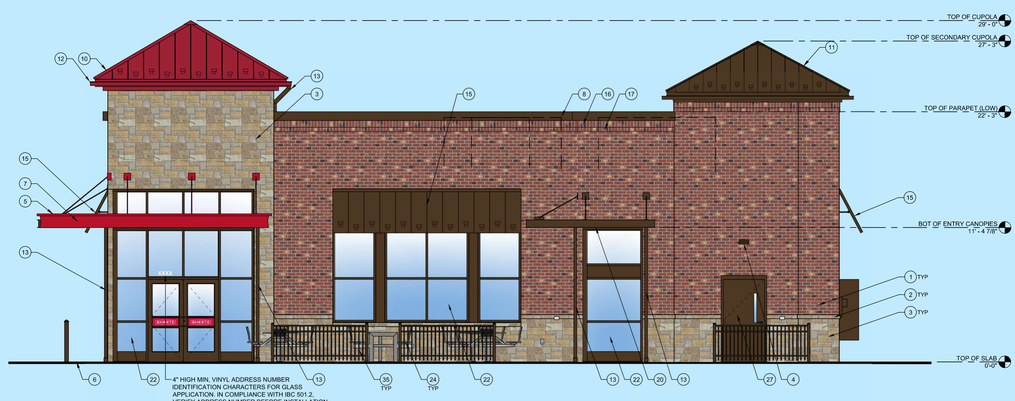
(35) DECORATIVE ALUMINUM FENCE - 8 FT
MANUFACTURER: ALUMINUM FENCE SPECIALTIES LLC.
FINISH: POLYESTER TGIC POWDER COAT
COLOR - GLOSS DARK BRONZE



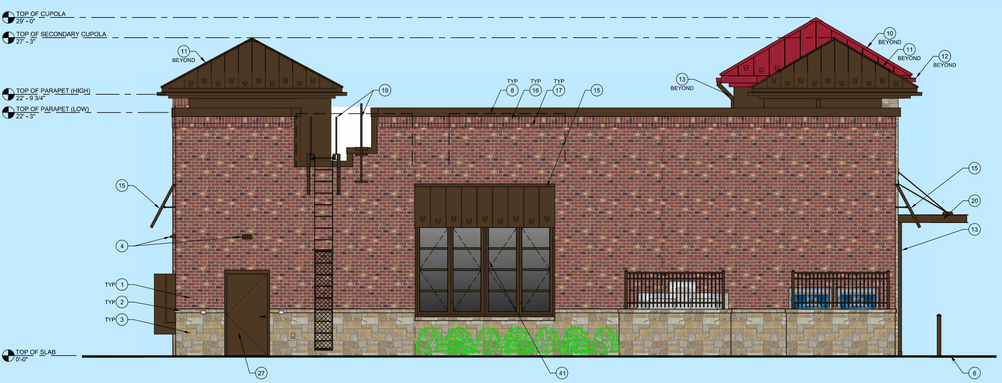
(41) FAUX WINDOW REFLECTIVE FILM
MANUFACTURER: SUNTEK
FINISH: DRMPS/DS-7 NEUTRAL
GROUP: #1A, GLASS



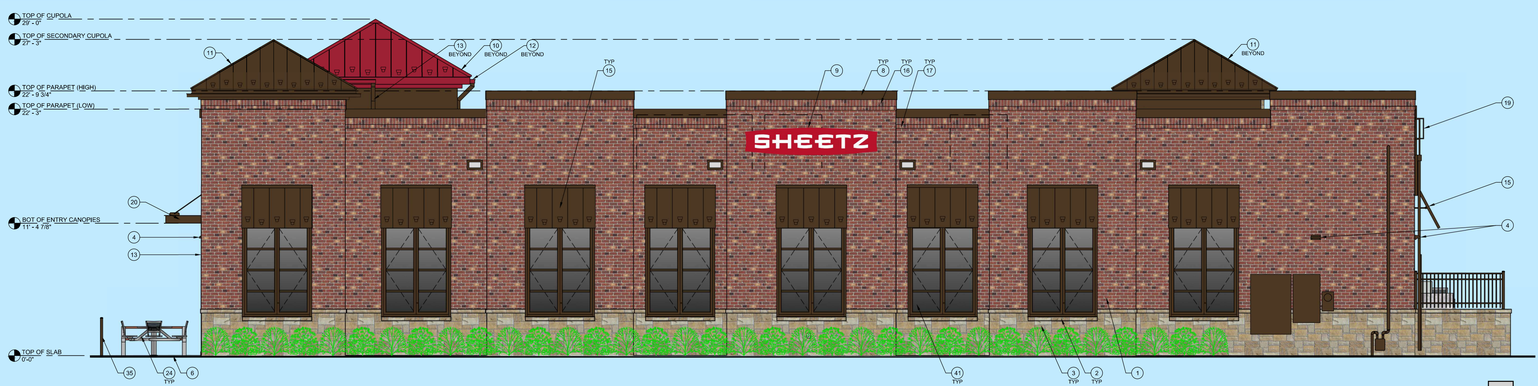
EAST ELEVATION: NOT TO SCALE



NORTH ELEVATION: NOT TO SCALE

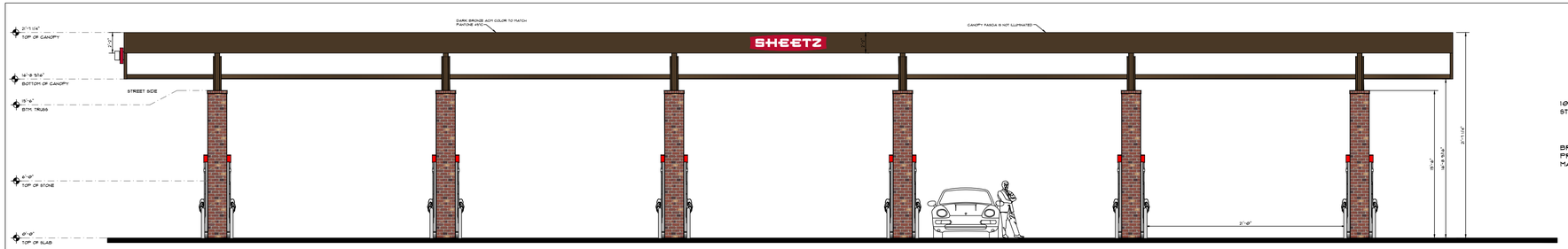


SOUTH ELEVATION: NOT TO SCALE

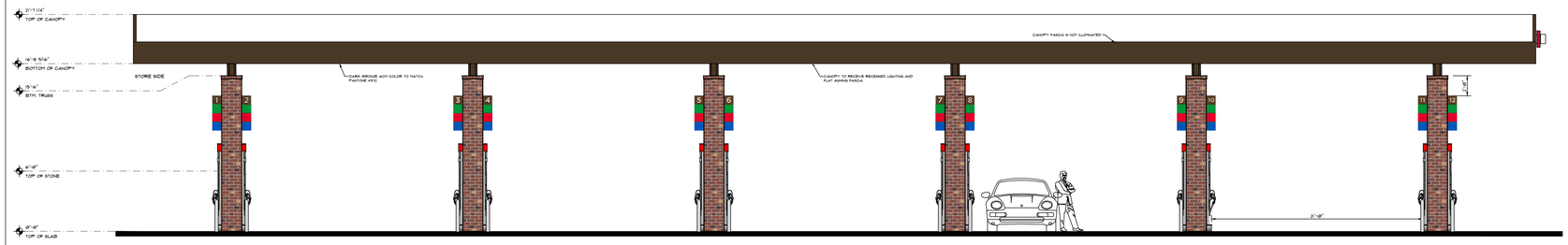


WEST ELEVATION: NOT TO SCALE

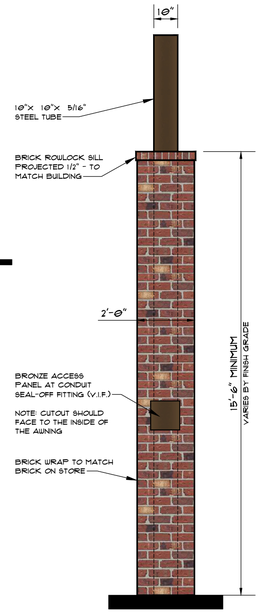
SHEET NUMBER: A112



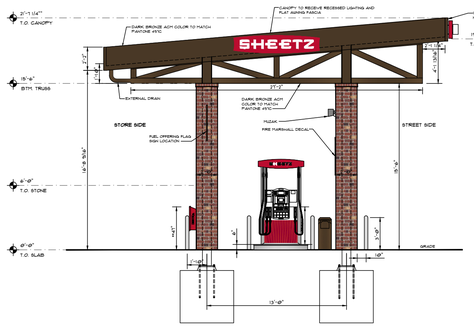
EAST SIDE ELEVATION
SCALE: 3/16" =1'-0"



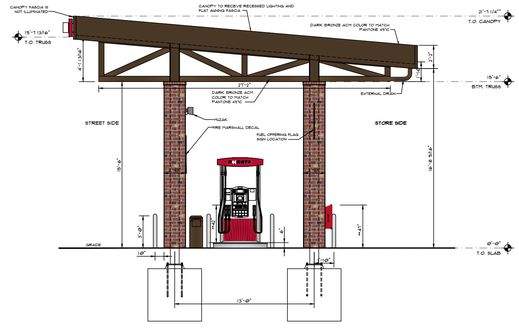
WEST SIDE ELEVATION
SCALE: 3/16" =1'-0"



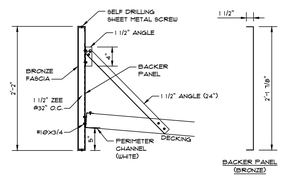
COLUMN ELEVATION
SCALE: 1/2" =1'-0"



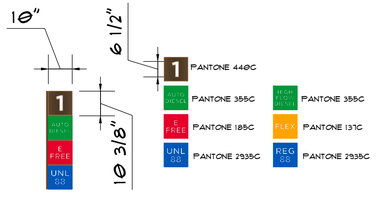
SOUTH SIDE ELEVATION
SCALE: 3/16" =1'-0"



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

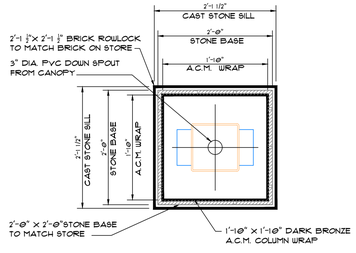


FASCIA MOUNTING DETAIL
SCALE: 1/4" =1'-0"

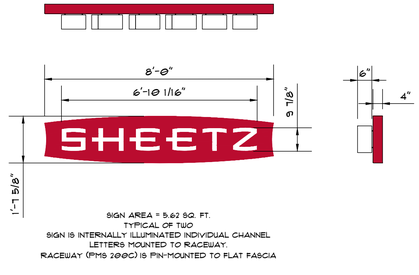


DISPENSER NUMBER AND FUEL OFFERING FLAG
VARIES PER SITE/PER DISPENSER
2 PER COLUMN ON STORE SIDE COLUMNS
.63 SQ. FT. PER FLAG

FUEL OFFERING FLAG SIGN ELEVATION AND DETAIL
SCALE: 1/2" =1'-0"

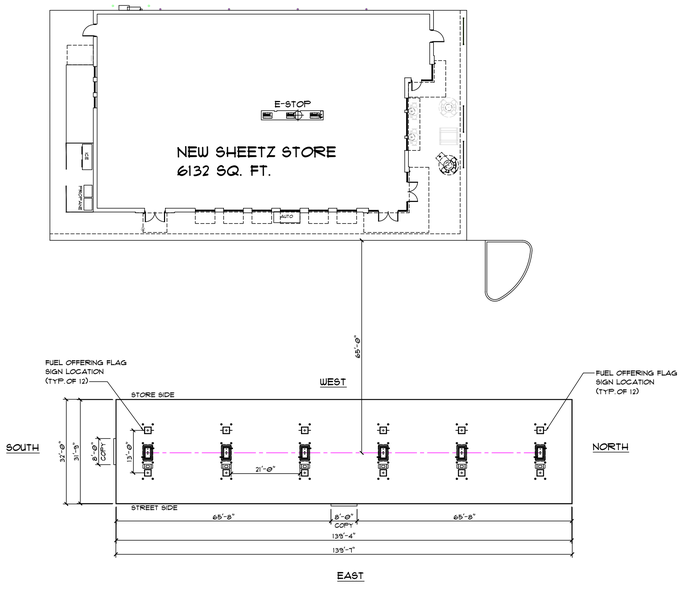


STONE COLUMN BASE DETAIL
SCALE: 1/4" =1'-0"



SIGN AREA = 5.62 SQ. FT.
TYPICAL OF TWO
SIGN IS INTERNALLY ILLUMINATED INDIVIDUAL CHANNEL LETTERS MOUNTED TO RACEWAY.
RACEWAY (PMS 209C) IS PIN-MOUNTED TO FLAT FASCIA

CANOPY MOUNTED SHEETZ SIGN DETAIL
SCALE: 1/2" =1'-0"



PLAN VIEW FOR LOGO LOCATIONS

Convenience Architecture and Design P.C.
351 Sheetz Way, Claysburg, PA 16625
phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:
NEW SHEETZ STORE
HARTLAND

Int. of Old U.S. 23
and Highland Road
Hartland
Michigan

OWNER:
SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

CONSULTANT

PROFESSIONAL

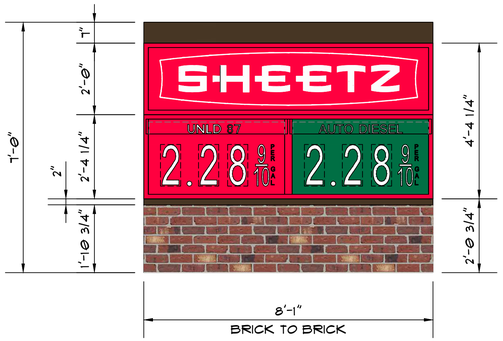
KEYPLAN

MARK	DATE	DESCRIPTION
DNC	05-22-25	REV. TO BRICK COLUMNS; NOTE FASCIA NOT ILLUMINATED
DNC	02-10-25	REVISED PER LATEST SITE PLAN

ISSUE: 11-27-24
PROJECT NO:
AUTHOR BY: DNC
REVIEW BY:
SHEET TITLE

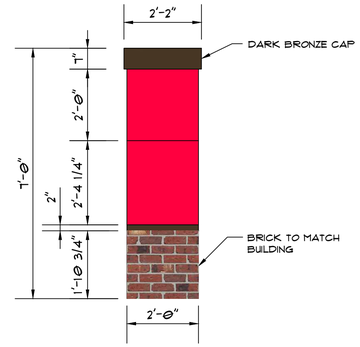
GAS AWNING
w/ FLAT FASCIA

A200



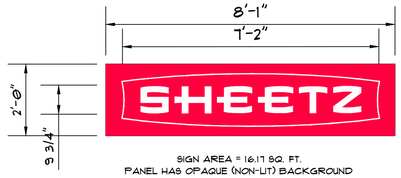
GAS PRICE SIGN DETAIL - PARTIAL ELEVATION

SCALE: 1/2" = 1'-0" AREA: 35.19 SQ. FT.

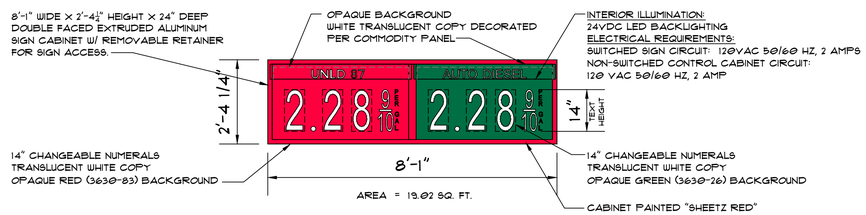


MONUMENT SIGN SIDE ELEVATION

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



SIGN AREA = 16.17 SQ. FT.
PANEL HAS OPAQUE (NON-LIT) BACKGROUND



"UNLD 87" TO BE ON STREET SIDE OF SIGN FOR BOTH SIDES

SIGN CABINET DETAILS

TOTAL SIGN AREAS: 35.19 SQ. FT.

*C*onvenience *A*rchitecture
and *D*esign P.C.
351 Sheetz Way, Claysburg, PA 16625

phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:

NEW SHEETZ STORE

HARTLAND

Int. of Old U.S. 23
and Highland Road
Hartland
Michigan

OWNER:

SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

CONSULTANT

PROFESSIONAL

KEYPLAN

MARK	DATE	DESCRIPTION

ISSUE: **11-27-24**
PROJECT NO:
AUTHOR BY: DNC
REVIEW BY:
SHEET TITLE

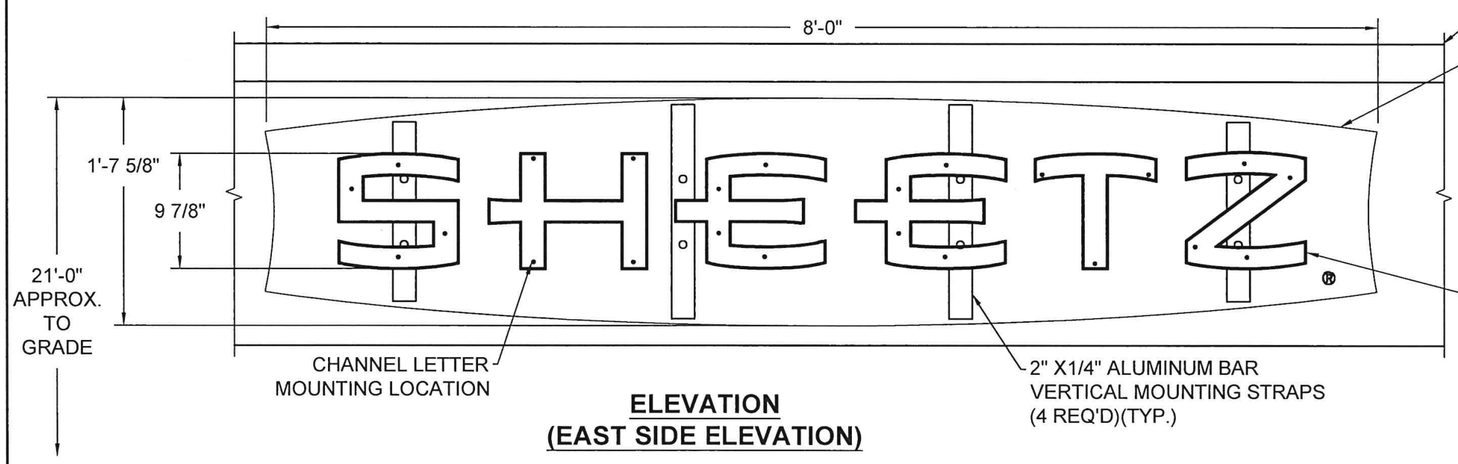
MONUMENT SIGN DETAILS

A201

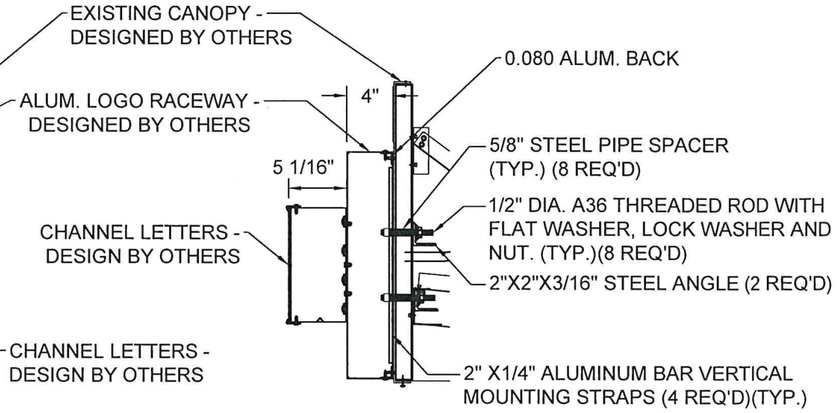
G:\Sites\under-contract\MI-214657-Hartland- Old US 23\Sign Package\MI-Hartland-Old 23-monument.dwg, 11/27/2024 4:01:23 PM

SIGN CABINET
DESIGN BY OTHERS.

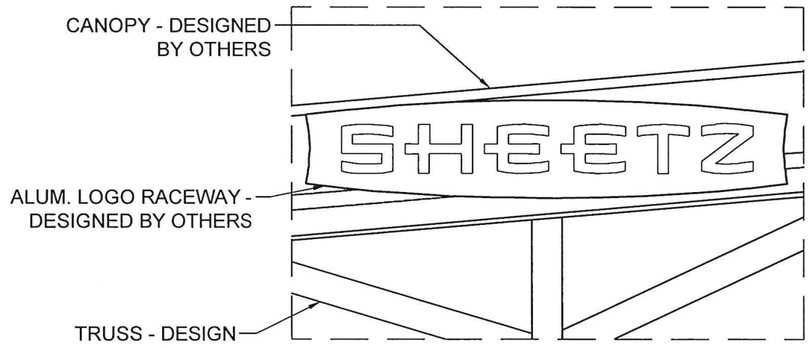
GRAPHICS DEPICTED ON THIS DRAWING
ARE FOR ILLUSTRATIVE PURPOSES ONLY! USE
ONLY APPROVED ARTWORK FOR PRODUCTION.



ELEVATION
(EAST SIDE ELEVATION)



ELEVATION
SIDE VIEW



SOUTH SIDE ELEVATION

(2) IDENTICAL SIGNS ARE TO BE
INSTALLED AT THIS LOCATION.

THE SCOPE OF THIS ENGINEER IS LIMITED TO THE ATTACHMENT OF THE SIGN CABINET TO THE EXISTING CANOPY. ALL OTHER ASPECTS OF THIS DESIGN ARE EXPLICITLY EXCLUDED.

NOTE: All designs depicted on this drawing are the sole property of Campbell Consulting Engineering, LLC developed specifically for this project. Use of these designs for any purpose other than the intended application without written consent of Campbell Consulting Engineering, LLC is prohibited. Disclosure of the information presented herein, without Owner's consent, is a violation of intellectual property and will not be tolerated.

STATE OF MICHIGAN
GREGORY A.
CAMPBELL
ENGINEER
No.
6201038508
LICENSED PROFESSIONAL ENGINEER

2/20/25

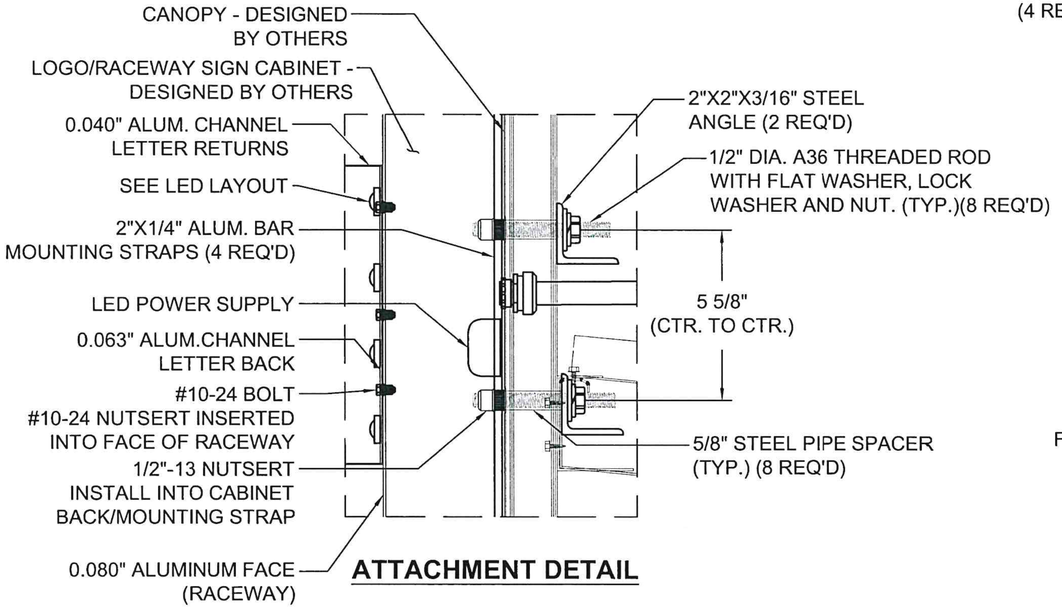
SHEETZ
OLD U.S. 23 AND HIGHLAND ROAD
HARTLAND, MI

CLIENT:

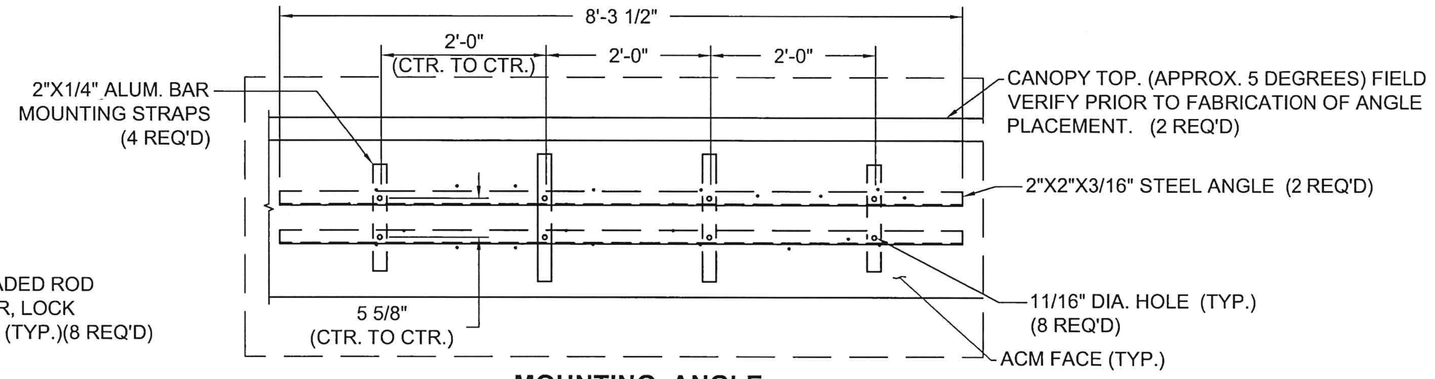
BLAIR COMPANIES
ARCHITECTURAL IMAGING
GRAPHICS • FIXTURES • LIGHTING
5107 KISSELL AVENUE
ALTOONA, PA 16601
(814) 949-8287
FAX (814) 949-8293
E-MAIL: cad@blaircompanies.com

CAMPBELL
CONSULTING
ENGINEERING, LLC
382 HIGH STREET
MARYVILLE, TN 37804
865-980-8881
CCENGINEER.COM
COA# E9053H

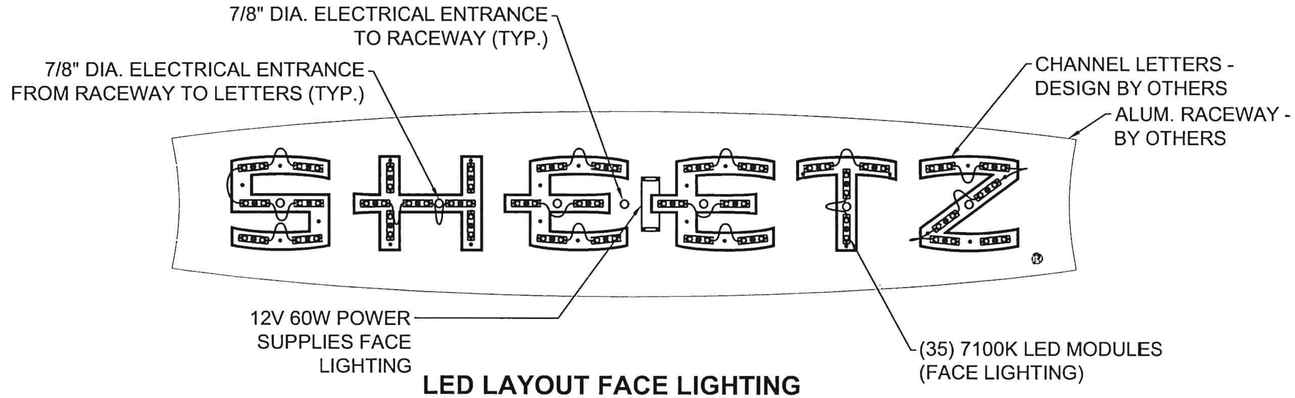
SHEET	BY	PROJECT NO.
1	RDG	25-0017
OF	DATE	DRAWING NO
3	02/20/2025	A202



ATTACHMENT DETAIL



MOUNTING ANGLE FRAMING DETAIL



LED LAYOUT FACE LIGHTING DETAIL (INSIDE FRONT VIEW)

MEANWELL POWER SUPPLY BREAK DOWN & LED QUANTITIES						
POWER SUPPLIES			LED MODULES			SERVICE DRAW (AMPS)
QUANTITY	WATTS	PART #	QUANTITY	COLOR	PART #	
1	60	60W, 12VPOWER SUPPLY	35	WHITE	6500K-7000K WHITE LED MODULES	1.200

NOTE: NEC ARTICLE 600. SIGN SHALL BE PROPERLY GROUNDED TO MEET 2023 NEC 607.(A)(1). SIGN SHALL BE PROPERLY BONDED TO MEET NEC TO MEET THE REQUIRE NEC 607.(B)(1)

ELECTRICAL NOTES

1. All materials and fasteners meet 3004.4
2. All electrical components listed and approved in accordance with UL48 and NEC NFPA 70.
3. Sign grounded according to NEC 600.7.
4. Signs manufactured and listed NEC 600.3 and marked per NEC 600.4.
5. All branch circuits per NEC 600.5(B).1 or (B).2.
6. All Signs controlled by photocell or time clock per NEC 600.
7. One visible 20 amp disconnect per sign per circuit per NEC 600.6(A).1
8. All Class 2 rated LED modules and LED power supplies will be in compliance with a nationally recognized test laboratory and NEC 600.33 (A) thru (D).

NOTE: All designs depicted on this drawing are the sole property of Campbell Consulting Engineering, LLC developed specifically for this project. Use of these designs for any purpose other than the intended application without written consent of Campbell Consulting Engineering, LLC is prohibited. Disclosure of the information presented herein, without Owner's consent, is a violation of intellectual property and will not be tolerated.

STATE OF MICHIGAN
GREGORY A. CAMPBELL
ENGINEER
No. 6201038508
LICENSED PROFESSIONAL ENGINEER

2/20/25

SHEETZ
OLD U.S. 23 AND HIGHLAND ROAD
HARTLAND, MI

CLIENT:

BLAIR COMPANIES
ARCHITECTURAL IMAGING SIGNS • FIXTURES • LIGHTING
5107 KISSELL AVENUE
ALTOONA, PA 16601
(814) 949-8287
FAX (814) 949-8293
E-MAIL: cad@blaircompanies.com

CAMPBELL CONSULTING ENGINEERING, LLC
382 HIGH STREET
MARYVILLE, TN 37804
865-980-8881
CCENGINEER.COM
COA# E9053H

SHEET	BY	PROJECT NO.
2	RDG	25-0017
OF	DATE	DRAWING NO
3	02/20/2025	A203

WALL SIGN CALCULATIONS

CLIENT:	BLAIR IMAGE ELEMENTS	DESIGN WIND SPEED:	115 MPH
END USER:	SHEETZ	DESIGN WIND PRESSURE:	-22.03 PSF
PROJECT #:	25-0017	DESIGN SNOW LOAD:	25 PSF
DRAWING #:	B144479	ESTIMATED SIGN WEIGHT:	8 PSF
CITY:	HARTLAND	SIGN CABINET DEPTH:	10 IN
STATE:	MI	FASTENER SPCG - VERT.:	7 IN
BLDG. CODE:	MBC2015/IBC2015	SPACED OFF WALL:	5 IN
REF. STD.:	ASCE 7- 10		

									FASTENER	FASTENER	FASTENER	AVERAGE	MAXIMUM
									SHEAR	TENSION	TENSION	FASTENER	FASTENER
	HEIGHT	LENGTH	AREA	AREA	WIND	DEAD	SNOW	FASTENER	D+S	D+S	WIND	SHEAR	TENSION
SECTION	(IN)	(IN)	(IN^2)	(FT^2)	LOAD (LB)	LOAD (LB)	LOAD (LB)	QTY.	(LB)	(LB)	(LB)	(LB)	(LB)
SIGN	19.625	96	1687.470	11.719	258.119	93.748	250.000	8	42.969	100.446	32.265	42.969	132.711

TENSION PER FASTENER =	**132.71**	**LB**
SHEAR PER FASTENER =	**42.97**	**LB**

Wall Signage - Treated as Components & Cladding

Wind Speed	115	mph
Exposure	C	
Zone	5	
Height	21	Ft
Sign Area	10	Ft^2

Determine wind pressure from ASCE 7-10 Chapter 30

Chapter 30: Wind Loads - Components & Cladding

p = q* (GCp - Gcpi) 0

q - 0.00256 * Kz * Kzt * Kd * V^2 (eq. 30.3-1)

Kz =	0.91	(Table 29.3-1)
Kd =	0.85	(Table 26.6-1)
Kzt =	1	(Section 26.8)
V =	115	
q =	26.222	
GCp =	-1.4	(From Figure 30.4-1 for h<= 60 ft and from Figure 30.6-1 for h> 60 ft)

p = -36.71 psf

Load Combination: D + 0.6W (Section 2.4.1)

Design Wind Pressure = 0.6W = -22.027 **psf**

Notes:

1. Design Criteria:
   Building Code: MBC 2015/IBC 2015
   Wind Speed: 115 mph, EXP C, Category II
   Design Snow Load: 25 PSF
2. Additional wind catching surfaces are being added to the building structure. Determination of the adequacy of the building structure is by others.
3. Electrical design, where applicable, is by others.
4. Maximum tension per fastener: 133 LB
   Maximum shear per fastener: 43 LB
5. All fasteners shall be zinc coated or stainless steel to prevent corrosion.
6. This engineer will not be responsible for the safety on this job site before, during, or after installation of the signs. It is the responsibility of the owners, contractors and installers to ensure that the installation and erection of the signs are performed using methods that fully comply with OSHA regulations.
7. Any deviation from this design or from any part of this drawing, including these notes, without prior written consent from this engineer voids this drawing in its entirety.
8. The signs depicted on this drawing are intended to be installed at the address shown and should not be used at any other location.

NOTE: All designs depicted on this drawing are the sole property of Campbell Consulting Engineering, LLC developed specifically for this project. Use of these designs for any purpose other than the intended application without written consent of Campbell Consulting Engineering, LLC is prohibited. Disclosure of the information presented herein, without Owner's consent, is a violation of intellectual property and will not be tolerated.

STATE OF MICHIGAN
GREGORY A. CAMPBELL
ENGINEER
No. 6201038508
LICENSED PROFESSIONAL ENGINEER

2/20/25

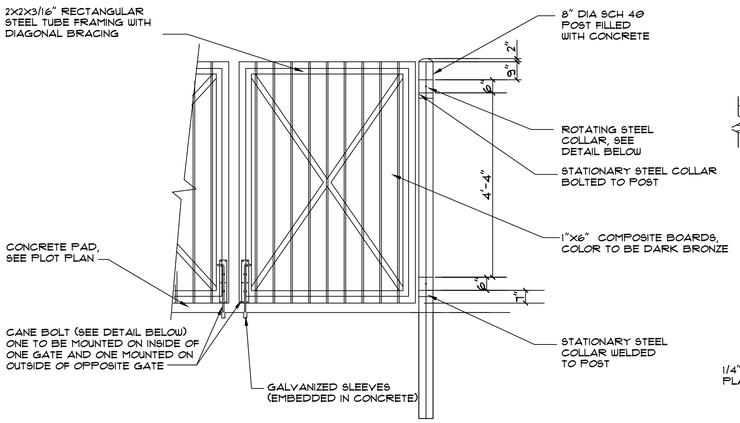
SHEETZ
OLD U.S. 23 AND HIGHLAND ROAD
HARTLAND, MI

CLIENT:

BLAIR COMPANIES
ARCHITECTURAL IMAGING
SIGNS • FIXTURES • LIGHTING
5107 KISSELL AVENUE
ALTOONA, PA 16601
(814) 949-8287
FAX (814) 949-8293
E-MAIL: cad@blaircompanies.com

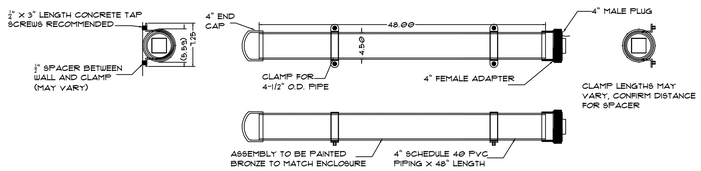
CAMPBELL CONSULTING ENGINEERING, LLC
382 HIGH STREET
MARYVILLE, TN 37804
865-980-8881
CCENGINEER.COM
COA# E9053H

SHEET	BY	PROJECT NO.
3	RDG	25-0017
OF 3	DATE 02/20/2025	DRAWING NO. A204



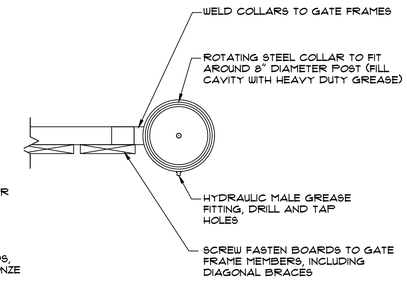
GATE AND POST DETAIL

FOR QUANTITIES OF GATES AND POSTS SEE PLOT PLAN



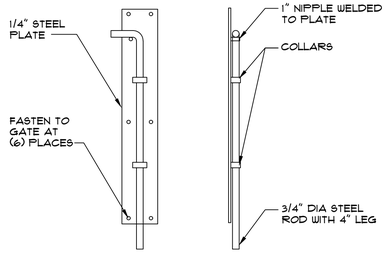
GUAGE STICK DETAILS

SCALE: 1" = 1'-0"



HINGE/COLLAR DETAIL

SCALE: NOT TO SCALE

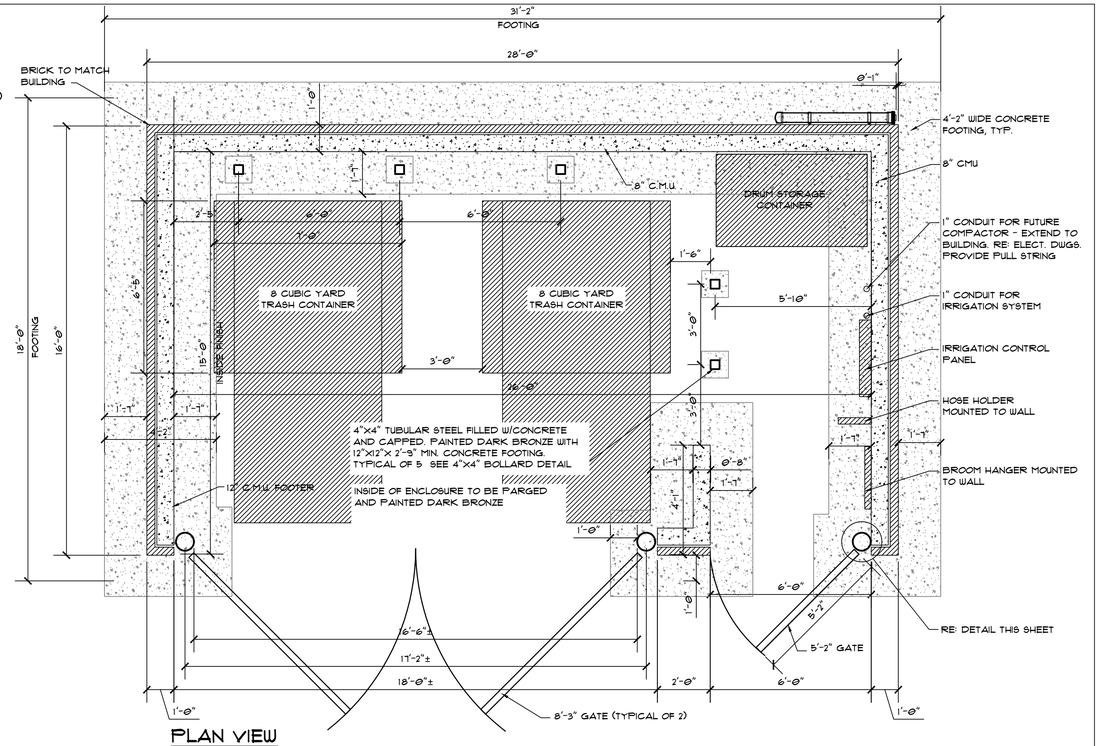


CANE BOLT DETAIL

ONE TO BE MOUNTED ON INSIDE OF ONE GATE AND ONE MOUNTED ON OUTSIDE OF OPPOSITE GATE

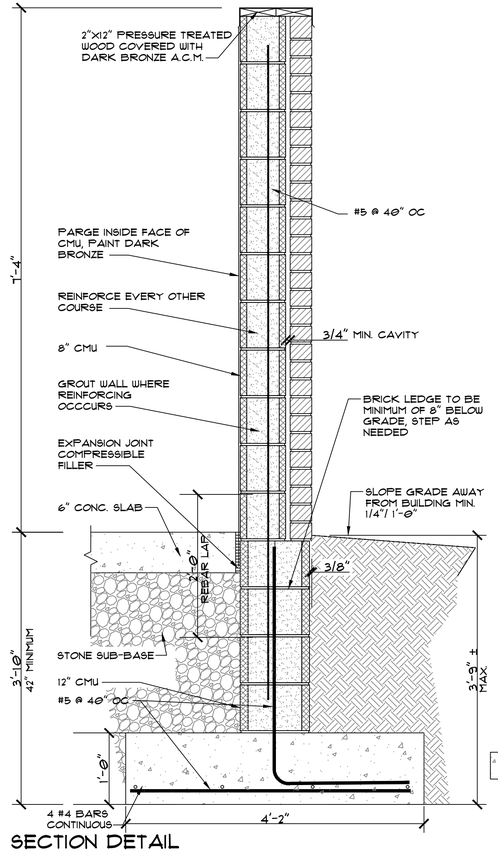
DUMPSTER GATE DETAILS

SCALE: NOT TO SCALE



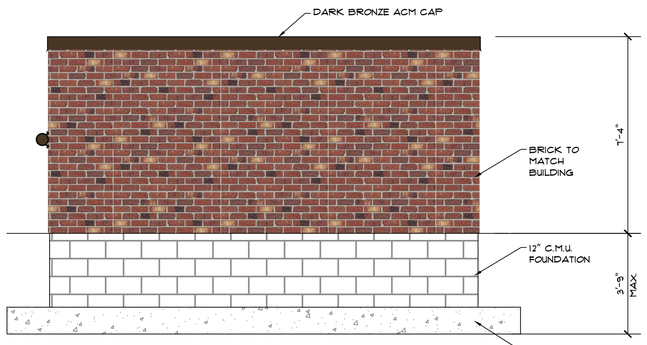
PLAN VIEW

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



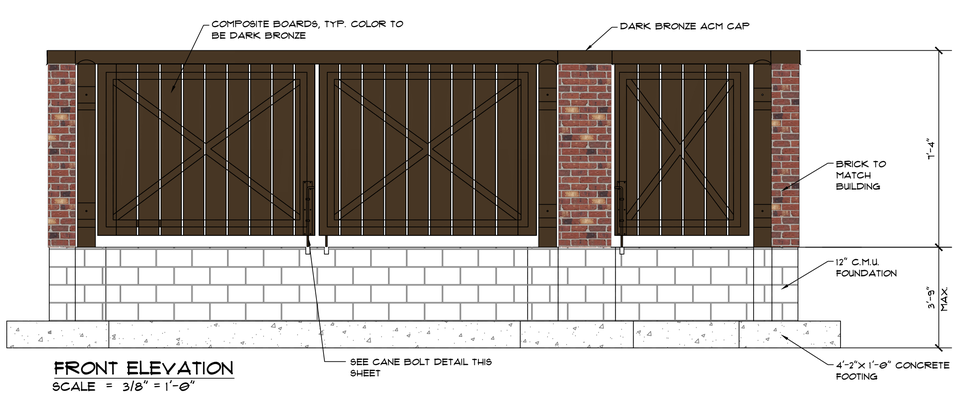
SECTION DETAIL

SCALE: 1" = 1'-0"



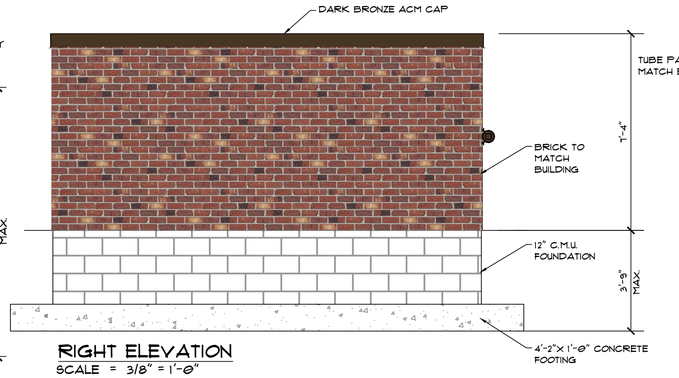
LEFT ELEVATION

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



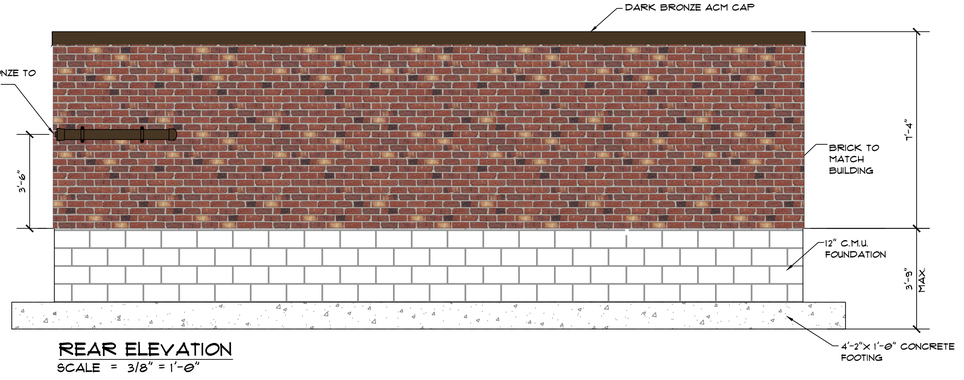
FRONT ELEVATION

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



RIGHT ELEVATION

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



REAR ELEVATION

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

DUMPSTER ENCLOSURE

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

Convenience Architecture and Design P.C.
351 Sheetz Way, Claysburg, PA 16625
phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:

NEW SHEETZ STORE

HARTLAND

Int. of Old U.S. 23
and Highland Road
Hartland
Michigan

OWNER:

SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

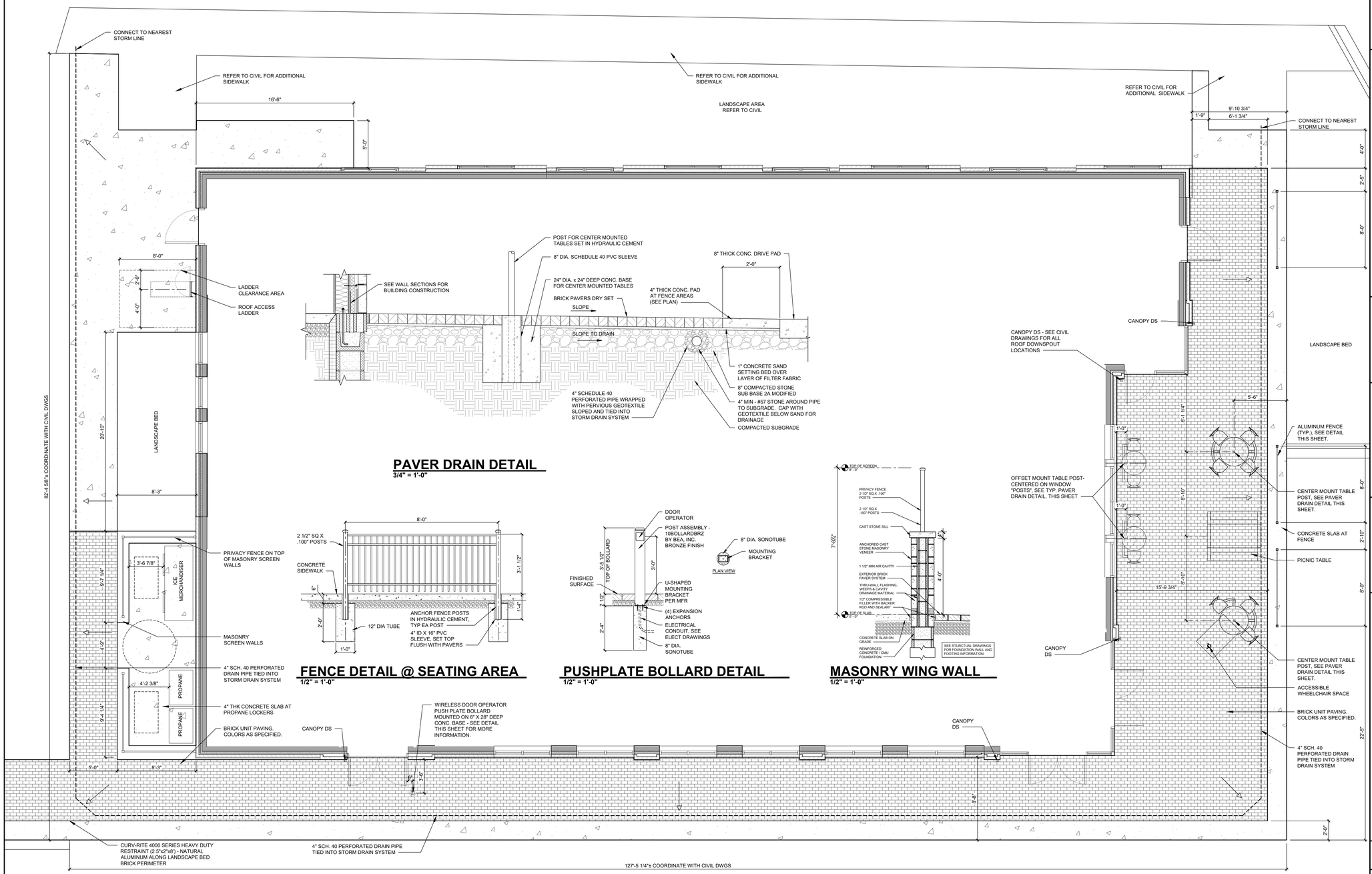
MARK	DATE	DESCRIPTION

ISSUE: **05-09-25**
PROJECT NO:
AUTHOR BY: NMI
REVIEW BY:
SHEET TITLE

TRASH ENCLOSURE

A210

G:\Sites\under-construct\Mi-214652-Hartland, Old US-23\Engineering and Permits\Trash Enclosure\Mi-Hartland-23-Trash.dwg, 5/9/2025 8:10:19 AM, DWG To PDF.pc3



SIDEWALK PLAN
1/4" = 1'-0"

*C*onvenience *A*rchitecture and *D*esign P.C.
351 Sheetz Way, Claysburg, PA 16625
phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:
NEW SHEETZ STORE

HARTLAND

Int. of Old US 23
and Highland Road
Hartland, MI 48353

OWNER:
SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

CONSULTANT

PROFESSIONAL

KEYPLAN

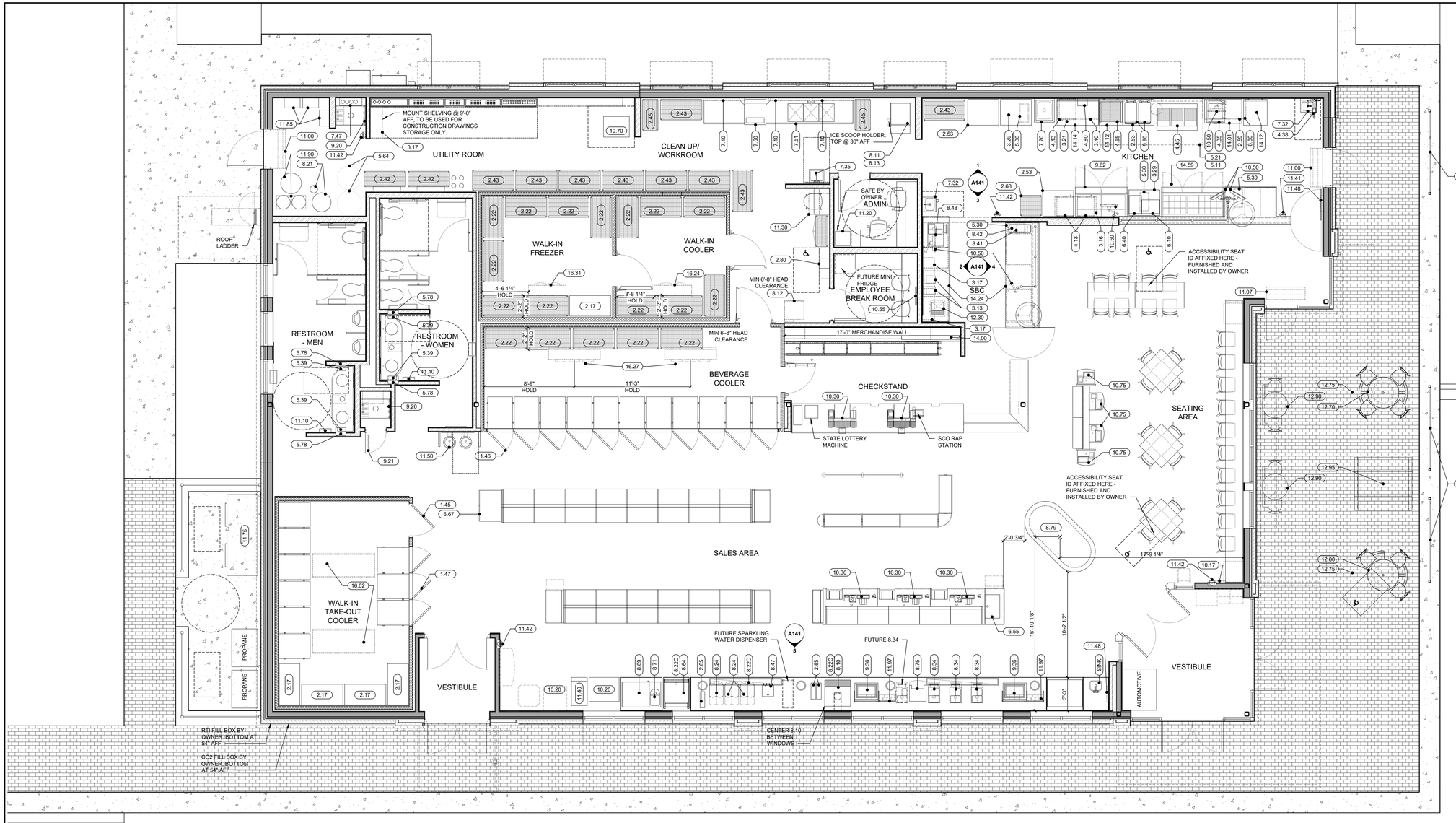
MARK	DATE	DESCRIPTION

ISSUE:	02.28.2025
SITE ID NO:	214657
AUTHOR BY:	AMM/DLN
REVIEW BY:	RJH
VERSION:	6132R_v1.7

SIDEWALK PLAN

A211

PRELIMINARY FLOOR PLAN



EQUIPMENT PLAN

1/4" = 1'-0"

SALES FIXTURE CHART - 6132	
NUMBER OF GONDOLAS	43
LINEAR FEET OF GONDOLA	131'-11"
NUMBER OF REACH-IN COOLER DOORS	13 (2 W/ BEER)
LINEAR FEET OF REACH-IN COOLER DOORS	33'-4"
NUMBER OF RTE UNITS	2 (1 HOT, 1 COLD)
NUMBER OF NOVELTY ICE CREAM FREEZERS	1
LINEAR FEET OF TABACCO WALL	17'-0"
NUMBER OF CHECKOUTS	6 (3 POS, 3 SCO)
NUMBER OF INDOOR SEATS	30 (2 HC)

SPECIALTY EQUIPMENT SCHEDULE

Equip No	Item Description	Count	Installed by	Connected by
1.45	TAKE-HOME COOLER DOORS MAN DOOR	1	OWNER	N/A
1.46	TAKE-HOME FLANGELESS COOLER DOORS	11	OWNER	N/A
1.47	TAKE-HOME FULL FLANGE COOLER DOORS	3	OWNER	N/A
2.17	24 x 48 DUNNAGE RACK	5	OWNER	N/A
2.22	24 x 48 EPOXY SHELVING W/ CASTERS	18	OWNER	N/A
2.42	18x48 CHROME SHELVING W/ CASTERS	2	OWNER	N/A
2.43	24x48 CHROME SHELVING W/ CASTERS	9	OWNER	N/A
2.45	18 x 36 CHROME SHELVING W/ CASTERS	2	OWNER	N/A
2.53	36 x 30 SS TABLE	3	OWNER	N/A
2.59	EAGLE SHELF 24 X 48	1	OWNER	N/A
2.68	24 X 24 MOBILE BREAD RACK	1	OWNER	N/A
2.80	STEEL LOCKER - 6-HIGH BOX 12"X12", 1 MIN ACCESSIBLE	3	OWNER	OWNER
2.85	LID & STRAW HOLDER	3	OWNER	OWNER
3.13	VITAMIX BLENDER	2	OWNER	OWNER
3.16	WALL MOUNTED SOLID SHELVING 24 x 48	1	OWNER	N/A
3.17	WALL MOUNTED SOLID SHELVING 14 x 36	3	OWNER	N/A
3.29	36 x 30 SS TABLE - W/O UNDERSHELF	2	OWNER	N/A
3.40	WALL MOUNTED WIRE SHELVING 24 x 48	1	OWNER	N/A
3.90	14 x 36 EAGLE SECURITY RACK	1	OWNER	OWNER
4.13	MICROWAVE	3	OWNER	OWNER
4.35	FRY HOLDING STATION	1	OWNER	OWNER
4.38	HOSE REEL	1	PC	PC
4.45	ELECTRIC FRYER - 3 VAT	1	OWNER	OWNER
4.65	ROLLER GRILL	1	OWNER	OWNER
4.80	LABEL MINDER 2	1	OWNER	OWNER
5.11	FIRE SUPPRESSION SYSTEM	1	OWNER	OWNER
5.21	CAPTIVEAIRE 10FT EXHAUST HOOD	1	OWNER	OWNER
5.30	TRASH CAN	4	OWNER	OWNER
5.39	PAPER TOWEL DISPENSER	4	OWNER	OWNER
5.64	RTI INDOOR GREASE TANK SYSTEM	1	OWNER	OWNER
5.78	RECESSED BOX FOR PAPER TOWELS	4	OWNER	OWNER
6.10	HOT FOOD PRODUCT HOLDING UNIT	1	OWNER	OWNER
6.40	DOUBLE BARREL CONDIMENT DISPENSER	1	OWNER	OWNER
6.55	HEATED GLASS MINI-MERCHANDISER WARMER	1	OWNER	OWNER
6.67	FREEZER MERCHANDISER	1	OWNER	OWNER
7.10	MODULAR WALL WIRE SHELF, MAT, AND HOOK SYSTEM	3	OWNER	OWNER
7.32	KNEE OPERATED HANDSINK	2	PC	PC
7.35	SS HAND SINK W/ WRIST BLADES AND EYEWASH	1	PC	PC
7.47	WALL MOUNTED WATER FILTRATION SYSTEM	1	PC	PC
7.50	VENTLESS DISH MACHINE	1	OWNER	EC/PC
7.51	SCULLERY DISH TABLE 102" W/ 3 BOWL SINK	1	OWNER	PC
7.70	ONE-COMPARTMENT RINSE SINK WITH COVED EDGING	1	PC	PC
8.10	BEVERAGE DISPENSER	1	OWNER	OWNER
8.11	TRUE ICE MAKER TI-522-MA	1	OWNER	OWNER
8.12	ICE MACHINE (WITH ELEVATED SUPPORT STAND)	1	OWNER	EC
8.13	TRUE IC EBIN TIB-422	1	OWNER	OWNER
8.21	CO2 CARBONATION SYSTEM	1	OWNER	OWNER
8.22C	UNDER COUNTER COMPACT WATER BOOSTER	3	OWNER	OWNER
8.24	2 HEAD FUB	3	OWNER	OWNER
8.34	FRANKE COFFEE BREWER	3	OWNER	OWNER
8.41	GAS MODULE (DASHED) UNDER NITRON	1	OWNER	OWNER
8.42	NITRON COLD DRAFT ON 5" LEGS	1	OWNER	OWNER
8.47	ICE TEA MACHINE	1	OWNER	OWNER
8.48	FRANKE A1000 WITH DAIRY ATTACHMENT	1	OWNER	OWNER
8.64	SELF CONTAINED FCB MACHINE	1	OWNER	OWNER
8.69	MILKSHAKE BLENDING BAR	1	OWNER	OWNER
8.71	MILKSHAKE BLENDER	1	OWNER	OWNER
8.75	5 HOPPER HOT BEVERAGE SYSTEM	1	OWNER	OWNER
8.79	OPEN AIR RTE CASE	1	OWNER	EC
8.80	COUNTERTOP CUP DISPENSING CABINETS	1	OWNER	OWNER
9.20	24" MOP AND BROOM HOLDER	2	OWNER	OWNER
9.21	18" MOP AND BROOM HOLDER	1	OWNER	OWNER
9.36	REMOTE REFRIGERATED DROP-IN WELL	2	OWNER	OWNER
9.62	FOOD PREP TABLE - 60" SOLID DOOR SANDWICH UNIT	1	OWNER	OWNER
9.90	HIGH SPEED OVEN	2	OWNER	OWNER
10.17	STORE CLOCK (BATTERY OPERATED)	1	OWNER	OWNER
10.20	LOTTERY MACHINE	1	OWNER	OWNER
10.25	LOTTERY COUNTERTOP TICKET DISPENSER	1	OWNER	OWNER
10.30	POS TERMINAL	6	OWNER	OWNER
10.50	ORDER MONITOR	6	OWNER	OWNER
10.55	EMPLOYEE KIOSK	1	OWNER	OWNER
10.70	STORE SERVER	1	OWNER	OWNER
10.75	TOUCH SCREEN	4	OWNER	OWNER
11.00	AIR CURTAIN - 42", WHITE	2	OWNER	EC
11.07	AIR CURTAIN - 42", BRONZE	1	OWNER	EC
11.10	HAND DRYER	2	OWNER	EC
11.20	MULTI-FUNCTION PRINTER	1	OWNER	OWNER
11.30	TV SECURITY WALL MOUNT ENCLOSURE	1	OWNER	OWNER
11.40	ATM - CASH DISPENSER	1	OWNER	OWNER
11.41	FIRE EXTINGUISHER "CLASS K"	1	OWNER	OWNER
11.42	FIRE EXTINGUISHER	4	BC	BC
11.43	ATM - CASH DISPENSER	1	OWNER	OWNER
11.48	INSECT LIGHT TRAP	2	OWNER	OWNER
11.50	WATER FOUNTAIN	1	PC	PC
11.75	OUTDOOR ICE MERCHANDISER	1	OWNER	OWNER
11.85	TANKLESS WATER HEATER	3	OWNER	EC/PC
11.90	WATER SOFTENER	1	OWNER	EC/PC
11.97	SELF-SERVE COFFEE FIXING RACK	2	OWNER	OWNER
12.30	SINGLE BOWL UNDERMOUNT SS SINK	1	OWNER	PC
12.50	CYCLESAFE U BIKE RACK (SEE CIVIL)	2	OWNER	OWNER
14.00	TOBACCO MERCHANDISER	1	OWNER	OWNER
14.01	WORKTOP DRAWERED FREEZER - 43"	1	OWNER	OWNER
14.12	27" WORKTOP REFRIGERATOR	2	OWNER	OWNER
14.14	48" WORKTOP FREEZER	1	OWNER	OWNER
14.24	UNDERCOUNTER SINGLE DOOR COOLER - 27"	2	OWNER	OWNER
14.59	REFRIGERATED FOOD PREP TABLE - 72"	1	OWNER	OWNER
16.02	EVAPORATOR - WALK-IN TAKE-OUT COOLER	2	OWNER	EC
16.24	EVAPORATOR - WALK-IN COOLER	1	OWNER	EC
16.27	EVAPORATOR - BEVERAGE COOLER	2	OWNER	EC
16.31	EVAPORATOR - WALK-IN FREEZER	1	OWNER	EC

OUTDOOR FURNITURE SCHEDULE

MARK	DESCRIPTION	Count
12.65	ULTRA ALUMINUM FENCING - 8'-0"	3
12.70	4 SEAT OUTDOOR TABLE CLUSTER	1
12.80	3 SEAT OUTDOOR TABLE CLUSTER	1
12.90	2 SEAT OUTDOOR TABLE CLUSTER	2
12.95	ALUMINUM PICNIC TABLE	1

LEGEND:
BC = BUILDING CONTRACTOR
EC = ELECTRICAL CONTRACTOR
MC = MECHANICAL CONTRACTOR
PC = PLUMBING CONTRACTOR
SC = SPECIALTY CONTRACTOR

NOTES:
1. ALL EQUIPMENT LISTED IS SUPPLIED BY OWNER, UNO.
2. ALL OVERHEAD EQUIPMENT TO BE MOUNTED 80" AFF MIN, UNO.
3. REFER TO G003 FOR ALL EQUIPMENT INSTALLATION PARAMETERS

*C*onvenience *A*rchitecture and *D*esign P.C.
351 Sheetz Way, Claysburg, PA 16625
phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:
NEW SHEETZ STORE

HARTLAND

Int. of Old US 23
and Highland Road
Hartland, MI 48353

OWNER:
SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

CONSULTANT

PROFESSIONAL

KEYPLAN

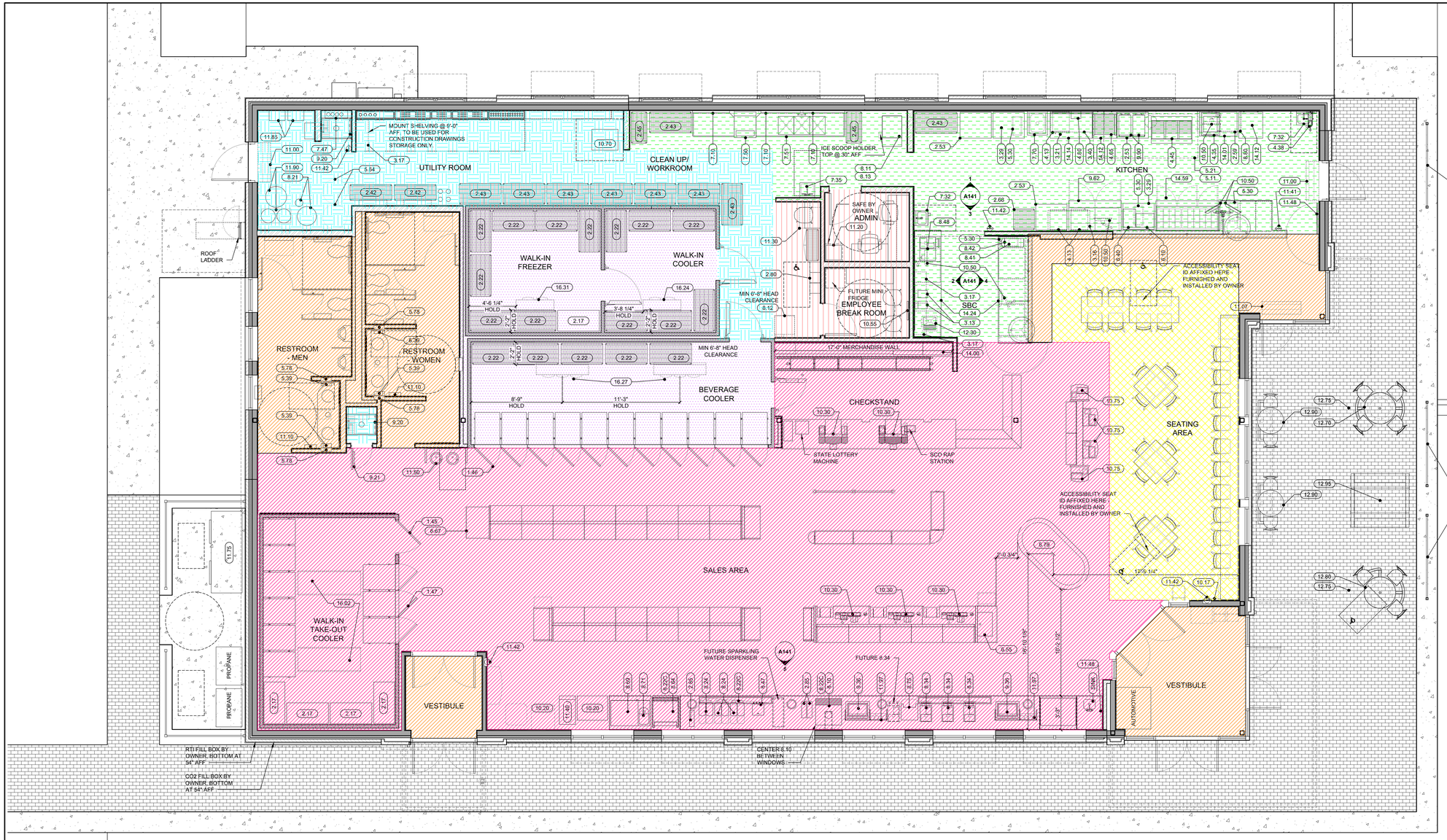
MARK	DATE	DESCRIPTION

ISSUE: 02.28.2025
SITE ID NO: 214657
AUTHOR BY: AMM/DLN
REVIEW BY: RJH
VERSION: 6132R_v1.7

EQUIPMENT PLAN

A212

PRELIMINARY FLOOR PLAN



EQUIPMENT PLAN

1/4" = 1'-0"

SALES FIXTURE CHART - 6132	
NUMBER OF GONDOLAS	43
LINEAR FEET OF GONDOLA	131'-11"
NUMBER OF REACH-IN COOLER DOORS	13 (2 W/ BEER)
LINEAR FEET OF REACH-IN COOLER DOORS	33'-4"
NUMBER OF RTE UNITS	2 (1 HOT, 1 COLD)
NUMBER OF NOVELTY ICE CREAM FREEZERS	1
LINEAR FEET OF TABACCO WALL	17'-0"
NUMBER OF CHECKOUTS	6 (3 POS, 3 SCO)
NUMBER OF INDOOR SEATS	30 (2 HC)

LEGEND:
BC = BUILDING CONTRACTOR
EC = ELECTRICAL CONTRACTOR
MC = MECHANICAL CONTRACTOR
PC = PLUMBING CONTRACTOR
SC = SPECIALTY CONTRACTOR

NOTES:
1. ALL EQUIPMENT LISTED IS SUPPLIED BY OWNER, UNO.
2. ALL OVERHEAD EQUIPMENT TO BE MOUNTED 80" AFF MIN, UNO.
3. REFER TO G003 FOR ALL EQUIPMENT INSTALLATION PARAMETERS

SPECIALTY EQUIPMENT SCHEDULE

Equip No	Item Description	Count	Installed by	Connected by
1.45	TAKE-HOME COOLER DOORS MAN DOOR	1	OWNER	N/A
1.46	TAKE-HOME FLANGELESS COOLER DOORS	11	OWNER	N/A
1.47	TAKE-HOME FULL FLANGE COOLER DOORS	3	OWNER	N/A
2.17	24 x 48 DUNNAGE RACK	5	OWNER	N/A
2.22	24 x 48 EPOXY SHELVING W/ CASTERS	18	OWNER	N/A
2.42	18x48 CHROME SHELVING W/ CASTERS	2	OWNER	N/A
2.43	24x48 CHROME SHELVING W/ CASTERS	9	OWNER	N/A
2.45	18 x 36 CHROME SHELVING W/ CASTERS	2	OWNER	N/A
2.53	36 x 30 SS TABLE	3	OWNER	N/A
2.59	EAGLE SHELF 24 X 48	1	OWNER	N/A
2.68	24 X 24 MOBILE BREAD RACK	1	OWNER	N/A
2.80	STEEL LOCKER - 6-HIGH BOX 12"X12", 1 MIN ACCESSIBLE	3	OWNER	OWNER
2.85	LID & STRAW HOLDER	3	OWNER	OWNER
3.13	VITAMIX BLENDER	2	OWNER	OWNER
3.16	WALL MOUNTED SOLID SHELVING 24 x 48	1	OWNER	N/A
3.17	WALL MOUNTED SOLID SHELVING 14 x 36	3	OWNER	N/A
3.29	36 x 30 SS TABLE - W/O UNDERSHELF	2	OWNER	N/A
3.40	WALL MOUNTED WIRE SHELVING 24 x 48	1	OWNER	N/A
3.90	14 x 36 EAGLE SECURITY RACK	1	OWNER	OWNER
4.13	MICROWAVE	3	OWNER	OWNER
4.35	FRY HOLDING STATION	1	OWNER	OWNER
4.38	HOSE REEL	1	PC	PC
4.45	ELECTRIC FRYER - 3 VAT	1	OWNER	OWNER
4.65	ROLLER GRILL	1	OWNER	OWNER
4.80	LABEL MINDER 2	1	OWNER	OWNER
5.11	FIRE SUPPRESSION SYSTEM	1	OWNER	OWNER
5.21	CAPTIVEAIRE 10FT EXHAUST HOOD	1	OWNER	OWNER
5.30	TRASH CAN	4	OWNER	OWNER
5.39	PAPER TOWEL DISPENSER	4	OWNER	OWNER
5.64	RTI INDOOR GREASE TANK SYSTEM	1	OWNER	OWNER
5.78	RECESSED BOX FOR PAPER TOWELS	4	OWNER	OWNER
6.10	HOT FOOD PRODUCT HOLDING UNIT	1	OWNER	OWNER
6.40	DOUBLE BARREL CONDIMENT DISPENSER	1	OWNER	OWNER
6.55	HEATED GLASS MINI-MERCHANDISER WARMER	1	OWNER	OWNER
6.67	FREEZER MERCHANDISER	1	OWNER	OWNER
7.10	MODULAR WALL WIRE SHELF, MAT, AND HOOK SYSTEM	3	OWNER	OWNER
7.32	KNEE OPERATED HANDSINK	2	PC	PC
7.35	SS HAND SINK w/ WRIST BLADES AND EYEWASH	1	PC	PC
7.47	WALL MOUNTED WATER FILTRATION SYSTEM	1	PC	PC
7.50	VENTLESS DISH MACHINE	1	OWNER	EC/PC
7.51	SCULLERY DISH TABLE 102" W/ 3 BOWL SINK	1	OWNER	PC
7.70	ONE-COMPARTMENT RINSE SINK WITH COVED EDGING	1	PC	PC
8.10	BEVERAGE DISPENSER	1	OWNER	OWNER
8.11	TRUE ICE MAKER TI-522-MA	1	OWNER	OWNER
8.12	ICE MACHINE (WITH ELEVATED SUPPORT STAND)	1	OWNER	EC
8.13	TRUE IC EBIN TIB-422	1	OWNER	OWNER
8.21	CO2 CARBONATION SYSTEM	1	OWNER	OWNER
8.22C	UNDER COUNTER COMPACT WATER BOOSTER	3	OWNER	OWNER
8.24	2 HEAD FUB	3	OWNER	OWNER
8.34	FRANKE COFFEE BREWER	3	OWNER	OWNER
8.41	GAS MODULE (DASHED) UNDER NITRON	1	OWNER	OWNER
8.42	NITRON COLD DRAFT ON 5" LEGS	1	OWNER	OWNER
8.47	ICE TEA MACHINE	1	OWNER	OWNER
8.48	FRANKE A1000 WITH DAIRY ATTACHMENT	1	OWNER	OWNER
8.64	SELF CONTAINED FCB MACHINE	1	OWNER	OWNER
8.69	MILKSHAKE BLENDING BAR	1	OWNER	OWNER
8.71	MILKSHAKE BLENDER	1	OWNER	OWNER
8.75	5 HOPPER HOT BEVERAGE SYSTEM	1	OWNER	OWNER
8.79	OPEN AIR RTE CASE	1	OWNER	EC
8.80	COUNTERTOP CUP DISPENSING CABINETS	1	OWNER	OWNER
9.20	24" MOP AND BROOM HOLDER	2	OWNER	OWNER
9.21	18" MOP AND BROOM HOLDER	1	OWNER	OWNER
9.36	REMOTE REFRIGERATED DROP-IN WELL	2	OWNER	OWNER
9.62	FOOD PREP TABLE - 60" SOLID DOOR SANDWICH UNIT	1	OWNER	OWNER
9.90	HIGH SPEED OVEN	2	OWNER	OWNER
10.17	STORE CLOCK (BATTERY OPERATED)	1	OWNER	OWNER
10.20	LOTTERY MACHINE	1	OWNER	OWNER
10.25	LOTTERY COUNTERTOP TICKET DISPENSER	1	OWNER	OWNER
10.30	POS TERMINAL	6	OWNER	OWNER
10.50	ORDER MONITOR	6	OWNER	OWNER
10.55	EMPLOYEE KIOSK	1	OWNER	OWNER
10.70	STORE SERVER	1	OWNER	OWNER
10.75	TOUCH SCREEN	4	OWNER	OWNER
11.00	AIR CURTAIN - 42", WHITE	2	OWNER	EC
11.07	AIR CURTAIN - 42", BRONZE	1	OWNER	EC
11.10	HAND DRYER	2	OWNER	EC
11.20	MULTI-FUNCTION PRINTER	1	OWNER	OWNER
11.30	TV SECURITY WALL MOUNT ENCLOSURE	1	OWNER	OWNER
11.40	ATM - CASH DISPENSER	1	OWNER	OWNER
11.41	FIRE EXTINGUISHER "CLASS K"	1	OWNER	OWNER
11.42	FIRE EXTINGUISHER	4	BC	BC
11.43	ATM - CASH DISPENSER	1	OWNER	OWNER
11.48	INSECT LIGHT TRAP	2	OWNER	OWNER
11.50	WATER FOUNTAIN	1	PC	PC
11.75	OUTDOOR ICE MERCHANDISER	1	OWNER	OWNER
11.85	TANKLESS WATER HEATER	3	OWNER	EC/PC
11.90	WATER SOFTENER	1	OWNER	EC/PC
11.97	SELF-SERVE COFFEE FIXING RACK	2	OWNER	OWNER
12.30	SINGLE BOWL UNDERMOUNT SS SINK	1	OWNER	PC
12.50	CYCLESAFE U BIKE RACK (SEE CIVIL)	2	OWNER	OWNER
14.00	TOBACCO MERCHANDISER	1	OWNER	OWNER
14.01	WORKTOP DRAWERED FREEZER - 43"	1	OWNER	OWNER
14.12	27" WORKTOP REFRIGERATOR	2	OWNER	OWNER
14.14	48" WORKTOP FREEZER	1	OWNER	OWNER
14.24	UNDERCOUNTER SINGLE DOOR COOLER - 27"	2	OWNER	OWNER
14.59	REFRIGERATED FOOD PREP TABLE - 72"	1	OWNER	OWNER
16.02	EVAPORATOR - WALK-IN TAKE-OUT COOLER	2	OWNER	EC
16.24	EVAPORATOR - WALK-IN COOLER	1	OWNER	EC
16.27	EVAPORATOR - BEVERAGE COOLER	2	OWNER	EC
16.31	EVAPORATOR - WALK-IN FREEZER	1	OWNER	EC

OUTDOOR FURNITURE SCHEDULE

MARK	DESCRIPTION	Count
12.65	ULTRA ALUMINUM FENCING - 8'-0"	3
12.70	4 SEAT OUTDOOR TABLE CLUSTER	1
12.80	3 SEAT OUTDOOR TABLE CLUSTER	1
12.90	2 SEAT OUTDOOR TABLE CLUSTER	2
12.95	ALUMINUM PICNIC TABLE	1

Function of Space	Square Footage
Mercantile:	2472 SF
Acillary Areas:	744 SF
Assembly without Fixed Seats, Unconcentrated:	442 SF
Kitchen:	731 SF
Business:	187 SF
Accessory Storage Areas, Mechanical Equipment Room:	505 SF
Mercantile Storage Areas, Refrigerated Storage:	619 SF

*C*onvenience *A*rchitecture and *D*esign P.C.
351 Sheetz Way, Claysburg, PA 16625
phone (814) 239-6013
email tcolumbu@sheetz.com
web site www.sheetz.com

PROJECT NAME:
NEW SHEETZ STORE

HARTLAND

Int. of Old US 23
and Highland Road
Hartland, MI 48353

OWNER:
SHEETZ, INC.

5700 SIXTH AVE.
ALTOONA, PA 16602

CONSULTANT

PROFESSIONAL

KEYPLAN

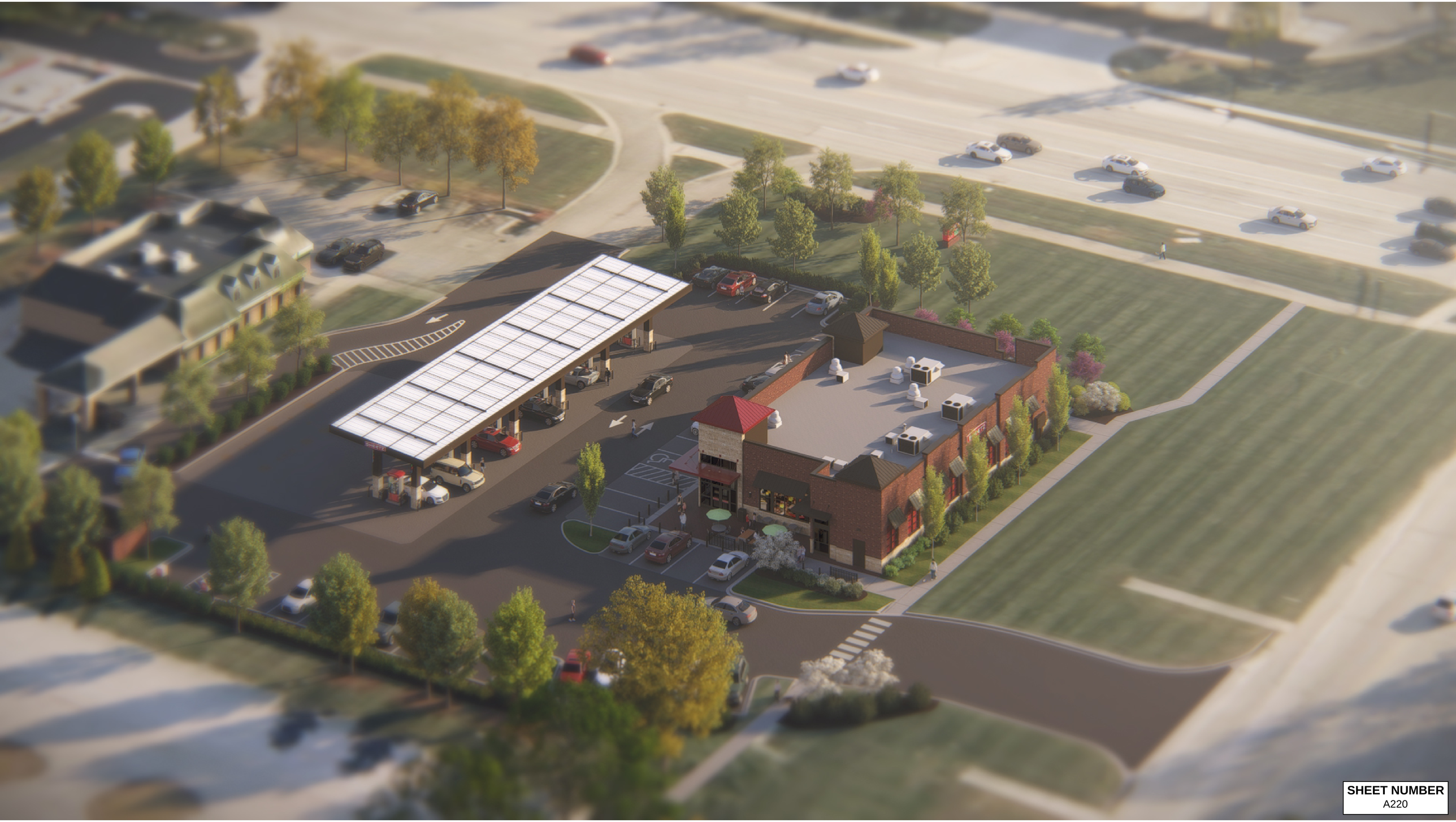
MARK	DATE	DESCRIPTION

ISSUE:	05.08.2025
SITE ID NO:	214657
AUTHOR BY:	AMM/DLN
REVIEW BY:	RJH
VERSION:	6132R_v1.7

EQUIPMENT PLAN

A213

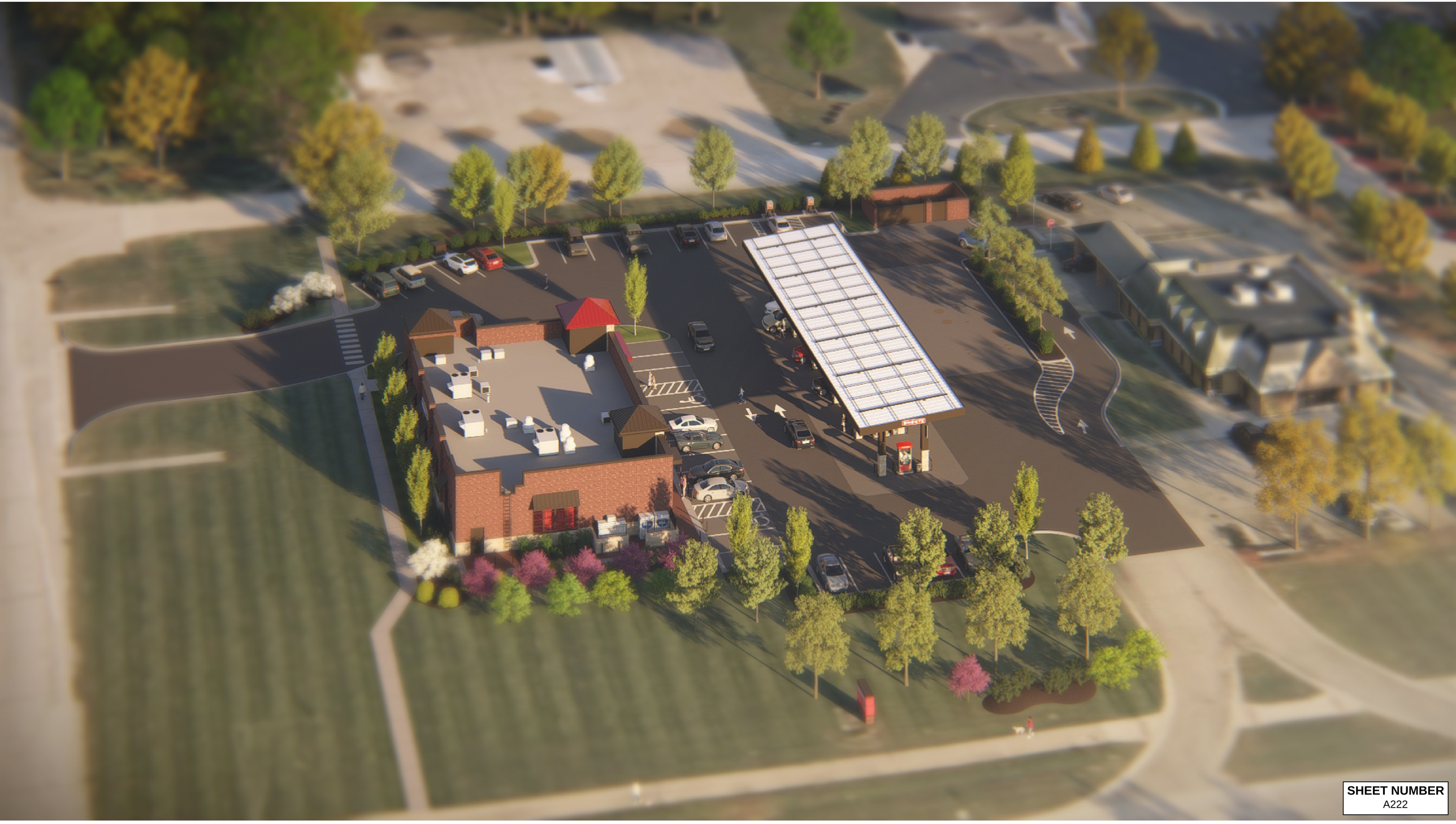
PRELIMINARY FLOOR PLAN



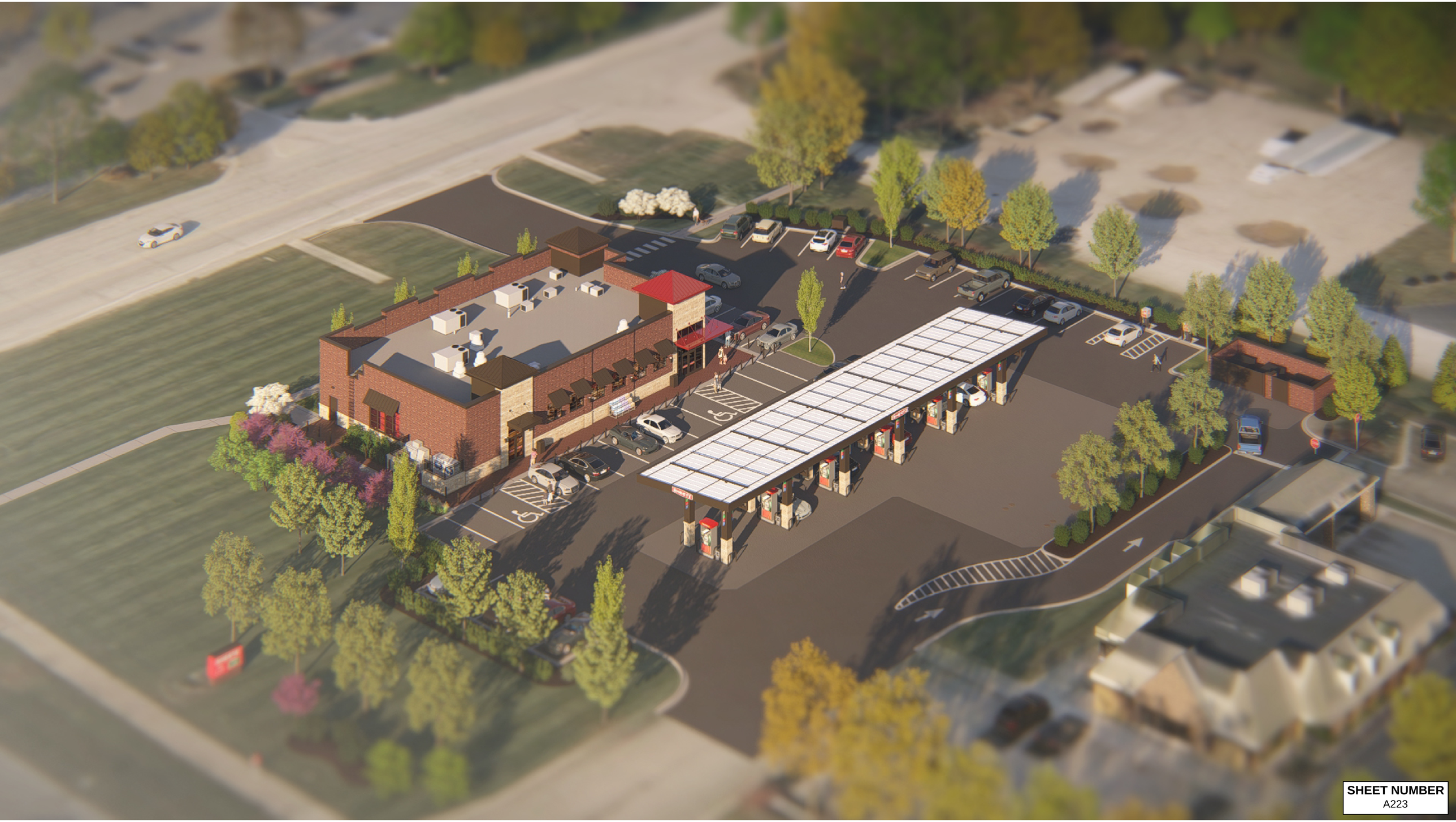
SHEET NUMBER
A220



SHEET NUMBER
A221



SHEET NUMBER
A222



SHEET NUMBER
A223