GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
AUGUST 10, 2026
MONDAY, 6:30 P.M.
AGENDA

CALL TO ORDER:
PLEDGE OF ALLEGIANCE:
ELECTION:
APPROVAL OF AGENDA:
DECLARATION OF CONFLICT OF INTEREST:
CALL TO THE PUBLIC Non-Agenda Items Only): (*Note: The Board reserves the right to not begin new business after 10:00 p.m.)*

OPEN PUBLIC HEARING # 1…Consideration of a special land use application, environmental impact assessment and site plan for a proposed drive-through coffee shop in the Grand River Plaza. The property is located at 3599 Grand River Avenue, north side of Grand River Avenue, west of Latson Road. The request is petitioned by Carly Detar, OLIO Dev. Grp.

A. Recommendation of Special Use Application
B. Recommendation of Environmental Impact Assessment
C. Recommendation of Site Plan

OPEN PUBLIC HEARING # 2…Consideration of an environmental impact assessment and site plan for a proposed 5,940 sq. ft. administrative office building for the MHOG Water Authority. The property is located at 900 Chilson Road, west side of Chilson Road, south of Grand River Avenue. The request is petitioned by MHOG.

A. Recommendation of Environmental Impact Assessment
B. Disposition of Site Plan

OPEN PUBLIC HEARING #3… Consideration of an environmental impact assessment, PUD amendment and site plan for a proposed parking lot expansion for the existing Trinity Health Hospital. The property is located at 7575 Grand River Avenue, north side of Grand River Avenue, west of Hacker Road. The parking The request is petitioned by Trinity Health.

A. Recommendation of Environmental Impact Assessment
B. Recommendation of Site Plan
C. Recommendation of PUD Amendment

OPEN PUBLIC HEARING #4…Consideration of an environmental impact assessment and site plan for a proposed 6,515 sq. ft. building with 8 vehicle bays for a minor auto repair establishment in the existing Livingston Commons Phase 2 Planned Unit Development. The property is located on the south side of Grand Oaks Drive and west of S. Latson Road. The request is petitioned by Zaremba Group, LLC.

A. Recommendation of Environmental Impact Assessment
B. Recommendation of Site Plan

ADMINISTRATIVE BUSINESS:

- Staff Report
- Approval of June 8, 2026 Planning Commission meeting minutes
- Member discussion
- Adjournment

*Citizen's Comments- In addition to providing the public with an opportunity to address the Township Board at the beginning of the meeting, opportunity to comment on individual agenda items may be offered by the Chairman as they are presented. Anyone speaking on an agenda item will be limited to 2 minutes.

GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:
(Application must be completed in its entirety)

APPLICANT NAME & ADDRESS: Carly Detar, OLIO Dev Grp, 1062 Ridge Street, Columbus, OH 43215
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: Symmetry Management Group, 4327 Delemere Ct., Suite 100, Royal Oak, MI

SITE ADDRESS: 3599 GRAND RIVER PLAZA, HOWELL, MI 48843 PARCEL #(s): 4711-05-400-031 4711-05-400-032

LOCATION AND BRIEF DESCRIPTION OF SITE: Proposed outparcel development along E Grand River Avenue. The project parcel would sit in the current parking field for the existing development

BRIEF STATEMENT OF PROPOSED USE: 7 Brew Coffee Stand, drive through only. No indoor or outdoor seating. Serving only beverages, no food.

THE FOLLOWING BUILDINGS ARE PROPOSED: One pre-manufactured building and one pre-manufactured walk in cooler freezer

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: Carly Detar, OLIO Dev Grp

ADDRESS: 1062 Ridge Street, Columbus, OH 43215

GENOA CHARTER TOWNSHIP
Special Land Use Application

This application **must** be accompanied by a site plan review application and the associated submittal requirements. (The Zoning Official may allow a less detailed sketch plan for a change in use.)

APPLICANT NAME & ADDRESS: Carly Detar, OLIO Dev Grp, 1062 Ridge Street, Columbus, OH 43215
Submit a letter of Authorization from Property Owner if application is signed by Acting Agent.

APPLICANT PHONE: (614) 813 4641 EMAIL: cdetar@oliodevgrp.com

OWNER NAME & ADDRESS: Symmetry Management, 4327 Delemere Ct. Suite 100, Royal Oak, MI 48073

SITE ADDRESS: 3599 GRAND RIVER PLAZA, HOWELL, MI 48843 PARCEL #(s): 4711-05-400-031 4711-05-400-032

OWNER PHONE: ( ) EMAIL:

Location and brief description of site and surroundings:
Site is located in a parking field of the current hobby lobby development and will be an outparcel.

Proposed Use:
We are proposing a 7 Brew Coffee stand, drive through only. There will be no indoor or outdoor seating and only serving beverages.

Describe how your request meets the Zoning Ordinance General Review Standards (section 19.03):

a. Describe how the use will be compatible and in accordance with the goals, objectives, and policies of the Genoa Township Comprehensive Plan and subarea plans, and will promote the Statement of Purpose of the zoning district in which the use is proposed.

The proposed 7 Brew Coffee use is consistent with the goals and objective of the Genoa Township Comprehensive Plan by promoting commercial development within an established commercial corridor. The project represents an infill development on an existing commercial site and will enhance consumer service while utilizing existing infrastructure.

b. Describe how the use will be designed, constructed, operated, and maintained to be compatible with, and not significantly alter, the existing or intended character of the general vicinity.

The proposed use will be designed, constructed, operated, and maintained in a manner that is compatible with the surrounding commercial development. The building scale, architectural design, landscaping, lighting, and signage will be consistent with the character of nearby commercial uses. Due to the nature of the business, activity will remain primarily vehicle-oriented and compatible with existing environment.

c. How will the use be served adequately by essential public facilities and services such as highways, streets, police and fire protection, drainage structures, water and sewage facilities, refuse disposal and schools?

The site has direct access to the existing roadway network serving Grand River Plaza and is located within an area currently served by police, fire, emergency services, public utilities, stormwater infrastructure, and refuse collection services. Water and sanitary sewer are available to the site through existing utility systems. The development is not expected to place a significant burden on public facilities or services.

d. Will the use involve any uses, activities, processes, or materials potentially detrimental to the natural environment, public health, safety, or welfare by reason of excessive production of traffic, noise, vibration, smoke, fumes, odors, glare, or other such nuisance? If so, how will the impacts be mitigated?

Traffic generated will be accommodated through a dedicated on-site management plan utilizing the drive through circulation system. Noise levels will be limited primarily to customer vehicles. The use will not generate smoke, fumes, vibration, glare, hazadous materials, or odors. Limited to the sale of beverages only helps reduce potential impacts commonly associated with larger restaurant uses.

e. Does the use have specific criteria as listed in the Zoning Ordinance (sections 3.03.02, 7.02.02, & 8.02.02)? If so, describe how the criteria are met.

The proposed use will comply with all applicable Special Land Use requirements and development standards contained within the Genoa Township Zoning Ordinance, including any requirements applicable to drive-through facilities and commercial uses.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION ARE TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I AGREE TO DESIGN, CONSTRUCT AND OPERATE, AND MAINTAIN THESE PREMISES AND THE BUILDINGS, STRUCTURES, AND FACILITIES WHICH ARE GOVERNED BY THIS PERMIT IN ACCORDANCE WITH THE STATED REQUIREMENTS OF THE GENOA TOWNSHIP ZONING ORDINANCE, AND SUCH ADDITIONAL LIMITS AND SAFEGUARDS AS MAY BE MADE A PART OF THIS PERMIT.

THE UNDERSIGNED Carly Detar STATES THAT THEY ARE THE FREE OWNER OF THE PROPERTY OF PROPERTIES DESCRIBED ABOVE AND MAKES APPLICATION FOR THIS SPECIAL LAND USE PERMIT.

BY: _____

ADDRESS: 1062 Ridge Street, Columbus, OH 43215

Contact Information - Review Letters and Correspondence shall be forwarded to the following:

Carly Detar	of OLIO Development Group/7 Brew	at cdetar@oliodevgrp.com
Name	Business Affiliation	Email

FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE: _____ DATE: 6.15.26

PRINT NAME: Carly Detar PHONE: 614.813.4641

Revised 08-15-13, kasp

July 30, 2026

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Amy Ruthig, Planning Director
Subject:	7 Brew Coffee – Special Land Use and Site Plan Review #2
Location:	3599 Grand River Avenue – north side of Grand River Avenue, west of S. Latson Road
Zoning:	RCD Regional Commercial District

Dear Commissioners:

At the Township's request, we have reviewed the revised submittal materials requesting special land use and site plan review/approval for a drive-through coffee shop in the Grand River Plaza (cover sheet dated 5/27/26). As a side note, the plan dates have not changed from the initial submittal. We request the applicant add revision dates to avoid any confusion in the future.

A. Summary

1. Special Land Uses (Section 19.03):
- a. The special land use standards of Section 19.03 are generally met.
- b. In order to make favorable findings related to compatibility and impacts, the use conditions of Section 7.02.02(j) must be met to the Commission's satisfaction.
- c. The applicant must address any comments provided by the Township Engineer or Brighton Area Fire Authority regarding public facilities and services.

2. Drive-Through Use Conditions (Section 7.02.02(j)):
- a. The use conditions of Section 7.02.02(j) are generally met.
- b. Planning Commission has the authority to waive/modify the 500-foot spacing requirement between drive-throughs.

3. Site Plan Review:
- a. The applicant should be prepared to present building material and color samples to the Commission for their review/approval.
- b. The applicant must provide the Commission with evidence supporting a further reduction in parking for the Plaza, per Section 14.02.04.
- c. We request the applicant confirm that no building mounted lighting is proposed. Details need to be provided for the proposed light poles and light fixtures.
- d. One of the ornamental trees depicted on the landscape plan must be increased in size to a canopy tree for full compliance.
- e. There are inconsistencies between the plant schedule and landscape plan that must be corrected.
- f. Refuse removal will need to be scheduled for off-peak/business hours to avoid conflicts.
- g. The concrete base pad for the waste receptacle must be depicted on the plan and detail.
- h. We suggest the site plan submittal include a compliant sign package.
- i. The applicant must address any site plan comments provided by the Township Engineering and/or Brighton Area Fire Authority.

Aerial view of site and surroundings (looking north)

B. Background/Proposal/Process

The applicant requests review and approval of a drive-through coffee shop on an outlot portion of the Grand River Plaza development. The development area is within an existing parking field north of the east/west drive aisle between Grand River Plaza and Arby's.

Per Table 7.02 of the Township Zoning Ordinance, coffee shops with a drive-through are listed as a special land use review. Such uses are also subject to the conditions of Section 7.02.02(j).

Procedurally, the Planning Commission is to review the special land use, site plan, and Environmental Impact Assessment, and put forth recommendations on each to the Township Board.

C. Special Land Use Review

Section 19.03 of the Zoning Ordinance identifies the review criteria for Special Land Use applications as follows:

1. **Master Plan.** The Township Master Plan Future Land Use Map identifies the subject property as Mixed Use – West Grand River. This classification states that "regional commercial uses, such as auto-oriented uses (including fast-food) are only intended at interchange uses and where otherwise currently existing along Grand River Avenue."

   The proposed use is located near a major roadway intersection and within reasonably close proximity to the S. Latson/I-96 interchange. Furthermore, there are other auto-oriented uses (gas stations and drive-throughs) in the surrounding area.

   As such, the Commission may find that the proposed use at this location is consistent with the Master Plan.

2. **Compatibility.** Surrounding properties are commercial/service in nature with some larger uses/buildings and multiple auto-oriented uses (drive-throughs and gas stations).

   The use conditions of Section 7.02.02(j) are intended to help mitigate potential off-site impacts. In order to make a favorable finding under this criterion, these standards must be met to the Commission's satisfaction.

3. **Public Facilities and Services.** Given the location of the site on the main arterial roadway through the Township and in close proximity to relatively intense commercial developments, we believe that necessary public facilities and services are in place for the proposal.

   With that being said, the applicant must address any comments provided by the Township Engineer and/or Brighton Area Fire Authority related to this criterion.

4. **Impacts.** Similar to comments above, the use conditions must be met to the Township's satisfaction, though given the proposed location, environmental impacts are not anticipated (the development area is within an existing parking lot).

5. **Mitigation.** If further concerns arise as part of the review process, the Township may require additional efforts to mitigate potential adverse impacts.

D. Use Conditions

Drive-through coffee shops are subject to the use requirements of Section 7.02.02(j), as follows:

1. **Principal and accessory buildings shall be setback a minimum of fifty (50) feet from any adjacent public right of way line or property line.**

The proposed building provides setbacks of more than 50 feet on each side.

2. **The establishment of a new drive-through, excluding a drive-in, shall require the lot be separated a minimum of five hundred (500) feet from any other lot containing a drive-through. The Planning Commission may waive this requirement for uses with vehicular access to an internal service drive (and not directly to/from the main roadway), where access to the main roadway is via a shared driveway or signalized intersection, or where the use is expected to generate 50 directional or fewer trips during the a.m. or p.m. peak hour.**

The development area is within 500 feet of another drive-through (Arby's immediately to the south).

In this instance, access to/from the proposed use is via an internal service drive and not directly to/from the main roadway. As such, the Planning Commission may waive the spacing requirement.

3. **Only one (1) access shall be provided onto any street.**

The commercial center has 3 existing vehicular access points to/from Grand River Avenue; however, as noted above, the proposed use is accessed via an internal service drive (and not directly to/from the main roadway)

4. **Such uses constructed adjacent to other commercial developments shall have a direct vehicular access connection (cross-site access) where possible.**

The proposed use has direct access to/from the remainder of the Grand River Plaza. However, there is not currently a connection between the Plaza and Meijer site immediately to the east.

As part of a proposed development on the Meijer site, the Township is currently working to gain a shared access driveway, while an easement currently exists on the Plaza property from the recent remodel.

5. **Where the property abuts a residential land use or zoning district, the site plan shall comply with the applicable landscaping and lighting regulations of Article 12 of the Township Zoning Ordinance. Additionally, the applicant shall provide a sound study demonstrating compliance with the Township Noise Ordinance (Ordinance #011203).**

The proposed use does not abut a residential use or zoning.

6. **Clear identification and delineation between the drive-through lane and parking lot shall be provided.**

The drive-through and escape lanes are delineated by pavement markings.

7. **Each drive-through shall provide an escape lane to allow other vehicles to pass those waiting to be served. The Planning Commission may waive the requirement for an escape lane where it can be demonstrated that such a waiver will not result in an adverse effect on public safety or the convenience of patrons of the facility.**

The drive-through provides the required escape lane.

8. **The drive-through lane and window shall be located on the side or rear elevation of the building to minimize visibility from the public or private roadway. The Planning Commission may allow a drive-through lane and window in a front yard of a corner lot, provided it is located in the front yard of the secondary street and the greenbelt requirements of Section 12.02.01 of the Township Zoning Ordinance are met. The Commission may also require additional landscaping/screening of the drive-through lane and window, if deemed necessary.**

The drive-through lanes wrap around the sides and rear of the building, while the pick-up window is on the west side.

E. Site Plan Review

1. **Dimensional Requirements.** The applicant is leasing an area that is currently occupied by parking.

   The proposed building location meets or exceeds minimum RCD setback requirements.

   There will also be a slight reduction in impervious surface area and the proposed building is well within the maximum height allowed (just over 19' proposed, while the district allows up to 45').

2. **Building Design and Materials.** The primary building material is brick paneling with metal accents.

   The applicant should be prepared to present building material and color samples to the Commission for their consideration. Of note, the use of "regal blue" may fall outside of the Township's requirement for subtle earth tone colors, though it is only applied to the metal accents.

   Ultimately, building materials and colors are subject to review and approval by the Planning Commission.

3. **Pedestrian Circulation.** The Plaza property currently has a public sidewalk along Grand River Avenue.

   The site plan provides internal pedestrian connections between the parking area and building, including a crosswalk connection between the barrier-free space and building.

4. **Vehicular Circulation.** The proposed use will be accessed via existing internal service drives, while the overall property has 3 curb cuts along Grand River Avenue.

   Drive aisles are of sufficient width for one-way circulation around the proposed development area.

   The revised plan includes the required loading area on the west side of the building. A note indicates that deliveries will be scheduled for off-peak hours to avoid conflicts with patrons driving to/from the site.

   The applicant must address any comments provided by the Township Engineer and/or the Brighton Area Fire Authority with respect to vehicular circulation.

5. **Parking.** Based on the parking calculations included on Sheet C1.0, the project requires 8 parking spaces. The site plan provides 8 parking spaces, including 1 barrier-free space.

   The design and dimensions of parking spaces and drive aisles comply with Ordinance standards. the revised plan also depicts the required stacking, as requested.

   The revised submittal also includes parking calculations for the Grand River Plaza, as requested, given the loss of parking for the rest of the development. The calculations note a 137 space deficiency; however, it is important to note that the 2024 project to remodel the Plaza included an 88-space reduction by the Planning Commission.

   The current request further reduces required parking by an additional 49 spaces. Similar to the 2024 project, Planning Commission has the ability to reduce parking by up to 30% where it determines that peak usage will occur at different periods of the day (Section 14.02.04). The current request is for a further reduction of 7% from what was approved in 2024 (from 680 to 631).

   The applicant must present the Commission with further evidence supporting the additional reduction.

6. **Exterior Lighting.** The revised submittal includes the required lighting plan. The plan depicts 4 light poles around the development area. We request the applicant confirm that no building mounted lighting is proposed (as none is depicted).

   Photometric readings and pole heights comply with current Ordinance standards; however, we request the applicant provide a fixture detail sheet and typical pole detail.

7. **Landscaping.** The landscape plan has been reviewed for compliance with the standards of Section 12.02, as follows:

Standard	Required	Proposed	Comments
Buffer Zone C (N)	10’ width 8 canopy trees OR 8 evergreen trees OR 31 shrubs	11’ width 1 canopy tree 1 ornamental tree 25 shrubs	The ornamental tree must be replaced with a canopy tree at least 2.5” for compliance
Buffer Zone C (S)	10’ width 8 canopy trees OR 8 evergreen trees OR 31 shrubs	10’ width 31 shrubs	In compliance
Buffer Zone C (E)	10’ width 10 canopy trees OR 10 evergreen trees OR 39 shrubs	10’ width 39 shrubs	In compliance
Buffer Zone C (W)	10’ width 10 canopy trees OR 10 evergreen trees OR 39 shrubs	10’ width 2 ornamental trees 39 shrubs	In compliance

As noted above, provided the ornamental tree in the northerly buffer zone if increased in size to a canopy tree, the revised landscape will be in compliance with Ordinance standards.

The plant schedule and landscape plan are inconsistent with respect to the shrub quantities for the Compact Inkberry and Anthony Waterer Spirea. These must be corrected.

8. **Waste Receptacle.** The proposed waste receptacle has been reviewed for compliance with the standards of Section 12.04, as follows:

	Requirement	Proposed	Comments
Location	Rear yard or non-required side yard AND not less than 20' from residential	Rear yard	Requirements met
Access	Clear access w/ out damaging buildings/vehicles	Sufficient access	Refuse removal will need to occur during off-peak/business hours to avoid vehicular conflicts
Base design	9' x 9' concrete pad (minimum) w/ 6' extension	14' x 21' concrete pad	Applicant notes that the pad extends 8' beyond the gate; however, plans do not reflect this
Enclosure	3-sided enclosure w/ gate Masonry walls 6' height/taller than receptacle	3 sides w/ gate across 4th Masonry walls 7'	Requirements met

9. **Signage.** The revised submittal depicts more wall signage than is allowed by Ordinance (3 7 Brew signs and 3 drive-through signs).

The business is allowed 1 wall sign, though the Planning Commission may grant a 2nd wall sign "where obstructed views and building orientation require additional visibility."

We suggest the applicant identify a compliant wall sign package within the site plan submittal, though a separate sign permit will be required prior to installation of any signage.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFEBUILT

Brian V. Borden, AICP
Planning Manager

TETRA TECH

August 4, 2026

Ms. Amy Ruthig
Genoa Township
2911 Dorr Road
Brighton, MI 48116

Re: 7 Brew
Site Plan Review No. 2

Dear Ms. Ruthig:

Tetra Tech conducted a review of the site plan submittal for 7 Brew last dated July 21, 2026. The site plan was prepared by CESO, Inc on behalf of OLIO Development Group. The development is located on 0.68 acres north of East Grand River Avenue, 0.4 miles west of South Latson Road. The Petitioner is proposing a new drive thru building. The proposed site includes a new parking lot and storm sewer.

We offer the following comments:

DRAINAGE AND GRADING

1. Profiles should be provided for all proposed storm sewers with information as required from LCDC standards. The hydraulic gradient should be shown in the profile.

2. Callout 13 on the utility plan indicates that there is a 4-inch storm pipe proposed. Minimum size for private storm is 6-inches and should be updated accordingly.

3. Storm sewer details such as catch basins, storm cleanouts, slope channel, etc should be provided for review.

PARKING LOT

1. Parking lot details such as pavement cross sections, sidewalk cross sections, curb and gutter, signage, etc should be provided for review.

We recommend that the petitioner address the above comments and resubmit for additional review. Please call or email if you have any questions.

Sincerely,

Sydney Streveler, EIT
Civil Engineering Group

Tetra Tech
3497 Coolidge Road, East Lansing, MI 48823
Tel 517.316.3930 Fax 517.484.8140 www.tetratech.com

BRIGHTON AREA FIRE AUTHORITY
615 W. Grand River Ave.
Brighton, MI 48116
o: 810-229-6640 f: 810-229-1619

August 4, 2026

Bobby Foster, Planner
Genoa Charter Township
2911 Dorr Rd.
Brighton, MI 48116

RE: 7 Brew Drive Thru Coffee
3599 Grand River Plaza
Howell, MI 48843
Site Plan Review

Dear Bobby:

The Brighton Area Fire Department has reviewed the above-mentioned site plan. The plans were received for review on July 22, 2026, and the drawings are dated May 29, 2026, with response comments dated July 22, 2026. The project is based on a newly proposed 510-square-foot drive-thru coffee shop. The plan review is based on the requirements of the International Fire Code (IFC) 2024 edition.

Due to the facility's small size, limited occupant capacity, and existing access on three sides, BAFA does not require additional access through the project parcel.

All previous comments have been addressed in the response letter dated July 22, 2026. The fire authority has no further comments related to the project as proposed.

Additional comments will be given during the building plan review process (specific to the building plans and occupancy). The applicant is reminded that the fire authority must review the building plans for life safety requirements in conjunction with the Building Department.

If you have any questions about the comments on this plan review please contact me at 810-229-6640.

Cordially,

Rick Boisvert, CFPS
Fire Marshal

cc: Amy Ruthig (amy@genoa.org)

Impact Assessment: 3599 Grand River Plaza, Howell, MI 48843

a. **Name(s) and address(es) of person(s) responsible for preparation:** Carly Detar, Development Specialist - OLIO Development Group 1062 Ridge St. Columbus, OH 43215

b. **Map(s) and written description/analysis of the project site:**

The proposed project consists of the development of a 7 Brew Coffee drive-through facility on an outlot within an existing commercial development in Genoa Township, Livingston County, Michigan. The site is currently developed and consists primarily of paved parking and associated site improvements. Site plans, utility plans, grading plans, landscaping plans, and supporting engineering drawings have been submitted as part of the Site Plan and Special Use submittals and provide detailed information regarding the existing conditions and proposed improvements.

The project has been designed to utilize existing access drives, utility infrastructure, and stormwater management facilities that were constructed as part of the larger commercial development. The proposed use is compatible with surrounding commercial land uses and represents the continued development of a previously planned outlot area.

c. **Impact on natural features:**

The project site is an existing developed outlot that has historically functioned as a paved parking area. No regulated wetlands, woodlands, watercourses, floodplains, steep slopes, or other significant natural features are located within the development area. Because the site is already disturbed and developed, the proposed project will not result in the removal of significant vegetation or the alteration of natural landforms.

As a result, the development is expected to have negligible impact on natural features and environmental resources. In addition, the project will introduce landscaped areas that will enhance the aesthetic character of the site compared to its current condition.

d. **Impact on stormwater management:**

Stormwater from the proposed development will be directed into the existing stormwater management system serving the larger commercial development. The project will maintain existing drainage patterns and connect to the existing storm sewer infrastructure through a proposed underground 12-inch storm connection to an existing catch basin located north of the site.

The total area of disturbance is approximately 0.75 acres. The proposed development reduces the amount of impervious surface currently associated with the existing parking lot configuration, resulting in no adverse increase in stormwater runoff. The existing regional stormwater facilities were designed to accommodate development of the commercial outlots and are expected to provide adequate capacity for the proposed use.

The project will comply with all applicable local, county, and state stormwater management requirements during both construction and operation.

e. **Impact on surrounding land used:**

The proposed 7 Brew Coffee facility is consistent with the commercial character of the surrounding area and is compatible with adjacent retail, service, and commercial uses within the existing development. The project will utilize existing utility infrastructure and internal circulation systems established as part of the larger commercial center.

Site lighting will be designed with full cut-off fixtures and directed downward to minimize glare and light trespass onto adjacent properties. Any lighting will remain within acceptable property boundaries and will comply with Township requirements. The project will not generate excessive noise, vibration, smoke, dust, odors, or other emissions that would negatively affect neighboring properties.

Given the site's location within an established commercial development, the proposed use is not expected to create adverse impacts on surrounding land uses and will contribute to the continued economic vitality of the area.

f. **Impact on public facilities and services:**

The proposed development is not anticipated to create significant demands on public facilities or municipal services. The project is a relatively small-scale commercial use located within an area already planned and served for commercial development.

Police, fire protection, emergency medical services, road maintenance, and other governmental services currently serve the larger commercial development and are expected to have adequate capacity to serve the proposed use. The project will comply with all applicable building, fire, and life-safety codes.

Because the site is located within an existing commercial corridor with established public infrastructure and services, the proposed development is not expected to require expansion of public facilities or create measurable adverse impacts on service levels.

g. **Impact on public utilities:**

The proposed development will connect to existing water, sanitary sewer, and stormwater infrastructure that was previously installed to support development of the commercial outlots. Water service, sanitary sewer service, and storm drainage facilities are available adjacent to the site and are considered adequate to support the proposed use.

Stormwater runoff will be collected onsite through catch basins and conveyed to the existing stormwater system, including connection to an existing 24-inch storm sewer. During construction, the contractor will implement temporary soil erosion and sedimentation control measures, including silt fencing, construction entrance

stabilization, inlet protection/filter sacks, and designated concrete washout facilities to prevent off-site sediment transport and protect downstream infrastructure.

The anticipated sanitary sewer demand is approximately 520 gallons per day. The proposed 6-inch sanitary service lateral will connect to an existing 8-inch sanitary sewer main that was installed as part of the larger development. Based on the original utility design and planned development of the outlots, the existing sanitary system is expected to have sufficient capacity to accommodate the proposed use without adverse impacts on system performance.

h. **Any hazardous materials:**

No hazardous waste generation or industrial processes are proposed as part of the development.

i. **Impact on Traffic and Pedestrians:**

The proposed 7 Brew Coffee facility is not expected to generate traffic volumes that would significantly affect the surrounding roadway network. Based on the scale of the development and available traffic projections, the project is not anticipated to generate 100 or more directional vehicle trips during the peak traffic hour.

Vehicular access will be provided through existing internal drives and service roads within the larger commercial development. No new direct access points to public roadways are proposed. The existing circulation system was designed to accommodate commercial traffic associated with development of the outlots and is expected to adequately serve the proposed use.

Pedestrian movement within the site will utilize existing and proposed walkways connecting parking areas and building entrances. The project will maintain safe internal circulation patterns for both vehicles and pedestrians. Due to the site's location within an established commercial center and its use of existing access infrastructure, no significant adverse traffic or pedestrian impacts are anticipated.

GENOA CHARTER TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

SITE IMPROVEMENTS

FOR

7 BREW

3599 GRAND RIVER PLAZA
HOWELL, MICHIGAN

OWNER/DEVELOPER:
OLIO DEVELOPMENT GROUP
1062 RIDGE STREET
COLUMBUS, OH, 43215
PHONE: 614-813-4641
CONTACT: CARLY DETAR STAS

ARCHITECT:
CESO ARCHITECT, INC.
2012 W. 25TH ST., SUITE 200
CLEVELAND, OH 44113
PHONE: (614) 893-6708
CONTACT: JOE HORTON

ENGINEER:
CESO, INC.
2800 CORPORATE EXCHANGE DR., SUITE 400
COLUMBUS, OH 43231
PHONE: (614) 893-6708
CONTACT: JOE HORTON
EOR: BRYAN HALL, P.E.

GOVERNING AGENCIES AND UTILITY COMPANIES:

SEWER:
GENOA OCEOLA SEWER AND WATER
GREG TATARA
EMAIL: GREG@MHOG.ORG
PHONE: (810) 588-7900

GAS SERVICE:
CONSUMERS ENERGY GAS
1000 GRAND OAKS DR.
HOWELL, MI 48116
PHONE: (800) 482-7161

WATER:
MHOG AUTHORITY POTABLE WATER
GREG TATARA
EMAIL: GREG@MHOG.ORG
PHONE: (810) 588-7900

ELECTRIC:
DTE ENERGY ELECTRIC
1095 LAWSON DR.
HOWELL, MI 48843
PHONE: (313) 407-5364

STORMWATER:
LIVINGSTON COUNTY DRAIN COMMISSIONER
PHONE: (517) 546-0040

COMMUNICATIONS:
123.NET, INC
24700 NORTHWESTERN HWY #700
SOUTHFIELD, MI 48075
PHONE: (248) 431-4584

AT&T
1251 LAWSON DR.
HOWELL, MI 48843
PHONE: (616) 881-2268

COMCAST CABLE TV
9675 VILLAGE PL BLVD.
BRIGHTON, MI 48116
PHONE: (655) 962-8525

ZONING:
GENOA TOWNSHIP
2911 DORR RD.
BRIGHTON, MICHIGAN 48116
PHONE: (810) 227-5225

PROPERTY DATA:

PARCEL OWNER:	HOWELL FAMILY VENTURES, LLC
PARCEL ID:	4711-05-400-031, 4711-05-400-032
ADDRESS:	3599 GRAND RIVER PLAZA HOWELL, MI 48843
PROPERTY AREA:	PROPOSED LEASE AREA 0.68 ACRES
ZONING:	RCD - REGIONAL COMMERCIAL DISTRICT
PROPOSED USE:	QUICK SERVICE DRIVE-THRU COFFEE

	REQUIRED	PROPOSED
BUILDING SETBACKS		
FRONTAGE ALONG STREET:	50'	
SIDE:	50'	
REAR:	50'	
PARKING AREA SETBACKS		
FRONT:	20'	
SIDE:	10'	
REAR:	10'	
SIGN SETBACKS:	10' FROM STREET	
MAXIMUM BUILDING HEIGHT:	45'	19' - 8"
BUILDING AREA:	N/A	510 SF

GREAT SHOPPING CENTER
PARKING CALCULATIONS:
-1 SPACE FOR EACH 250 SF OF GROSS RETAIL
FLOOR AREA (FOR FIRST 50,000 SF)
-1 SPACE FOR EACH 275 SF GROSS RETAIL
FLOOR AREA (FOR AREA BETWEEN 50,000 TO 450,000 SF)

GROSS FLOOR AREA = 242,470 SF *85% = 206,100 SF

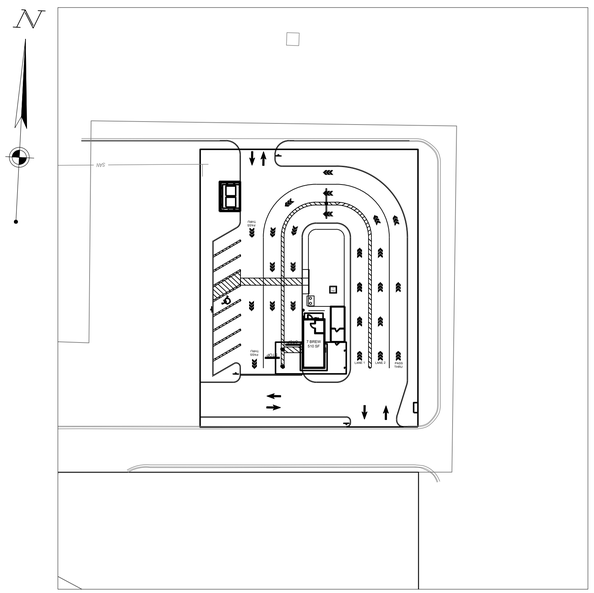
FIRST 50,000 SF: 50,000 SF/250 = 200 SPACES
REMAINDER SF: 156,100 SF/275 = 568 SPACES

REQUIRED 200+568 = 768 SPACES
PROVIDED WITH DEVELOPMENT PLAN: 681 SPACES (52 ADA SPACES)

7BREW SITE PARKING:

TOTAL PARKING SPACES:	8	8
ADA PARKING SPACES:	1 PER 25 SPACES	1
CALCULATION:	1 SPACE FOR EVERY 70 SF OF FLOOR AREA = (510 SF / 70 SF) = 8 SPACES	

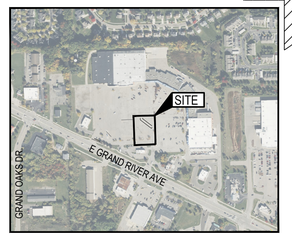
FLOODPLAIN DESIGNATION: PARCEL IS LOCATED WITHIN "ZONE X" AS INDICATED BY THE FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NUMBER 26093C0309D, EFFECTIVE DATE: 09/17/2008; PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.



INDEX MAP
Scale 1" = 50'

Sheet List Table	
Sheet Number	Sheet Title
C1.0	COVER SHEET
C1.1	GENERAL NOTES
C1.2	ALTA NSPS LAND TITLE SURVEY
C1.3	ALTA NSPS LAND TITLE SURVEY
C2.0	DEMOLITION PLAN
C3.0	SITE PLAN
C3.1	TRUCK TURNS
C4.0	GRADING PLAN
C5.0	UTILITY PLAN
C6.0	EROSION & SEDIMENT CONTROL PLAN
C7.0	DUMPSTER DETAIL
L1.0	LANDSCAPE PLAN
L2.0	LANDSCAPE DETAILS
L2.0	LANDSCAPE DETAILS
SL-1	SITE LIGHTING & PHOTOMETICS PLAN

LOCATION MAP
NO SCALE



VICINITY MAP
NO SCALE

ELEVATION MATERIAL PERCENTAGE SUMMARY					
ELEVATION	TOTAL AREA (SF)	WINDOWS(%)	SOLID MATERIAL (%)	BRICK(%)	STONE (%)
WEST ELEVATION -(LEFT SIDE)	813	10.7%	89.3%	45.5%	24.0%
EAST ELEVATION -(RIGHT SIDE)	813	3.1%	96.9%	57.9%	24.8%
NORTH ELEVATION -(REAR)	381	-	100.0%	13.6%	32.3%
SOUTH ELEVATION- (FRONT)	381	15.7%	84.3%	54.9%	11.3%
TOTAL	2,388	7.2%	92.8%	55.8%	23.6%

SURVEY PROVIDED BY:
CESO, INC.
175 MONTROSE WEST AVE., SUITE 400
AKRON, OH 44321
PHONE: 330.665.0660
DATED: 05.19.2026

CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

BENCHMARK — DATUM: NAVD88

BM "A":	THE EAST BONNET BOLT ON A FIRE HYDRANT, BEING 138 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 580 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1006.09'
BM "B":	THE TOP BOLT OF A FIRE HYDRANT, BEING 363 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 860 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1002.19'
BM "C":	A NORTH BONNET BOLT ON A FIRE HYDRANT, BEING 232 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 1090 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1006.55'

MISS DIG 811

SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
BRYAN J. HALL
License No. 6201315589
LICENSED PROFESSIONAL ENGINEER
07/21/2026

7 BREW
HOWELL MICHIGAN
3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

ID	Description	Date

Project Number:
Scale: 767758
Drawn By: RJH
Checked By: JMS
Date: 05/27/2026
Issue: NOT FOR CONSTRUCTION

Drawing Title:
COVER SHEET

C1.0

C:\DCA\CCDocs\CES\017-Brew-OLIO-Howell I MI\Project Files_CES\0\03-CIVIL\PLANS_PLOT\768411_COVER SHEET.dwg - 7/21/2026 - Reed Hemelgarn

GENERAL NOTES

DEMOLITION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL. THE DEMOLITION, REMOVAL, AND DISPOSAL IS TO BE APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL FACILITIES SUCH AS: STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE, STRUCTURES, UTILITIES, WELLS, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL AS SPECIFIED BY A QUALIFIED PROFESSIONAL GEOTECHNICAL ENGINEER. IF UNDOCUMENTED FACILITIES ARE FOUND ON SITE, CONTRACTOR SHALL CONTACT THE OWNER AND UTILITY COMPANY PRIOR TO REMOVAL. ALL FACILITIES SHALL BE PLUGGED, ABANDONED, OR REMOVED PER STATE AND LOCAL REQUIREMENTS.
2. FEDERAL, STATE AND LOCAL CODE REQUIREMENTS SHALL GOVERN THE DISPOSAL OF DEBRIS INCLUDING ANY POTENTIALLY HAZARDOUS AND TOXIC MATERIALS. ALL MATERIALS AND STRUCTURES DESIGNATED AS "TO BE REMOVED" SHALL BE DISPOSED OF OFF SITE AND AT THE COST OF THE CONTRACTOR.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING JOB SITE SAFETY PER OSHA REQUIREMENTS AT ALL TIMES.
4. PRIOR TO DEMOLITION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL THE STATE 811 AND NOTIFY ALL UTILITY COMPANIES TO SCHEDULE UTILITY SERVICE REMOVAL AND/OR ABANDONMENT. ALL UTILITIES SHALL BE REMOVED/RELOCATED PER THE SPECIFICATIONS OF THE UTILITY COMPANIES. THE CONTRACTOR IS RESPONSIBLE TO PAY ALL FEES AND CHARGES ASSOCIATED WITH THIS WORK
5. CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICES TO INHABITED BUILDINGS ON SITE AND ADJACENT PROPERTIES AT ALL TIMES. INTERRUPTIONS SHALL BE APPROVED BY THE OWNERS OF THE BUILDINGS/PROPERTIES.
6. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ONSITE LOCATIONS OF EXISTING UTILITIES. IF THE LOCATION OR ELEVATION OF THE EXISTING UTILITIES ARE FOUND TO BE DIFFERENT FROM THE PLANS, CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. CONTRACTOR SHALL PROTECT EXISTING SITE FEATURES TO REMAIN INSIDE AND OUTSIDE CONSTRUCTION LIMITS. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGES AND NOTIFY THE CITY/COUNTY PRIOR TO CONSTRUCTION START. ANY EXISTING SITE FEATURE TO REMAIN THAT IS DAMAGED DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, CURB, ETC. SHALL BE REPAIRED TO A CONDITION THAT IS EQUAL TO, OR BETTER THAN, THE EXISTING CONDITIONS. PRIOR TO BEING DAMAGED, THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST.
8. CONTINUOUS ACCESS SHALL BE MAINTAINED TO THE SURROUNDING PROPERTIES AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH STATE DEPARTMENT OF TRANSPORTATION REGULATIONS AND LOCAL REGULATIONS.
10. THE CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING CONSTRUCTION FENCE, SIGNS, ETC. TO WARN AND KEEP UNAUTHORIZED PEOPLE OFF SITE FOR THE DURATION OF THE PROJECT.
11. PRIOR TO DEMOLITION, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED PER THE GOVERNING AGENCIES GUIDELINES AND STANDARDS. DUST CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. SAWCUT LINE PROVIDED IS FOR REFERENCE ONLY. CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING THE EXTENT OF THE SAWCUT THAT WILL BE REQUIRED AS WELL AS PAVEMENT REPAIRS TO INSTALL UTILITY TRENCHING. IF ANY DAMAGE OCCURS ON ANY OF THE SURROUNDING PAVEMENT, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THAT WHICH IS NECESSARY TO COMPLETE THE INTENT OF THE PROPOSED IMPROVEMENTS. SAWCUT EXISTING PAVEMENT TO FULL DEPTH, USING CARE TO CUT NEAT, STRAIGHT LINES. CUT AT EXISTING JOINTS WHERE POSSIBLE.
13. THE CONTRACTOR SHALL MAINTAIN A WELL-DRAINED SITE, FREE OF STANDING WATER DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY DRAINAGE MEASURES DURING CONSTRUCTION.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO STUDY THE PLANS AND VISIT THE SITE TO DETERMINE THE ITEMS THAT MUST BE REMOVED TO COMPLY WITH THE SITE DEVELOPMENT PLANS. NO EXTRA FEE WILL BE PAID FOR THE REMOVAL OF ANY ITEM NOT LISTED THAT IS VISIBLE UPON A SITE VISIT. THE DEMOLITION PLAN IS INTENDED TO PRESENT THE SCOPE OF THE DEMOLITION, AND DOES NOT GUARANTEE THAT ALL ITEMS ARE ADDRESSED.
15. THE CONTRACTOR SHALL OBTAIN ALL PERMITS FOR ALL SITE DEVELOPMENT WORK, PAY ALL FEES FOR PERMITS AND CHECK ALL GOVERNING AUTHORITIES' SPECIFICATIONS FOR BUT NOT LIMITED TO, GUTTERS, SIDEWALKS, POLES, AND OTHER STRUCTURES, INCLUDING THE REMOVAL OR RELOCATION OF EXISTING UTILITIES OR OTHER PHYSICAL OBJECTS SHOWN ON PLANS OR NOTED OTHERWISE.
16. THE CONTRACTOR SHALL CREATE AND IMPLEMENT AN EROSION AND SEDIMENTATION CONTROL PLAN FOR ALL SITE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROJECT. THE PLAN MUST CONFORM TO THE EROSION AND SEDIMENTATION REQUIREMENTS OF THE CONSTRUCTION GENERAL PERMIT OR LOCAL STANDARDS AND CODES, WHICHEVER IS MORE STRINGENT.
17. ALL COSTS FOR INSPECTIONS AND/OR TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS NOTED OTHERWISE.

SITE NOTES

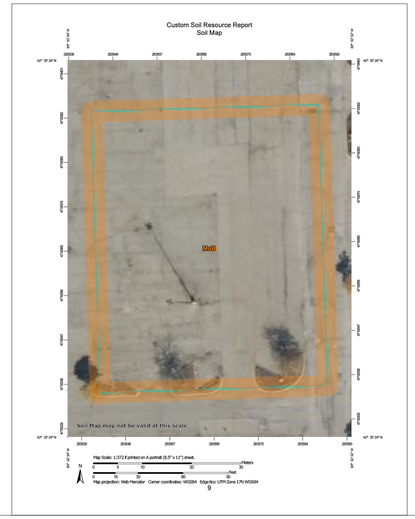
1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL TOWNSHIP REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. ALL MATERIAL NOTED ON DRAWINGS WILL BE SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS TO COORDINATE ACCESS POINTS AND ELEVATIONS. REFER TO ARCHITECTURAL PLANS. FOR EXACT LOCATIONS AND DIMENSIONS OF DOORS, ENTRY RAMP, AND CANOPY.
4. THE CONTRACTOR SHALL OBTAIN ALL PERMITS FOR ALL SITE DEVELOPMENT WORK, PAY ALL FEES FOR PERMITS AND CHECK ALL GOVERNING AUTHORITIES' SPECIFICATIONS FOR BUT NOT LIMITED TO, GUTTERS, SIDEWALKS, POLES, AND OTHER STRUCTURES, INCLUDING THE REMOVAL OR RELOCATION OF EXISTING UTILITIES OR OTHER PHYSICAL OBJECTS SHOWN ON PLANS OR NOTED OTHERWISE.
5. THE CONTRACTOR SHALL CREATE AND IMPLEMENT AN EROSION AND SEDIMENTATION CONTROL PLAN FOR ALL SITE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROJECT. THE PLAN MUST CONFORM TO THE EROSION AND SEDIMENTATION REQUIREMENTS OF THE CONSTRUCTION GENERAL PERMIT OR LOCAL STANDARDS AND CODES, WHICHEVER IS MORE STRINGENT.
6. ALL COSTS FOR INSPECTIONS AND/OR TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS NOTED OTHERWISE.
7. ACCESSIBILITY STANDARDS SHALL BE IN ACCORDANCE WITH FEDERAL AND LOCAL REQUIREMENTS FOR HANDICAP ACCESSIBILITY, INCLUDING BUT NOT LIMITED TO THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES. ADA PARKING STALLS SHALL MEET ADA GRADE GUIDELINES. CONTRACTOR SHALL FIELD VERIFY EXISTING GRADES AT ACCESS POINTS, ACCESSIBLE ROUTES, AND EXISTING PARKING TO REMAIN TO DETERMINE COMPLIANCE WITH STANDARDS.
8. ALL DISTURBED AREAS ARE TO RECEIVE 6" OF TOPSOIL, SEED, MULCH AND WATER UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.
9. ALL DIMENSIONS AND RADII ARE TO THE FACE OF THE CURB OR EDGE OF PAVEMENT, AS APPLICABLE, UNLESS OTHERWISE NOTED.
10. ALL CURB RADII ARE 5 FEET UNLESS OTHERWISE NOTED.
11. PROVIDE SIGNAGE AND STRIPING AS SHOWN. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL COMPLY WITH THE GOVERNING MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.). PAVEMENT MARKINGS ON ASPHALT SHALL BE WHITE. PAVEMENT MARKINGS ON CONCRETE SHALL BE YELLOW.
12. REFER TO ARCHITECTURAL PLANS FOR PROPOSED BUILDING SIGNAGE.
13. REFER TO MECHANICAL PLANS FOR EQUIPMENT LAYOUT.
14. REFER TO ELECTRICAL PLANS FOR ELECTRICAL WORK.
15. REFER TO GEOTECHNICAL ENGINEERING REPORT FOR SITE WORK PREPARATION/RECOMMENDATIONS AND PAVEMENT SECTIONS.
16. REFER TO ORIGINAL SURVEY PROVIDED BY CESO, INC. DATED 05/19/2026.
17. ALL LIGHT POLES TO BE LOCATED 3' FROM THE BACK OF CURB, AS MEASURED FROM THE FACE OF POLE FOUNDATION, UNLESS OTHERWISE DENOTED ON PLANS.

GRADING NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. THE TOPOGRAPHIC SURVEY WAS PERFORMED BY A REGISTERED LAND SURVEYOR. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW.
3. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
4. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE EPA OR APPLICABLE STATE GENERAL N.P.D.E.S. PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
5. EXISTING AND PROPOSED GRADE CONTOUR INTERVALS ARE SHOWN AT 1 FOOT INTERVALS.
6. ALL SPOT ELEVATIONS REFER TO FINISHED PAVEMENT ELEVATIONS UNLESS OTHERWISE NOTED.
7. ALL ADA ACCESSIBLE PARKING SPACES AND LOADING AREAS SHALL BE GRADED WITH A 2.0% MAXIMUM SLOPE IN ALL DIRECTIONS. ALL ADA ACCESSIBLE ROUTES SHALL BE GRADED WITH A 2.0% MAXIMUM CROSS SLOPE AND 5.0% MAXIMUM RUNNING SLOPE.
8. MAINTAIN EXISTING DRAINAGE PATTERN THROUGHOUT THE SITE, EXCEPT WITHIN THE LIMITS OF DISTURBANCE (LOD).
9. COORDINATE GRADES AT BUILDING ENTRIES WITH ARCHITECTURAL PLANS.
10. EXISTING DRAINAGE STRUCTURES SHALL BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES ARE TO BE CLEANED TO REMOVE ALL SILT AND DEBRIS AFTER CONSTRUCTION IS COMPLETE.
11. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO A CONDITION EQUAL TO OR BETTER THAN IT'S CONDITION PRIOR TO DAMAGE.
12. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDING AND WITHIN PAVED AREAS.
13. ALL TOPSOIL MUST BE REMOVED BEFORE FILL MATERIAL IS PLACED.
14. ALL WET, OR OTHERWISE UNSUITABLE SOILS MUST BE STABILIZED. THIS MAY BE ACCOMPLISHED BY DRYING, REMOVAL & REPLACEMENT, REMOVAL & DRYING & RECOMPACTION, OR SOIL TREATMENT (LIME/CEMENT) UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL GEOTECHNICAL ENGINEER.
15. ALL UNSURFACED AREAS, DISTURBED BY GRADING, OPERATION SHALL RECEIVE 6" OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER AND SEED WITH LOW MAINTENANCE GRASS SEED MIX. CONTRACTOR SHALL SEED DISTURBED AREAS IN ACCORDANCE WITH SPECIFICATIONS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED. ALL EXPOSED SURFACE AREAS SHALL BE STABILIZED PER THE SWPPP AND LANDSCAPE REQUIREMENTS AS PART OF THIS PLAN SET.
16. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS SOIL TIGHT.
17. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
18. STORM PIPE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

MATERIAL	TYPE	PIPE SPEC	JOINT SPEC	INSTALLATION	ACCEPTABLE AREAS OF USE
REINFORCED CONCRETE PIPE (RCP)	CLASS III, IV, V	ASTM C-76	ASTM C443	ASTM C1479	WITHIN R/W, COVER VARIES WITH PIPE CLASS
HIGH DENSITY POLY-ETHYLENE (HDPE)	SMOOTH-WALLED CORRUGATED ADS-N12 OR EQUAL	AASHTO M294 (TYPE S)	ASTM F477	ASTM D2321	ON SITE, 12" TO 60" DIA.
POLY VINYL CHLORIDE (PVC)	SDR 35	ASTM D3034	ASTM D3212	ASTM D2321	ON SITE, 4" TO 10"

19. ALL STORM SEWER STRUCTURE GRATES AND FRAMES WITHIN PAVEMENT SHALL BE HEAVY DUTY.
20. ALL STORM DRAINAGE SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, COUNTY AND MDOT STANDARDS.
21. ALL DOWNSPOUT DRAIN LINES OR ROOF LEADERS SHALL HAVE A 1.0% MINIMUM SLOPE, UNLESS OTHERWISE NOTED. CONNECT ALL DOWNSPOUTS AND ROOF LEADERS TO THE STORM SEWER SYSTEM. REFER TO ARCHITECTURAL PLANS FOR DOWNSPOUT AND ROOF LEADER LOCATIONS. PROVIDE POSITIVE DRAINAGE AND PAVEMENT REPAIR AS NEEDED.
22. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
23. THE STORM SEWER GRADE WILL BE SUCH THAT A MINIMUM COVER IS MAINTAINED TO WITHSTAND AASHTO HS-25 LOADING ON THE PIPE. PROVIDE MINIMUM 2.0 FEET OF COVER FOR ALL STORM SEWERS UNLESS OTHERWISE NOTED.
24. WHEN A SANITARY SEWER MAIN LIES ABOVE A STORM SEWER, OR WITHIN 18 INCHES BELOW, THE SANITARY SEWER WILL HAVE AN IMPERVIOUS ENCASEMENT OR BE CONSTRUCTED OF STRUCTURAL SEWER PIPE FOR A MINIMUM OF 10 FEET ON EACH SIDE OF WHERE THE STORM SEWER CROSSES.
25. IF EXISTING FIELD TILES ARE ENCOUNTERED DURING CONSTRUCTION THEY SHALL BE REPAIRED AND/OR TIED INTO A STORM SEWER SYSTEM AS NEEDED TO MAINTAIN POSITIVE DRAINAGE.



UTILITY NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE.
2. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
3. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF O.S.H.A. DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, AND OTHER MEANS OF PROTECTION. THIS TO INCLUDE BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR O.S.H.A.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITY DURING CONSTRUCTION AT NO COST TO THE OWNER.
5. ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
6. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY REGULATIONS AND THE OWNER'S INSPECTION AUTHORITIES.
7. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITY'S INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
8. WATER AND SANITARY UTILITIES SHALL HAVE TEN (10') FEET OF HORIZONTAL CLEARANCE WHEN PARALLEL OR 18" VERTICAL CLEARANCE WHEN CROSSING. ALL CLEARANCE DISTANCES SHALL BE MEASURE FROM OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE. THE CROSSING SHALL BE ARRANGED SO THAT THE SANITARY SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER LINE JOINTS.
9. IF A WATER LINE PASSES UNDER THE SANITARY SEWER LINE, THE SEWER LINE SHOULD BE CONSTRUCTED OF A WATERTIGHT MATERIAL APPROVED BY THE REGULATORY AGENCY FOR USE IN WATER MAIN CONSTRUCTION AND SHALL EXTEND TEN (10') FEET ON BOTH SIDES OF THE CROSSING, AS MEASURED PERPENDICULAR TO THE WATER LINES. ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO MAINTAIN LINE AND GRADE.
10. UNDERGROUND LINES SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
11. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY REGULATIONS AND THE OWNER'S INSPECTION AUTHORITIES.
12. UTILITY TRENCHES WITHIN PAVED AREAS TO BE BACKFILLED PER UTILITY TRENCH DETAIL PROVIDED WITHIN THE CONSTRUCTION DETAILS SHEET.
13. ALL WATER LINE WORK SHALL BE PERFORMED IN ACCORDANCE WITH MHOG CONSTRUCTION STANDARDS AND STATE REGULATIONS.
14. INSTALL ALL WATER LINES WITH A MINIMUM COVER OF 5'-6".
15. ON-SITE WATER LINE MATERIAL SHALL BE AS FOLLOWS:

MATERIAL	PRESSURE RATING	PIPE SPEC	FITTINGS	INSTALLATION	ACCEPTABLE AREAS OF USE
HIGH-DENSITY POLY-ETHYLENE (HPDE TUBING)	SDR 9 P.C. = 250 PSI	ASTM D2239 AWWA C901 ASTM F714	ASTM D3350 ASTM D3261	ASTM D2774	ON SITE, < 3" DIA.
COPPER 1"-3"	TYPE "K"	ASTM B88	AWWA C800	AWWA C800	DOMESTIC WATERLINES 1"-3"
PE 4710 POLY-ETHYLENE PLASTIC (IPS)	SDR 11 P.C. = 200 PSI	ASTM D3035 AWWA C901	ASTM D3350 ASTM D3261	ASTM D2774	ON SITE, 2" TO 3" DIA.
P.V.C. POLY VINYL CHLORIDE 4"- 8" C900	C900	AWWA C901 (RATED DR 14)	ASTM F-477 ASTM D3139	AWWA C900 C651	ON SITE, 4"-8" WATER LINES & FIRE LINES INSTALL W/ TRACER & TAPE #12 COPPER
DUCTILE IRON PIPE 4"-12"	CLASS 52 P.C. = 350PSI	AWWA C104, C110, C151, C500	AWWA C111	AWWA C600, C651	6" FIRE HYDRANT LEADS
PE 4710 POLY-ETHYLENE PLASTIC (DIPS)	SDR 9 P.C. = 250 PSI	ASTM D2239 ASTM F714 AWWA C906	ASTM D3350 ASTM D3261	ASTM D2774	ON SITE, 4" DIA. AND LARGER

16. ON-SITE SANITARY SEWER LINE MATERIAL SHALL BE AS FOLLOWS:

MATERIAL	PRESSURE RATING	PIPE SPEC	FITTINGS	INSTALLATION	ACCEPTABLE AREAS OF USE
POLY VINYL CHLORIDE (PVC)	SDR 35	ASTM D3034	ASTM D3212	ASTM D2321 WITH TYPE 1 BEDDING	ON SITE, 6" TO 8" DIA., LESS THAN 8.5' OF COVER
POLY VINYL CHLORIDE (PVC)	SDR 26	ASTM 3034	ASTM D3212	ASTM D2321 WITH TYPE 1 BEDDING	ON SITE, 6" TO 8" DIA., GREATER THAN OR EQUAL TO 8.5' OF COVER

17. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS, SERVICE SIZES TO BE DETERMINED BY ARCHITECT.
18. CLEAN OUTS AND CURB BOXES WITHIN THE PAVED AREAS MUST HAVE TRAFFIC LOADING FRAMES AND COVERS.

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
BRYAN J. HALL
License No. 6201315589
LICENSED PROFESSIONAL ENGINEER
07/21/2026

7 BREW
HOWELL MICHIGAN
3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

ID	Description	Date

Project Number:
Scale: 767758
Drawn By: RJH
Checked By: JMS
Date: 05/27/2026
Issue: NOT FOR CONSTRUCTION

Drawing Title:
GENERAL NOTES

C1.1

C:\DC\ACCDocs\CESO\7-Brew-QLIO-Howell Mill\Project Files_CESO\03-CIVIL\LPLAN_PLOT\768411_COVER SHEET .dwg - 7/21/2026 - Reed Hemelgarn

NORTH
SITE
Kroger
Liberty University
Liberty Drive
Trail Lane
Snowden Lane
North Snowden Lane
South Snowden Lane
Audrey Kae Lane
Aster Boulevard
Hampton Miller Boulevard
Kirkway Court
Kirkway Drive
Toddlem
Toddlem
Toddlem
South Lawton Ridge
Lawton Lane
Lawton Lane
Lawton Lane

SURVEYOR NOTES:

1. This survey does not constitute a title search by the surveyor. All information regarding record easements, and other documents that might affect the quality of title to the parcel shown hereon we obtained through a certified title commitment conducted by First American Title Insurance Company National Commercial Servces, Commitment Number 1005190 and bearing an effective date of February 19, 2026 at 8:00 a.m.

2. Direct access to the surveyed property is available via an access drive on Grand River Ave shown hereon.

3. The utilities shown are located from field survey information, MISS DIG 811 Ticket #20260422055552-000, and/or existing drawings supplied by client. The surveyor makes no guarantee that the utilities located comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the utilities located are in the exact location indicated although the surveyor does certify that they are located as accurately as possible from information available.

4. Parcel is located within Zone "X" (Area of Minimal Flood Hazard) as indicated by the Flood Insurance Rate Map (FIRM) Map Number 26093C0309D, effective date: 09-17-2008 published by the Federal Emergency Management Agency.

5. There are 0 regular sparking spaces & and 0 handicap spaces on the topographic area.

6. There was observed evidence of recent earth moving work, building construction or building additions at the time of this survey, the topographic area appears to be disturbed.

7. No proposed changes in street right of way lines were provided to the surveyor. No evidence of street or sidewalk construction or repairs observed at time of survey.

8. The nearest intersecting streets are Grand River Avenue with Grand Oaks Drive, located approximately 600 feet westerly of the surveyed property.

TOPOGRAPHIC LEGEND

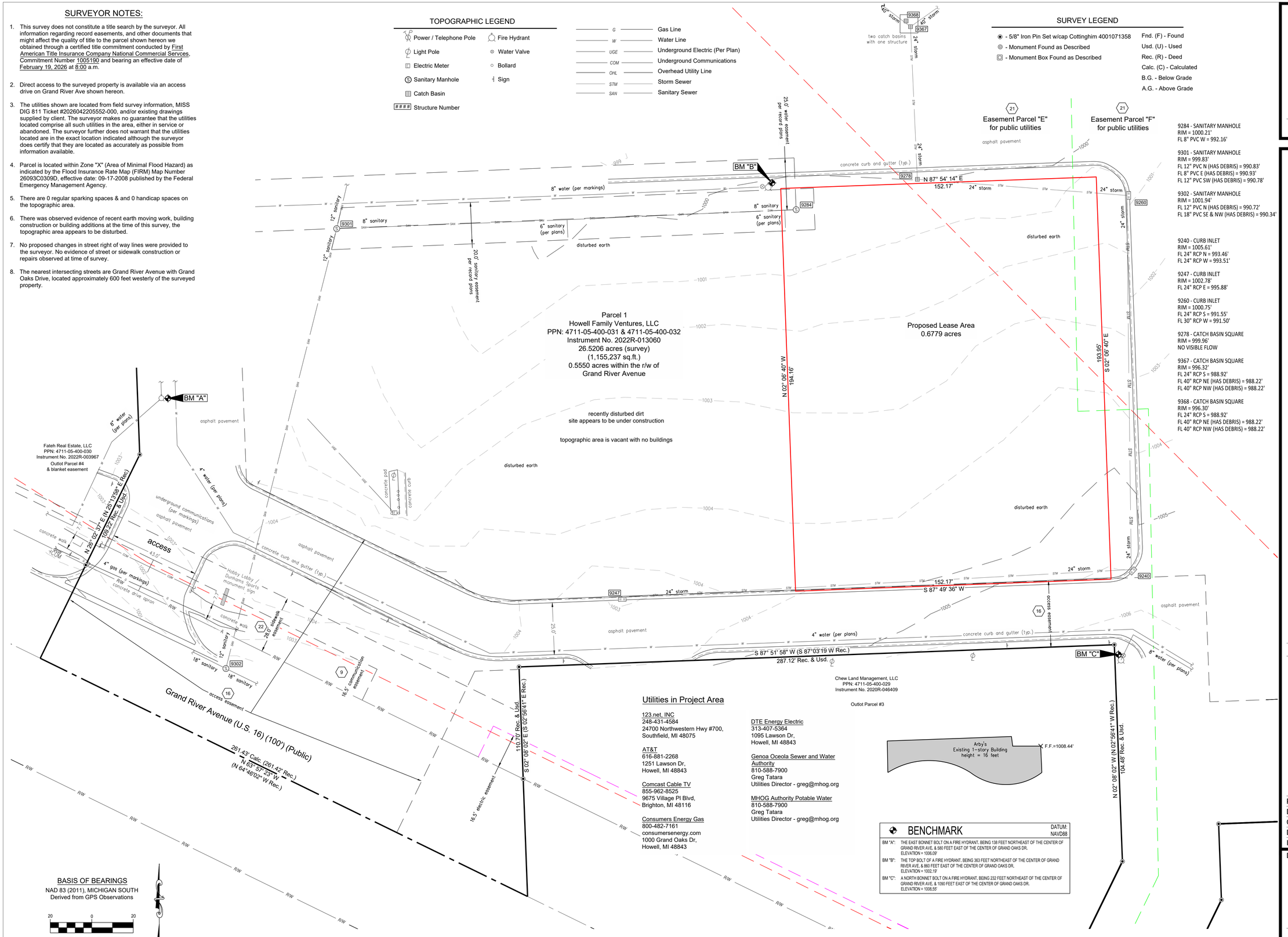
- Power / Telephone Pole
- Light Pole
- Electric Meter
- Sanitary Manhole
- Catch Basin
- #### Structure Number
- Fire Hydrant
- Water Valve
- Bollard
- Sign

- G — Gas Line
- W — Water Line
- UGE — Underground Electric (Per Plan)
- COM — Underground Communications
- OHL — Overhead Utility Line
- STM — Storm Sewer
- SAN — Sanitary Sewer

SURVEY LEGEND

- ◉ - 5/8" Iron Pin Set w/cap Cottinghim 4001071358
- ◎ - Monument Found as Described
- ▣ - Monument Box Found as Described

Fnd. (F) - Found
Usd. (U) - Used
Rec. (C) - Deed
Calc. (C) - Calculated
B.G. - Below Grade
A.G. - Above Grade



Utilities in Project Area

123.net, INC
248-431-4584
24700 Northwestern Hwy #700,
Southfield, MI 48075

AT&T
616-881-2268
1251 Lawson Dr,
Howell, MI 48843

Comcast Cable TV
855-962-8525
9675 Village Pl Blvd,
Brighton, MI 48116

Consumers Energy Gas
800-482-7161
consumersenergy.com
1000 Grand Oaks Dr,
Howell, MI 48843

DTE Energy Electric
313-407-5364
1095 Lawson Dr,
Howell, MI 48843

Genoa Oceola Sewer and Water Authority
810-588-7900
Greg Tatara
Utilities Director - greg@mhog.org

MHOG Authority Potable Water
810-588-7900
Greg Tatara
Utilities Director - greg@mhog.org

BENCHMARK

DATUM: NAVD88

BM "A": THE EAST BONNET BOLT ON A FIRE HYDRANT, BEING 138 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 580 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1006.09'

BM "B": THE TOP BOLT OF A FIRE HYDRANT, BEING 363 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 860 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1002.19'

BM "C": A NORTH BONNET BOLT ON A FIRE HYDRANT, BEING 232 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 1090 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1008.55'

9284 - SANITARY MANHOLE
RIM = 1000.21'
FL 8" PVC W = 992.16'

9301 - SANITARY MANHOLE
RIM = 999.83'
FL 12" PVC N (HAS DEBRIS) = 990.83'
FL 8" PVC E (HAS DEBRIS) = 990.93'
FL 12" PVC SW (HAS DEBRIS) = 990.78'

9302 - SANITARY MANHOLE
RIM = 1001.94'
FL 12" PVC N (HAS DEBRIS) = 990.72'
FL 18" PVC SE & NW (HAS DEBRIS) = 990.34'

9240 - CURB INLET
RIM = 1005.61'
FL 24" RCP N = 993.46'
FL 24" RCP W = 993.51'

9247 - CURB INLET
RIM = 1002.78'
FL 24" RCP E = 995.88'

9260 - CURB INLET
RIM = 1000.75'
FL 24" RCP S = 991.55'
FL 30" RCP W = 991.50'

9278 - CATCH BASIN SQUARE
RIM = 999.96'
NO VISIBLE FLOW

9367 - CATCH BASIN SQUARE
RIM = 996.32'
FL 24" RCP S = 988.92'
FL 40" RCP NE (HAS DEBRIS) = 988.22'
FL 40" RCP NW (HAS DEBRIS) = 988.22'

9368 - CATCH BASIN SQUARE
RIM = 996.30'
FL 24" RCP S = 988.92'
FL 40" RCP NE (HAS DEBRIS) = 988.22'
FL 40" RCP NW (HAS DEBRIS) = 988.22'

CESO
WWW.CESOINC.COM
175 Montrose West Ave., Suite 400
Akron, OH 44321
Phone: 330.665.0660 Fax: 888.208.4826

ALTA / NSPS LAND TITLE SURVEY

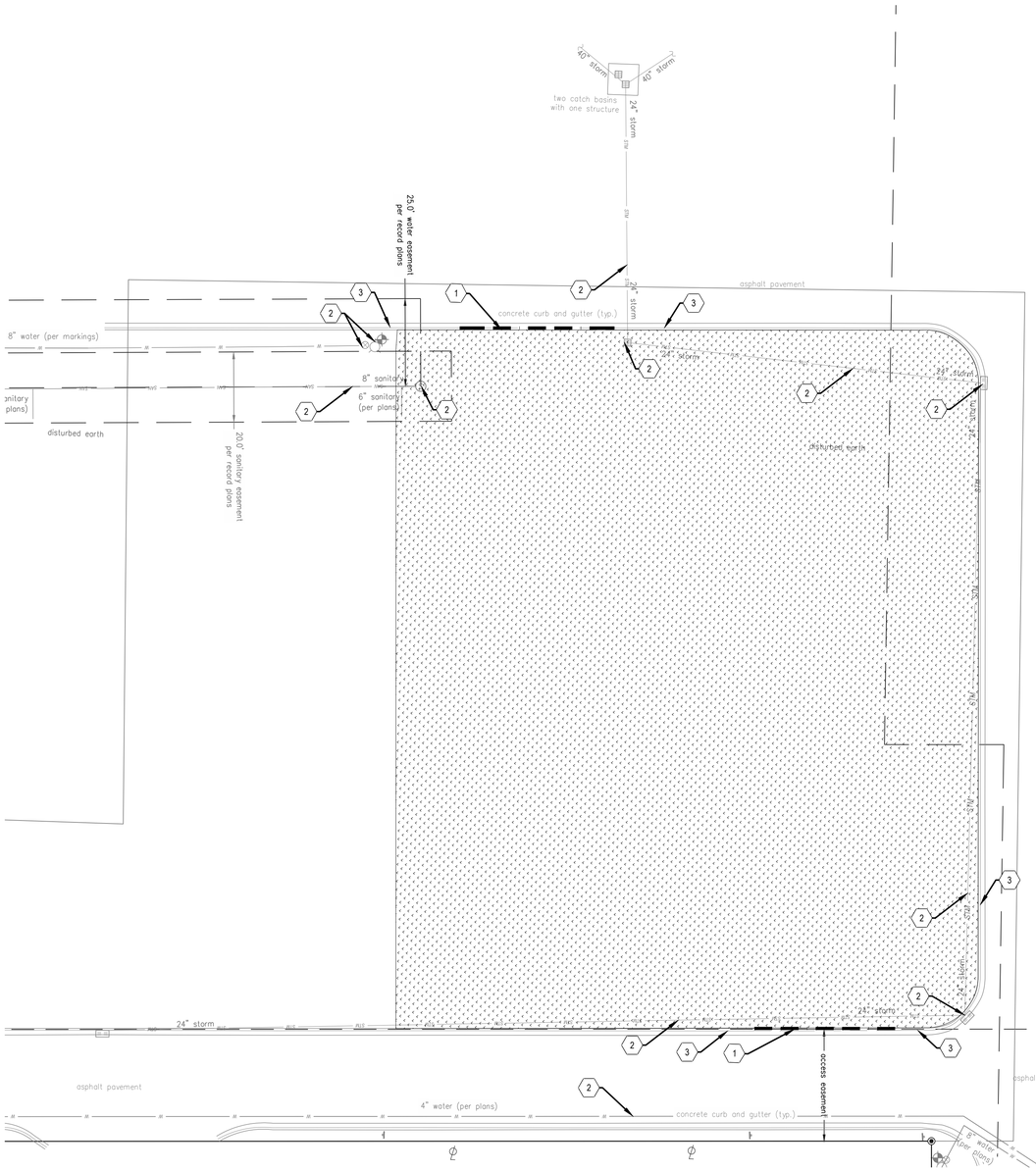
Brewtopia 7-Brew

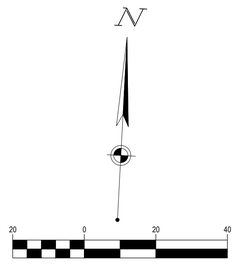
3599 and 3669 Grand River Avenue
Section 5, Township 2 North, Range 5 East, Genoa TWP, Livingston County, Michigan

ID	Revisions / Submissions	Date
	Description	

Project Number:	768411
Drawn By:	CCR
Checked By:	JRC / SJM
Date:	05-29-2026
Issue:	

Drawing Title:
Topographic Survey





GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

DEMOLITION LEGEND

EXISTING

REFER TO C1.3 FOR EXISTING FEATURES LEGEND

PROPOSED

- SITE CLEARING LIMITS
- REMOVE EXISTING ASPHALT PAVEMENT (OR AS NOTED ON THE PLANS)
- SAWCUT LINE
- REMOVE EXISTING CURB & GUTTER

CONTRACTOR NOTE:

1. CONTRACTOR SHALL VERIFY ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES.

CODED NOTES:

1. HORIZONTAL SAWCUT AND REMOVE EXISTING CURB & GUTTER.
2. EXISTING UTILITY LINE/STRUCTURE TO REMAIN. CONTRACTOR TO PROTECT IN PLACE.
3. PROTECT EXISTING CURB AND GUTTER, DO NOT REMOVE.

BENCHMARK

DATUM: NAVD88

BM "A": THE EAST BONNET BOLT ON A FIRE HYDRANT, BEING 138 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 580 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1006.09'

BM "B": THE TOP BOLT OF A FIRE HYDRANT, BEING 363 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 860 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1002.19'

BM "C": A NORTH BONNET BOLT ON A FIRE HYDRANT, BEING 232 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 1090 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1006.55'

MISS DIG 811

SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
BRYAN J. HALL
License No. 6201315589
LICENSED PROFESSIONAL ENGINEER
07/21/2026

7 BREW
HOWELL MICHIGAN

3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

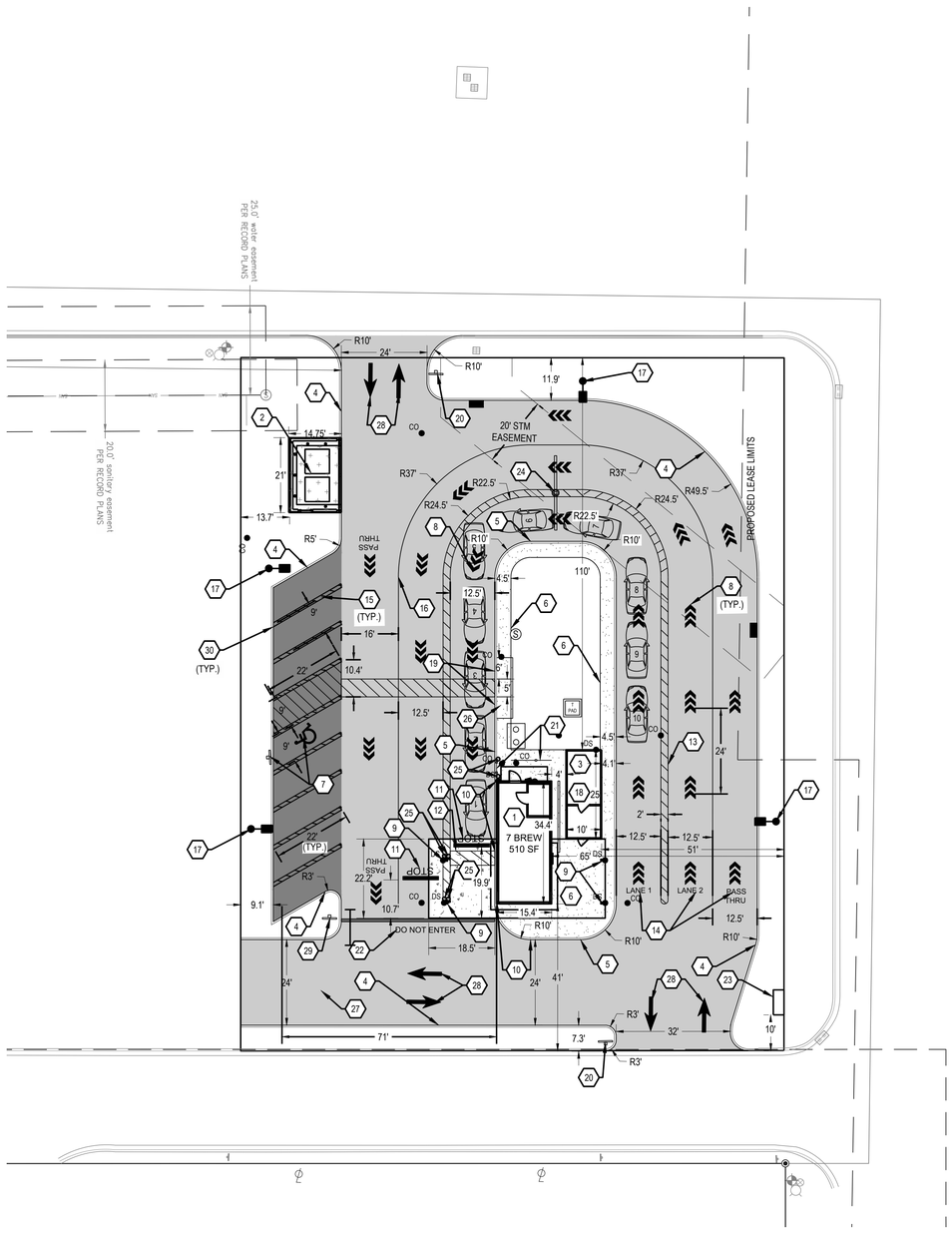
ID	Description	Date

Project Number:	
Scale:	767758
Drawn By:	RJH
Checked By:	JMS
Date:	05/27/2026
Issue:	NOT FOR CONSTRUCTION

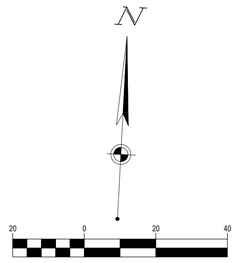
Drawing Title:
DEMOLITION PLAN

C2.0

C:\DCACCDocs\CES\017-Brew-OLIO-Howell MI\Project Files_CES\0\03-CIVIL\PLANS_PLOT\768411_DEMO PLAN.dwg - 7/21/2026 - Reed Hemelgarn



AREA TABLE-PROPERTY			
	PERVIOUS COVERAGE (SF)	IMPERVIOUS COVERAGE (SF)	TOTAL LIMITS OF DISTURBANCE AREA
PRE-DEVELOPED	1,120 SF (3.4%)	31,926 SF (96.6%)	33,046 SF
POST-DEVELOPED	11,177 SF (33.8%)	21,869 SF (66.2%)	33,046 SF
PERCENT REDUCTION		30.4% DECREASE	



GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

STRIPING PAINT COLORS:

SUBSTITUTION TO COLORS MUST BE APPROVED BY 7 BREW

WHITE	BLUE	RED
PMS 000C	PMS 293	PMS 185 C
R: 255 C: 255 B: 255	R: 0 G: 58 B: 159	R: 234 G: 0 B: 41
HEX: FFFFFF	HEX: 003A9F	HEX: EA0029

PAINT TYPE:

SHERWIN- WILLIAMS PRO PARK, SETFAST, HOTLINE OR AN APPROVED EQUAL.

SITE LEGEND

EXISTING

REFER TO C1.3 FOR EXISTING FEATURES LEGEND

PROPOSED

- PROPOSED STANDARD DUTY ASPHALT PAVEMENT
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- PROPOSED CONCRETE DUMPSTER PAD
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- R/W — RIGHT-OF-WAY
- PROPERTY LINE
- SETBACK
- EASEMENT
- CENTERLINE
- BUILDING
- CONCRETE CURB
- PAVEMENT/WALK
- 7 — PARKING SPACE COUNT
- SIGN
- CATCH BASIN
- STORM MANHOLE
- SANITARY MANHOLE
- CURB INLET
- CO — CLEANOUT
- DS — DOWN SPOUT
- LIGHT POLE

CODED NOTES:

1. PROPOSED 510 SF BUILDING. HEIGHT- 19'-2".
2. PROPOSED TRASH ENCLOSURE PER LOCAL REQUIREMENTS. SEE SHEET C7.0 FOR DETAILS.
3. PROPOSED 250 SF REMOTE COOLER BUILDING. HEIGHT= 11'-2".
4. PROPOSED 6" CONCRETE CURB.
5. PROPOSED CONCRETE CURB W/ SIDEWALK.
6. PROPOSED CONCRETE SIDEWALK.
7. ADA ACCESSIBLE PARKING SPACE WITH SIGNAGE.
8. SOLID WHITE TRIPLE ARROW PAVEMENT MARKER.
9. PROPOSED CANOPY COLUMN LOCATION.
10. TRANSITION FROM FLUSH TO FULL-HEIGHT 6" CURB.
11. 12" SOLID RED STOP BAR WITH 48-INCH TALL "STOP" TEXT PAINTED IN RED.
12. ALIGN 4" SOLID WHITE CROSS WALK MARKER WITH SLIDING DOOR PANEL AT FRONT OPENING.
13. 4-INCH SOLID BLUE PAVEMENT MARKER, TYPICAL MIDLINES SPACE AT 24" O.C.
14. 48-INCH TALL "LANE #" PAINTED IN WHITE.
15. 4-INCH SOLID BLUE PAVEMENTS MARKER FOR PARKING, TYPICAL.
16. 4-INCH SOLID BLUE PAVEMENT MARKER, TYPICAL
17. PROPOSED LIGHT POLE. REFER TO SL-1.
18. 1' WIDTH CONCRETE AROUND REMOTE COOLER BUILDING.
19. PROPOSED CURB TAPER.
20. PROPOSED STOP SIGN.
21. PROPOSED LOWER SCREEN WALL.
22. 12" SOLID WHITE STOP BAR WITH 48-INCH TALL "DO NOT ENTER" TEXT PAINTED IN WHITE.
23. PROPOSED MONUMENT SIGN.
24. PROPOSED DOUBLE SIDED, SINGLE PANEL DRIVE-THRU CLEARANCE BAR.
25. PROPOSED DRIVE THOUGH BOLLARD.
26. PROPOSED SIDEWALK RAMP.
27. PROPOSED TEMPORARY TRAFFIC BARRICADE.
28. SOLID WHITE DIRECTIONAL TRAFFIC ARROWS, TYPICAL.
29. PROPOSED " DO NOT ENTER" SIGN.
30. PARKING SPACES SHALL BE MARKED WITH LOOP STRIPES AT 4" WIDE AND SPACED 24" APART.

BENCHMARK

DATUM: NAVD88

BM "A": THE EAST BONNET BOLT ON A FIRE HYDRANT, BEING 138 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 580 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1006.09'

BM "B": THE TOP BOLT OF A FIRE HYDRANT, BEING 363 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 860 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1002.19'

BM "C": A NORTH BONNET BOLT ON A FIRE HYDRANT, BEING 232 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 1090 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1008.55'

MISS DIG 811

SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
BRYAN J. HALL
License No. 6201315589
LICENSED PROFESSIONAL ENGINEER
07/21/2026

7 BREW
HOWELL MICHIGAN
3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

ID	Description	Date

Project Number: 767758
Scale:
Drawn By: RJH
Checked By: JMS
Date: 05/27/2026
Issue: NOT FOR CONSTRUCTION

Drawing Title:
SITE PLAN

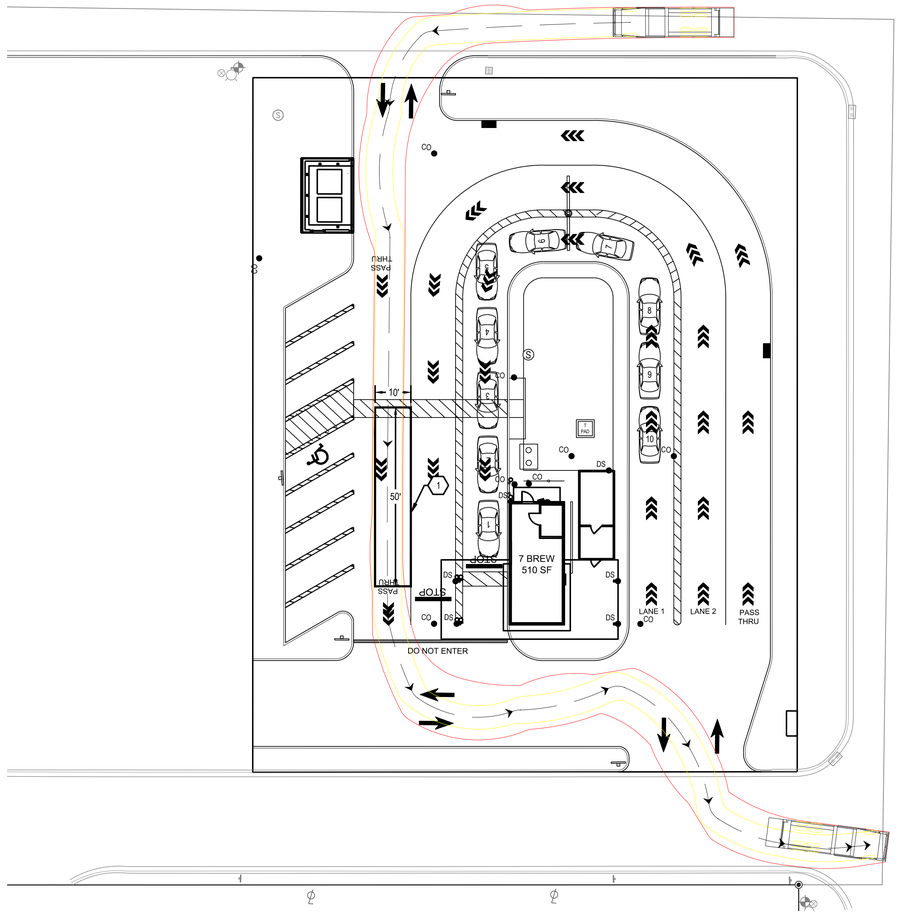
C3.0

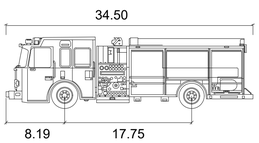
C:\DC\ACCDocs\CESO\7-Brew-OLIO-Howell Mill\Project Files_CESO\03-CIVIL\PLAN_PLOT\768411_SITE PLAN.dwg - 7/21/2026 - Reed Hemelgarn

TURNING LEGEND

WHEEL TRACKING PATH

BODY OVERHANG TRACKING PATH





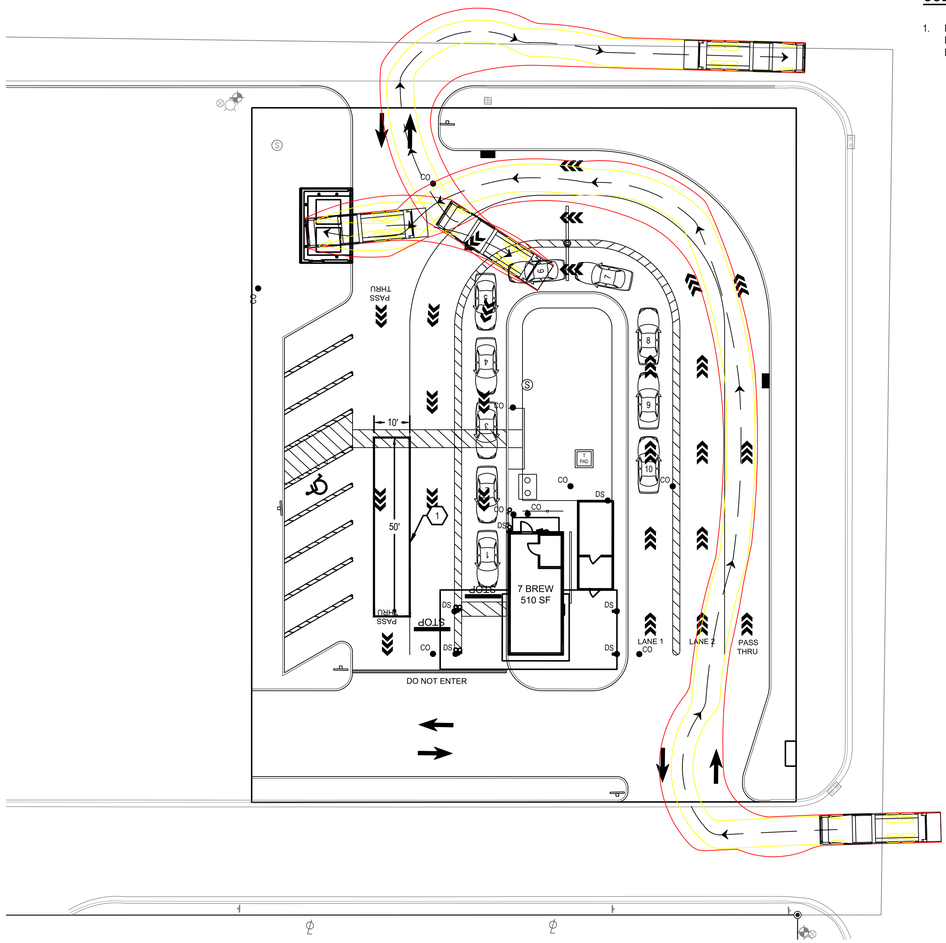
Spartan Gladiator 2013

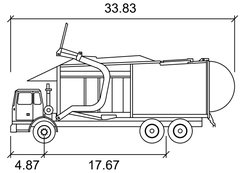
	feet
Width	: 8.25
Track	: 8.20
Lock to Lock Time	: 6.0
Steering Angle	: 36.7

TURNING LEGEND

WHEEL TRACKING PATH

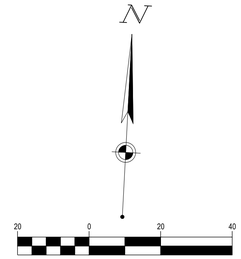
BODY OVERHANG TRACKING PATH





Wayne Titan

	feet
Width	: 8.46
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 45.0



GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

CODED NOTES:

1. PROPOSED 10'X50' LOADING AREA LOCATION. DELIVERY SHALL BE 2X/WEEK OF 1 PALLET AND DURING OFF PEAK HOURS.

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
BRYAN J. HALL
License No.
6201315589
LICENSED PROFESSIONAL ENGINEER
07/21/2026

7 BREW

HOWELL MICHIGAN

3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

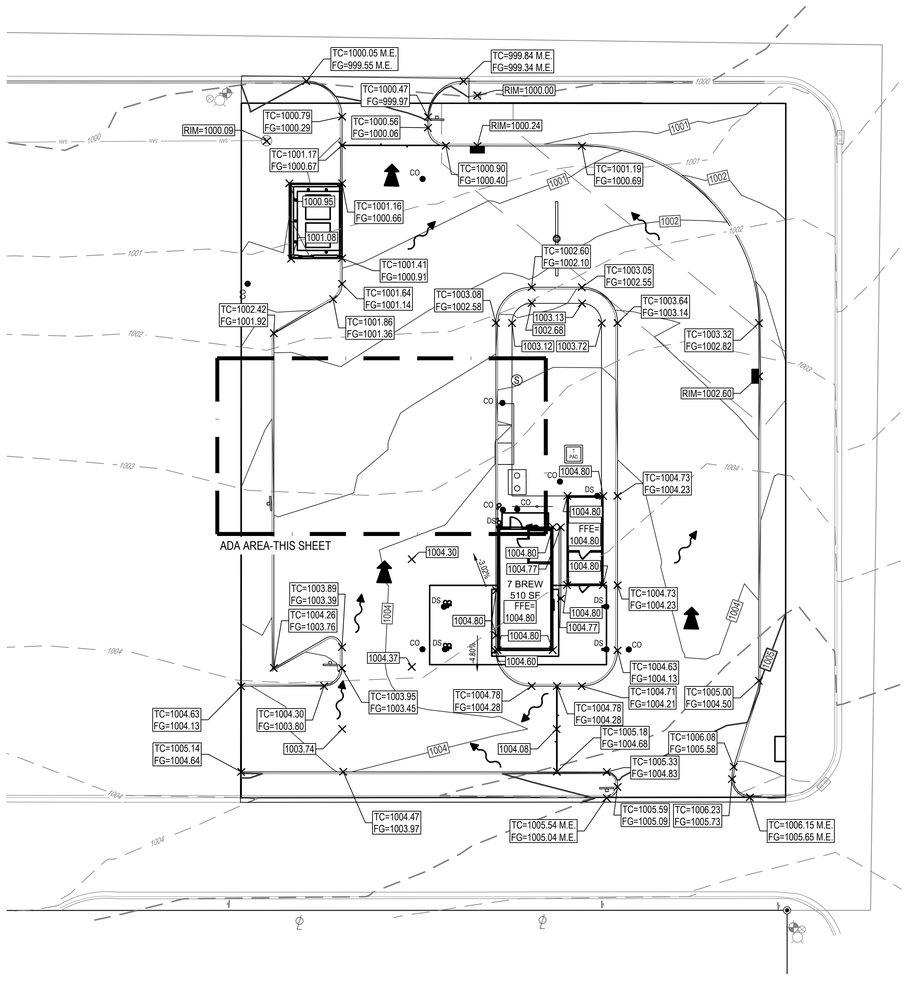
ID	Description	Date

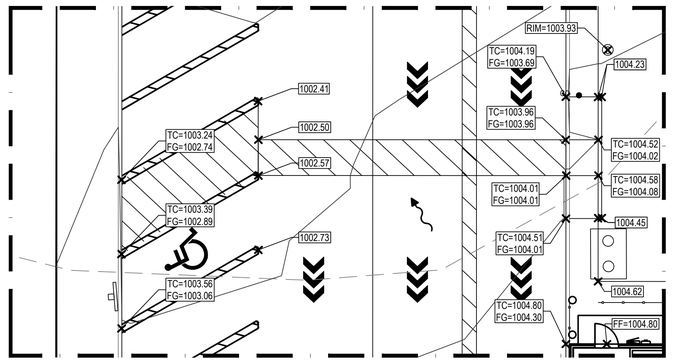
Project Number:	
Scale:	767758
Drawn By:	RJH
Checked By:	JMS
Date:	05/27/2026
Issue:	NOT FOR CONSTRUCTION

Drawing Title:
TRUCK TURNS

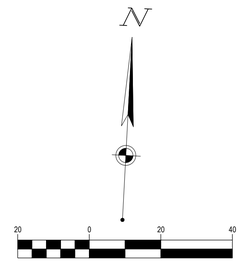
C3.1

C:\DC\ACCDocs\CESO\7-Brew-OLIO-Howell MI\Project Files_CESO\03-CIVIL\PLANS_PLOT\768411_SITE PLAN.dwg - 7/21/2026 - Reed Hemelgarn





ADA AREA



GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

GRADING LEGEND

EXISTING

REFER TO C1.3 FOR EXISTING FEATURES LEGEND

PROPOSED

- R/W — RIGHT-OF-WAY
- PROPERTY LINE
- SETBACK
- EASEMENT
- BUILDING
- 860 — MAJOR CONTOUR
- 862 — MINOR CONTOUR
- GRADE BREAK
- FLOW LINE
- 1 — STRUCTURE NUMBER
- CATCH BASIN
- STORM MANHOLE
- CURB INLET
- CO — CLEANOUT
- YD — YARD DRAIN
- DS — DOWNSPOUT
- XXX.XX — FINISHED GRADE ELEVATION
- RIM=XXX.XX — RIM ELEVATION
- BC=XXX.XX — BACK OF CURB ELEVATION
- TC=XXX.XX / FG=XXX.XX — TOP OF CURB ELEVATION / FINISHED GRADE ELEVATION
- TP=XXX.XX / FTG=XXX.XX — TOP OF PAVEMENT ELEVATION / TOP OF FOOTING ELEVATION
- M.E. — MATCH EXISTING ELEVATION
- X.XX% — SLOPE ARROW
- FLOOD ROUTE

BENCHMARK

DATUM: NAVD88

BM "A": THE EAST BONNET BOLT ON A FIRE HYDRANT, BEING 138 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 580 FEET EAST OF THE CENTER OF GRAND OAKS DR.
ELEVATION = 1006.09'

BM "B": THE TOP BOLT OF A FIRE HYDRANT, BEING 363 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 860 FEET EAST OF THE CENTER OF GRAND OAKS DR.
ELEVATION = 1002.19'

BM "C": A NORTH BONNET BOLT ON A FIRE HYDRANT, BEING 232 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 1090 FEET EAST OF THE CENTER OF GRAND OAKS DR.
ELEVATION = 1006.55'

MISS DIG 811

SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
BRYAN J. HALL
License No. 6201315589
LICENSED PROFESSIONAL ENGINEER
07/21/2026

7 BREW
HOWELL MICHIGAN

3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

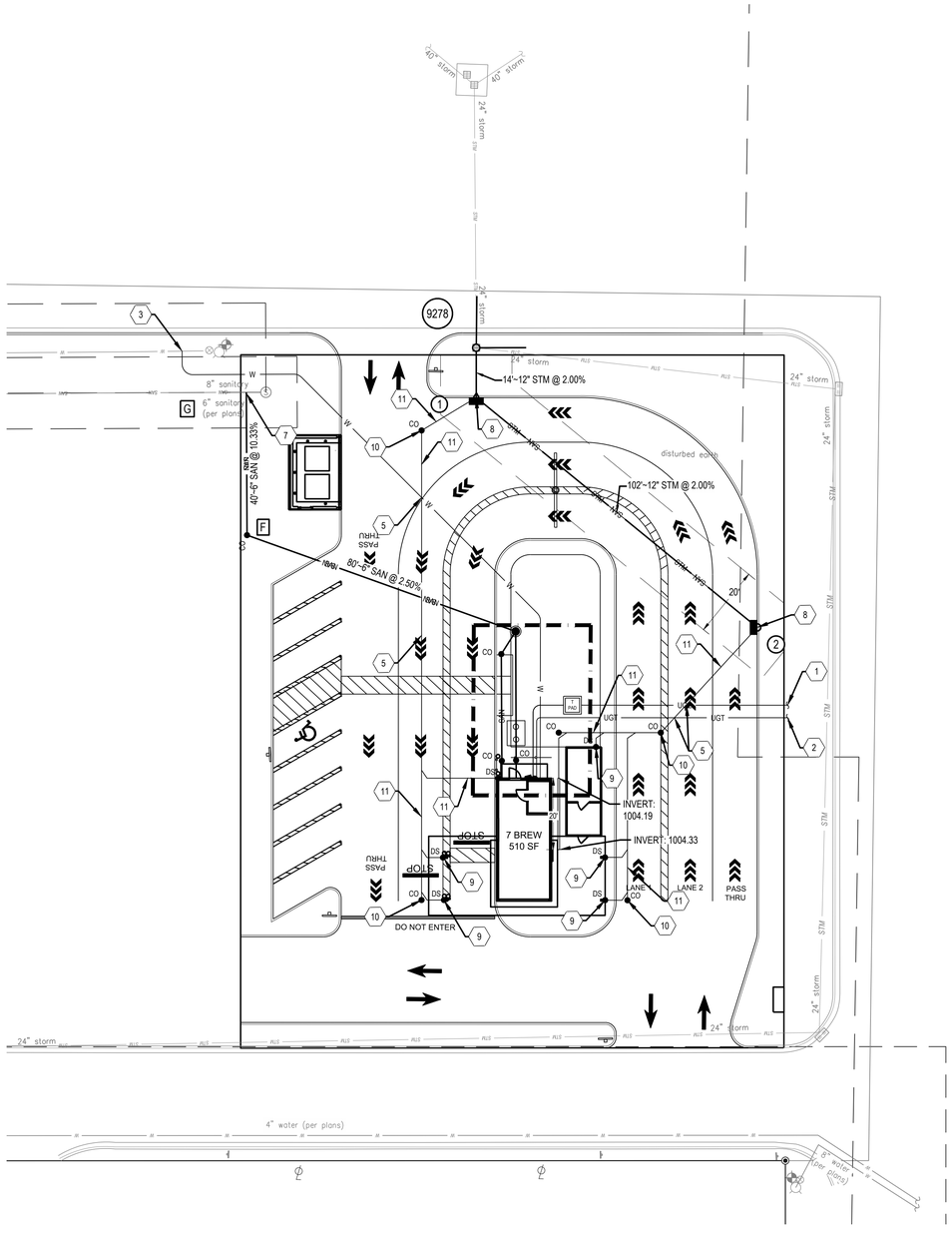
ID	Description	Date

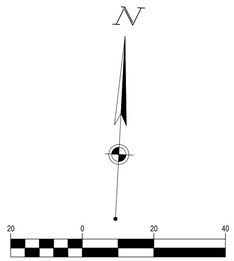
Project Number:	
Scale:	767758
Drawn By:	RJH
Checked By:	JMS
Date:	05/27/2026
Issue:	NOT FOR CONSTRUCTION

Drawing Title:
GRADING PLAN

C4.0

C:\DCA\CCDocs\CES\017-Brew-OLIO-Howell MI\Project Files_CES\0\03-CIVIL\PLAN_PLOT\768411_GRADING PLAN.dwg - 7/21/2026 - Reed Hemelgarn





GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

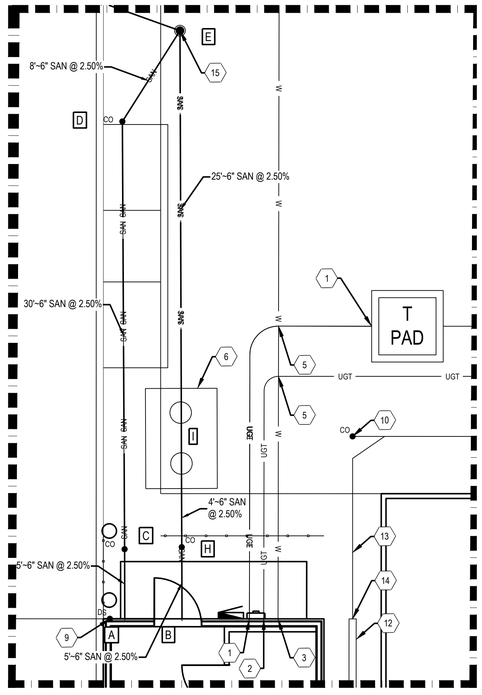
SANITARY SEWER STRUCTURE SCHEDULE

NO.	STRUCTURE	RIM	INVERT
A	BUILDING CONNECTION	1000.34	999.80 (6") N
B	BUILDING CONNECTION	1000.34	999.80 (6") N
C	6" CO	1004.71	999.68 (6") S 999.68 (6") N
D	6" CO	1004.19	998.93 (6") S 998.93 (6") NE
E	48" MH	1003.93	998.74 (6") SW 998.70 (6") S 998.70 (6") W
F	6" CO	1001.43	996.70 (6") E 996.70 (6") N
G	EX LATERAL CONNECTION	996.53	992.57 (6") S
H	6" CO	1004.70	999.67 (6") S 999.68 (6") N
I	GREASE INTERCEPTOR	1104.56	999.57 (6") S 999.32 (6") N

STORM SEWER STRUCTURE SCHEDULE

NO.	STRUCTURE	GRATE	INVERT
1	CURB INLET	1000.24	996.24 (12") SE 996.24 (12") N
2	CURB INLET	1002.60	998.28 (12") NW
9278	EX CB	999.96	995.96 (12") S * 990.75 (24") E * 990.75 (24") N *

*=INVERTS FROM RECORD PLANS



UTILITY AREA

5 0 5 10

GRAPHIC SCALE (IN FEET)
1 in. = 5 ft.

Storm Sewer Tabulation 10 YEAR

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (i)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	13.926	0.39	0.52	0.90	0.35	0.47	5.0	6.8	5.5	2.57	5.47	4.47	12	2.01	995.96	996.24	996.65	996.93	999.12	1000.24	26
2	1	101.663	0.13	0.13	0.90	0.12	0.12	5.0	5.0	6.2	0.72	5.47	2.08	12	2.01	996.24	998.28	996.93	998.63	1000.24	1002.75	24

UTILITY LEGEND

EXISTING

REFER TO C1.3 FOR EXISTING FEATURES LEGEND

PROPOSED

- BUILDING
- CONCRETE CURB
- PAVEMENT/WALK
- STM — STORM SEWER LINE
- SANITARY SEWER LINE
- W — DOMESTIC WATER SERVICE LINE
- G — GAS SERVICE LINE
- OHE — OVERHEAD ELECTRIC LINE
- UGE — UNDERGROUND ELECTRIC LINE
- FM — FORCEMAIN
- UGT — UNDERGROUND TELEPHONE LINE
- OHT — OVERHEAD TELEPHONE LINE
- CATCH BASIN
- STORM SEWER
- SANITARY SEWER
- CURB INLET
- CO — CLEANOUT
- DS — DOWNSPOUT
- T PAD — ELECTRICAL TRANSFORMER PAD
- FIRE HYDRANT
- WATER VALVE

CONTRACTOR NOTE:

1. CONTRACTOR SHALL VERIFY ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES.

CODED NOTES:

1. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND THE UTILITY COMPANY TO INSTALL PRIMARY RISER AS REQUIRED TO PROVIDE ELECTRICAL SERVICE TO THE PROPOSED BUILDING. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND THE LOCAL UTILITY COMPANY TO INSTALL PAD TRANSFORMER.
2. 2-2" CONDUITS FOR TELEPHONE SERVICE. CONTRACTOR TO COORDINATE WITH SERVICE PROVIDER FOR CONNECTION.
3. CONTRACTOR SHALL FURNISH AND INSTALL 1" METER SETTING. NEW WATER TAPS WILL NEED TO BE INSTALLED AT WATER MAIN. SEE WATER SERVICE CONNECTION DETAIL ON SHEET CX. CONTRACTOR TO VERIFY EXACT LOCATION OF WATER SERVICE CONNECTION PRIOR TO CONSTRUCTION. IF THERE ARE ANY DISCREPANCIES PLEASE NOTIFY CIVIL ENGINEER IMMEDIATELY.
4. COORDINATE UTILITIES WITH PLUMBING CONTRACTOR. FINAL CONNECTION BY PLUMBING CONTRACTOR.
5. MAINTAIN 18" MINIMUM VERTICAL SEPARATION.
6. GREASE INTERCEPTOR. CONTRACTOR TO INSTALL PER LOCAL REQUIREMENTS.
7. EXISTING LATERAL CONNECTION. CONNECT TO EXISTING 6" SANITARY SERVICE LINE STUB.
8. PROPOSED PRECAST CURB INLET.
9. DOWNSPOUT CONNECTION.
10. INSTALL 6" STORM CLEANOUT, TYPICAL.
11. ROOF DRAINAGE, INSTALL 6" PVC PIPE AT MINIMUM 1.00% SLOPE.
12. PROPOSED 20' LONG, 6" WIDE TRENCH DRAIN WITH A DURA SLOPE POLY PERFORATED GRATE AT 0.70% SLOPE.
13. INSTALL 4" PVC PIPE AT MINIMUM 2.08% SLOPE.
14. PROPOSED DURA SLOPE CHANNEL DRAIN UNIVERSAL END OUTLET TO CONNECT TO 4" PIPE.
15. PROPOSED PRECAST MANHOLE.

MISS DIG 811

SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
BRYAN J. HALL
License No. 6201315589
LICENSED PROFESSIONAL ENGINEER
07/21/2026

7 BREW
HOWELL MICHIGAN
3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

ID	Description	Date

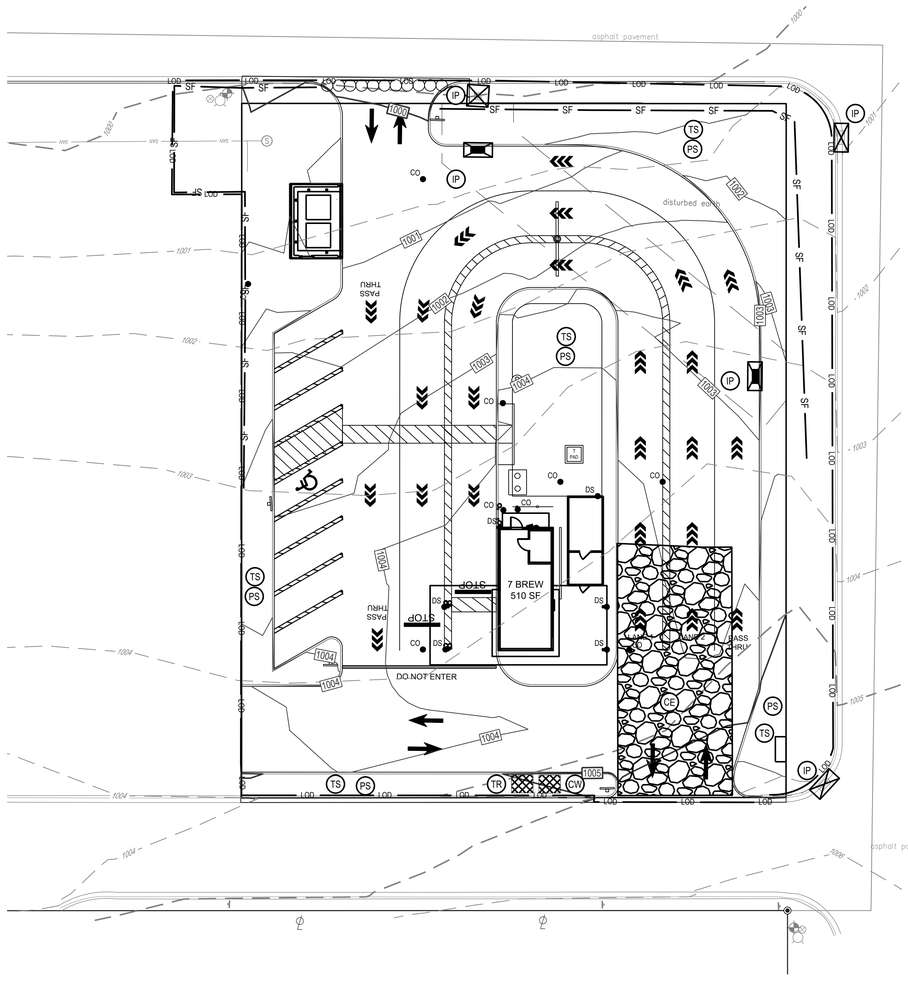
Project Number:

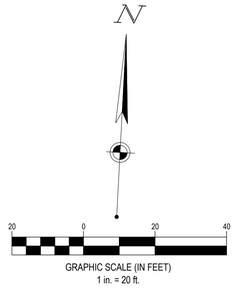
Scale:	767758
Drawn By:	RJH
Checked By:	JMS
Date:	05/27/2026
Issue:	NOT FOR CONSTRUCTION

Drawing Title:
UTILITY PLAN

C5.0

C:\DC\ACCDocs\CESO\7-Brew-OLIO-Howell MI\Project Files_CESO\03-CIVIL\PLANS_PLOT\768411_UTILITY PLAN.dwg - 7/21/2026 - Reed Hemelgarn





GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

EROSION AND SEDIMENT CONTROL PROJECT NARRATIVE:

PLAN ENGINEERS: CESO, INC.
2800 CORPORATE EXCHANGE DR.
SUITE 400
COLUMBUS, OHIO 43230
PHONE: (614) 893-6708
CONTACT: JOSEPH HORTON
EMAIL: JOSEPH.HORTON@CESOINC.COM

DEVELOPER: OLIO
1062 RIDGE STREET
COLUMBUS, OH, 43215
PHONE: 614-813-4641
CONTACT: CARLY DETAR STAS
EMAIL: CDETAR@OLIODEVGRP.COM

THE PROPOSED PROJECT IS THE CONSTRUCTION OF COFFEE SHOP WITH DRIVE-THRU. THE SUBJECT PARCEL IS 0.68 ACRES. THE TOTAL DISTURBED AREA IS 0.75 ACRES.

THE SITE DRAINS TO AN EXISTING STORM NETWORK NORTH OF THE SITE WHICH GOES TO AN EXISTING STORMWATER BASIN.

ON-SITE SOILS: MoB- WAWASEE LOAM 100%

HYDROLOGIC SOIL GROUP =C

THE EXISTING CONDITIONS ON-SITE IS AN EXISTING PARKING LOT.

SEQUENCE OF CONSTRUCTION

1. NOTIFY TOWNSHIP ENGINEER BEFORE WORK IS TO BEGIN.
2. INSTALL ALL TEMPORARY EROSION CONTROL MEASURES INCLUDING SILT FENCE, CONSTRUCTION EXIT, FILTER SACKS, CONCRETE WASHOUT.
3. SITE DEMOLITION AND CLEARING.
4. ROUGH GRADING. PROVIDE TEMPORARY SEEDING OF DISTURBED AREAS WHICH ARE INACTIVE.
5. BUILDING PAD.
6. STORM SEWER AND UNDERGROUND UTILITY CONSTRUCTION.
7. CURB CONSTRUCTION.
8. FINE GRADING AND PAVEMENT SUBGRADE PREPARATION
9. ASPHALT PAVING AND REMAINING CONCRETE FLATWORK.
10. FINAL SEEDING.

* CONTRACTOR SHALL MODIFY THE SEQUENCE OF CONSTRUCTION BASED ON SITE CONDITIONS. CONTRACTOR TO NOTIFY PROJECT MANAGER PRIOR TO CHANGING SEQUENCE OF CONSTRUCTION.

SWPPP LEGEND

EXISTING

REFER TO C1.3 FOR EXISTING FEATURES LEGEND

PROPOSED

- 960 — MAJOR CONTOUR
- 962 — MINOR CONTOUR
- PAVEMENT/WALK
- STM — STORM SEWER
- SF — SILT FENCE
- COMPOST SOCK
- GRADING/SEEDING LIMITS
- LOD — LIMIT OF DISTURBANCE
- PERMANENT EROSION CONTROL BLANKET ON ALL 3:1 SLOPES OR STEEPER
- STABILIZED CONSTRUCTION ENTRANCE
- STORAGE AREA
- BASIN SEDIMENT FILTER
- STORM MANHOLE
- CATCH BASIN
- CURB INLET
- CE — STABILIZED CONSTRUCTION ENTRANCE
- TS — TEMPORARY SEEDING
- PS — PERMANENT SOD
- CW — CONCRETE WASHOUT AREA
- IP — INLET PROTECTION
- DC — DANDY CURB (INLET PROTECTION)
- DB — DANDY BAG (INLET PROTECTION)
- TR — TRASH AREA

BENCHMARK

DATUM: NAVD88

BM "A": THE EAST BONNET BOLT ON A FIRE HYDRANT, BEING 138 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 580 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1036.09'

BM "B": THE TOP BOLT OF A FIRE HYDRANT, BEING 363 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 860 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1002.19'

BM "C": A NORTH BONNET BOLT ON A FIRE HYDRANT, BEING 232 FEET NORTHEAST OF THE CENTER OF GRAND RIVER AVE. & 1090 FEET EAST OF THE CENTER OF GRAND OAKS DR. ELEVATION = 1008.55'

MISS DIG 811

SEVENTY-TWO (72) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: MICHIGAN UTILITIES PROTECTION SERVICE AT 811 OR 800-482-7171 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF STATE UTILITIES PROTECTION SERVICE

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
BRYAN J. HALL
License No. 6201315589
LICENSED PROFESSIONAL ENGINEER
07/21/2026

7 BREW
HOWELL MICHIGAN

3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

ID	Description	Date

Project Number:
Scale: 767758
Drawn By: RJH
Checked By: JMS
Date: 05/27/2026
Issue: NOT FOR CONSTRUCTION

Drawing Title:
EROSION & SEDIMENT CONTROL PLAN

C6.0

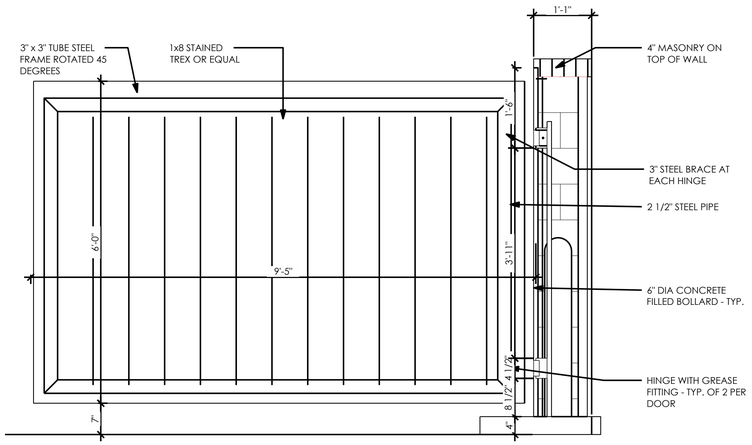
C:\DC\ACCDocs\CESO\7-Brew-OLIO-Howell MI\Project Files_CESO\03-CIVIL\PLAN_PLOT\767411_SWPPP.dwg - 7/21/2026 - Reed Hemelgarn

TRASH ENCLOSURE GENERAL NOTES

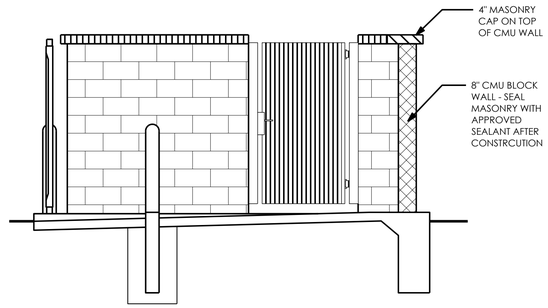
1. PRE-PAINT ALL BARE METAL WITH POR-15 PRIMER PRIOR TO INSTALLATION.
2. PAINT DOOR FRAMES, HINGES, AND BOLLARDS TO MATCH THE CANOPY OF THE PREFRABRICATED BUILDING - MORIN REGAL BLUE.

TRASH ENCLOSURE KEYNOTES

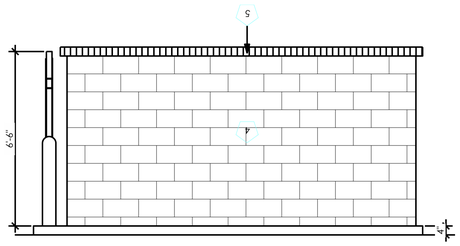
1	6" CONCRETE FILLED BOLLARD - TYP.
2	CUSTOM GATES: REF 6/A5.0
3	8 YARD DUMPSTER
4	SEALED 8" CMU BLOCK
5	4" MASONRY CAP ON TOP OF CMU WALL



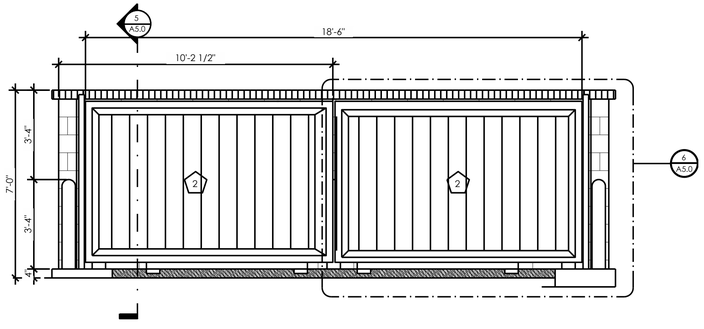
6 DOOR / HINGE DETAIL
3/4" = 1'-0"



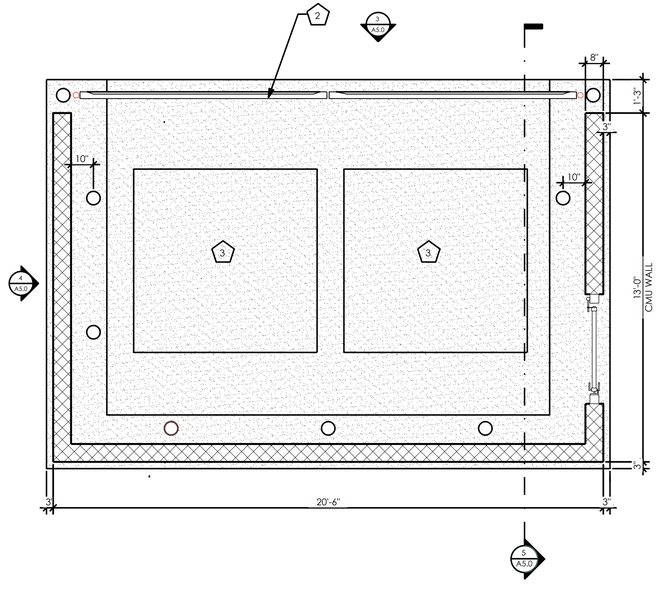
5 SECTION THRU TRASH ENCLOSURE
3/8" = 1'-0"



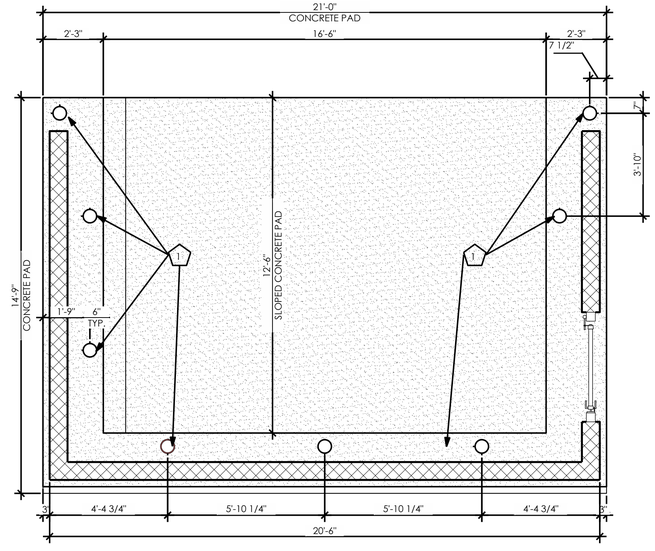
4 TRASH ENCLOSURE - SIDE ELEVATION
3/8" = 1'-0"



3 TRASH ENCLOSURE - FRONT ELEVATION
3/8" = 1'-0"



2 TRASH ENCLOSURE PLAN
3/8" = 1'-0"



1 TRASH ENCLOSURE - CONCRETE PLAN
3/8" = 1'-0"

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
BRYAN J. HALL
License No. 6201315589
LICENSED PROFESSIONAL ENGINEER
07/21/2026

7 BREW
HOWELL MICHIGAN

3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

ID	Description	Date

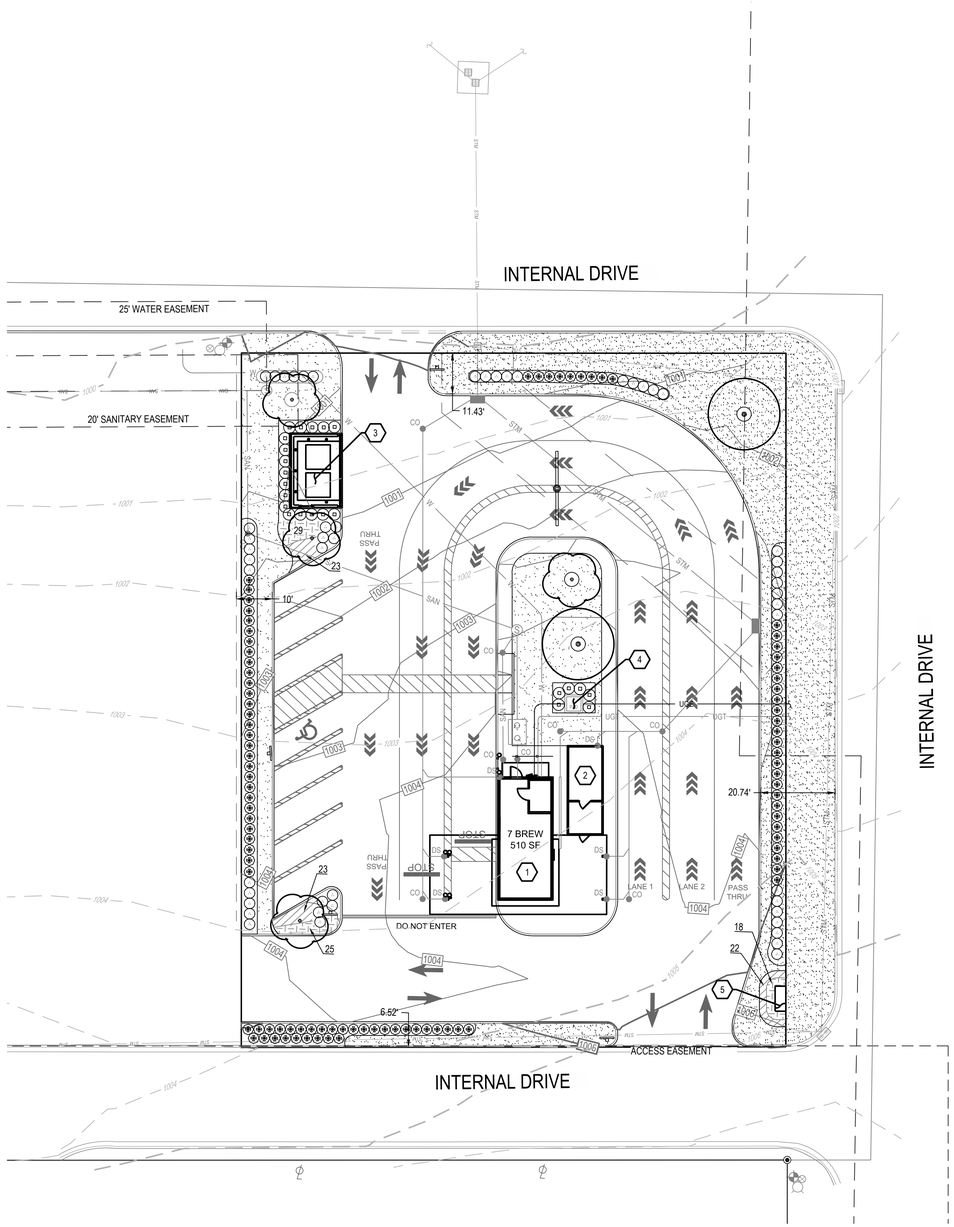
Project Number:

Scale:	767758
Drawn By:	RJH
Checked By:	JMS
Date:	05/27/2026
Issue:	NOT FOR CONSTRUCTION

Drawing Title:
DUMPSTER DETAIL

C7.0

C:\DC\ACCDocs\CESO\7-Brew-OLIO-Howell MI\Project Files_CESO\03-CIVIL\PLANS_PLOT\768411_UTILITY PLAN.dwg - 7/21/2026 - Reed Hemelgarn



PLANT SCHEDULE

SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	MIN HT / SPR	SPACING
TREES					
	2	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE 'OCTOBER GLORY'	2.5" CAL	10-12' HT	AS SHOWN
	4	MALUS X 'PRAIRIFIRE' PRAIRIFIRE CRABAPPLE	2" CAL	8-10' HT	AS SHOWN
SHRUBS					
	169	ILEX GLABRA 'COMPACTA' COMPACT INKBERRY	---	24" HT	3`-0" OC
	88	SPIRAEA X BUMALDA `ANTHONY WATERER` ANTHONY WATERER SPIREA	---	18" HT	3`-0" OC
	23	TAXUS X MEDIA `DENSIFORMIS` DENSE ANGLO-JAPANESE YEW	---	24" HT	3`-0" OC
GROUND COVERS					
	72	HEMEROCALLIS X 'STELLA DE ORO' STELLA DE ORO DAYLILY	1 GAL	1` HT / SPR	1`-6" OC
13	68	JUNIPERUS HORIZONTALIS `BLUE RUG` BLUE RUG JUNIPER	3 GAL		1`-6" OC
		NUMBER INDICATED ON HATCH THROUGHOUT THE DRAWING REFLECTS THE NUMBER OF PLANTS IN THAT PARTICULAR AREA			
SOD/SEED					
	8,710 SF	POA PRATENSIS KENTUCKY BLUEGRASS	SOD		

MULCH

- ALL PLANT BEDS SHALL CONTAIN A 3" LAYER OF DOUBLE - HAMMERED HARDWOOD MULCH FROM A SUSTAINABLE RESOURCE
- CONTRACTOR TO PLACE A 4' DIAMETER MULCH RING AROUND ALL TREES IN LAWN
- ALL TREE RINGS TO BE A MINIMUM OF 3' AWAY FROM PLANTING BED EDGE UNLESSSPECIFICALLY DIMENSIONED OTHERWISE

IRRIGATION

THE CONTRACTOR SHALL DESIGN, SUPPLY, AND INSTALL IRRIGATION SYSTEM FOR ALL SODDED AND PLANTING AREAS AS SHOWN ON THIS SHEET. DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION

LANDSCAPE REQUIREMENTS

BUFFER ZONE REQUIREMENTS

TYPE C BUFFER REQUIRED BETWEEN REGIONAL COMMERCIAL USES
(1 CANOPY, OR EVERGREEN, OR 4 SHRUBS PER 20 LF ALONG THE PROPERTY LINE)

(NORTH): 126 LF (NOT INCLUDING DRIVE)
REQUIRED WIDTH: 10'
PROPOSED WIDTH: 11.43'
REQUIRED: 8 TREES, OR 31 SHRUBS
PROPOSED: 2 TREES, AND 30 SHRUBS

(WEST): 194 LF
REQUIRED WIDTH: 10'
PROPOSED WIDTH: 10'
REQUIRED: 10 TREES, OR 39 SHRUBS
PROPOSED: 2 TREES, AND 39 SHRUBS

(EAST): 194 LF
REQUIRED WIDTH: 10'
PROPOSED WIDTH: 20.74'
REQUIRED: 10 TREES, OR 39 SHRUBS
PROPOSED: 39 SHRUBS

(SOUTH): 112 LF (NOT INCLUDING DRIVE)
REQUIRED WIDTH: 10'
PROPOSED WIDTH: 6.53'
REQUIRED: 8 TREES, OR 31 SHRBS
PROPOSED: 31 SHRUBS

CODED NOTES:

1. PROPOSED BUILDING
2. PROPOSED REMOTE COOLER BUILDING
3. PROPOSED DUMPSTER PAD
4. PROPOSED TRANSFORMER PAD
5. PROPOSED MONUMENT SIGN

LEGEND

- LEASE LIMIT
- EASEMENT LINE
- OHL — OVERHEAD POWER LINE
- STM — STORM DRAIN
- SAN — SANITARY SEWER
- W — WATER LINE
- G — GAS LINE
- UGT — UNDERGROUND TELEPHONE LINE
- UGE — UNDERGROUND ELECTRIC LINE
- 102 — MAJOR EXISTING CONTOUR
- 102 — MINOR EXISTING CONTOUR
- 960 — MAJOR ENGINEERED CONTOUR
- 962 — MINOR ENGINEERED CONTOUR

N

20 0 20 40
GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
ERIC LALONE
LANDSCAPE ARCHITECT
3901001796
LICENSED LANDSCAPE ARCHITECT

07/21/2026

7 BREW
HOWELL MICHIGAN
3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

ID	Description	Date

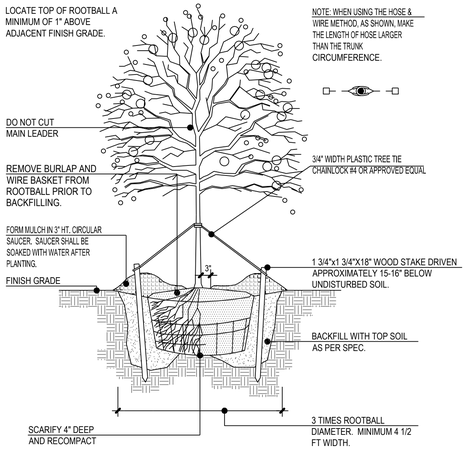
Project Number:

Scale:	768411
Drawn By:	JC
Checked By:	EAB
Date:	06/12/2026
Issue:	NOT FOR CONSTRUCTION

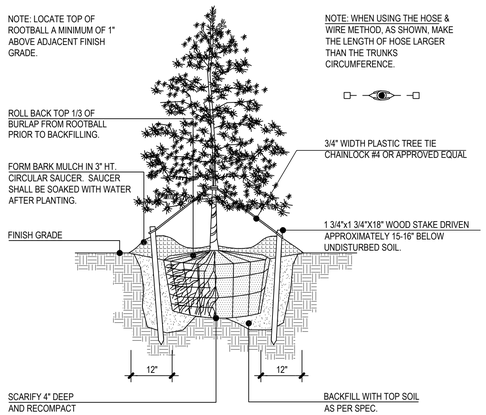
Drawing Title:
LANDSCAPE PLAN

L1.0

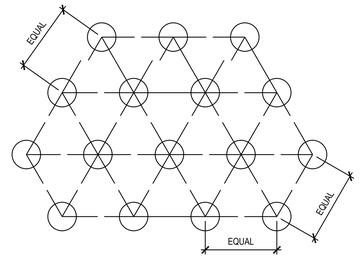
C:\DC\ACCDocs\CESO\7-Brew-OLIO-Howell MI\Project Files_CESO\06-LA_PLAN_CD\768411_Landscape Plan.dwg - 7/21/2026 - Josmanny Cid



1 DECIDUOUS TREE STAKING N.T.S.



2 EVERGREEN TREE STAKING N.T.S.



ALL GROUND COVER SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING PER ON CENTER SPACING AS SPECIFIED ON PLANTING PLAN.

LOCATE GROUND COVER ONE HALF OF SPECIFIED SPACING DISTANCE FROM ANY CURB, SIDEWALK, OR OTHER HARD SURFACE, UNLESS OTHERWISE NOTED.

3 GROUND COVER SPACING N.T.S.

4 EVERGREEN / DECIDUOUS SHRUB N.T.S.

NOTE: USE TRENCH DETAIL ON ALL PLANTING BEDS TRANSITIONING TO TURF AREAS

5 TRENCH EDGING N.T.S.

NOTES:

1. NO TRUCKS OR HEAVY EQUIPMENT ALLOWED WITHIN BARRIERS, ONLY HAND LABOR ALLOWED.
2. NO CONSTRUCTION MATERIALS, SOILS DEPOSITS, OR SOLVENTS SHALL BE ALLOWED WITHIN BARRIERS.
3. BARRIERS ARE TO IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES WITH-IN TREE AREA.
4. BARRIERS ARE TO STAY IN PLACE UNTIL ALL PAVING, CONSTRUCTION, AND HEAVY EQUIPMENT IS REMOVED FROM THE AREA.
5. CRITICAL ROOT ZONE: 1 INCH OF TREE AT DIAMETER BREAST HEIGHT (DBH) IS EQUAL TO 1 FOOT OF CRITICAL ROOT ZONE (CRZ). IE. 30 INCH DBH = 30 FOOT CRZ

6 TYP. TREE PROTECTION N.T.S.

TREE PROTECTION NOTES

1. DURING LAND ALTERATION AND CONSTRUCTION ACTIVITIES, DO NOT PLACE SOIL DEPOSITS, DEBRIS SOLVENTS, MACHINERY CONSTRUCTION MATERIAL OF ANY KIND WITHIN THE DRIP LINE OF A TREE TO REMAIN.

2. BEFORE CONSTRUCTION STARTS ALL PROTECTED TREES SHALL BE PRUNED AS FOLLOWS UNLESS OTHERWISE DIRECTED BY THE OWNER OR HIS REPRESENTATIVE: REMOVE ANY DEAD OR DISEASED TRUNKS OR BRANCHES, AND REMOVE WEAK OR CROSSED BRANCHES. ALL CUTS SHALL BE MADE SUFFICIENTLY CLOSE TO THE TRUNK OR PARENT LIMB, WITHOUT CUTTING INTO THE BRANCH COLLAR OR LEAVING A PROTRUDING STUB, SO THAT CLOSURE CAN READILY START. ALL TRIMMING SHALL BE DONE BY A QUALIFIED TREE SURGEON. PRUNING SHALL BE IN ACCORDANCE WITH ANSI A-300 PRUNING STANDARDS.

3. ALL ROOTS TO BE REMOVED DURING THE SITE CLEARING SHALL BE SEVERED CLEAN AT THE PERIMETER OF THE DESIGNATED PROTECTED RADIUS. A 3" LAYER OF MULCH SHALL BE IMMEDIATELY APPLIED OVER THE SURFACE OF EXPOSED ROOTS OF PROTECTED TREES. A SOIL AUGER WILL BE USED TO BORE UNDER ROOT SYSTEMS UTILITIES ARE TO BE INSTALLED WITHIN 10' OF A PROTECTED TREE.

ROOT PRUNING NOTE:

WHEN THE CRITICAL ROOT ZONE WILL BE DISTURBED, AFFECTED ROOTS MUST BE SEVERED BY CLEAN PRUNING CUTS AT THE POINT WHERE CONSTRUCTION IMPACTS THE ROOTS. ROOTS CAN BE PRUNED BY UTILIZING TRENCHING EQUIPMENT DESIGNED FOR THIS PURPOSE OR BY HAND DIGGING A TRENCH AND PRUNING ROOTS WITH A PRUNING SAW, CHAIN SAW OR OTHER EQUIPMENT DESIGNED FOR TREE PRUNING. ROOTS LOCATED WITHIN A CRITICAL ROOT ZONE THAT WILL BE IMPACTED BY CONSTRUCTION MUST BE PRUNED TO A DEPTH OF 18 INCHES BELOW THE EXISTING GRADE OR TO THE DEPTH OF DISTURBANCE IF LESS THAN 18 INCHES FROM THE EXISTING GRADE. WHEN UNDERGROUND UTILITY LINES ARE TO BE INSTALLED WITHIN THE CRITICAL ROOT ZONE, THE ROOT PRUNING REQUIREMENTS MAY BE WAIVED IF THE LINES ARE INSTALLED VIA TUNNELING OR DIRECTIONAL BORING AS OPPOSED TO OPEN TRENCHING. A LICENSED CERTIFIED ARBORIST SHALL PROVIDE PRUNING.

GENERAL NOTES: LANDSCAPE PLAN

1. CONTRACTOR TO VERIFY WITH OWNER AND UTILITY COMPANIES THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION, TO DETERMINE IN THE FIELD THE ACTUAL LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL CALL UTILITY LOCATE SERVICE 72 HOURS PRIOR TO CONSTRUCTION.
2. SITE CONDITIONS BASED UPON SURVEY PROVIDED BY OWNER. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS BY DETAILED INSPECTION PRIOR TO SUBMITTING BID AND BEGINNING CONSTRUCTION.
3. REFER TO SITE CIVIL DRAWINGS FOR ADDITIONAL REQUIREMENTS AND COORDINATE WORK WITH OTHER SITE RELATED DEVELOPMENT DRAWING AS NEEDED.
4. REESTABLISH EXISTING TURF IN AREAS DISTURBED BY GRADING OR UTILITY TRENCHING, INCLUDING AREAS IN RIGHT-OF-WAY, TO MATCH EXISTING SPECIES.
5. CONTRACTOR SHALL EXAMINE FINISH SURFACE, GRADES, TOPSOIL QUALITY AND DEPTH. DO NOT START ANY WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. VERIFY LIMITS OF WORK BEFORE STARTING.
6. CONTRACTOR TO REPORT ALL DAMAGES TO EXISTING CONDITIONS AND INCONSISTENCIES WITH PLANS TO LANDSCAPE ARCHITECT.
7. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL LANDSCAPE BEDS AND ALL LAWN AREAS.
8. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS) & EXTRANEOUS MATERIAL OR DEBRIS.
9. REMOVE EXISTING WEEDS FROM PROJECT SITE PRIOR TO THE ADDITION OF ORGANIC AMENDMENTS AND FERTILIZER. APPLY AMENDMENTS AND FERTILIZER AS NEEDED.
10. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS. IF THERE IS A DISCREPANCY BETWEEN THE NUMBER LABELED ON THE PLANT LEGEND AND THE QUANTITY OF GRAPHIC SYMBOLS SHOWN, THE GREATER QUANTITY SHALL GOVERN.
11. COORDINATE LANDSCAPE INSTALLATION WITH INSTALLATION OF UNDERGROUND SPRINKLER AND DRAINAGE SYSTEMS.
12. ALL SIZES AND QUALITY OF PLANT MATERIAL SHALL MEET THE MINIMUM SPECIFICATIONS OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2014). THE LANDSCAPE CONTRACTOR SHALL INSTALL ALL PLANT MATERIAL IN SIZE AS INDICATED IN THE PLANT SCHEDULE UNLESS OTHERWISE SPECIFIED ON THE PLAN SET. ALL PLANTS THAT DO NOT MEET THE SIZE AND SPECIFICATIONS SET FORTH BY THE AMERICAN STANDARD FOR NURSERY STOCK WILL BE REJECTED BY LANDSCAPE ARCHITECT AT NO COST TO OWNER.
13. ONCE PROJECT IS AWARDED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO SECURE ALL PLANT MATERIAL IN THE SIZE SPECIFIED ON PLAN PRIOR TO INSTALLATION. IN THE EVENT THE PLANT MATERIAL IS NOT AVAILABLE IN THE SIZE SPECIFIED, THE CONTRACTOR SHALL INSTALL LARGER AT NO COST TO OWNER.
14. THE LANDSCAPE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ALL PLANT MATERIAL SUBSTITUTIONS FROM THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. PLANT SUBSTITUTIONS WITHOUT PRIOR WRITTEN APPROVAL THAT DO NOT COMPLY WITH THE DRAWINGS AND SPECIFICATIONS MAY BE REJECTED BY THE LANDSCAPE ARCHITECT AND REPLACED BY CONTRACTOR AT NO COST TO THE OWNER.
15. PRIOR TO MOBILIZATION THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT, IN WRITING, IF HE/SHE BELIEVES ANY OF THE PLANT MATERIAL IDENTIFIED ON THE PLAN MAY NOT BE SUITABLE FOR THE SITE OR MAY DIE. SUBSTITUTION REQUESTS WILL BE GRANTED BY THE LANDSCAPE ARCHITECT PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. IF NOTIFICATION IS NOT GIVEN TO THE LANDSCAPE ARCHITECT ALL PLANTING WHICH FAILS TO GROW (EXCEPT FOR DEFECTS RESULTING FROM LACK OF ADEQUATE MAINTENANCE AS DETERMINED BY THE OWNER, NEGLECT, OR VANDALISM) SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
16. WHERE PROPOSED TREE LOCATIONS OCCUR UNDER EXISTING OVERHEAD UTILITIES OR CROWD EXISTING TREES, NOTIFY LANDSCAPE ARCHITECT TO ADJUST TREE LOCATIONS.
17. ALL PLANT MASSES TO BE TOP DRESSED WITH MULCH AS SPECIFIED IN PLANT SCHEDULE, SPREAD UNIFORMLY IN DEPTH OVER THE PLANTING BEDS AS DELINEATED ON THE PLANS UNLESS OTHERWISE NOTED.
18. BED EDGE TO BE NO LESS THAN 12" AND NO MORE THAN 18" FROM OUTER EDGE OF PLANT MATERIAL BRANCHING. WHERE GROUND-COVER OCCURS, PLANT TO LIMITS OF AREA AS SHOWN.
19. ALL PLANTS SHALL BE GUARANTEED FOR 1 YEAR AFTER SUBSTANTIAL COMPLETION OCCURS AND FINAL ACCEPTANCE BY OWNER.
20. LANDSCAPE MAINTENANCE PERIOD BEGINS IMMEDIATELY AFTER THE COMPLETION OF ALL PLANTING OPERATIONS AND WRITTEN ACCEPTANCE FROM THE OWNER AND LANDSCAPE ARCHITECT. MAINTAIN TREES, SHRUBS, LAWNS, AND OTHER PLANTS AS PER THE PROJECT MANUAL AND/OR WRITTEN SPECIFICATIONS, IF APPLICABLE. LANDSCAPE MAINTENANCE IS THE LANDSCAPING CONTRACTORS RESPONSIBILITY UNTIL FINAL ACCEPTANCE BY THE OWNER.
21. ALL LANDSCAPE MAINTENANCE SHALL BE IN ACCORDANCE WITH LOCAL GOVERNING STANDARDS.
22. REFER TO PROJECT MANUAL OR WRITTEN SPECIFICATIONS, IF AVAILABLE, FOR ADDITIONAL REQUIREMENTS.

SOIL PLANTING MIXTURE (MIX ONSITE)

1. THE LANDSCAPE CONTRACTOR SHALL FURNISH FROM THEIR SOURCE A GOOD CLEAN, NATIVE SOIL WHICH SHALL MEET THE APPROVAL OF THE OWNER'S REPRESENTATIVE. THIS SOIL SHALL BE USED FOR THE PLANTING MIXTURE AS FOLLOWS:
   A. ONE PART COMPOST/MANURE PLANTING MIX, TOPSOIL OR APPROVED EQUAL
   B. ONE PART NATIVE SOIL

2. SOILS WITHIN PLANTING AREAS MUST BE SUITABLE FOR PROPOSED PLANTED MATERIAL & SOD WITH REGARD TO: pH, SOIL TEXTURE, SOIL STRUCTURE, AND SEASONAL HIGH WATER TABLE. THE CONTRACTOR SHALL ANALYZE EXISTING SOILS LOCATED IN PROXIMITY TO PROPOSED PLANT MATERIAL AND BE RESPONSIBLE TO AMEND THE SOIL TO OBTAIN ESSENTIAL REQUIREMENTS NECESSARY FOR THE ESTABLISHMENT AND GROWTH OF PLANT LIFE. LANDSCAPE CONTRACTOR TO PROVIDE SOILS REPORT AND APPROPRIATE RECOMMENDATIONS PRIOR TO INSTALLATION TO OWNER'S REPRESENTATIVE FOR REVIEW. FAILURE TO PROVIDE REPORT MAY RESULT IN PLANT MATERIAL BEING REJECTED BY OWNER'S REPRESENTATIVE AND REPLACED AT NO COST TO OWNER.

3. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING PRIOR TO PLANTING, WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, POOR PLANTING SOIL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS.

CESO
WWW.CESOINC.COM

STATE OF MICHIGAN
ERIC LALONE
LANDSCAPE ARCHITECT
3901001796
LICENSED LANDSCAPE ARCHITECT

07/21/2026

7 BREW

HOWELL MICHIGAN
3599 GRAND RIVER PLAZA
HOWELL, MI 48843

Revisions / Submissions

ID	Description	Date

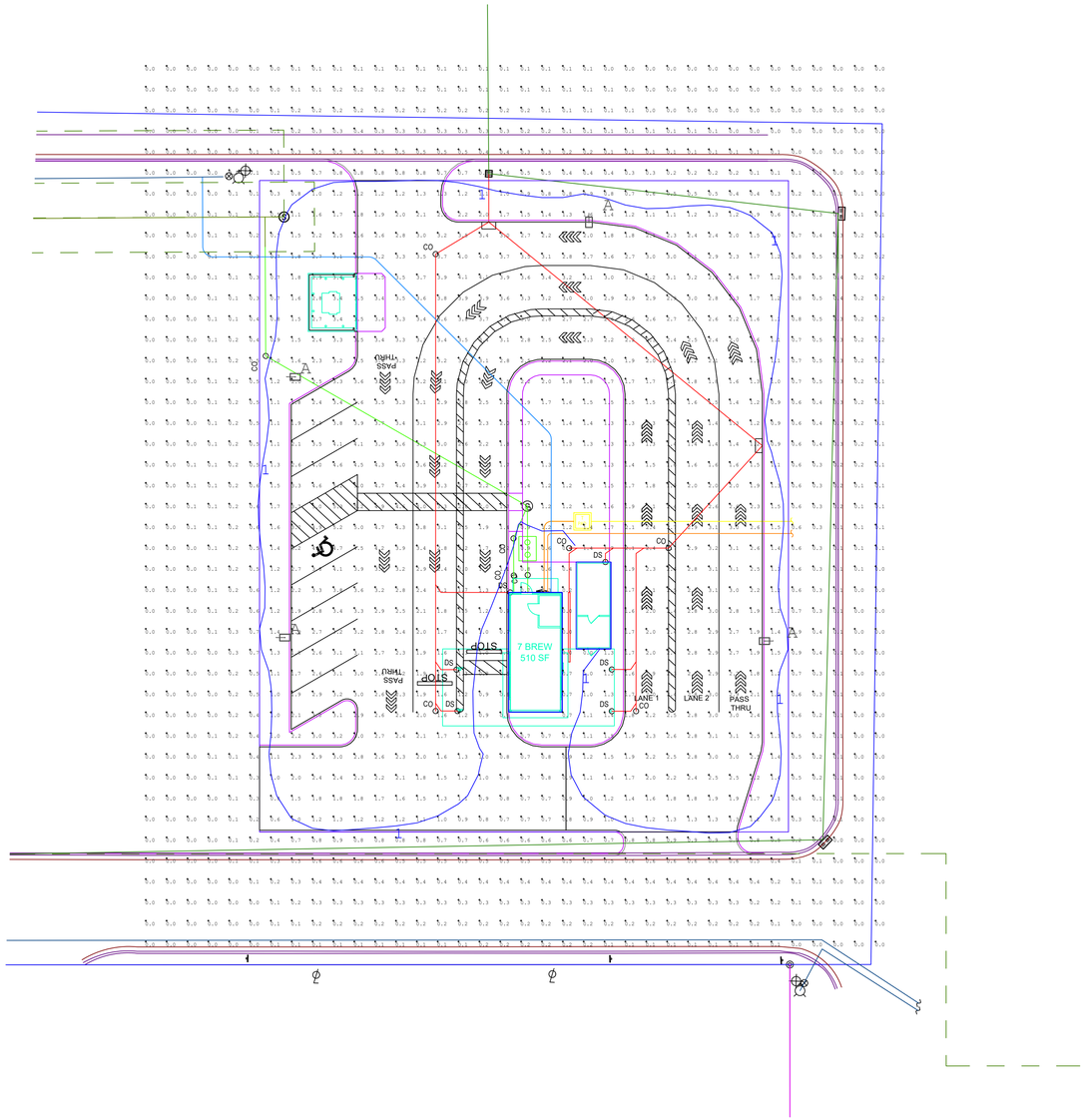
Project Number:

Scale:	768411
Drawn By:	JC
Checked By:	EAB
Date:	6/05/2026
Issue:	NOT FOR CONSTRUCTION

Drawing Title:
PLANTING DETAILS & NOTES

L2.0

C:\DC\ACCDocs\CESO\7-Brew-OLO-Howell MI\Project Files_CESO\08-LA_PLAN_CD\768411_Landscape Plan.dwg - 7/21/2026 - Josnanny Cid



7BREW
63599 GRAND RIVER PLAZA
HOWELL, MI
MAY 28, 2026

ACCUSERV LIGHTING & EQUIPMENT
877-707-7378
DESIGNED BY: JOHN BUJAKE
jbujake@accu-serv.com
QUOTATIONS BY: AARON HAMPTON
ahampton@accu-serv.com

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
EXTENDED	1.16	5.3	0.0	N.A.	N.A.
PARKING & DRIVE-THRU SURFACES	2.43	5.3	0.6	4.05	8.83

LIGHT LEVELS ARE MAINTAINED FOOT-CANDLES

Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Luminaire Lumens	LLF	CCT	Luminaire Watts	Mounting Height	Description
	5	A	SINGLE	18361	0.900	4000K	143	27.5	VF-1-[EOL-135-4KT-4K-UNV-A-DBT / SHD-1-HSS-90-B-DBT / SES-25-40-01-F-R4-DBT

NOTES: LIGHT LEVEL AT THE PROPERTY LINES NOT TO EXCEED 1.0 FOOT-CANDLE
POLE BASES ARE 2'-6" AFG

accuserv
LIGHTING & EQUIPMENT
4325 SHEPHERDSVILLE RD. LOUISVILLE, KY
TOLL FREE: 877-707-7378 PHONE: 502-961-0096

No.	Issue	Date
1.	DESIGN SUBMITTAL	5/28/26

7BREW
HOWELL, MI

ALL PLANS AND SPECIFICATIONS ARE THE PROPERTY OF ACCUSERV LIGHTING & EQUIPMENT. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BY THE CONTRACTOR AND THEIR SUBCONTRACTORS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER AND ARCHITECT.

PURCHASING: ALL LIGHTING IS SUPPLIED BY ACCUSERV LIGHTING & EQUIPMENT. THE COMPLETE PACKAGE IS AVAILABLE AT ESTABLISHED DISCOUNTED PRICING FROM ACCUSERV. FOR PURCHASE ORDER PLACEMENT AND COORDINATING DELIVERY, CONTACT AARON HAMPTON AT ACCUSERV, 877-707-7378, AHAMPTON@ACCU-SERV.COM, TO ARRANGE FOR LIGHTING FIXTURE PROCUREMENT AND SHIPPING INFORMATION.

Sheet Title

SITE LIGHTING & PHOTOMETRICS PLAN

Scale	Date
AS SHOWN	5/28/26
Drawn By	Checked By
JB	JB
Job No.	

Sheet No.

SL-1

2 EXTERIOR ELEVATION - BACK
3/8" = 1'-0"

1 EXTERIOR ELEVATION - FRONT
3/8" = 1'-0"

EXTERIOR FINISH LEGEND

- NICHIHA MODERNBRICK MIDNIGHT
- NICHIHA CANYON BRICK SHALE BROWN
- PAC-CLAD STANDING SEAM PANEL REGAL BLUE
- BRAKE METAL CLEAR ANODIZED TO MATCH STOREFRONT FRAMES
- BRAKE METAL REGAL BLUE
- BRAKE METAL ONYX
- BRAKE METAL SANDSTONE
- DOORS FIRST STAR SW7464

KINETIC DESIGN + DEVELOPMENT
2215 W CHESTERFIELD BLVD, SUITE 01 - SPRINGFIELD, MO 65807 - P (417) 530-4321

FIRM LICENSE NO.

INTERIM REVIEW ONLY

These documents are incomplete, and are released for interim review only and are not intended for regulatory approval, bidding, permit, or construction purposes.

PROJECT NUMBER:

REVISION:

7 BREW DRIVE-THRU

A2.0
EXTERIOR ELEVATIONS

DATE: NOT FOR CONSTRUCTION

2 EXTERIOR ELEVATION - RIGHT SIDE
3/8" = 1'-0"

1 EXTERIOR ELEVATION - LEFT SIDE
3/8" = 1'-0"

EXTERIOR FINISH LEGEND

- NICHIHA MODERNBRICK MIDNIGHT
- NICHIHA CANYON BRICK SHALE BROWN
- PAC-CLAD STANDING SEAM PANEL REGAL BLUE
- BRAKE METAL CLEAR ANODIZED TO MATCH STOREFRONT FRAMES
- BRAKE METAL REGAL BLUE
- BRAKE METAL ONYX
- BRAKE METAL SANDSTONE
- DOORS FIRST STAR SW7464

KINETIC DESIGN + DEVELOPMENT
2215 W CHESTERFIELD BLVD, SUITE 01 - SPRINGFIELD, MO 65807 - P (417) 530-4321

FIRM LICENSE NO.

INTERIM REVIEW ONLY

These documents are incomplete, and are released for interim review only and are not intended for regulatory approval, bidding, permit, or construction purposes.

PROJECT NUMBER:

REVISION:

7 BREW DRIVE-THRU

A2.1

EXTERIOR ELEVATIONS

DATE: NOT FOR CONSTRUCTION

GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:
(Application must be completed in its entirety)

APPLICANT NAME & ADDRESS: MHOG, 2911 Dorr Rd, Brighton, MI 48116
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: MHOG, 2911 Dorr Rd, Brighton, MI 48116

SITE ADDRESS: 900 Chilson Road PARCEL #(s): 4711-06-400-003

LOCATION AND BRIEF DESCRIPTION OF SITE: Existing Wastewater Treatment Plant located on the west side of Chilson Road between Grand River Ave and I-96.

BRIEF STATEMENT OF PROPOSED USE: Proposed MHOG Administration Building.

THE FOLLOWING BUILDINGS ARE PROPOSED: See above.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: Joseph C. White, PE, PLA

ADDRESS: 333 Albert Avenue, Ste. 622, East Lansing, MI 48823

July 31, 2026

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Amy Ruthig, Planning Director
Subject:	MHOG Administration Building – Site Plan Review #2
Location:	900 Chilson Road – west side of Chilson Road, north of I-96
Zoning:	PRF Public and Recreational Facilities District

Dear Commissioners:

At the Township's request, we have reviewed the revised submittal materials requesting site plan review/approval for a new administration building for the MHOG Water Authority (plans dated 7/21/26).

A. Summary

1. The amount of siding exceeds the limit for new buildings in the PRF; however, the Commission may allow the proposal based on a finding that it is in keeping with the intent and purpose of the Ordinance.
2. Building materials and color scheme are subject to review/approval by the Planning Commission.
3. The amount of parking proposed requires Planning Commission approval, per Section 14.02.06.
4. The Commission may allow existing trees and vegetation in lieu of new greenbelt tree plantings.
5. The applicant must address any comments provided by the Township Engineer and/or Brighton Area Fire Authority.

B. Proposal/Process

The applicant requests review/approval of a site plan for a new 5,940 square foot building to house administration/office services for the MHOG Water Authority.

Per Table 6.02, public buildings and uses for administrative functions are permitted by right in the PRF District.

Procedurally, the Planning Commission is to review the site plan and Environmental Impact Assessment.

The Commission has review/approval authority over the site plan, but must put forth a recommendation to the Township Board on the Impact Assessment.

Aerial view of site and surroundings (looking north)

C. Site Plan Review

1. **Dimensional Requirements.** As noted in the table below, the site plan complies with the dimensional requirements of the PRF District:

	Min. Lot Req.		Minimum Yard Setbacks (feet)				Max. Lot Coverage (%)	Max. Height
	Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking Lot		
PRF	N/A	N/A	85	100	100	20 front 10 side/rear	N/A	35' 2 stories
Proposed	33.27	2,127	160	1,000 (N) 785 (S)	521	92 front 692 side/rear	Info not provided	20' 1 story

2. **Building Design and Materials.** The primary building material is a vertical batten board siding with a stone base and composite accents.

   Based on the calculations provided, the building exceeds the limit for siding for new buildings in the PRF. However, Section 12.01.04 does allow the Commission to approve modifications when it is in keeping with the intent and purpose of the Ordinance. The project architect has submitted a letter stating their rationale for alternative building materials (letter dated 7/17/26 from Fika Architects).

   The applicant should be prepared to present building material and color samples to the Commission for their consideration. Ultimately, building materials and colors are subject to review and approval by the Planning Commission.

3. **Pedestrian Circulation.** A public sidewalk/pathway is not required (nor proposed) in this location, though the site plan does include sidewalks between the parking lot and building entrances.

4. **Vehicular Circulation.** The site plan proposes a new, full turning movement driveway to/from Chilson Road.

   Internal drive aisles are of sufficient width for two-way traffic around the proposed development area.

   The applicant must address any comments provided by the Township Engineer and/or the Brighton Area Fire Authority with respect to vehicular circulation, including the proposed driveway design and location.

5. **Parking.** Based on the standard for a municipal office building, the proposal requires 22 parking spaces, while 40 are provided.

   Section 14.02.06 places limits on excessive parking, such that proposals for more than 120% of the minimum requirement must be approved by the Planning Commission. In this instance, the proposed parking results in 182% of the minimum requirement and the applicant has included a letter in support of the amount of parking proposed for the Commission's consideration.

   The dimensions and design of parking spaces and drive aisles comply with Ordinance standards. The number of barrier-free spaces is also compliant.

6. **Exterior Lighting.** The lighting plan identifies 6 wall mounted fixtures, 4 pole mounted fixtures, and 3 canopy fixtures. The revised submittal includes fixture details noting the use of downward directed, cut-off LEDs.

   Photometric readings on-site and along property lines comply with Ordinance standards.

7. **Landscaping.** The landscape plan has been reviewed for compliance with the standards of Section 12.02, as follows:

Standard	Required	Proposed	Comments
Front yard greenbelt	20' width 6 canopy trees (project area only)	90' width Existing trees	In compliance provided PC allows existing trees in lieu of new plantings
Parking lot	4 canopy trees 400 SF landscaped area	6 canopy trees 468 SF landscaped area	In compliance

   The Commission has the authority to modify landscaping requirements, per Section 12.02.13.

8. **Waste Receptacle.** The proposed waste receptacle has been reviewed for compliance with the standards of Section 12.04, as follows:

	Requirement	Proposed	Comments
Location	Rear yard or non-required side yard AND not less than 20' from residential	Side yard	Requirements met
Access	Clear access w/ out damaging buildings/vehicles	Sufficient maneuvering area	Requirements met
Base design	9' x 15' concrete pad	9' x 15' concrete pad	Requirement met
Enclosure	3-sided enclosure w/ gate Masonry walls 6' height/taller than receptacle	3 sides w/ gate across 4th Masonry walls 6' height	Requirements met

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFEBUILT

Brian V. Borden, AICP
Planning Manager

TETRA TECH

August 4, 2026

Ms. Amy Ruthig
Genoa Township
2911 Dorr Road
Brighton, MI 48116

Re: MHOG Administrative Building
Site Plan Review No. 2

Dear Ms. Ruthig:

Tetra Tech conducted a review of the site plan submittal for MHOG Administration Building last dated July 20, 2026. The site plan was prepared by JW CivilWorks on behalf of MHOG Sewer and Water Utilities. The development is located on 33.2 acres west of Chilson Rd, 0.5 miles north of I-96. The Petitioner is proposing a new admin building. The proposed site includes a new parking lot, bioretention facility, and storm sewer.

We have reviewed the revised site plan, and the petitioner has satisfactorily addressed our previous comments. We have no further engineering related concern with the proposed site plan. Please call or email if you have any questions.

Sincerely,

Sydney Streveler, EIT
Civil Engineering Group

Tetra Tech
3497 Coolidge Road, East Lansing, MI 48823
Tel 517.316.3930 Fax 517.484.8140 www.tetratech.com

BRIGHTON AREA FIRE AUTHORITY
615 W. Grand River Ave.
Brighton, MI 48116
o: 810-229-6640 f: 810-229-1619

July 31, 2026

Bobby Foster, Planner
Genoa Charter Township
2911 Dorr Rd.
Brighton, MI 48116

RE: MHOG Utility Building
900 Chilson Rd.
Site Plan Review

Dear Bobby:

The Brighton Area Fire Department has reviewed the above-mentioned site plan. The revised submission was received for review on July 22, 2026. The project is based on the proposed construction of a new 5,940-square-foot Business Occupancy. The plan review is based on the requirements of the International Fire Code (IFC) 2024 edition.

All previous comments have been revised on the drawings or noted to be complied with as part of the development.

Additional comments will be given during the building plan review process (specific to the building plans and occupancy)for life safety requirements in conjunction with the Building Department.

If you have any questions about the comments on this plan review, please contact me at 810-229-6640.

Cordially,

Rick Boisvert, CFPS
Fire Marshal

cc: Amy Ruthig (amy@genoa.org)

ENVIRONMENTAL IMPACT ASSESSMENT

FOR

THE NEW MHOG ADMINISTRATION BUILDING

GENOA TOWNSHIP, LIVINGSTON COUNTY

Prepared for:

MHOG Sewer and Water Utilities
Mr. Greg Tatara, Utility Director
(810)-244-5837

Prepared by:

JW CivilWorks
333 Albert Avenue, Ste. 622
East Lansing, MI 48823
(517)-204-2178

Issue Date: June 23rd, 2026

Introduction

The purpose of this Impact Assessment (IA) report is to show the effect that this proposed development may have on various factors in the general vicinity of the project. The format used for presentation of this report conforms to the Submittal Requirements for Impact Assessment guidelines in accordance with Section 18.07 of the published Zoning Ordinance for Genoa Township, Livingston County, Michigan.

Discussion Items

A. Name(s) and address(es) of person(s) responsible for preparation of the impact assessment and a brief statement of their qualifications.

Prepared For:
MHOG Sewer and Water Utilities
Mr. Greg Tatara, Utility Director
(810)-224-5837
Greg@MHOG.org

Prepared By:
JW CivilWorks
333 Albert Avenue, Ste. 622
East Lansing, MI 48823
(517)-204-2178
Joe@jwcivilworks.com

JW CivilWorks, LLC is a civil engineering and landscape architecture firm founded in 2023 by Joseph White. With over 30 years of experience, Mr. White guides the firm in delivering a distinctive blend of technical precision and creative design. By integrating the artistic principles of landscape architecture with disciplined civil engineering practices, JW CivilWorks produces solutions that are both functional and thoughtfully designed.

We serve residential, commercial, industrial, and municipal clients with a commitment to integrity, responsiveness, and accountability. Clients value our practical problem-solving approach, attention to detail, and consistent follow-through from project initiation through construction completion.

B. Map(s) and written description / analysis of the project site including all existing structures, manmade facilities, and natural features. The analysis shall also include information for areas within 10 feet of the property. An aerial photograph or drawing may be used to delineate these areas.

The project site is located on the west side of Chilson Road, between E. Grand River Avenue and I-96, on Parcel No. 4711-06-400-003. The parcel contains approximately 33 acres and is zoned PRF, Public and Recreational Facilities. The proposed project consists of the construction of the MHOG Water Authority Administration Building.

The proposed development area is currently wooded and generally undeveloped. Existing natural features on the site include mature wooded areas and undulating topography. Steep slopes greater than 20% are present along the west side of the proposed development area. The project has been designed to limit disturbance to the existing wooded areas where practicable, and as much of the existing woodlot as possible will be preserved.

Existing manmade facilities on the parcel include an existing wastewater treatment plant located west of the proposed administration building site. Chilson Road is located along the east side of the parcel and provides access to the general project area. Existing manmade features, natural features, wooded areas, topography, the proposed development limits, and the area within 10 feet of the property have been identified on the accompanying existing conditions plan.

Areas immediately adjacent to the property consist primarily of Suburban and High Density Residential across Chilson, existing public/utility-related facilities within the parcel, and wooded or undeveloped land surrounding portions of the proposed development area. No disturbance is proposed outside the project limits except as necessary for grading, utility connections, access, and related site improvements shown on the plans.

C. Impact on natural features: A written description of the environmental characteristics of the site prior to development and following development, i.e., topography, soils, wildlife, woodlands, mature trees (eight-inch caliper or greater), wetlands, drainage, lakes, streams, creeks or ponds. Documentation by a qualified wetland specialist shall be required wherever the township determines that there is a potentially regulated wetland. Reduced copies of the Existing Conditions Map(s) or aerial photographs may accompany written material.

Prior to development, the proposed construction area is primarily wooded and undeveloped. Existing natural features include rolling to undulating topography, woodlands, and areas of steep slope. Existing grades generally slope toward the west/northwest, with steep slopes greater than 20% located along the west side of the proposed development area. An existing detention pond is located on the same overall parcel northwest of the proposed construction area and downhill from the proposed improvements.

Based on the USDA Web Soil Survey, the soils within the general project area are identified as Wawasee Loam, including areas mapped as Wawasee Loam, 2 to 6 percent slopes, and Wawasee Loam, 6 to 12 percent slopes. Existing soil and topographic conditions are shown on the Existing Conditions Sheet included with this submittal.

No wetlands, lakes, streams, creeks, or ponds are currently identified within the proposed construction area. The existing detention pond located northwest of the project area will remain in place. The site is currently wooded and may provide habitat for common wildlife typically associated with wooded and undeveloped land in the area. Development of the proposed MHOG Water Authority Administration Building will require clearing, grading, utility installation, driveway/access improvements, and construction of associated site improvements. Tree removal and clearing will be limited to the areas necessary to construct the proposed building, access drives, utilities, stormwater facilities, and related grading. As much of the existing woodlot as possible will be preserved.

Following development, the site will continue to include preserved wooded areas surrounding portions of the proposed administration building site. Drainage patterns will be modified as necessary to accommodate the proposed development and will be managed through the proposed grading and stormwater management design shown on the site plans. The proposed improvements are not anticipated to impact wetlands, lakes, streams, creeks, or natural ponds, as none are currently identified within the proposed construction area.

D. Impact on storm water management: Description of measures to control soil erosion and sedimentation during grading and construction operations and until a permanent ground cover is established. Recommendations for such measures may be obtained from the Livingston County Drain Commission at (517) 546-0040.

During grading and construction operations, soil erosion and sedimentation will be controlled using temporary and permanent soil erosion control measures. Proposed measures include silt fence, a temporary gravel construction access drive, temporary seeding, permanent seeding, mulch blankets, and check dams where necessary. These measures will be installed and maintained to reduce sediment migration from disturbed areas, protect downstream drainage facilities, and stabilize exposed soils until permanent ground cover is established.

Silt fence will be installed along downgradient limits of disturbance and other appropriate locations to intercept sediment-laden runoff. A gravel construction access drive will be provided to reduce the tracking of soil and debris onto adjacent roadways. Check dams will be installed in swales or concentrated flow areas where needed to reduce runoff velocity and encourage sediment deposition. Disturbed areas will be stabilized with temporary seed, permanent seed, and mulch blankets as appropriate based on the stage of construction and final site conditions.

During construction, there may be temporary dust, noise, vibration, and construction-related disturbance. These conditions will be temporary and will be controlled through appropriate construction practices, including watering for dust control when necessary, maintaining erosion control measures, and stabilizing disturbed areas in a timely manner.
The site plans show the proposed locations of site improvements and soil erosion and sedimentation control measures. The project will be reviewed for compliance with

applicable Livingston County Drain Commissioner requirements prior to issuance of a Soil Erosion and Sedimentation Control permit. All erosion control measures will be installed, inspected, and maintained as required until construction is complete and permanent stabilization has been established.

E. Impact on surrounding land used: Description of the types of proposed uses and other man-made facilities, including any project phasing, and an indication of how the proposed use conforms or conflicts with existing and potential development patterns. A description shall be provided of any increases of light, noise or air pollution which could negatively impact adjacent properties.

The proposed project consists of the construction of an administration building for MHOG Water Authority. The building will support the existing public utility use on the parcel, which already contains a wastewater treatment plant located west of the proposed construction area. The proposed administration building is therefore consistent with the existing use of the property and will serve as an accessory/supporting facility for the owner.

No project phasing is currently proposed beyond normal construction sequencing for site clearing, grading, utility installation, building construction, paving, stormwater improvements, and final restoration. The proposed use does not represent a significant change in the overall character or function of the parcel, as the property is already used for public utility-related facilities. The proposed administration building is compatible with the PRF, Public and Recreational Facilities, zoning classification and is not expected to conflict with existing or potential development patterns in the surrounding area.

Site lighting will be provided for the proposed building. The lighting has been designed so that illumination levels are reduced to less than 0.1 foot-candles before reaching the property line. In addition, existing trees and wooded areas to be preserved on site will provide additional screening between the proposed improvements and surrounding properties. Therefore, the proposed lighting is not expected to negatively impact adjacent properties.

Because the proposed use is an administration building, no significant increase in noise or air pollution is anticipated. Noise associated with the use will generally be limited to normal employee, visitor, maintenance, and vehicle activity typical of an office/administrative facility. Any temporary noise, dust, or equipment emissions during construction will be limited in duration and will cease once construction is complete. Following development, the proposed use is not expected to create adverse impacts to surrounding land uses related to light, noise, or air pollution.

F. Impact on public facilities and services: Describe the number of expected residents, employees, visitors, or patrons and the anticipated impact on public schools, police protection and fire protection. Letters from the appropriate agencies may be provided, as appropriate.

The building is not a residential use and will not generate any new residents or school-aged children. Therefore, the proposed development is not expected to have an impact on public school enrollment or public school facilities.

The building is expected to accommodate no more than approximately 20 employees on a typical day-to-day basis. A large conference room is also planned within the building, which may result in intermittent increases in visitors or meeting attendees. Additional parking has been provided to accommodate this occasional conference room's use.

The proposed administration building is expected to generate typical office-related activity, including employee trips, visitor trips, deliveries, and occasional maintenance or service vehicles. The use is not anticipated to create a significant increase in demand for police protection. Fire protection needs will be typical of an office/administrative building and will be addressed through applicable building code, fire code, site access, and utility requirements. The proposed site layout will be reviewed by the appropriate agencies as part of the site plan review process, and letters from applicable public safety agencies will be provided if required by the Township.

G. Impact on public utilities: Describe the method to be used to service the development with water and sanitary sewer facilities, the method to be used to control drainage on the site and from the site, including runoff control during periods of construction. For sites serviced with sanitary sewer, calculations for pre- and post development flows shall be provided in comparison with sewer line capacity. Expected sewage rates shall be provided in equivalents to a single family home. Where septic systems are proposed, documentation or permits from the Livingston County Health Department shall be provided.

The proposed administration building will be served by public water and sanitary sewer facilities. Water service will be provided by extending approximately 496 feet of 2-inch Type K copper water service from a water main which will be constructed under separate contract within the Chilson Road right-of-way.

Sanitary sewer service will be provided by a proposed grinder station. Wastewater from the building will be collected and pumped through a proposed low pressure sewer line to an existing sanitary manhole located at the wastewater treatment plant. The proposed sanitary sewer flow is expected to be limited to typical office/administrative use associated with the MHOG Water Authority Administration Building. Pre- and post-development sanitary sewer flow calculations, including the equivalent single-family residential unit calculations, will be provided as part of the engineering review materials, as required.

Stormwater runoff from the proposed building, parking lot, and associated paved areas will be directed to a proposed bioretention basin. The basin will provide treatment for the Channel Protection Volume Control prior to discharging to the existing detention pond located northwest of the proposed construction area. The existing detention pond is located

downhill from the proposed development area and will continue to function as part of the overall stormwater management system for the site.

During construction, runoff and sediment will be controlled through soil erosion and sedimentation control measures, including silt fence, temporary gravel construction access, temporary and permanent seeding, mulch blankets, and check dams where necessary. These measures will be installed and maintained until construction is complete and permanent ground cover has been established.

No septic system is proposed for this development. Therefore, permits or documentation from the Livingston County Health Department for an on-site septic system are not required.

H. Storage and handling of any hazardous materials: A description of any hazardous substances expected to be used, stored or disposed of on the site. The information shall describe the type of materials, location within the site and method of containment. Documentation of compliance with federal and state requirements, and a Pollution Incident Prevention Plan (PIPP) shall be submitted, as appropriate.

No hazardous materials are proposed to be stored, handled, or disposed of on the site.

I. Impact on Traffic and Pedestrians: A description of the traffic volumes to be generated based on the national reference documents, such as the most recent edition of the *Institute of Transportation Engineers Trip Generation Manual*, other published studies or actual counts of similar uses in Michigan. A detailed traffic impact study shall be submitted for any site over ten (10) acres in size which would be expected to generate 100 directional vehicle trips (i.e. 100 inbound or 100 outbound trips) during the peak hour of traffic of the generator or on the adjacent streets.

The overall parcel is greater than 10 acres in size; however, the proposed area of disturbance and development is less than 10 acres. Based on the proposed administrative use, expected staffing levels, and parking provided, the project is not expected to generate 100 or more inbound or 100 or more outbound directional vehicle trips during the peak hour of the generator or adjacent street system. Therefore, a detailed traffic impact study is not required.

Vehicular access will be provided as shown on the site plan. Traffic generated by the proposed building is expected to be compatible with the existing public utility use on the parcel, which already contains a wastewater treatment plant. Pedestrian activity is expected to be limited to employees and visitors accessing the building from the parking area. Proposed pedestrian routes, parking areas, and access drives have been designed to provide safe and orderly circulation on site.

J. Special Provisions. General description of any deed restrictions, protective covenants, master deed or association bylaws shall be included or attached as an exhibit.

There are no known deed restrictions, protective covenants, master deed or association bylaws encumbering this parcel.

900 CHILSON ROAD

PLAN OF PROPOSED

MHOG ADMINISTRATION BUILDING

GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

ZONING INFORMATION

	REQUIRED	PROVIDED	ZO SECTION
MINIMUM LOT SIZE	3 ACRES	33.27 ACRES	6.02.02(O)(1)
MINIMUM LOT WIDTH	N/A	2,127.69 Ft	
SETBACK - FRONT	40 FT (ADJACENT TO SUBURBAN RESIDENTIAL)	160 FT	6.03.04
SETBACK - SIDE	100 FT	1,000.65 FT AND 785.31 FT	6.03.05
SETBACK - REAR	100 FT	521.62 FT	6.03.05
SETBACK - WATER BODIES	75 FT	N/A	6.03.03
SETBACK - PARKING AREA	20 FT FROM R/W 10 FT FROM P/L	92.5 FT FROM R/W ±1,372 AND ±692 FT FROM P/L	6.03.05
PARKING SPACES	25	40	14.04 (MUNICIPAL OFFICE BUILDINGS)
BARRIER - FREE SPACE	1	2	14.05.01

VARIANCE CONSIDERATIONS:
1. SECTION 6.02.02 (O)(2): A FENCE SIX (6) FEET IN HEIGHT SHALL BE CONSTRUCTED ON THE BOUNDARY PROPERTY LINES.
2. SECTION 6.03.05: WHERE PARKING ABUTS A RESIDENTIAL DISTRICT, A BUFFER ZONE C, AS DEFINED IN SECTION 12.02, SHALL BE REQUIRED.
3. SECTION 11.02.01: NO LOT MAY CONTAIN MORE THAN ONE (1) PRINCIPAL BUILDING, STRUCTURE, OR USE.
4. SECTION 14.02.06: IN ORDER TO MINIMIZE EXCESSIVE AREAS OF PAVEMENT WHICH REDUCES AESTHETIC STANDARDS AND CONTRIBUTE TO HIGH RATES OF STORM WATER RUNOFF, EXCEEDING THE MINIMUM PARKING SPACE REQUIREMENTS BY MORE THAN TWENTY PERCENT (20%) SHALL ONLY BE ALLOWED WITH APPROVAL BY THE PLANNING COMMISSION.

PARCEL INFORMATION

PARCEL NUMBER: 4711-06-400-003
PARCEL LOCATION: WEST SIDE OF CHILSON ROAD, BETWEEN E GRAND RIVER AVE AND I-96
ACREAGE: APPROX. 33 ACERS
ZONING CLASSIFICATION: PRF - PUBLIC AND RECREATIONAL FACILITIES
EXISTING USE: VACANT / WASTEWATER TREATMENT PLANT
PROPOSED USE: MHOG WATER AUTHORITY ADMINISTRATION BUILDING

LEGAL DESCRIPTION (AS PROVIDED THIS OFFICE)

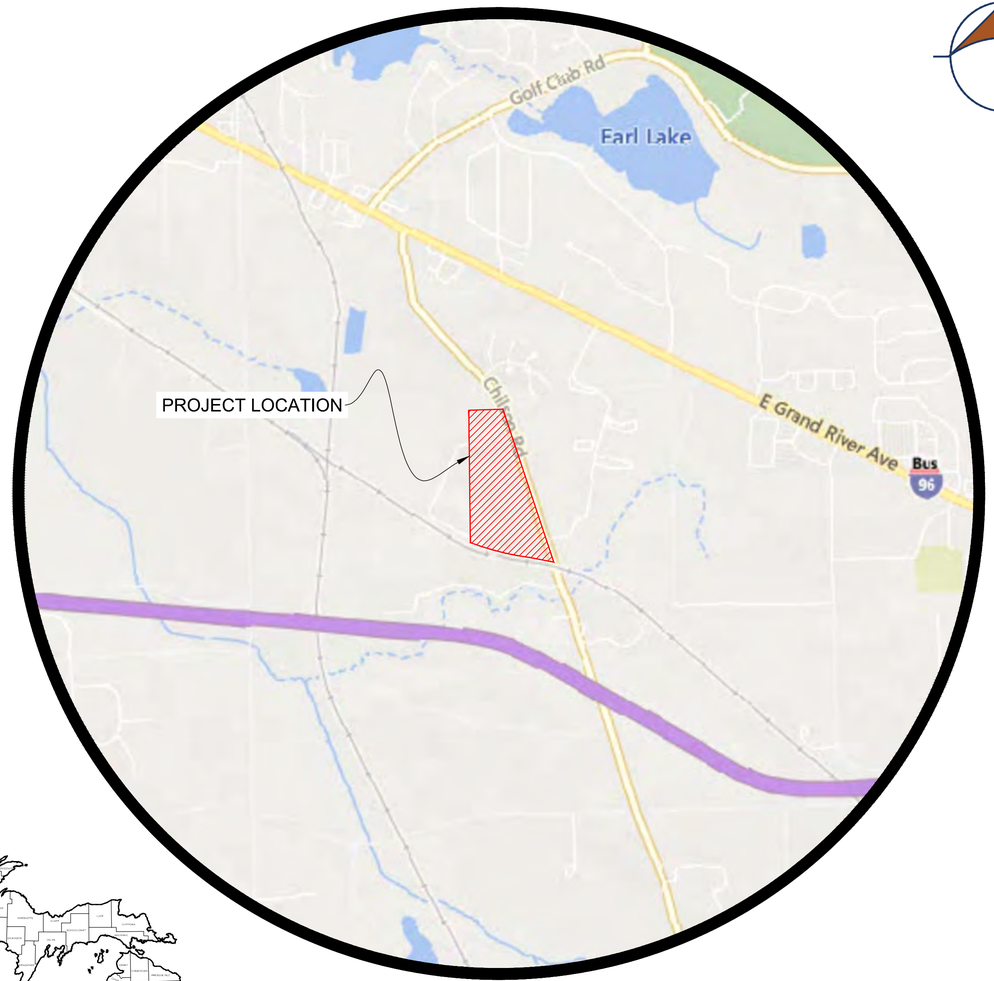
PARCEL #4711-06-400-003, AS SURVEYED:

A PARCEL OF LAND LYING WITHIN THE SOUTHEAST 1/4 OF SECTION 6, TOWNSHIP 2 NORTH, RANGE 5 EAST, GENOA CHARTER TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 6; THENCE SOUTH 88°11'29" WEST 2218.35 FEET ALONG THE EAST-WEST 1/4 LINE OF SAID SECTION # TO THE POINT OF BEGINNING; THENCE SOUTH 19°21'02" EAST 358.45 FEET ALONG THE CENTERLINE OF SAID CHILSON ROAD; THENCE CONTINUING ALONG SAID CENTERLINE SOUTH 18°23'49" EAST 819.98 FEET; THENCE CONTINUING ALONG SAID CENTERLINE SOUTH 17°57'55" EAST 949.26 FEET; THENCE ALONG THE NORTHERLY RIGHT-OF-WAY OF THE C&O RAILROAD NORTHWESTERLY 295.46 FEET ALONG THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 3724.90 FEET, A CENTRAL ANGLE OF 4°32'41", AND SUBTENDED BY A CHORD BEARING NORTH 78°54'47" WEST 295.38 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY NORTH 81°11'04" WEST 191.74 FEET; THENCE CONTINUING ALONG SAID RIGHT-OF-WAY NORTHWESTERLY 646.69 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 2782.52 FEET, A CENTRAL ANGLE OF 13°18'58", AND SUBTENDED BY A CHORD BEARING NORTH 74°31'35" WEST 645.23 FEET TO THE NORTH-SOUTH 1/4 LINE OF SAID SECTION 6; THENCE ALONG SAID NORTH-SOUTH 1/4 LINE NORTH 00°39'20" WEST 1746.80 FEET TO THE CENTER OF SAID SECTION 6; THENCE ALONG SAID EAST-WEST 1/4 LINE NORTH 88°11'29" EAST 451.05 FEET TO THE POINT OF BEGINNING. CONTAINING 33.27 ACRES (1,449,401.43 SQ.FT.), MORE OR LESS.

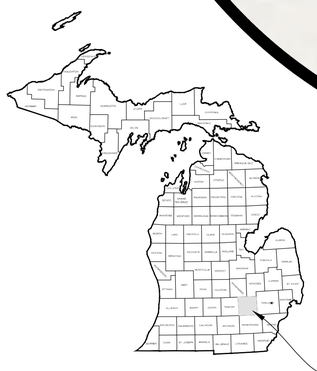
Know what's **below.**
Call before you dig.

!!! CAUTION !!!

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. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN ACCORDANCE WITH MICHIGAN P.A. NO. 174 OF 2013.



LOCATION MAP
1" = 1000'



Sheet List Table

Sheet Number	Sheet Title
1	COVER SHEET
2	CERTIFICATE OF SURVEY
3	EXISTING CONDITIONS PLAN
4	DEMOLITION PLAN
5	SITE DIMENSION PLAN
6	UTILITY PLAN
7	UTILITY PROFILES
8	GRADING PLAN
9A	STORM WATER MANAGEMENT PLAN
9B	STORM WATER MANAGEMENT PLAN
10	SESC PLAN
11	LANDSCAPE PLAN
12	PHOTOMETRIC PLAN
13	LIGHTING DETAILS
14	SITE DETAILS
15	MISC MDOT DETAILS
16	MDOT DETAILS
17	MHOG DETAILS 1
18	MHOG DETAILS 2
19	MHOG DETAILS 3
20	MHOG DETAILS 4
21	FIRST FLOOR PLAN A1-01
22	ELEVATIONS A2-01

JWC PROJECT INFORMATION: MHOG ADMINISTRATION BUILDING JN2026-050

OWNER INFORMATION

MHOG SEWER AND WATER UTILITIES
MR. GREG TATARA, UTILITY DIRECTOR
PH. 810.224.5837
GREG@MHOG.ORG

REV.	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/21/2026	REV PER GENOA TWP REVIEW PACKET RECEIVED 7/14/2026

#BuildBetter
Schafer Construction, Inc.

NOT TO BE USED AS CONSTRUCTION DRAWING

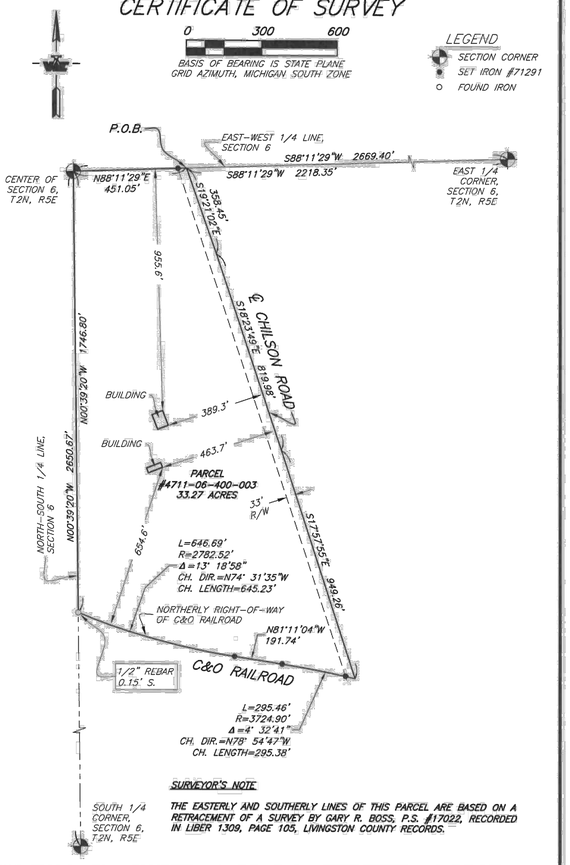
PREPARED UNDER SUPERVISION OF

(SEAL)

JWC CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

STATE OF MICHIGAN
JOSEPH C. WHITE
License No. 6201046821
LICENSED PROFESSIONAL ENGINEER

CERTIFICATE OF SURVEY



SURVEYOR'S NOTE

THE EASTERLY AND SOUTHERLY LINES OF THIS PARCEL ARE BASED ON A RETRACEMENT OF A SURVEY BY GARY R. BOSS, P.S. #17022, RECORDED IN LIBER 1309, PAGE 105, LIVINGSTON COUNTY RECORDS.

WOLVERINE Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517-676-9200
Fx: 517-676-9396
http://www.wolveng.com

SURVEY FOR: GENOA–OCEOLA SANITARY SEWER SECTION 6, T2N, R5E, GENOA CHARTER TOWNSHIP LIVINGSTON COUNTY, MICHIGAN		
SCALE: 1" = 300'	DATE: 5/28/2026	SHEET: 1 OF 3
DRAWN: DLD	FIELD: TY & JY	JOB: 26–0446

CERTIFICATE OF SURVEY

LEGAL DESCRIPTIONS

PARCEL #4711–06–400–003, PER WARRANTY DEED RECORDED IN LIBER 1299, PAGE 602, JACKSON COUNTY RECORDS:

A PART OF THE EAST 1/2 OF SECTION 6 AND A PART OF THE NORTHWEST FRACTIONAL 1/4 OF SECTION 6 AND A PART OF THE SOUTHWEST FRACTIONAL 1/4 OF SECTION 6, TOWN 2 NORTH, RANGE 5 EAST, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 6; THENCE SOUTH 87° 24' 44" WEST (PREVIOUSLY RECORDED AS SOUTH 88° 25' 45" WEST) ALONG THE EAST–WEST 1/4 LINE OF SAID SECTION 6, 2218.35 FEET TO THE CENTERLINE OF CHILSON ROAD AND POINT OF BEGINNING OF THE PARCEL TO BE DESCRIBED; THENCE ALONG THE CENTERLINE OF CHILSON ROAD ON THE FOLLOWING 3 COURSES;
(1) SOUTH 20° 07' 49" EAST (PREVIOUSLY RECORDED AS SOUTH 19° 14' 45" EAST) 358.45 FEET;
(2) SOUTH 19° 10' 34" EAST (PREVIOUSLY RECORDED AS SOUTH 18° 17' 30" EAST) 819.98 FEET;
(3) SOUTH 18° 44' 40" EAST 949.26 FEET TO THE NORTHERLY RIGHT–OF–WAY OF THE C&O RAILROAD (100 FEET WIDE); THENCE NORTHERLY ALONG SAID RIGHT–OF–WAY 295.46 FEET ON AN ARC LEFT HAVING A CENTRAL ANGLE OF 04° 32' 41", RADIUS OF 3724.90 FEET AND LONG CHORD BEARING NORTH 79° 41' 32" WEST 295.38 FEET; THENCE CONTINUING ALONG SAID RIGHT–OF–WAY NORTH 81° 57' 49" WEST 191.74 FEET; THENCE CONTINUING ALONG SAID RIGHT–OF–WAY NORTHWESTERLY 1185.11 FEET ON AN ARC RIGHT HAVING A CENTRAL ANGLE OF 24° 24' 10", RADIUS OF 2782.52 AND LONG CHORD BEARING NORTH 69° 45' 44" WEST 1176.17 FEET; THENCE CONTINUING ALONG SAID RIGHT–OF–WAY, NORTH 57° 33' 40" WEST 1294.12 FEET; THENCE NORTH 00° 09' 26" WEST 737.39 FEET TO THE EAST–WEST 1/4 LINE OF SAID SECTION; THENCE NORTH 02° 05' 11" WEST 141.72 FEET (PREVIOUSLY RECORDED AS NORTH 100 FEET); THENCE NORTH 58° 34' 52" EAST, 1503.59 FEET (PREVIOUSLY RECORDED AS NORTH 51° 05" EAST 1503 FEET) TO THE CENTERLINE OF CHILSON ROAD; THENCE SOUTH 44° 38' 24" EAST (PREVIOUSLY RECORDED AS SOUTH 42° 12' EAST) ALONG SAID CENTERLINE 898.50 FEET; THENCE CONTINUING ALONG SAID CENTERLINE SOUTH 20° 07' 49" EAST (PREVIOUSLY RECORDED AS SOUTH 21° 05' EAST) 206.87 FEET TO THE POINT OF BEGINNING.

PARCEL #4711–06–400–003, AS SURVEYED:

A PARCEL OF LAND LYING WITHIN THE SOUTHEAST 1/4 OF SECTION 6, TOWNSHIP 2 NORTH, RANGE 5 EAST, GENOA CHARTER TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, DESCRIBED AS COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 6; THENCE SOUTH 88°11'29" WEST 2218.35 FEET ALONG THE EAST–WEST 1/4 LINE OF SAID SECTION 6 TO THE POINT OF BEGINNING; THENCE SOUTH 19°21'02" EAST 358.45 FEET ALONG THE CENTERLINE OF SAID CHILSON ROAD; THENCE CONTINUING ALONG SAID CENTERLINE SOUTH 18°23'49" EAST 819.98 FEET; THENCE CONTINUING ALONG SAID CENTERLINE SOUTH 17°57'55" EAST 949.26 FEET; THENCE ALONG THE NORTHERLY RIGHT–OF–WAY OF THE C&O RAILROAD NORTHWESTERLY 295.46 FEET ALONG THE ARC OF A CURVE TO THE LEFT; HAVING A RADIUS OF 3724.90 FEET, A CENTRAL ANGLE OF 4°32'41", AND SUBTENDED BY A CHORD BEARING NORTH 79°54'47" WEST 295.38 FEET; THENCE CONTINUING ALONG SAID RIGHT–OF–WAY NORTH 81°11'04" WEST 191.74 FEET; THENCE CONTINUING ALONG SAID RIGHT–OF–WAY NORTHWESTERLY 646.69 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 2782.52 FEET, A CENTRAL ANGLE OF 13°18'58", AND SUBTENDED BY A CHORD BEARING NORTH 74°31'35" WEST 645.23 FEET TO THE NORTH–SOUTH 1/4 LINE OF SAID SECTION 6; THENCE ALONG SAID NORTH–SOUTH 1/4 LINE NORTH 00°39'20" WEST 1746.80 FEET TO THE CENTER OF SAID SECTION 6; THENCE ALONG SAID EAST–WEST 1/4 LINE NORTH 88°11'29" EAST 451.05 FEET TO THE POINT OF BEGINNING. CONTAINING 33.27 ACRES, MORE OR LESS.

WOLVERINE Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517-676-9200
Fx: 517-676-9396
http://www.wolveng.com

SURVEY FOR: GENOA–OCEOLA SANITARY SEWER SECTION 6, T2N, R5E, GENOA CHARTER TOWNSHIP LIVINGSTON COUNTY, MICHIGAN		
SCALE: N/A	DATE: 5/28/2026	SHEET: 2 OF 3
DRAWN: DLD	FIELD: TY & JY	JOB: 26–0446

CERTIFICATE OF SURVEY

WITNESSES TO SECTION CORNERS
SECTION 6, TOWNSHIP 2 NORTH, RANGE 5 EAST,
GENOA CHARTER TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN

EAST 1/4 CORNER
FOUND 1 1/4" PIPE WITH BRASS CAP STAMPED "LIVINGSTON COUNTY REMONUMENTATION CORNER"
FND. N&T, "LIV. CO. REMON," W. SIDE 8" OAK, N45°E 17.70'
FND. N&T, "LIV. CO. REMON," E. SIDE 6" PINE, N3°W 13.11'
FND. N&T, "LIV. CO. REMON," E. SIDE 12" RED OAK, N5°E 27.45'
FND. N&T, "LIV. CO. REMON," N. SIDE 26" WHITE OAK, S65°W 34.47'

SOUTH 1/4 CORNER
FOUND 1 1/4" PIPE WITH BRASS CAP STAMPED "LIVINGSTON COUNTY REMONUMENTATION CORNER"
FACE PANHANDLE EASTERN FENCE POST, N6°E 78.02'
FACE PANHANDLE EASTERN FENCE POST, N39°E 89.77'
FND. N&T, "LIV. CO. REMON," N. SIDE TRIPLE 36" COTTONWOOD, N78°E 104.89'
FND. N&T, S. SIDE TWIN 12" BLACK LOCUST, N87°W 10.87'

CENTER OF SECTION 6
FOUND 1 1/4" PIPE WITH BRASS CAP STAMPED "TRP P.S. 62878"
FND. N&T, "DESINE," SW SIDE 13" CHERRY, S32°E 8.03'
FND. N&T, "DESINE," SE SIDE TWIN 8" OAK, S50°W 10.81'
FND. N&T, "PEA 14864," S. SIDE 16" OAK, N43°W 25.52'
FND. N&T, "DESINE," E. SIDE 8" MAPLE, N4°W 32.54'

CERTIFICATION STATEMENT

I, MICHAEL NEAL VAN FOSSEN, PROFESSIONAL SURVEYOR #71291, CERTIFY THAT THIS SURVEY WAS MADE UNDER MY DIRECTION, THAT ALL CORNERS HAVE BEEN MARKED AS SHOWN, THAT THE RELATIVE POSITIONAL PRECISION OF THE CORNERS IDENTIFIED ON THIS SURVEY AND SHOWN THEREON ARE WITHIN THE LIMITS CONSIDERED ACCEPTABLE BY THOSE IN THE PRACTICE OF PROFESSIONAL SURVEYING, AND THAT THE REQUIREMENTS OF MCL SECTION 54.213 OF ACT 132 OF 1970, AS AMENDED, HAVE BEEN MET.

5-28-26
DATE

STATE OF MICHIGAN
MICHAEL NEAL VAN FOSSEN
PROFESSIONAL SURVEYOR
4001071291
LICENSED PROFESSIONAL SURVEYOR

WOLVERINE Engineers & Surveyors, Inc.
312 North Street
Mason, Michigan 48854
Ph: 517-676-9200
Fx: 517-676-9396
http://www.wolveng.com

SURVEY FOR: GENOA–OCEOLA SANITARY SEWER SECTION 6, T2N, R5E, GENOA CHARTER TOWNSHIP LIVINGSTON COUNTY, MICHIGAN		
SCALE: N/A	DATE: 5/28/2026	SHEET: 3 OF 3
DRAWN: DLD	FIELD: TY & JY	JOB: 26–0446

CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

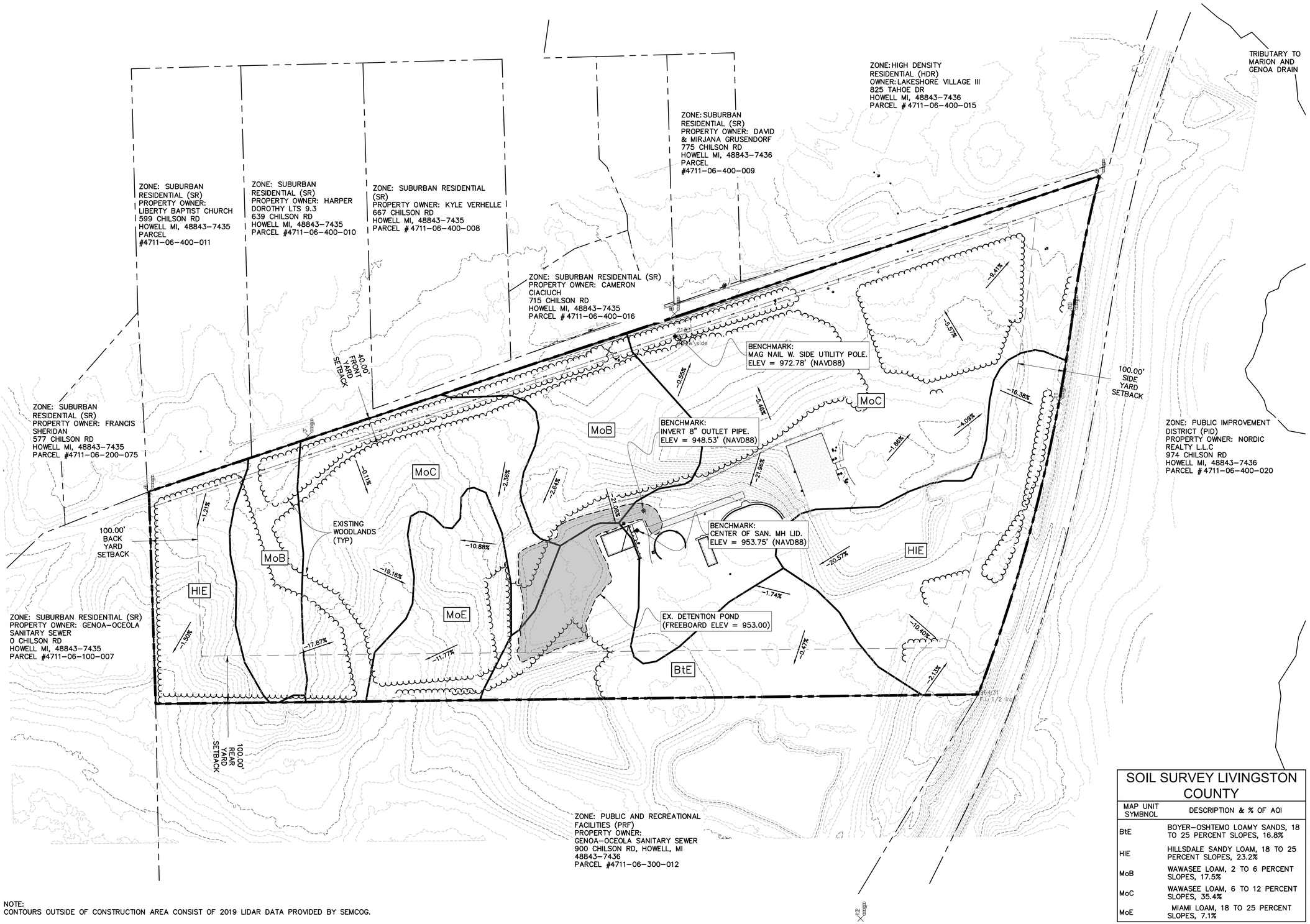
SHEET TITLE
CERTIFICATE OF SURVEY

COPYRIGHT © 2025 JW CIVILWORKS, LLC. ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT THE WRITTEN CONSENT OF JW CIVILWORKS, LLC. ANY SUCH DUPLICATION, USE OR DISCLOSURE WITHOUT SUCH CONSENT IS PROHIBITED BY LAW. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).
ELECTRONIC DATA PROVIDED BY SEMCOG ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION

FOR REVIEW

APPROVED: JCW	CHECKED: JCW
DRAWN: JAS	DATE: 2026.06.23
SCALE: 1"=20'	
JOB NO.: JN2026–050	
SHEET NO.: 2	



NOTE:
CONTOURS OUTSIDE OF CONSTRUCTION AREA CONSIST OF 2019 LIDAR DATA PROVIDED BY SEMCOG.

SOIL SURVEY LIVINGSTON COUNTY

MAP UNIT SYMBNOL	DESCRIPTION & % OF AOI
BtE	BOYER-OSHTEMO LOAMY SANDS, 18 TO 25 PERCENT SLOPES, 16.8%
HIE	HILLSDALE SANDY LOAM, 18 TO 25 PERCENT SLOPES, 23.2%
MoB	WAWASEE LOAM, 2 TO 6 PERCENT SLOPES, 17.5%
MoC	WAWASEE LOAM, 6 TO 12 PERCENT SLOPES, 35.4%
MoE	MIAMI LOAM, 18 TO 25 PERCENT SLOPES, 7.1%

FOR REVIEW

JW CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
EXISTING CONDITIONS PLAN

COPYRIGHT © 2025 JW CIVILWORKS, LLC ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF JW CIVILWORKS, LLC. ELEVATION DATA PROVIDED BY SEMCOG" ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

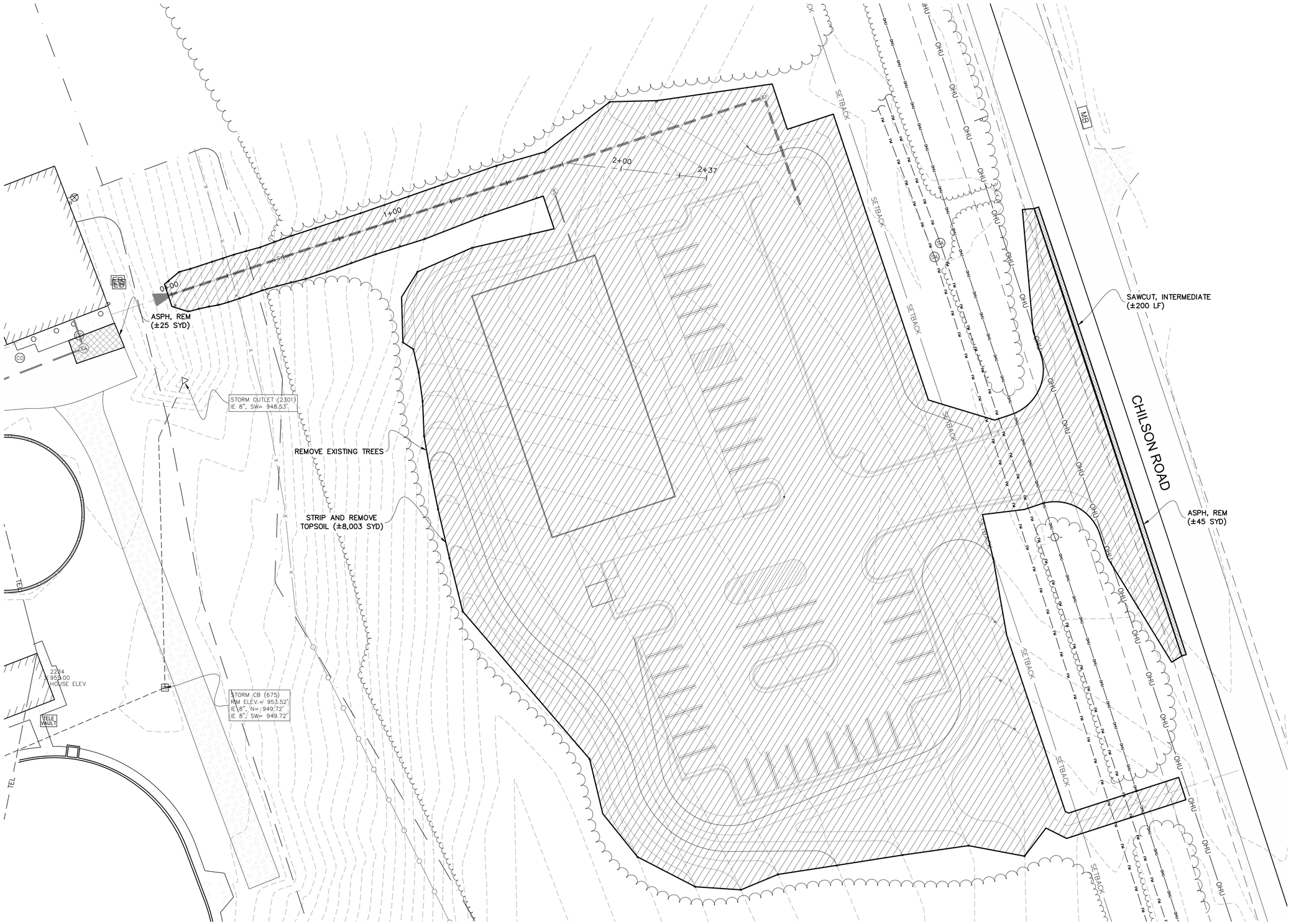
REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

GRAPHIC SCALE
100 50 0 100

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JAS	2026.06.23

SCALE: 1" = 100'
JOB NO.: 2026-050
SHEET NO.: 3



FOR REVIEW

JW CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
DEMOLITION PLAN

COPYRIGHT © 2025 JW CIVILWORKS, LLC. ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT THE WRITTEN CONSENT OF JW CIVILWORKS, LLC. ELECTRONIC DATA PROVIDED BY SEMCOG" ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

GRAPHIC SCALE
20 10 0 20

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JAS	2026.06.23

SCALE
1"=20'

JOB NO.
JN2026-050

SHEET NO.
4

PARKING INFORMATION

	REQUIRED	PROVIDED
PARKING SPACES (INCLUDING BARRIER FREE)	25	40
BARRIER-FREE SPACE	1	2

DETAIL KEY SYMBOL:

DETAIL NUMBER

SHEET NUMBER

X
XX

"KNOX BOX" TO BE INSTALLED AT BUILDING ENTRANCE

1000.65' TO NORTH PROPERTY LINE

521.62' TO WEST PROPERTY LINE

147.83'

PROP. ASPH, ±25 SYD

PROP BLDG
±5,940 SFT
FF = 970.00

55.00'

108.00'

24.50'

9.00'

785.31' TO SOUTH PROPERTY LINE

SETBACK

40.00' FRONT YARD SETBACK

33.00' R/W

CHILSON ROAD

10.00'

50.00'

±107' C/L DRIVE TO C/L DRIVE

±190' C/L DRIVE TO C/L DRIVE

R25.00'

R4.00' (TYP)

R4.50'

R5.00' (TYP)

18.00'

120.00'

8.00'

133.17'

LIGHT POLE

(3 EA)

26.00'

30.00'

(2 EA)

10.00'

7.00'

6.00'

LIGHT POLE (TYP)

24.00' (TYP)

9.00' (TYP)

25.00'

55.00'

LOADING ZONE
10' X 18'

64.00'

82.00'

19.50'

PARKING MARKINGS TO BE DOUBLE STRIPED PER 14.06.07

2A 14 · 2B 14 · 3 14 · 4 14 · 5 14 · 6 14 · 7 14 · 8 14 · 9 · 1 14

FOR REVIEW

JW CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
SITE DIMENSION PLAN

COPYRIGHT © 2025 JW CIVILWORKS, LLC. ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT THE WRITTEN CONSENT OF JW CIVILWORKS, LLC. ELECTRONIC DATA IS ALSO COPYRIGHTED BY SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED). ELECTRONIC DATA PROVIDED BY SEMCOG" ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

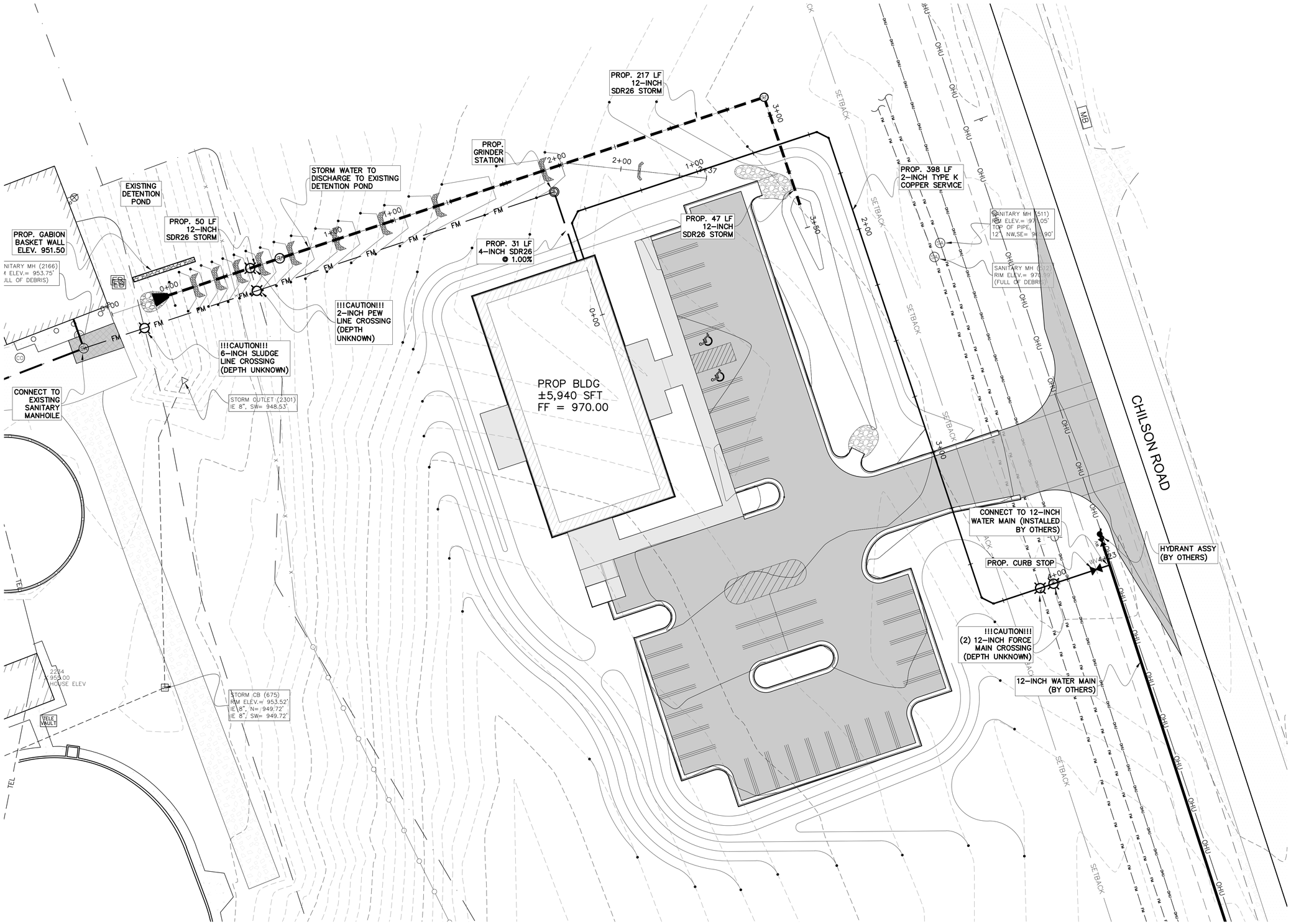
GRAPHIC SCALE
20 10 0 20

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JCW	2026.06.23

SCALE: 1"=20'

JOB NO.: JN2026-050

SHEET NO.: 5



FOR REVIEW

CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
UTILITY PLAN

COPYRIGHT © 2025 JW CIVILWORKS, LLC ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE COPIED, REPRODUCED, PUBLISHED OR USED IN ANY WAY WITHOUT THE EXPRESS WRITTEN CONSENT OF JW CIVILWORKS, LLC. ALL DATA PROVIDED BY SEMCOG" ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

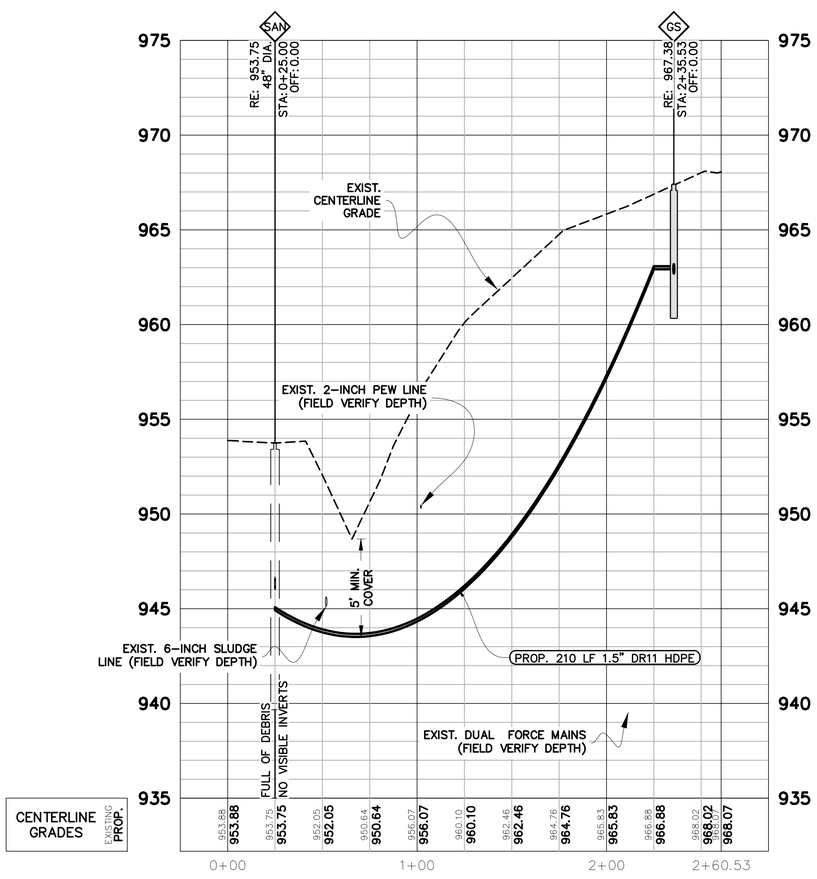
GRAPHIC SCALE
20 10 0 20

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JCW	2026.06.23

SCALE
1"=20'

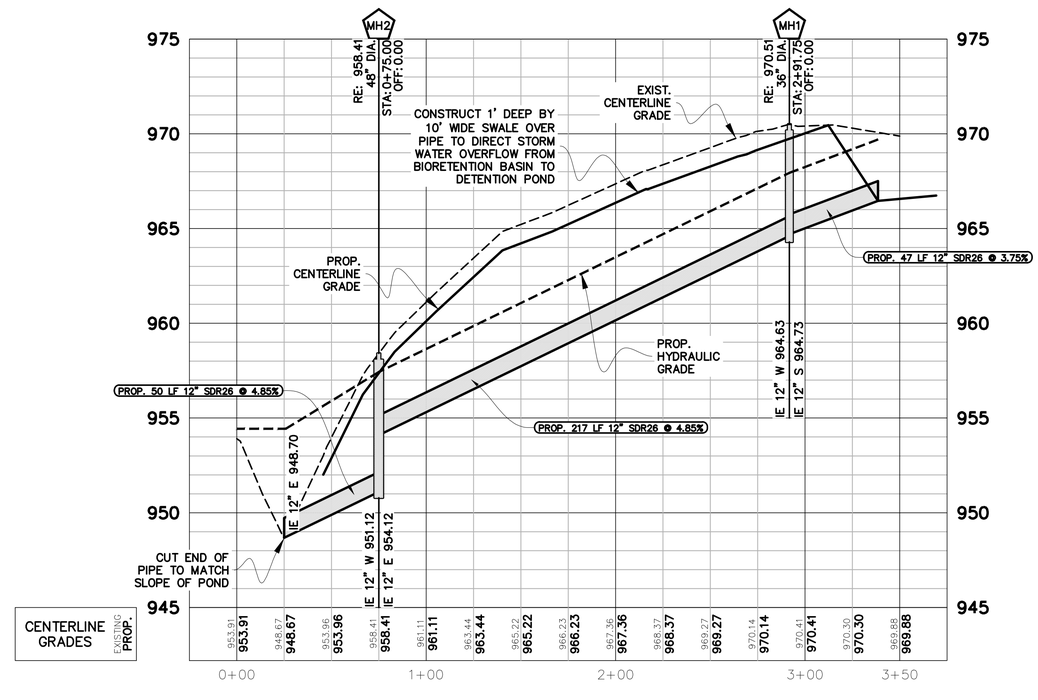
JOB NO.
JN2026–050

SHEET NO.
6



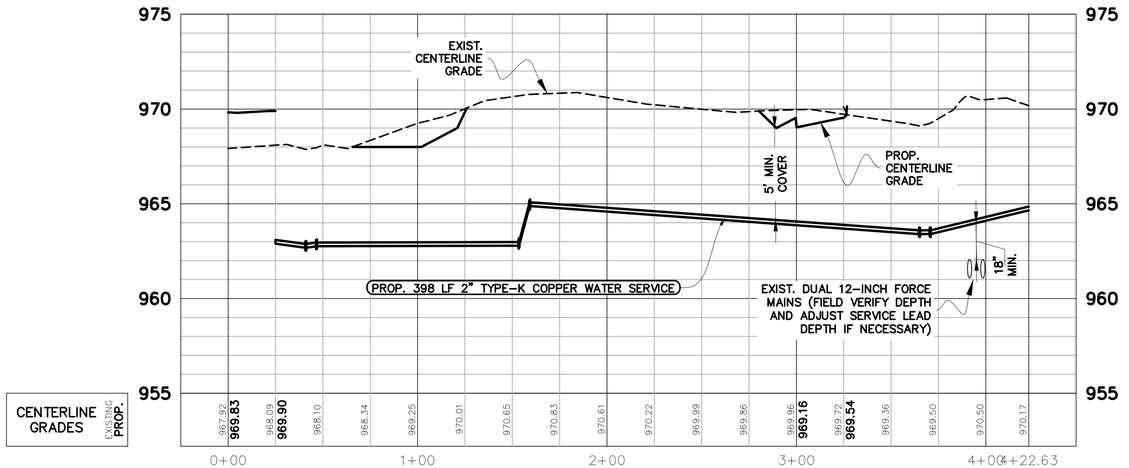
1 LOW PRESSURE SEWER PIPING

1"=40'H 1"=4'V



2 STORM SEWER PIPING

1"=40'H 1"=4'V



3 WATER SERVICE PIPING

1"=40'H 1"=4'V

FOR REVIEW

CivilWorks

engineers | landscape architects

333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT

NEW MHOG ADMINISTRATION BUILDING

GENOA TOWNSHIP

LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE

UTILITY PROFILES

COPYRIGHT © 2025 JW CIVILWORKS, LLC. ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DISCLOSED, COPIED OR USED WITHOUT THE EXPRESS WRITTEN CONSENT OF JW CIVILWORKS, LLC AND ANY SUCH USE IS SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED). PROVIDED BY SEMCOG" ARE SUBJECT TO

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

GRAPHIC SCALE

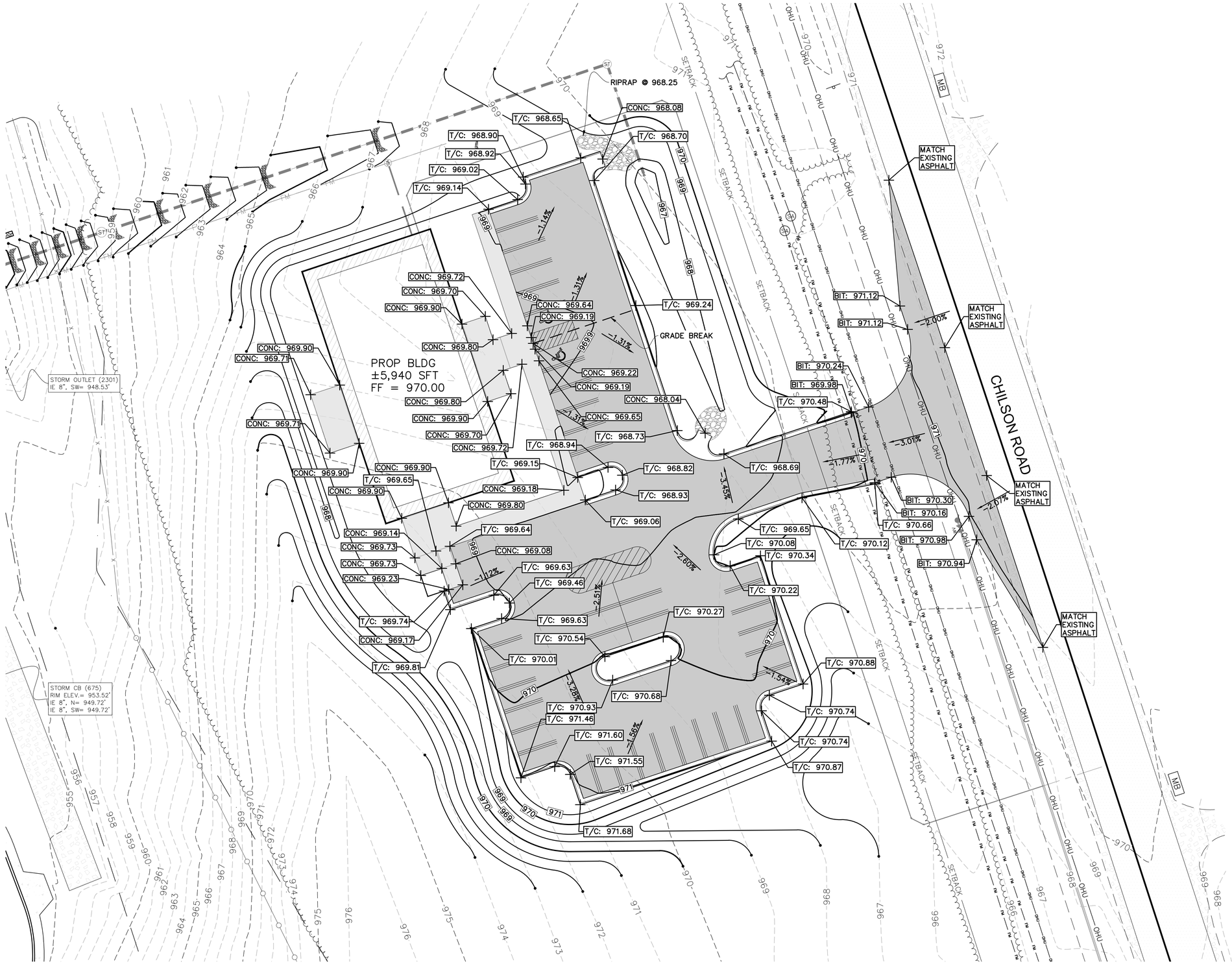
20 10 0 20

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JCW	2026.06.23

SCALE: 1"=20'

JOB NO.: JN2026-050

SHEET NO.: 7



FOR REVIEW

JW CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT

NEW MHOG ADMINISTRATION BUILDING

GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE

GRADING PLAN

ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE USED, DISCLOSED, REPRODUCED OR ALTERED WITHOUT THE EXPRESS WRITTEN CONSENT OF JW CIVILWORKS, LLC AND THE SAME SHALL NOT BE ASSIGNED TO ANY THIRD PARTY WITHOUT THE EXPRESS WRITTEN CONSENT OF JW CIVILWORKS, LLC. ANY REUSE OF THE PLANS AND/OR DATA PROVIDED BY SEMCOG ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).
COPYRIGHT © 2026 JW CIVILWORKS, LLC - ALL DRAWINGS

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

GRAPHIC SCALE
20 10 0 20

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JAS	2026.06.23

SCALE
1"=20'

JOB NO.
JN2026-050

SHEET NO.
8

LIVINGSTON COUNTY DRAIN COMMISSION
CONSTRUCTION PLAN CHECK LIST

	Item	Included Y/N	Approved Y/N
1.	The property description including total acreage as well as the location of the proposed project by means of a small location map. If the project is to be completed in phases, the boundary and the number of acres in each phase shall also be included.	Sheet 1	
2.	The proposed project layout with all dimensions, including the proposed drainage system for the project.	Sheets 5 and 6	
3.	A map, showing the drainage boundary of the proposed project and its relationship with existing drainage patterns.	Sheets 9A and 9B	
4.	The location and description of all on-site and adjacent off-site features including but not limited to: adjoining roads and subdivisions; railroads; high tension power lines and/or underground transmission lines; cemeteries; parks; natural and artificial watercourses, wetlands and wetland boundaries, floodplains, lakes, bays, and lagoons; designated natural areas and significant natural features, any proposed environmental mitigation features; drains, sewers, water mains, septic fields, and wells; existing and proposed easements.	Sheet 3	
5.	Plans, profiles and details of all roads and storm sewers. The storm sewer details will include type and class of pipe, length of run, percent of slope, invert elevations, rim elevations, depth of burial, backfill type,depth and compaction, and profile of the hydraulic gradient.	Sheets 6 and 7	
6.	Storm sewer calculations indicating the number of acres, calculated to the nearest tenth of an acre, contributing to each specific inlet/outlet, the calculated hydraulic gradient elevation, maximum flow in cfs and the flow velocities for enclosed systems.	Sheet 9B	
7.	Plans, profiles, & details of all open ditch drains, drainage swales, and drainage structures.	Sheet 7	
8.	Plans and details of the proposed soil erosion and sedimentation control measures, both temporary (during construction) and permanent.	Sheet 10	
9.	Plans and details of proposed retention/detention facilities. Test pit or Soil borings are required at the sites of these facilities.	Sheets 6 and 9	
10.	A drainage area map, overlaid onto a copy of the site grading plan, which clearly shows the areas tributary to each inlet and/or storage basin.	Sheet 8	
11.	Topographic maps, at one-foot contour intervals or less on NAVD 88, showing existing and proposed grades, as well as off-site topography over at least 200 feet of the adjoining property. Maps will also show all existing water courses, lakes and wetlands, and the extent of all off-site drainage areas contributing flow to the development.	Sheets 9A	
12.	All drain field locations as approved by the Livingston County Environmental Health Department & of all expansion areas. Drain fields shall not be located within drainage easements and shall comply with isolation distance requirements stated in the Livingston County sanitary code.	N/A	
13.	Locations of all drinking water wells, including the well record for each well. Wells shall not be located within drainage easements and shall also comply with the isolation distance requirements as state in the Livingston County Sanitary Code, and/or the Michigan Well Construction Code (Part 127 of Act 368 of 1978, as amended), and/or the Michigan Safe Drinking Water Act, (Act 399 of 1976, as amended).	N/A	
14.	Minimum basement opening elevations are required where walkout, daylight basements, or egress windows are proposed. Where walkout, daylight basements, or egress windows are proposed construction will be contingent on these elevations being matched or exceeded as certified by the Applicant's Surveyor or Engineer. Where finished grades indicate a substantial amount of drainage across adjoining lots, inlet structures and piped outlets shall be provided inside yards along lot lines. To ensure that property owners do not alter or fill drainage swales, easements in the developments governing documents (eg, deed restrictions or master deed) will be required over areas deemed necessary by the Drain Commissioner. Additional information regarding site grading can be found in Appendix I.	N/A	
15.	Benchmark locations and elevations using NAVD 88.	Sheet 3	

MHOG Administration Building Storm Water Narrative:

Existing Drainage Routing.:
The proposed administration building will be constructed within the existing wastewater treatment plant property, which is characterized by gently to moderately undulating terrain with ground elevations ranging from approximately 928 feet to 974 feet. A localized topographic ridgeline extends generally north–south along the western edge of the proposed improvements and serves as a natural drainage divide for the project area. Runoff generated within the proposed limits of disturbance generally flows in a northeasterly direction, following the existing grades toward an established detention pond located adjacent to the biosolids handling facility. The existing drainage patterns provide a favorable opportunity to maintain natural runoff conveyance while minimizing the extent of grading required to accommodate the proposed improvements.

Proposed Storm Water Management System:
The proposed storm water management system has been designed to take advantage of the site's existing topography by preserving the natural drainage direction and minimizing alterations to established flow paths. Finished grades surrounding the proposed administration building, parking areas, sidewalks, and other site improvements have been carefully designed to direct runoff toward a centrally located swale, which directs water to the existing detention pond via an enclosed pipe network.

Storm water runoff generated from the site will be collected through overland sheet flow and shallow swales before entering the enclosed piping. Storm water will discharge through an outlet control structure and be conveyed to the existing detention pond.

During larger storm events that exceed the storage capacity of the enclosed pipe network, runoff will safely overtop the swale and be conveyed to the existing detention pond via a stabilized open channel. The overflow channel will incorporate a series of stone check dams to reduce flow velocities, dissipate energy, minimize erosive forces, and promote additional sediment settling prior to discharge into the detention pond. This emergency overflow path provides a resilient secondary conveyance system while protecting the integrity of the enclosed piping system and downstream infrastructure.

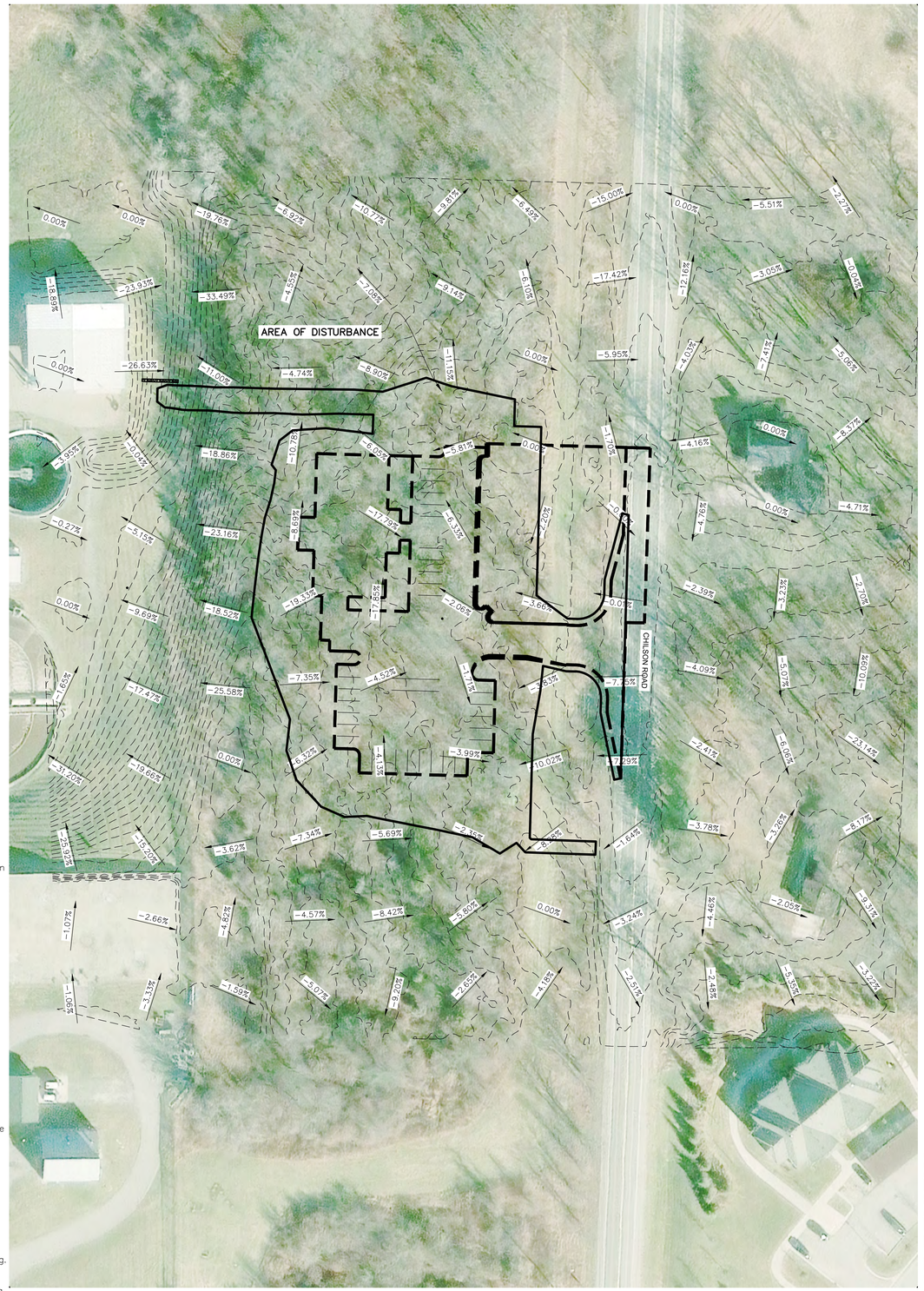
A sediment forebay will be constructed in the existing detention pond serving as a first stage of treatment by reducing flow velocities and allowing course sediments, debris, and other suspended solids to settle before runoff enters the primary detention basin. This pretreatment compartment improves overall water quality and reduces long–term maintenance requirements by limiting sediment accumulation within the main detention pond.

Following pretreatment, storm water will enter the detention basin through a constructed gabion basket wall. The gabion structure provides a stable and durable inlet while dissipating flow energy, minimizing erosion, and promoting uniform distribution of inflow into the basin. The rock–filled baskets also provide additional filtration and enhance the overall resilience of the inlet into the detention pond during larger storm events.

The existing detention pond will continue to provide downstream detention storage and controlled release of runoff from the site, maintaining the existing drainage characteristics while reducing pollutant loading and peak discharge rates. By utilizing the site's natural topography and existing storm water infrastructure, the proposed design minimizes earthwork, preserves existing drainage patterns, and provides an effective, sustainable, and resilient storm water management solution.

Soil Information:
According to the USDA Web Soil Survey, the project site is predominantly mapped as Wawasee Loam and Miami Loam. While these mapped soil types generally exhibit moderate infiltration characteristics, the design of the proposed bioretention facility has conservatively assumed no infiltration into the underlying native soils. As a result, the facility has been sized and analyzed as a filtration practice with an underdrain system rather than relying on infiltration to achieve the required storage volume or drainage rate.

The project area is currently heavily wooded, preventing the completion of representative subsurface soil investigations within the proposed bioretention footprint prior to site clearing. Because tree removal has not yet occurred, excavation equipment cannot safely access the area to perform a test pit or infiltration testing. Once clearing activities have been completed, subsurface investigations may be performed to verify existing soil conditions and infiltration characteristics if requested by the reviewing agency or determined necessary during final design. Any favorable infiltration rates identified during subsequent testing would provide additional storage and water quality benefits beyond those assumed in the current design, as the storm water management calculations have been prepared using the more conservative no–infiltration approach.



FOR REVIEW

CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
STORM WATER MANAGEMENT PLAN

COPYRIGHT © 2025 JW CIVILWORKS, LLC. ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF JW CIVILWORKS, LLC. ELECTRONIC DATA PROVIDED BY SEMCOG ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

GRAPHIC SCALE
50 25 0 50

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JAS	2026.06.23

SCALE: 1"=50'

JOB NO.: JN2026–050

SHEET NO.: 9A

NOTE:

ALL IMPROVED AREAS WILL DISCHARGE TO THE EXISTING DETENTION POND EAST/NORTH OF THE EXISTING BIOSOLIDS HANDLING FACILITY. A SEDIMENT FOREBAY IS BEING PROPOSED WITHIN THE DETENTION POND TO MEET THE REQUIREMENTS OF SECTION 2.2.1.2.b OF THE LIVINGSTON COUNTY DRAIN COMMISSION PROCEDURES AND DESIGN CRITERIA FOR STORMWATER MANAGEMENT SYSTEMS.

STORM WATER CALCULATIONS

Total Site Drainage Area	A	1.15	Acres
Weighted C - post development runoff coefficient	C	0.74	
	Q_{100ALL}	0.15	**Unless Q_{REE} is less**
Tc		5.24	min

Sheet Flow:

Velocity	0.61	1.63	Slope
Flow Time	5.24	192.6453	Length
Shallow Flow			
Velocity	0.00	0	
Flow Time	0.00	0	
Time of Concentration (T)	5.24 minutes	5.24	

WATER QUALITY VOLUME CONTROL (WQ)

Required Water Quality Volume Vwq	V_{wq} = 3,630 C * A	3104.66 cft	
Required Forebay Volume Vf	Vf = Vwq	3104.66	Forebay Volume to be discharged to detention basin at the same rate as the Extended Detention Volume is discharged from the basin
REQUIRED =	Vf = Vwq * 15%	465.70 cft	
PROVIDED =		1889.46 cft	
Required Water Quality Treatment Rate Qwq	Qwq = C * A *(97/Tc+30)	2.35 cfs	1 Yr. Storm Treatment Rate Requirement if a mechanical treatment device is used instead of a forebay for water quality purposes.

NOTES:
a. Water Quality Volume Control is required for the runoff from the 1-inch rainfall event.
b. This requirement is considered met if the full CPVC can be met through infiltration onsite.
c. The requirement is also met by using a forebay with storage volume equal to 15% of the V_{WQ}, unless the infiltration requirement is being met within the detention basin, in which case the required forebay volume is equal to the full V_{WQ}.
d. Water Quality Rate Control, based on the 1 Year Frequency storm event, may be provided by a mechanical treatment device in lieu of the Water Quality Volume Control. The required 1 Year Frequency Storm Treatment rate equals: R_{WQ} = CxAx(97/(Tc+30)) where Tc = Storm Sewer flow time in minutes. The system must have an 80% reduction in Total Suspended Solids (TSS) or a maximum discharge concentration of 80 mg/L.

CHANNEL PROTECTION VOLUME CONTROL (CPVC)

Required Channel Protection Volume CPVC	CPVC = 4,719* C * A	4036.06 cft	

NOTES:
a. The system will be designed to capture and infiltrate, the site runoff from the first 1.3 inch of rainfall. This is required for all sites to the Maximum Extent Practicable (MEP).
1. The Owner must submit evidence that a test pit has been used to determine soil infiltration. The minimum depth of this test pit is to be 10 feet below the proposed basin bottom elevation. This test pit is to be made in accordance with the standards detailed in Appendix E.
2. In instances that test pits are not possible, a geotechnical group can perform a core analysis, at the Drain Commissioner's discretion.
b. Provide adequate infiltration and/or storage/reuse BMPs, to the MEP, to provide the necessary CPVC. This may include (but is not limited to) bioretention, rain gardens, bio-swales, pervious pavement, cisterns, green roofs, and infiltration trenches.
1. When the in-situ infiltration rate is above 0.5 in/hr, supplemental measures are not required.
2. When in-situ infiltration rates are between 0.24 in/hr and 0.5 in/hr, soils are marginally suitable for infiltration BMP's, and supplemental measures are required. Supplemental measures may include subsoil amendment, or an underdrain located at the top of the storage bed layer to maximize infiltration. (The Drain Commissioner reserves the right to modify the infiltration requirement for sites with infiltration rates between 0.24 in/hr and 0.5 in/hr in the event of the site having excessive restrictions.)
3. When in-situ infiltration rates are less than 0.24 in/hr, infiltration is waived. When infiltration is waived, other volume reducing LID practices must be implemented to the MEP.
4. Infiltration BMP's shall completely dewater in less than 72-hours, consisting of 24-hour dewatering for the surface volume, and 48-hour dewatering of the void space (soil storage) volume. Water storage/reuse BMPs shall also be designed to fully dewater within 72-hours.
c. If infiltration is not feasible on the site, the system must still meet the WQ, CPRC and Flood Control requirements.
d. Infiltration testing results shall be shared with the Drain Commissioner prior to preliminary designs to determine if a predesign meeting is required.

CHANNEL PROTECTION RATE CONTROL (CPRC) = REQUIRED EXTENDED DETENTION VOLUME (V_{ED})

Channel Protection Rate Control (CPRC)	CPRC = 6897 * C * A	5898.86 cft	**REQUIRED EXTENDED DETENTION VOULME (V_{ED})**
Extended Detention Volume Discharge Rate Q_{ED}	Q_{ED} = V_{ED}/(48hr)(60min)(60sec)	0.03 cfs	To be used for both Forebay and Detention Basin Outlet Control Design

NOTES:
a. The system will capture and provide extended detention for the site runoff volume generated from a 1.9 in. rainfall event and release over 48 hours.

DETENTION AND FLOOD CONTROL VOLUME

NOTES:
a. The required detention and flood control volume shall be implemented to manage runoff from the 100-year frequency storm (see Atlas 14). Atlas 14 can be found on NOAA's Website. Additional information can also be found in Appendix J, page 1.
b. The allowable 100-year post-development peak flow rate (Q_{100P}) will be approved by LCDC and can be calculated one of two ways:
1. Using the Variable Release Rate (see following equations) in the limited situations where sufficient downstream capacity exists.
2. County determined peak flow rate based on known County Drain capacity limitations. A pre-design meeting is required for developments that discharge to County Drains. The typical maximum allowable discharge rate is 0.15 cfs/acre or less.

Variable Release Rate (When Applicable) Q_{VRR}	Q_{VRR} = 1.1055 - 0.206 * ln(A)	1.08 cfs/acre	

The variable release rate (cfs/acre) is capped at 1.0 cfs/acre for developments 2 acres or less. For all developments over 100 acres, the maximum allowable release rate is 0.15 cfs/acre.

Allowable 100-year Allowable Outlet Rate = Lesser of Restricted Rate for Drain or Variable Release Rate (Qvrr)

Allowable 100-year post development peak flow rate $Q_{100ALLOW}$	$Q100_{ALL}$ = Q_{VRR} * A	1.24 cfs/acre	**EXCEEDS MAXIMUM - DO NOT USE**
Allowable 100-year post development peak flow rate $Q_{100ALLOW}$	Q_{100ALL} = 0.15 * A	0.17 cfs/acre	

c. The required detention volume shall be calculated using all on-site contributing drainage areas. Volume stored within the forebay and extended detention area may be applied towards the required detention volume. Please refer to Appendix J, page 2 for typical detention basin profiles and stormwater design calculations.

The required 100-year detention volume (V100D) is calculated as follows:

100-year Peak Runoff Volume (V_{100D})	V_{100D} = 16985 * C * A	16237.46 cft

Where:
C=Post-development runoff coefficient
A=Contributing area in acres
V_{100P}=Post-development 100-year runoff volume in cubic feet

100-year Peak Inflow Rate ($Q100_{IN}$)	Q_{100IN} = C * I_{100} * A	8.21 cfs

Where:
Q_{100IN}= 100-year post-development peak inflow rate in cfs
C= Post-development runoff coefficient
I_{100}= 100-year peak rainfall intensity in inches/hour
A= Contributing area in acres

100-year Peak Rainfall Intensity (I_{100})	I_{100} = 83.3/ (Tc + 9.17)^0.81	9.60 in/hr

Where:
I_{100} = 100-year peak rainfall intensity
Tc=Site-specific time of concentration for the development in minutes

Storage Curve Factor for the 100-year Detention Volume (R)	R = 0.206 - (0.15)(ln(Q_{100ALL}/Q_{100IN}))	0.78

Where:
R=Storage Curve Factor (dimensionless)
$Q100_{ALL}$= 100-year post-development peak flow rate in cfs
$Q100_{IN}$= 100-year post-development peak inflow rate in cfs

100-year Detention Basin Size (V_{100D})	V_{100D} = ($V100_R$ * R) - V_{CPP}	8706.59 cft

Where:
$V100_R$= Required 100-year detention volume in cubic feet
V_{100P}= 100-year runoff volume in cubic feet
R= Storage Curve Factor (dimensionless)
V_{CPP}= Provided CVPC volume in cubic feet
Key Rule: $V_{100D} \geq V_{ED}$

The adjusted 100-year detention basin volume shall be equal to or greater than the Extended Detention Volume (VED). The adjusted detention basin volume shall not be less than VED.

DETENTION POND SIZING SUMMARY TABLES

Forebays and Detention Pond Combined

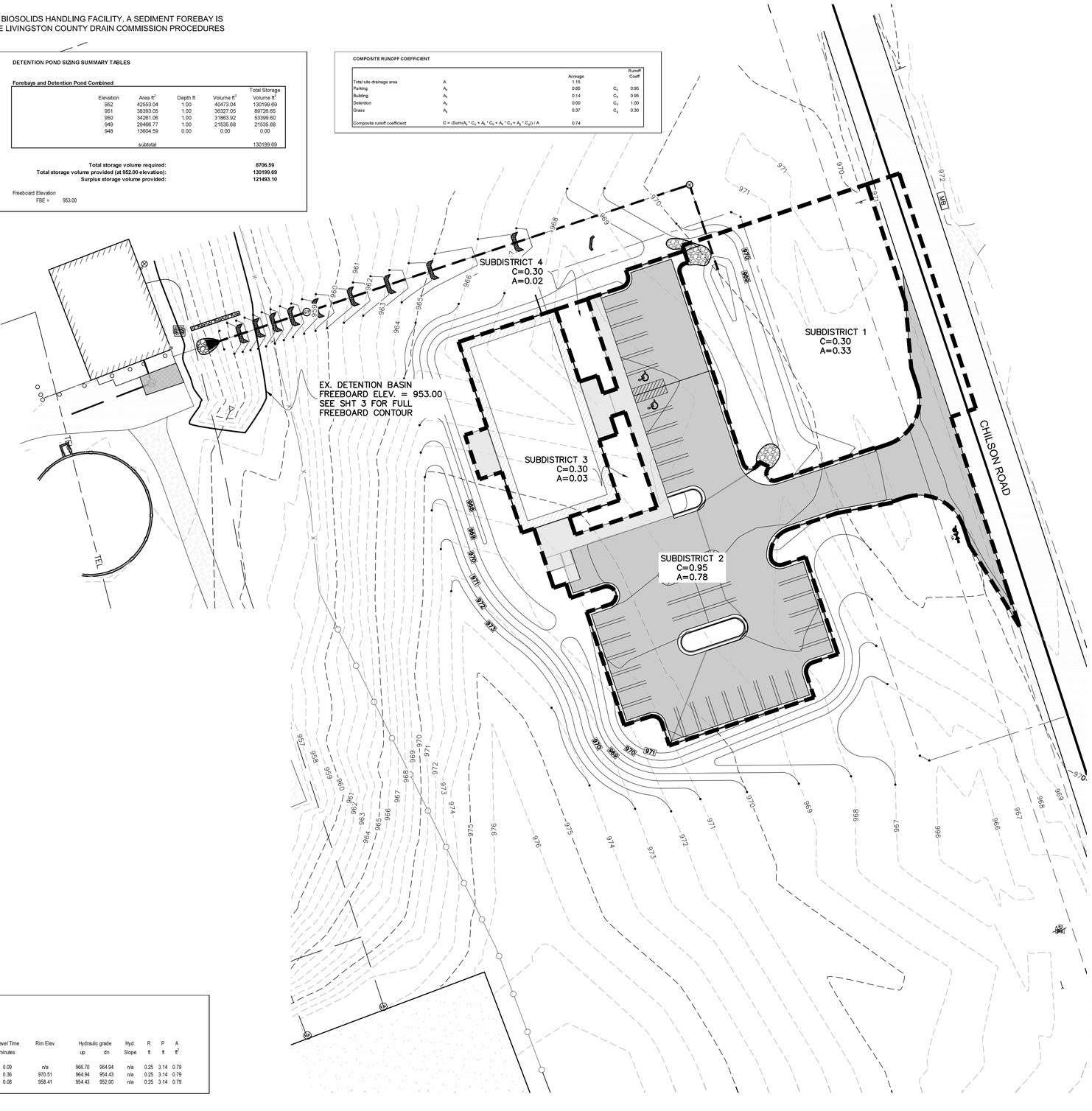
Elevation	Area ft²	Depth ft	Volume ft³	Total Storage Volume ft³
952	42553.04	1.00	40473.04	130199.69
951	38393.05	1.00	36327.05	89726.65
950	34261.06	1.00	31863.92	53399.60
949	29466.77	1.00	21535.68	21535.68
948	13604.59	0.00	0.00	0.00
	subtotal			130199.69

Total storage volume required:	**8706.59**
Total storage volume provided (at 952.00 elevation):	**130199.69**
Surplus storage volume provided:	**121493.10**

Freeboard Elevation
FBE = 953.00

COMPOSITE RUNOFF COEFFICIENT

		Acreage		Runoff Coeff
Total site drainage area	A	1.15		
Parking	A_p	0.65	C_p	0.95
Building	A_b	0.14	C_b	0.95
Detention	A_r	0.00	C_r	1.00
Grass	A_g	0.37	C_g	0.30
Composite runoff coefficient	C = (Sum(A_p * C_p + A_b * C_b + A_r * C_r + A_g * C_g)) / A	0.74		



Project:	Northline				Design Storm: 10 year				Sheet Flow Time of Concentration				5.24 minutes											
Job Number:	2026-050																							
Calculated By:	JCW			Checked By:					Rainfall Intensity I10 = 175 / (t + 25) where t = time of concentration in minutes															
Storm System 1																								
LOCATION	Drainage Area		C	Time of	Rainfall	Qcfs	Qcfs	Invert Elevations		L	Actual	Size	Manning's	Surcherged	Velocity	Travel Time	Rim Elev	Hydraulic grade		Hyd.	R	P	A
from and to	Increment	Accumulated	Factor	Concentration	inches/hr	Increment	Accumulated	upper	lower	ft	Slope	Inches	Capacity (cfs)	Capacity (cfs)	fps	minutes		up	dn	Slope	ft	ft	ft²
ES4 TO MH3	1.15	1.15	0.74	5.24	5.79	4.95	4.95	966.50	964.74	47.00	3.75%	12	6.90	n/a	8.78	0.09	n/a	966.70	964.94	n/a	0.25	3.14	0.79
MH3 TO MH2	0.00	1.15	0.00	5.33	5.77	0.00	4.95	964.64	954.13	216.75	4.85%	12	7.85	n/a	9.99	0.36	970.51	964.94	954.43	n/a	0.25	3.14	0.79
MH2 TO ES1	0.00	1.15	0.00	5.69	5.70	0.00	4.95	951.13	948.70	50.00	4.85%	12	7.85	n/a	9.99	0.08	958.41	954.43	952.00	n/a	0.25	3.14	0.79

FOR REVIEW

CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
STORM WATER MANAGEMENT PLAN CONT'D

COPYRIGHT © 2025 JW CIVILWORKS, LLC. ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF JW CIVILWORKS, LLC. ELECTRONIC DATA PROVIDED BY SEMCOG" ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

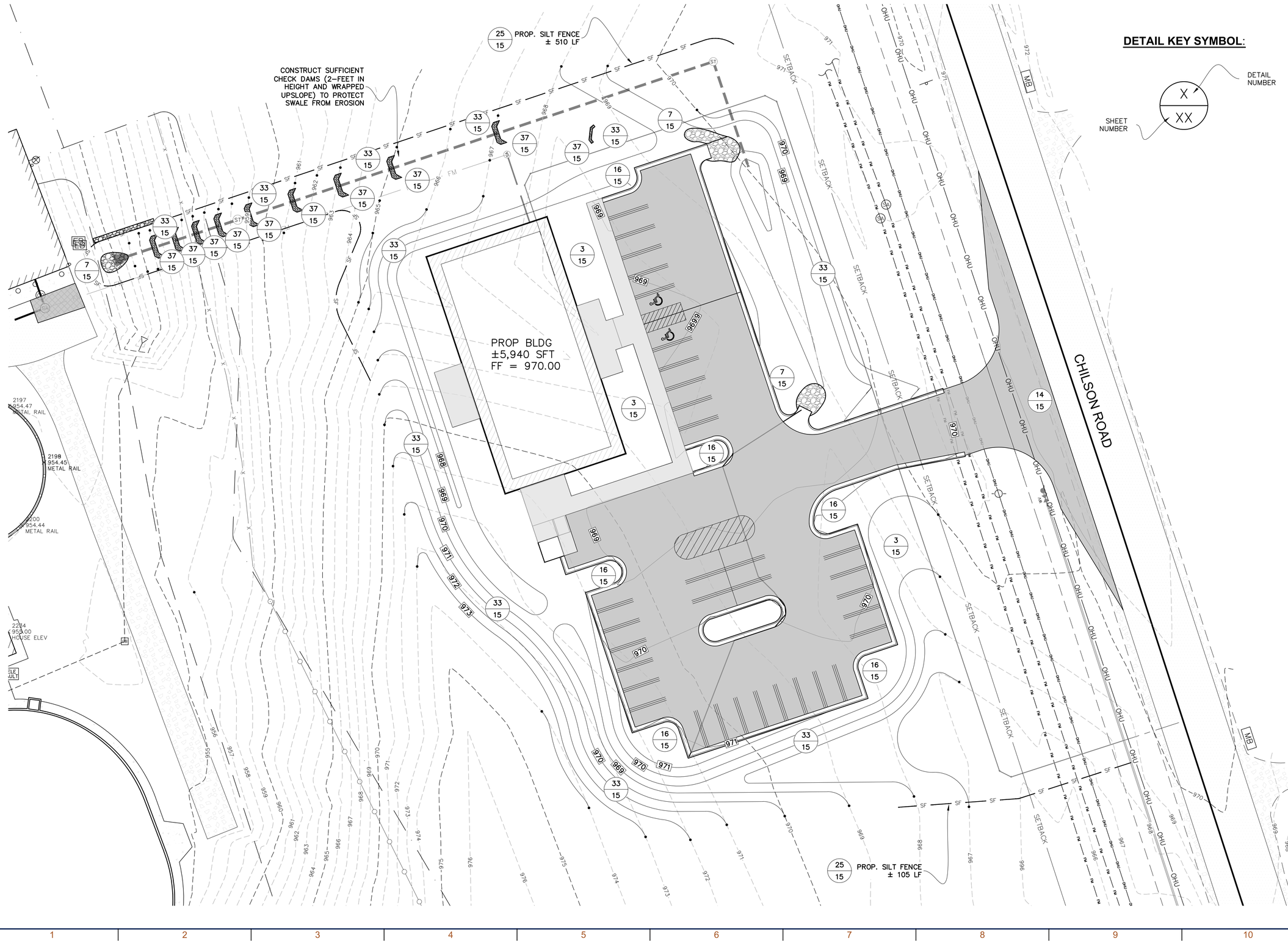
GRAPHIC SCALE
30 15 0 30

APPROVED	CHECKED
JCW	JCW
DRAWN	**DATE**
JAS	2026.06.23

SCALE: 1"=30'

JOB NO.: JN2026-050

SHEET NO.: 9B



FOR REVIEW

JW CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
SESC PLAN

COPYRIGHT © 2025 JW CIVILWORKS, LLC. ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF JW CIVILWORKS, LLC. ELECTRONIC DATA IS TO BE USED ONLY BY PARTIES AGREEING TO TERMS OF DATA PROVIDED BY SEMCOG". ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

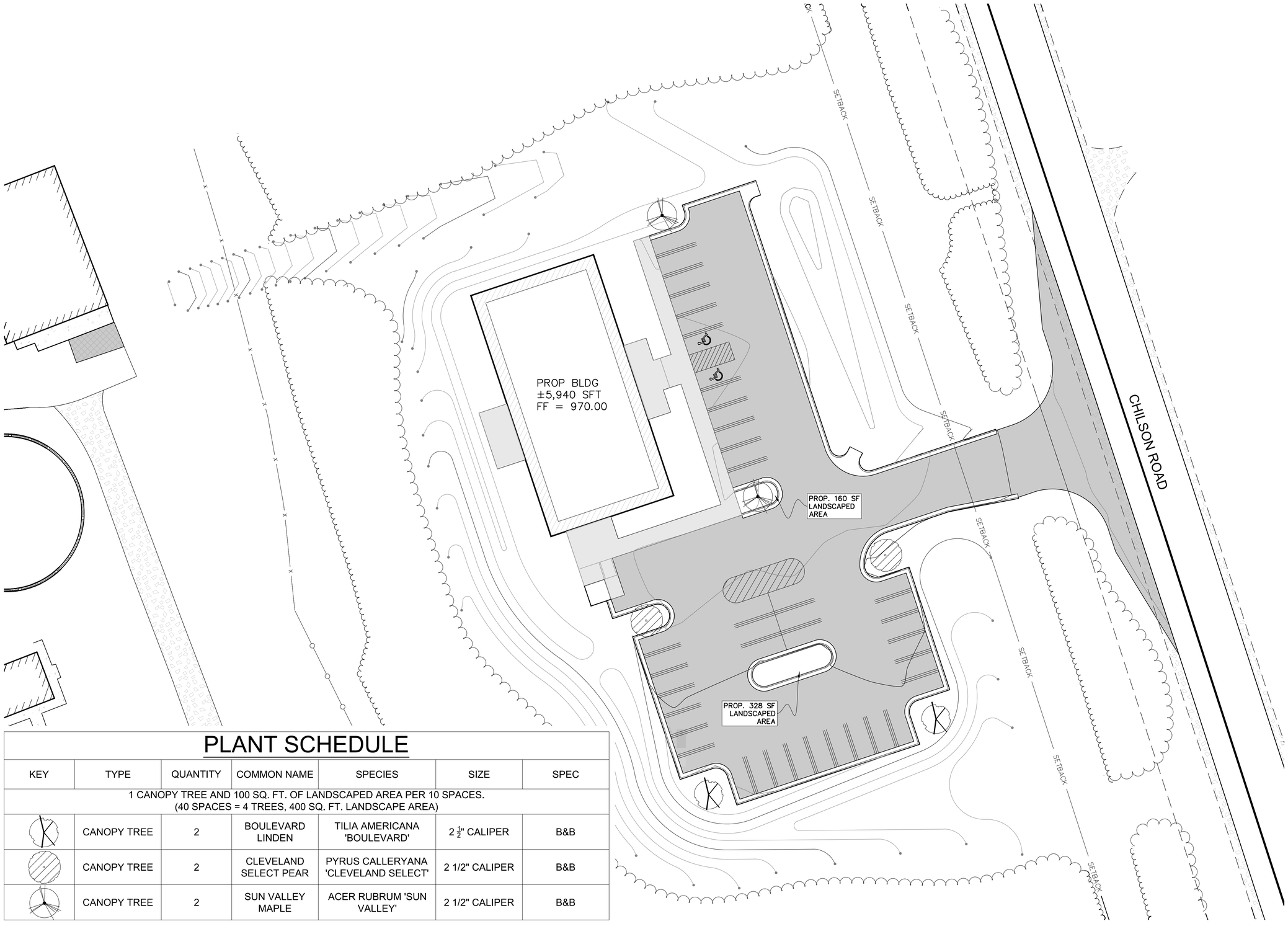
GRAPHIC SCALE
20 10 0 20

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JAS	2026.06.23

SCALE: 1"=20'

JOB NO.: JN2026-050

SHEET NO.: 10



PLANT SCHEDULE

KEY	TYPE	QUANTITY	COMMON NAME	SPECIES	SIZE	SPEC
1 CANOPY TREE AND 100 SQ. FT. OF LANDSCAPED AREA PER 10 SPACES. (40 SPACES = 4 TREES, 400 SQ. FT. LANDSCAPE AREA)						
	CANOPY TREE	2	BOULEVARD LINDEN	TILIA AMERICANA 'BOULEVARD'	2 ½" CALIPER	B&B
	CANOPY TREE	2	CLEVELAND SELECT PEAR	PYRUS CALLERYANA 'CLEVELAND SELECT'	2 1/2" CALIPER	B&B
	CANOPY TREE	2	SUN VALLEY MAPLE	ACER RUBRUM 'SUN VALLEY'	2 1/2" CALIPER	B&B

CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
LANDSCAPE PLAN

COPYRIGHT © 2025 JW CIVILWORKS, LLC
ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT THE WRITTEN CONSENT OF JW CIVILWORKS, LLC. ELECTRONIC DATA ASSOCIATED WITH THIS PLAN SET ("DATA") PROVIDED BY SEMCOG" ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

GRAPHIC SCALE
20 10 0 20

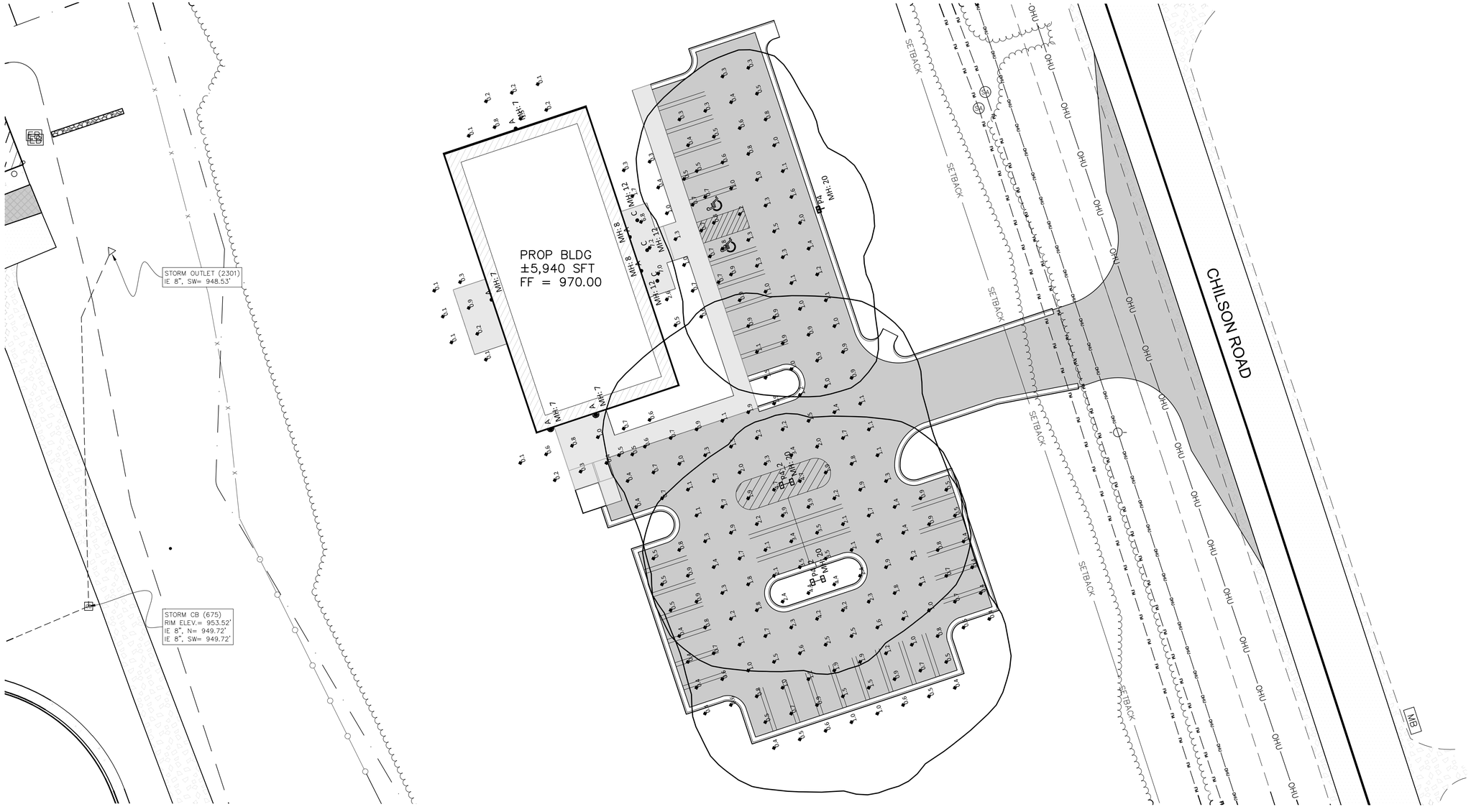
APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JCW	2026.06.23

SCALE
1"=20'

JOB NO.
JN2026-050

SHEET NO.
11

FOR REVIEW



Luminaire Schedule											
Symbol	Qty	Label	Arrangement	Description	LLF	Mounting Height	Luminaire Lumens	Luminaire Watts	Total Watts	[MANUFAC]	MOUNT TYPE
	6	A	Single	WS-W17218	0.921	7, 8	490	18.4212	110.527	WAC Lighting	
	3	C	Single	HC607D010-HM60525840-61WDH	0.921	12	980	8	24	COOPER - HALO	
	1	P4	Single	PRV-P-PA1B-740-U-T4W	0.921	20	7106	52.8	52.8	COOPER - LUMARK	
	2	P4_2	Back-Back	(2) PRV-P-PA1B-740-U-T4W	0.921	20	7106	52.8	211.2	COOPER - LUMARK	

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
EXTERIOR	1.04	7.2	0.1	10.40	72.00
PARKING LOT	1.35	4.7	0.3	4.50	15.67

NOTES
- CALC GRID ON GROUND

FOR REVIEW

JW CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
PHOTOMETRIC PLAN

COPYRIGHT © 2026 JW CIVILWORKS, LLC. ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF JW CIVILWORKS, LLC. ELECTRONIC DATA IS TO BE PROVIDED BY SEMCOG" ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

N

GRAPHIC SCALE
20 10 0 20

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JAS	2026.07.17

SCALE
1"=20'

JOB NO.
JN2026-050

SHEET NO.
12

WAC LIGHTING

Amherst

Outdoor Wall Sconce 3000K

Model & Finish	Color Temp & CRI	Finish	Watt	LED Lumens	Delivered Lumens
Q-WS-W17218- 18"	3000K 90	Q-BK Black	19W	1741	490

Example: **WS-W17218-BK**

For custom requests please contact customs@waclighting.com

FEATURES:
- Downlight Illumination
- Open bottom for ease of maintenance
- ALCED driverless technology
- 5 Year warranty

SPECIFICATIONS

Color Temp:	3000K
Input:	120 VAC,50/60Hz
CRI:	90
Dimming:	ELV 100-10%_TRIAC: 100-10%
Rated Life:	50000 Hours
Mounting:	Can be mounted on wall in all orientations
Standards:	ETL-cETL/IP65
Construction:	Wet Location Listed Aluminum body, seeded clear glass diffuser

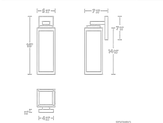
REPLACEMENT PARTS:

RPL-GLA-17218 - Glass

FINISHES:

Black

LINE DRAWING:



waclighting.com | **Phone** (800) 526.2588 | **Fax** (800) 526.2585 | **Headquarters/Eastern Distribution Center** 44 Harbor Park Drive Port Washington, NY 11050

WAC lighting reserve the right to modify the design of our products at any time as part of the company's continuous improvement program. January 2022

Project		Catalog #		Type	
Prepared by		Notes		Date	

HALO Commercial

HC6 | HM6 | 61 | 61PS

6-inch LED downlight and wall wash

Typical Applications

Office • Healthcare • Hospitality • Institutional • Mixed-Use/Retail

Interactive Menu
- Order Information page 2
- Product Specifications page 4
- Photometric Data page 5
- Energy & Performance Data page 9
- Connected Systems page 10
- Product Warranty

Top Product Features
- New construction/remodel series; 500 to 6,000 lumens
- Narrow, Medium and Wide distributions; Wall wash with rotatable linear spread lens
- 2700K, 3000K, 3500K, 4000K, 5000K CCT; 80 or 90 CRI
- Universal voltage 120V-277V; Standard 0-10V driver dims to 1%
- Mounting Frame converts to remodel that installs from below the ceiling
- Quick Spec emergency backup mounting frames - fast delivery option

Dimensional and Mounting Details

Trim Height	Plaster Ring Flange	Trim Height	Clip Height
Typical	4.0"	3.4"	3.8"
Shallow	4.0"	3.4"	3.8"
Deep	4.0"	3.4"	3.8"
Adj.	4.0"	3.4"	3.7"

HALO Commercial

HC6 | HM6 | 61 | 61PS

Mounting Frame Order Information

Sample Number: HC6300101RENT – HM6505235 – 61MBC

A complete luminaire consists of a housing/frame, LED module, and reflector (ordered separately)

Housing/Frame	Housing/Frame	Housing/Frame	Housing/Frame
HC6 – 6" new construction downlight housing HM6 – 6" new construction housing, IC44 – compliant	30 – 300 lm 51 – 750 lm 75 – 1000 lm 10 – 1500 lm 15 – 2000 lm 20 – 3000 lm 25 – 3500 lm 40 – 4000 lm 50 – 5000 lm 60 – 6000 lm 80 – 8000 lm**	927 – 7-segment battery pack with remote test / indicator light, use with 20 only **** 927EM – 7-segment battery pack with remote test / indicator light, use with 20 only **** 927EMTW – 7-segment battery pack with integral test / indicator light, use with 20 only **** 927EMTW-T – 7-segment battery pack with integral test / indicator light, use with 20 only and Sensor ES **** 927EMTW-TD – 7-segment battery pack with integral test / indicator light, use with 20 only and Sensor ES ** 927EMTW-TDT – 7-segment battery pack with integral test / indicator light, use with 20 only and Sensor ES ** 927EMTW-TDTD – 7-segment battery pack with integral test / indicator light, use with 20 only **** 927EMTW-TDTDT – 7-segment battery pack with integral test / indicator light, use with 20 only ****	HR10EMTW – Linkable 10-watt battery pack, 3V, 2-pin (requires external battery) RMBS2 – Adjustable wood joist remodel bracket, 2-1/2" to 11" long RMBSU – Universal bracket for 6" long Mudslap Specific Mayo refer to instructions for installing housing RSG6 – 6" Slot RSG7 – 6" Slot TRANS12 – 120V to 12V step-down transformer, 71VA WTH – Wall Wash to 120V step-down transformer, 71VA WTR – Wall Wash to PRO Filament Sensor ES WTW – Wall Wash to LED Filament Sensor ES **
Notes	Notes	Notes	Notes

LED Module Order Information

LED Module	Lumens	CRI/CCT	
HM6 – 6" LED Module For use with HC6 - HOUSE New Construction housings only	0525 = 500 - 2500 lumen 3540 = 2500-4000 lumen 4060 = 4500-6000 lumen	827 = 90CRI, 2700K 830 = 90CRI, 3000K 835 = 90CRI, 3500K 840 = 90CRI, 4000K 850 = 90CRI, 5000K	927 = 90CRI, 2700K 930 = 90CRI, 3000K 935 = 90CRI, 3500K 940 = 90CRI, 4000K 950 = 90CRI, 5000K
Notes	Notes	Notes	

HALO Commercial

HC6 | HM6 | 61 | 61PS

Trim Order Information

Reflector	Reflector	Reflector	Reflector
61 – 6" conical reflector	MB – narrow 10° beam angle 8.5° IC MD – medium 60° beam angle 11.5° IC MW – wide 90° beam angle 7.5° IC BWM – adjustable wall wash with linear spread lens	C – Specular clear S – Semi-specular clear W – White	Blank – Painted flange standard with 2 & 4 reflectors BWH – White Flange standard with 61 reflectors BF – Black Flange option available with 2, 4 & 6 reflectors BF – Black Flange options available with 2, 4 & 6 reflectors
Notes	Notes	Notes	Notes

Reflector	Reflector	Reflector	Reflector
61 – 6" baffle reflector	MD – wide 60° beam angle 11.5° IC (standard) MW – wide 90° beam angle 7.5° IC	BB – Black baffle WB – White baffle	Blank – White flange standard with BB & WB reflectors BF – Black Flange option available with 61 reflectors WH – White Flange option available with 61 reflectors
Notes	Notes	Notes	Notes

Reflector	Reflector	Reflector	Reflector
61 – 6" conical reflector	MD – wide 60° beam angle 11.5° IC (standard) MW – wide 90° beam angle 7.5° IC	C – Specular clear S – Semi-specular clear W – White	Blank – Painted flange standard with 2 & 4 reflectors BWH – White Flange option available with 61 reflectors BF – Black Flange option available with 2, 4 & 6 reflectors
Notes	Notes	Notes	Notes

Reflector	Reflector	Reflector	Reflector
61 – 6" conical reflector	MD – wide 60° beam angle 11.5° IC (standard) MW – wide 90° beam angle 7.5° IC	C – Specular clear S – Semi-specular clear W – White	Blank – Painted flange standard with 2 & 4 reflectors BWH – White Flange option available with 61 reflectors BF – Black Flange option available with 2, 4 & 6 reflectors
Notes	Notes	Notes	Notes

Reflector	Housing/Frame	Finish	Flange
61 – 6" conical reflector	MD – wide 60° beam angle 11.5° IC (standard) MW – wide 90° beam angle 7.5° IC	C – Specular clear S – Semi-specular clear W – White	Blank – White flange standard with 2 & 4 reflectors BF – Black Flange option available with 2, 4 & 6 reflectors
Notes	Notes	Notes	Notes

HALO Commercial

HC6 | HM6 | 61 | 61PS

Product Specifications

Housing Frame
- Boat shaped galvanized steel plaster frame with adjustable plaster lip
- Accommodates 1/2" to 1-1/2" thick ceilings
- Installs in new construction or from below the ceiling in remodel/retrofit applications (with mounting bars removed)
- Provided with two remodel clips to secure the frame to the ceiling

Universal Mounting Bracket
- Mounts 2" vertically from above and below the ceiling
- Use with the included mounting bars or with 1/2" Electric Metallic Tube (EMT)
- Removable to facilitate remodeling installation from below the finished ceiling

Mounting Bars
- Integrated Installed No Fuss™ mounting bars lock in place with screwdriver or pliers
- Integrated Wiretrex allow for consistent positioning of fixture

LED Module
- Warmdim phosphors over chip on board LEDs provide a uniform source with high efficiency and long life
- Available in 90 or 80 color rendering index (CRI)
- Color consistency within 3 SDCM provides color consistency and uniformity
- 90 CRI option: R9=50 (refer to chromaticity specifications for R9 values)
- Available in 2700K, 3000K, 3500K, 4000K and 5000K correlated color temperature (CCT)
- Lumen options include 500, 750, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500, 6000 delivered lumens
- Passive thermal management achieves 60,000 hours at 70% lumen maintenance (L70) in insulated ceilings (IC) and non-IC applications
- Integral connector allows quick connection to housing flex

Reflector
- Die-changed aluminum reflectors available in narrow, medium or wide distribution patterns
- Medium distribution polymer non-conductive matte reflector with soft diffuse finish is standard with the "dead front" appearance (SELC & TSI lumen max. in IC and 2000 lumen max. in Non-IC)
- Integral diffuse lens provides visual shielding
- Wall wash reflector features a rotatable linear spread lens for even wall illumination and minimal fixture shadows
- Reflectors attach to LED module with three spaced clamps
- Available in multiple painted or plated finishes

Reflector/Module Retention
- Reflector/module assembly is securely retained in the housing with two torsion springs

Driver
- Field-replaceable constant current driver provides low noise operation
- Universal 120-277VAC 50/60Hz input standard
- Continuous, 1% to 100% dimming with 0-10V analog control
- Optional low-voltage DC driver for use with Distributed Low Voltage Power (DLVP) system
- Distributed Low Voltage Power (DLVP) system combines power, lighting and controls with ease of installation (refer to DLVP Design Guide at www.cooperlighting.com for details)

Canada Options
- 347VAC 50/60Hz; 1% dimming on 0-10V analog control, for 500, 750, 1000,1500, 2000, 2500, 3000, 3500, 4000 lumen models only
- 347V step down transformer factory installed with 120V output for use with 120-277VAC LED driver; 4000, 5000, 5500, 6000 lumen models only

Emergency Option
- Provides 90 minutes of standby lighting, meeting NEC 700 and CEC Section 46 requirements
- Available with integral or remote charge indicator and test switch
- Available with field (self-diagnostic) with remote charge indicator and test switch
- Quick Spec emergency ordering option for quick-turn projects

Connected Lighting System

The WaveLinx connected solutions to choose from, refer to WaveLinx system specifications and application guides for details:

WaveLinx Occupancy Sensor Kit
- WaveLinx PRO WTX Silentsoft sensor kit offers daylight dimming, PIR motion sensing, scene and zone configuration, automatic commissioning, and optional RLTS - Real Time Location Services available.

WaveLinx PRO Wireless Node
- Remote mounted wireless node provides luminaire level control with scene and zone configuration without an integrated sensor; Connects wirelessly with daylight dimming sensor and PIR motion sensor if desired. Use with 0-10V driver only. **Note:** Not compatible with 347V or Chicago plum.

WaveLinx Tilesmount Sensor Kits Application
- The WTA and WTK tilesmount sensor kits include a control module mounted on the luminaire junction box via 1/2" knock-out, and a tilesmount sensor mounted in the ceiling tile via a supplied tile bridge, mount spring clips or via mounting bracket in octagon ceiling boxes.
- The WTA and WTK tilesmount sensor kits may be ordered as factory installed on the luminaire, or may be ordered as a field installed accessory kit.
- **Note: WaveLinx PRO devices are only compatible with the WaveLinx PRO system.**
- **Note: WaveLinx LITE devices are only compatible with the WaveLinx LITE system.**

Junction Box
- Galvanized steel junction box
- 20 in² internal volume excluding voltage barrier
- 25 in³ internal volume
- Voltage barrier for 0-10V dimming wires (occupies one 1/2" pry-out space)
- Listed for eight #12 AWG (four in, four out) 90°C conductors and three-wire branch wiring
- Three 1/2" and two 3/4" knock size pry-outs
- Through-wiring
- Three 4-port push wire nuts for mains voltage with 1-port for fixture connection

Compliance
- cULus Certified to UL 1598 / CSA C22.No. 250.0, suitable for damp locations and wet locations in covered ceilings only
- Emergency options provided with UL Listed emergency drivers to UL 924 / CSZ.2 No. 141, suitable for damp location ceilings
- IP20 – Wave finished ceiling; IP65 - Below finished ceiling
- Non-insulated ceiling (Non-IC) rated for 2500, 3000, 3500, 4000, 4500, 5000, 5500, 6000 lumen models (insulation must be kept 3" from top and sides)
- Insulated ceiling (IC) rated for 500, 750, 1000, 1500, 2000, 2500, 3000, 3500, 4000 lumen models (use with an permeable insulation/ IC models are also suitable for Non-IC installations)
- Non-IC marked spacing required for 4500, 5000, 5500, 6000 lumen models:
  - 3" Minimum Diameter to Center of Adjacent Luminaire = 36"
  - Center of Luminaire to Building Member = 18"
  - Minimum overhead = 0.5"
- Airtight per ASTM-E283-04
- Suitable for use in clothes closets when installed in accordance with the NEC 410.16 spacing requirements
- EMI/RFI emissions FCC CFR Title 47 Part 15 Class A and Class B
- Contains no mercury or lead and RoHS compliant
- Photometric testing completed in accordance of IES LM-79-08
- Lumen maintenance projection in accordance of IES LM-80-08 and TM-21-11
- 500, 750, 1,000, 1,500 and 2,000 lumen, 90 CRI, 2700K, 3000K, 3500K, 4000K and 5000K CCT meet all California Title 24 residential code, per JA8 certification standards
- May be used to comply with State of California Title 24 non-residential code as a dimmable LED luminaire
- ENERGY STAR® certified, reference certified light fixture requirements

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

Note for use in direct contact with spray foam insulation, consult NEMA LSD57-2013

Project		Catalog #		Type	
Prepared by		Notes		Date	

Lumark

Prevail Petite Discrete Wall

Wall Mount Luminaire

Product Features

Interactive Menu
- Ordering Information page 2
- Mounting Details page 4
- Product Specifications page 5
- Energy and Performance Data page 6
- Control Options page 7

Product Certifications

Connected Systems
- WaveLinx PRO Wireless
- WaveLinx LITE Wireless

Quick Facts
- Direct-mounted discrete light engine for improved optical uniformity and visual comfort
- Lumen packages range from 4,300 - 11,300 lumens (30W – 90W)
- Replaces 70W up to 250W HID equivalents
- Efficacies up to 147 lumens per watt
- Surface mount configuration with standard conduit entry

Dimensional Details

Surface Mount (SM)

Wall Mount (WM)

NOTES:
1. Refer to http://www.cooperlighting.com/ecosystem for certified platforms. Not all product variations are DLC qualified.
2. Not certified for UWMB-SFC and remote only.

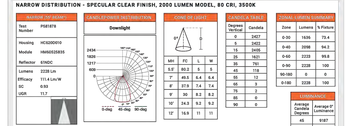
HALO Commercial

HC6 | HM6 | 61 | 61PS

Photometric Data

View IES files

NARROW DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K



*Value are nominal with specular clear reflectors, other finishes and field results may vary.
SC = Spacing Criteria
UGR = Unified Glare Rating

To estimate lumen output in emergency mode, multiply nominal battery wattage by LPW. Example: 6W x 115 LPW = 690 Lumens.

MEDIUM DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K

*Value are nominal with specular clear reflectors, other finishes and field results may vary.
SC = Spacing Criteria
UGR = Unified Glare Rating

To estimate lumen output in emergency mode, multiply nominal battery wattage by LPW. Example: 6W x 115 LPW = 690 Lumens.

Lumark

Prevail Petite Discrete Wall

Ordering Information

SAMPLE NUMBER: PRV-P-A1B-740-U-T4W-SM-BZ

Product Family	Light Engine		Color Temperature	Voltage	Distribution	Mounting (Style)	Finish
	Configuration	Nano Current *					
PRV-P Prevail Petite **PRV-PA** Prevail Petite Art Complete * **TBA-PRV-P** Perf Tab Prevail Petite Tab Complete**	R41=1 Panel, 34 LED Rectangle	A=4000mA Nominal B=3000mA Nominal C=2000mA Nominal N=1200mA Nominal	740=TC/CB, 4000K 730=TC/CB, 3000K 750=TC/CB, 5000K	U= Universal, 120-277V H=120V, 208V, 240-480V 1=120V 2=208V 3=240V 4=277V 5=347V 6=480V 7=UNV DM=Dimmed, 277-480V	**T24=Type 24 Roadway** T1=Type 1 Urban T2=Type 2 Urban T4W=Type 4 Square Wide T4R=Type 4 Square Wide	**SM=Surface Mid Mount** **WM=Wall Mount Arm**	**BZ=Bronze** **BK=Black** **WH=White** **DP=Dark Platinum** **GM=Graphite Metallic** **MW=Mist**

Options (Add as Suffix) | Accessories (Order Separately) * **

CBM=120V UL 1449 Rated Surge Protective Device
CBMDP=240V UL 1449 Surge Protective Device
DMG=0-10V Dimming Wires Pulled Outside Luminaire
DL=Two Circuit Light Engine
EM=Battery Backup Emergency Driver, 20°C to 55°C
HF=Double Fuse (Used with Voltages 208, 240 or 480V)
LCE=Limited Cold Environment, -30°C Minimum Ambient Start Temperature
LDP=CCO Shallow Emergency Battery Pack, Ambient Temp, -20° to 40°C *
LDPC=CEC Shallow Emergency Battery Pack, CEC Compliant (Ambient Temp, -20° to 40°C) *
SF=Single Fuse (120V, 277V) *
HA=50°C High Ambient Temperature *
OC=Coastal Construction *
PE=Photocell, Button Type
PER=Photocell, Long Life, Twistlock Photocontrol Receptacle *
PERS=Shorting Cap, Twistlock Photocontrol Receptacle *
RAD=Field Adjustable Dimming Controller *
SCE=Emergency Battery Backup, Selectable Emergency, Bi-Remote Programmable, 2" 0° Mounting *
SCER=CEC Emergency Battery and Daylight Sensor, Bi-Remote Programmable, 2" 0° Mounting *
SCRE=CEC Emergency Battery and Daylight Sensor, Bi-Remote Programmable, 2" 45° Mounting *
SDMG=Dimming Battery and Daylight Sensor, Bluetooth Programmable, 2" 0° Mounting *
SDMGR=Dimming Battery and Daylight Sensor, Bluetooth Programmable, 2" 45° Mounting *
WPM20S=WaveLinx Pro, 20 Pin Driver, Dimming Motion and Daylight, WAC Programmable, 2" 0° Mounting *
WPM20SR=WaveLinx Pro, 20 Pin Driver, Dimming Motion and Daylight, WAC Programmable, 2" 45° Mounting *
WPM24S=WaveLinx Pro, 24 Pin Driver, Dimming Motion and Daylight, Bluetooth Programmable, 2" 0° Mounting *
WLSAS=WaveLinx Lite, 24 Pin Driver, Dimming Motion and Daylight, Bluetooth Programmable, 70°, 45° Mounting *

WSS-HP=Power Side Shield, Horizontal Panel *
DA/BAT/D=Photocontrol Shorting Cap
DA/BAT/E=NEMA Photocontrol, 347V
DA/BAT/F=NEMA Photocontrol, 480V Tap 105-305V
DA/BAT/G=NEMA Photocontrol, 480V
DA/BAT/H=NEMA Photocontrol, 480V
WSS-SM=Motion Sensor for Occupancy Sense *
WSLC-TP=Mid-Lifestyle Tablet Control Module (TPMC) *

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

Shipping Data
Prevail Petite (with CSP): 31 lbs. (9.53 kgs.)

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

---

Lumark

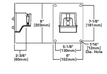
Prevail Petite Discrete Wall

Mounting Details

Surface Mount Plate (SM)

Surface Mount Assembly (SM)

Wall Mount (WM)



Product Specifications

Construction
- Single-piece die-cast aluminum housing
- Tethered die-cast aluminum door
- Surface Mount (SM) offers two 1/2" NPT conduit entry plugs
- Not suitable for inverted mount installation

Optics
- Dark Sky Approved (3000K CCT and warmer only)
- Precision molded polycarbonate optics

Electrical
- -40°C minimum operating temperature
- 40°C maximum operating temperature
- >.9 power factor
- <20% total harmonic distortion
- Class 1 electronic drivers have expected life of 100,000 hours with >76 failure rate
- 0-10V dimming driver is standard with leads exiting the fixture
- Standard 4KV surge protective device designed to withstand 10kV of transient line surge
- Luminaire available with the field adjustable dimming controller (FADC) to manually adjust light output from 100% to 10% in 10% increments of light levels. Comes pre-set to the highest position at the lumen output selected.

Typical Applications
Outdoor, Pedestrian Pathways, Building Entrances, Loading Docks, Perimeter Parking Lots

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

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

---

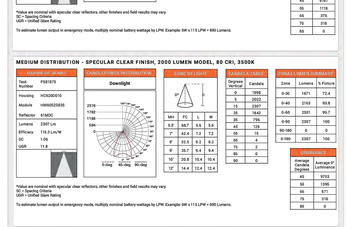
HALO Commercial

HC6 | HM6 | 61 | 61PS

Photometric Data

View IES files

WALL WASH DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K



*Value are nominal with specular clear reflectors, other finishes and field results may vary.
SC = Spacing Criteria, nominal for specular clear reflector, other may vary.
To estimate lumen output in emergency mode, multiply nominal battery wattage by LPW. Example: 6W x 115 LPW = 690 Lumens.

SINGLE LUMINAIRE LAYOUTS

2.0' from wall
(distance from fixture along wall)

	1	2	3	4	5	6	7	8	9	10
1	11.4	15.6	6.1	2.2	0.7	0.3	0.1			
2	29.1	22.8	13.3	5.7	2.5	1.2	0.6			
3	27.6	22.5	15.6	7.3	3.7	1.9	1			
4	21	19.3	13.4	7.4	4.2	2.4	1.4			
5	14.1	13.1	10.4	6.6	4.1	2.5	1.6			
6	9.7	9.1	7.9	5.5	3.7	2.5	1.6			
7	6.7	6.4	5.5	4.3	3.2	2.2	1.5			
8	4.7	4.6	4.1	3.4	2.7	2	1.4			
9	3.4	3.3	3.1	2.7	2.3	1.7	1.3			
10	2.5	2.5	2.4	2.1	1.8	1.4	1.1			

MULTIPLE LUMINAIRE LAYOUTS

2.0' from wall
(distance from fixture along wall)

2.0' from wall
(distance from fixture along wall)

	1	2	3	4	5	6	7	8	9	10
1	21.8	19.1	21.8							
2	34.7	34.4	34.7							
3	34.9	36	34.9							
4	35.4	39.7	35.4							
5	31	33.2	31							
6	15.3	16.8	15.3							
7	11	12	11							
8	8.2	8.7	8.2							
9	6.1	6.5	6.1							
10	4.6	4.9	4.6							

	1	2	3	4	5	6	7	8	9	10
1	30	10.1	30							
2	31.6	24.6	31.6							
3	31.3	27.6	31.3							
4	35.2	34.8	35.2							
5	19.6	19.8	19.6							
6	13.4	13	13.4							
7	9.9	11	9.9							
8	7.4	8.2	7.4							
9	5.5	6.2	5.5							
10	4.3	4.7	4.3							

Photometric Multipliers (Nominal Lumen Values)

500lm Lumens	750lm Lumens	1000lm Lumens	1500lm Lumens	2000lm Lumens	2500lm Lumens	3000lm Lumens	3500lm Lumens	4000lm Lumens	4500lm Lumens	5000lm Lumens	5500lm Lumens	6000lm Lumens
0.33	0.44	0.54	0.74	1.00	1.12	1.40	1.76					

Color Finish Multipliers

Finish Option	Specular Clear	Semi-Specular	White Matte White Baffle	Black Baffle
Typical	1.00	0.92	0.91	0.82

Multipliers for relative lumen values with other color finishes.

CCT Multipliers – 80CRI

2700K Lumens	3000K Lumens	3500K Lumens	4000K Lumens	5000K Lumens
0.92	0.98	1.00	1.03	1.03

Multipliers for relative lumen values with other color temperatures.

CCT Multipliers – 90CRI

2700K Lumens	3000K Lumens	3500K Lumens	4000K Lumens	5000K Lumens
0.77	0.84	0.89	0.90	0.90

Multipliers for relative lumen values with other color temperatures.

Note: Refer to IES files for more product data.

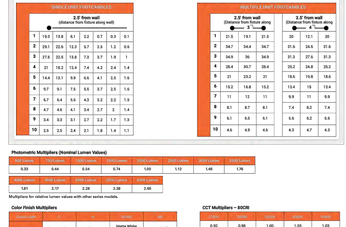
HALO Commercial

HC6 | HM6 | 61 | 61PS

Photometric Data

View IES files

WALL WASH DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K



*Value are nominal with specular clear reflectors, other finishes and field results may vary.
SC = Spacing Criteria, nominal for specular clear reflector, other may vary.
To estimate lumen output in emergency mode, multiply nominal battery wattage by LPW. Example: 6W x 115 LPW = 690 Lumens.

SINGLE LUMINAIRE LAYOUTS

2.0' from wall
(distance from fixture along wall)

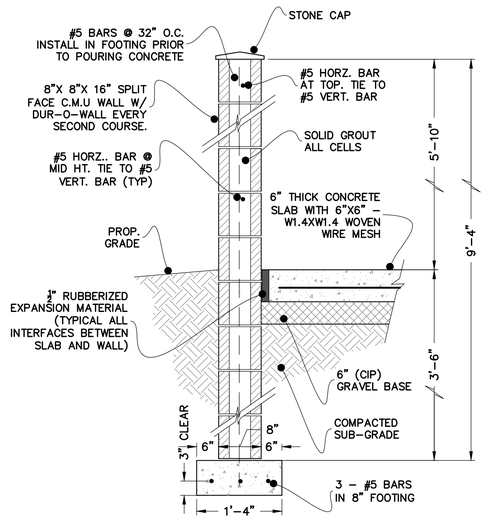
	1	2	3	4	5	6	7	8	9	10
1	11.4	15.6	6.1	2.2	0.7	0.3	0.1			
2	29.1	22.8	13.3	5.7	2.5	1.2	0.6			
3	27.6	22.5	15.6	7.3	3.7	1.9	1			
4	21	19.3	13.4	7.4	4.2	2.4	1.4			
5	14.1	13.1	10.4	6.6	4.1	2.5	1.6			
6	9.7	9.1	7.9	5.5	3.7	2.5	1.6			
7	6.7	6.4	5.5	4.3	3.2	2.2	1.5			
8	4.7	4.6	4.1	3.4	2.7	2	1.4			
9	3.4	3.3	3.1	2.7	2.3	1.7	1.3			
10	2.5	2.5	2.4	2.1	1.8	1.4	1.1			

MULTIPLE LUMINAIRE LAYOUTS

2.0' from wall
(distance from fixture along wall)

2.0' from wall
(distance from fixture along wall)

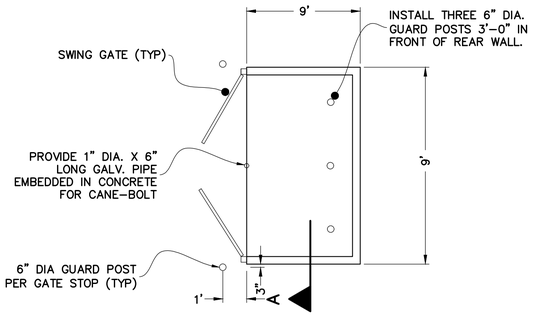
	1	2	3	4	5	6	7	8	9	10
1	21.8	19.1	21.8							
2	34.7	34.4	34.7			



SECTION "A"

1 DUMPSTER ENCLOSURE DETAIL

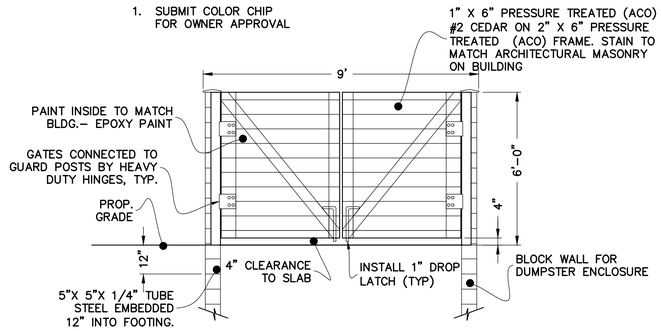
NOT TO SCALE



DUMPSTER PLAN VIEW

NOTE:

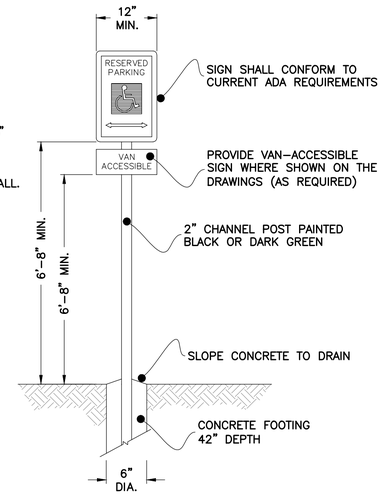
1. SUBMIT COLOR CHIP FOR OWNER APPROVAL



FRONT ELEVATION

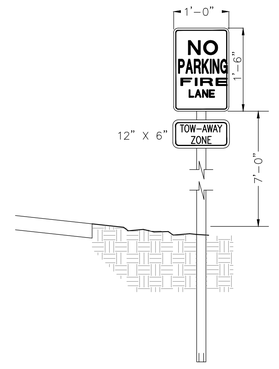
NOTE:

1. MINIMUM SIGN MOUNTING HEIGHT IS 6'-8" TO BOTTOM OF THE SIGN. WHEN A "VAN ACCESSIBLE" SIGN IS REQUIRED IT SHALL BE MOUNTED AT A HEIGHT OF 6'-8" TO THE BOTTOM OF THE SIGN WITH THE GRAPHIC SIGN MOUNTED ABOVE.
2. SIGN MAY ALSO BE MOUNTED ON BLDG. WALL.
3. SIZE OF SIGN, GRAPHIC, MOUNTING HEIGHT ETC. SHALL CONFORM TO CURRENT ADA REQUIREMENTS.



3 BARRIER FREE SIGN DETAIL

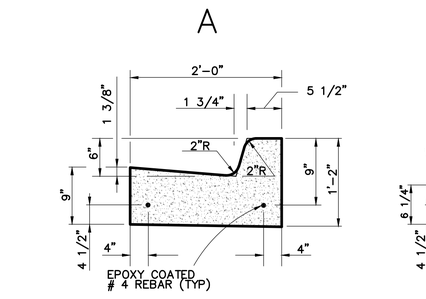
NOT TO SCALE

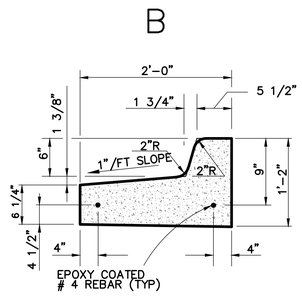


"NO PARKING FIRE LANE" SIGN SHALL BE BY EMEDCO, MODEL 18815 OR APPROVED EQUAL. THIS SIGN SHALL BE PLACED AND SHALL BE IN ACCORDANCE WITH ALL CURRENT MUTCD, MDOT, AND FHWA GUIDELINES AND SPECIFICATIONS.

4 SIGN-FIRE LANE

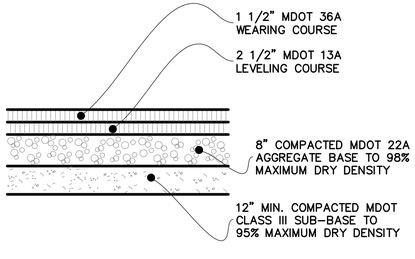
NO SCALE





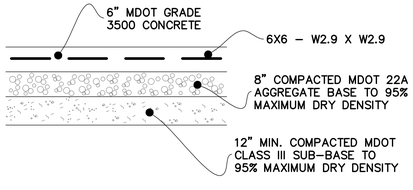
2 MDOT F4 CURB DETAIL

NOT TO SCALE



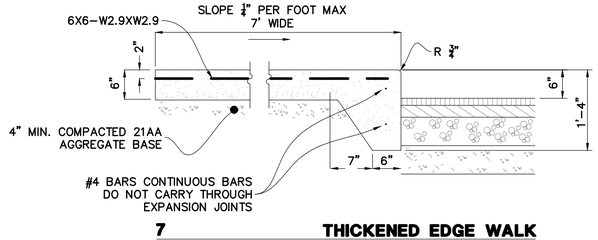
5 HMA PAVEMENT

NOT TO SCALE



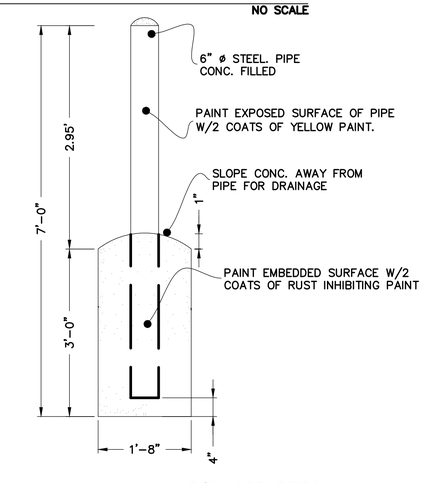
6 CONCRETE PAVEMENT

NOT TO SCALE



7 THICKENED EDGE WALK

NOT TO SCALE



8 BOLLARD DETAIL

NOT TO SCALE

FOR REVIEW

CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT

NEW MHOG ADMINISTRATION BUILDING

GENOA TOWNSHIP

LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE

SITE DETAILS

COPYRIGHT © 2025 JW CIVILWORKS, LLC. ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT THE WRITTEN CONSENT OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT THE WRITTEN CONSENT OF JW CIVILWORKS, LLC AND THE SAME PROVIDED BY SEMCOG" ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JAS	2026.07.20

SCALE: NO SCALE

JOB NO.: JN2026-050

SHEET NO.: 14

APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

(COMPREHENSIVE DETAILS ARE LOCATED IN SECTION 9 OF THE SOIL EROSION & SEDIMENTATION CONTROL MANUAL)

- A = SLOPES
- B = STREAMS AND WATERWAYS
- C = SURFACE DRAINAGEWAYS
- D = ENCLOSED DRAINAGE (INLET & OUTFALL CONTROL)
- E = LARGE FLAT SURFACE AREAS
- F = BORROW AND STOCKPILE AREAS
- G = DNRE PERMIT MAY BE REQUIRED

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
1	TURBIDITY CURTAIN	A Turbidity Curtain is used when slack water area is necessary to isolate construction activities from the watercourse. The silt water area contains the sediments within the construction limits.		•					
2	GRUBBING OMITTED	Retains existing root mat which assists in stabilizing slopes. Assists in the revegetation process by providing sprout growth. Reduces sheet flow velocities preventing rilling and gullying. Discourages off-road vehicle use.	•			•			
3	PERMANENT/TEMPORARY SEEDING	Inexpensive but effective erosion control measure to stabilize flat areas and mild slopes. Permits runoff to infiltrate soil, reducing runoff volumes. Proper preparation of the seed bed, fertilizing, mulching and watering is critical to its success.	•	•		•	•		
4	DUST CONTROL	Dust control can be accomplished by watering, and/or applying calcium chloride. The disturbed areas should be kept to a minimum. PERMANENT/TEMPORARY SEEDING (KEY 3) should be applied as soon as possible.	•				•	•	
5	SODDING	Provides immediate vegetative cover such as at spillways and ditch bottoms. Proper preparation of the topsoil, placement of the sod, and watering is critical to its success.	•				•	•	
6	VEGETATED BUFFER STRIPS	Reduces sheet flow velocities preventing rilling and gullying. Assists in the collection of sediments by filtering runoff. Assists in the establishment of a permanent vegetative cover.	•				•		

MDOT — PREPARED BY: BSUR — DESIGN DIVISION — DRAWN BY: JLC — CHECKED BY: RAC

DEPARTMENT DIRECTOR: Kirk T. Steudle — APPROVED BY: ENGINEER OF SOIL RESEARCH — APPROVED BY: ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 T.S.& L. APPROVAL	4-3-2010 PLAN DATE	R-96-E	SHEET 1 OF 6

NOTES:

THIS STANDARD PLAN WILL SERVE AS A KEY IN THE SELECTION OF THE APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL DETAILS. THIS PLAN SHALL BE REFERENCED ON THE SOIL EROSION AND SEDIMENTATION CONTROL PLAN (SESC PLAN) AS THE CONSTRUCTION PLAN NUMBER TO THE GREAT SOIL EROSION & SEDIMENTATION CONTROL MANUAL - SECTION 6 FOR SPECIFIC DETAILS. CONTRACT ITEM: "PAY ITEMS"- MID PAY UNITS.

COLLECTED SILT AND SEDIMENT SHALL BE REMOVED PERIODICALLY TO MAINTAIN THE EFFECTIVENESS OF THE SESC PLAN. REMOVED SEDIMENT SHALL BE PLACED, AGGREGATED PLACED OR STRUCKE SHOULD CONTAIN A MAXIMUM OF TONES.

TEMPORARY EROSION AND SEDIMENTATION CONTROL PROVISIONS SHALL BE COORDINATED WITH THE PERMANENT CONTROL MEASURES TO ASSURE EFFECTIVE CONTROL OF SEDIMENTS DURING CONSTRUCTION OF THE PROJECT.

ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AFTER REVEGETATION ESTABLISHMENT OR AT THE DISCRETION OF THE ENGINEER. CARE SHALL BE TAKEN DURING REMOVAL TO MINIMIZE SILTATION OR HEAVIER DRAINAGE STORES.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 T.S.& L. APPROVAL	4-3-2010 PLAN DATE	R-96-E	SHEET 6 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
7	RIPRAP	Used where vegetation cannot be established. Very effective in protecting against high velocity flows. Should be placed over a geotextile liner.	•	•	•	•			•
8	AGGREGATE COVER	Can be used in any area where a stable condition is needed for construction operations, equipment storage or in heavy traffic areas. Reduces potential soil erosion and fugitive dust by stabilizing raw areas.	•					•	•
9	BENCHES	Reduces sheet flow velocities preventing rilling and gullying. Assists in the collection and filtering of sediments. Provides access for stabilizing slopes.	•						•
10	DIVERSION DIKE	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying. Collects and diverts runoff to properly stabilized drainage ways. Works well with INTERCEPTING DITCH (KEY 11)	•					•	•
11	INTERCEPTING DITCH	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying. Works well with DIVERSION DIKE (KEY 10)	•					•	•
12	INTERCEPTING DITCH AND DIVERSION DIKE	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying.	•					•	•
13	GRAVEL FILTER BERM	Useful in filtering flow prior to its reentry into a lake, stream or wetland. Works well with SEDIMENT TRAP (KEY 20) and TEMPORARY BYPASS CHANNEL (KEY 35). Not to be used in lieu of a CHECK DAM (KEY 37) in a ditch.	•	•				•	•
14	GRAVEL ACCESS APPROACH	This practice is used to maintain a vegetative buffer adjacent to a watercourse. When utilized with SILT FENCE (KEY 26) it will, under normal circumstances, prevent sediment from leaving the construction site.						•	•

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 T.S.& L. APPROVAL	4-3-2010 PLAN DATE	R-96-E	SHEET 2 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
15	SLOPE DRAIN SURFACE	Excellent device for carrying water down slopes without creating an erosive condition. Generally used in conjunction with DIVERSION DIKE (KEY 10), INTERCEPTING DITCH (KEY 11) and INTERCEPTING DITCH AND DIVERSION DIKE (KEY 12) to direct flow to a stable discharge area or SEDIMENT TRAP (KEY 20).	•		•				
16	TREES, SHRUBS AND PERENNIALS	Trees, shrubs and perennials can provide low maintenance long term erosion protection. These plants may be particularly useful where site aesthetics are important along the roadside slopes.	•				•		
17	PIPE DROP	Effective way to allow water to drop in elevation very rapidly Assists in the collection and filtering of sediments. Also works as a sediment collector device. May be left in place as a permanent erosion control device.	•		•			•	•
18	DEWATERING WITH FILTER BAG	It may be necessary to dewater from behind a cofferdam or construction dam to create a dry work site. Discharged water must be pumped to a filter bag. A GRAVEL FILTER BERM (KEY 13) may be placed downslope of the filter bag to provide additional filtration prior to entering any stream or wetland.			•			•	
19	ENERGY DISSIPATORS	A device to prevent the erosive force of water from eroding soils. Used at outlets of culverts, drainage pipes or other conduits to reduce the velocity of the water. Prevents structure scouring and undermining.	•	•	•	•			
20	SEDIMENT TRAP	Used to intercept concentrated flows and prevent sediments from being transported off site or into a watercourse or wetland. The size of a Sediment Trap is 5 cubic yards or less. Works well when used with CHECK DAM (KEY 37).	•		•	•			
21	SEDIMENT BASIN	A Sediment Basin is used to trap sediments from an upstream construction site. Requires periodic inspections, repairs, and maintenance. Where practical, sediments should be contained on site. A Sediment Basin should be the last choice of sediment control. The size of a Sediment Basin is greater than 5 cubic yards.				•			•
22	VEGETATIVE BUFFER AT WATERCOURSE	This practice is used to maintain a vegetative buffer adjacent to a watercourse. When utilized with SILT FENCE (KEY 26) it will, under normal circumstances, prevent sediment from leaving the construction site.	•	•	•	•	•	•	•

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 T.S.& L. APPROVAL	4-3-2010 PLAN DATE	R-96-E	SHEET 3 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
23	STREAM RELOCATION	A detail depicting the proper procedures for stream relocation. Maintains same width, depth, and flow velocity as the natural stream. Revegetate banks with PERMANENT/TEMPORARY SEEDING (KEY 3), MULCHING AND MULCH ANCHORING (KEY 28), MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS (KEY 33) and woody plants to shade the stream.		•					•
24	SAND AND STONE BAGS	Sand and stone bags are a useful tool in the prevention of erosion. Can be used to divert water around a construction site by creating a DIVERSION DIKE (KEY 10). Works well for creating a CONSTRUCTION DAM (KEY 36) and temporary culvert end fill.	•	•	•	•	•	•	•
25	SAND FENCE AND DUNE STABILIZATION	A Sand Fence traps blowing sand by reducing wind velocities. Can be used to prevent sand from blowing onto roads. Must be maintained until sand source is stabilized.		•				•	•
26	SILT FENCE	A permeable barrier erected below disturbed areas to capture sediments from sheet flow. Can be used to divert small volumes of water to stable outlets. Ineffective as a filter and should never be placed across streams or ditches where flow is concentrated.	•					•	•
27	PLASTIC SHEETS OR GEOTEXTILE COVER	Plastic Sheets can be used to create a liner in temporary channels. Can also be used to create a temporary cover to prevent erosion of stockpiled materials.	•	•	•				•
28	MULCHING AND MULCH ANCHORING	Anchored mulch provides erosion protection against rain and wind. Mulch must be used on seeded areas to promote water retention and growth. Should be inspected after every rainstorm and repaired as necessary until vegetation is well established.	•	•	•	•	•	•	•
29	INLET PROTECTION FABRIC DROP	Provides settling and filtering of silt laden water prior to its entry into the drainage system. Can be used in median and side ditches where vegetation will be disturbed. Allows for early use of drainage systems prior to project completion.				•	•		
30	INLET PROTECTION GEOTEXTILE AND STONE	Provides settling and filtering of silt laden water prior to its entry into the drainage system. Should be used in paved areas where drainage structures are existing or proposed. Allows for early use of drainage systems prior to project completion.				•	•		

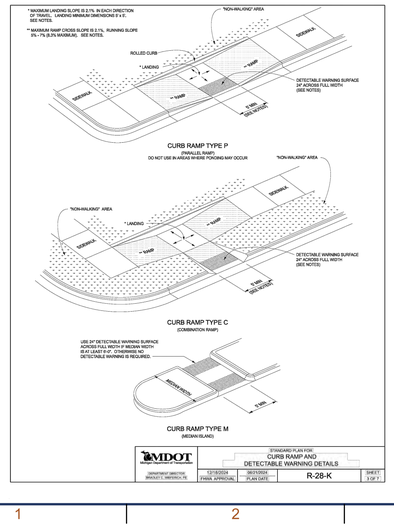
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 T.S.& L. APPROVAL	4-3-2010 PLAN DATE	R-96-E	SHEET 4 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
31	INLET PROTECTION SEDIMENT TRAP	An Inlet Protection Sediment Trap is a temporary device that can be used in areas where medium flows are anticipated. Effective in trapping small quantities of sediments prior to water entering the drainage system. Can be used in areas such as median and side ditches.			•		•		
32	SLOPE ROUGHENING AND SCARIFICATION	A simple and economical way to reduce soil erosion by wind and water. Can be accomplished by harrowing with a disk, back blading, or tracking with a dozer perpendicular to the slope.	•				•	•	•
33	MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS	Mulch blankets provide an immediate and effective cover over raw erodible slopes affording excellent protection against rain and wind erosion. High velocity mulch blankets work well for stabilizing the bottom of ditches in waterways.	•	•			•	•	•
34	COFFERDAM	Used to create a dry construction area and protect the stream from raw erodible areas. Must be pumped dry or dewatered according to DEWATERING WITH FILTER BAG (KEY 18).			•				•
35	TEMPORARY BYPASS CHANNEL	Utilized when a dry construction area is needed. Isolates stream flows from raw erodible areas minimizing erosion and subsequent siltation. Can incorporate SEDIMENT BASIN (KEY 21), CHECK DAM (KEY 37), and GRAVEL FILTER BERM (KEY 13) to remove sediments from water. Construction sequence of events may be necessary.		•					•
36	CONSTRUCTION DAM	Used to create a dry or slack water area for construction. Isolates the stream from raw erodible areas. Can be created out of any non-erodible materials such as SAND AND STONE BAGS (KEY 24), a gravel dike with clay core or plastic liner, steel plates or plywood.		•					•
37	CHECK DAM	Can be constructed across ditches or any area of concentrated flow. Protects vegetation in early stages of growth. A Check Dam is intended to reduce water velocities and capture sediment. A Check Dam is not a filtering device.	•	•			•		

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 T.S.& L. APPROVAL	4-3-2010 PLAN DATE	R-96-E	SHEET 5 OF 6

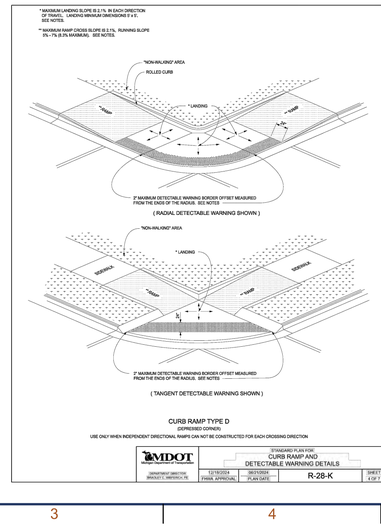


CURB RAMP TYPE P
(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PICKING MAY OCCUR

CURB RAMP TYPE C
(COMBINATION RAMP)

CURB RAMP TYPE M
(MEDIAN RAMP)

STANDARD PLAN FOR: CURB RAMP AND DETECTABLE WARNING DETAILS
MDOT — DEPARTMENT DIRECTOR: PROJECT C. SMITH/ C.TR. — 12/18/2024 FINAL APPROVAL — 08/31/2024 PLANS DATE — R-28-K — SHEET 3 OF 7

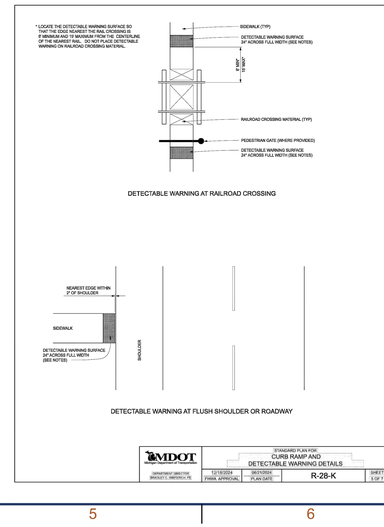


(RADIAL DETECTABLE WARNING SHOWN)

(TANGENT DETECTABLE WARNING SHOWN)

CURB RAMP TYPE D
(DEPRESSED CORNER)
USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

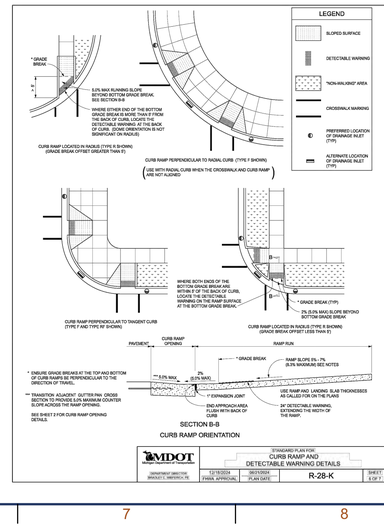
STANDARD PLAN FOR: CURB RAMP AND DETECTABLE WARNING DETAILS
MDOT — DEPARTMENT DIRECTOR: PROJECT C. SMITH/ C.TR. — 12/18/2024 FINAL APPROVAL — 08/31/2024 PLANS DATE — R-28-K — SHEET 4 OF 7



DETECTABLE WARNING AT RAILROAD CROSSING

DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

STANDARD PLAN FOR: CURB RAMP AND DETECTABLE WARNING DETAILS
MDOT — DEPARTMENT DIRECTOR: PROJECT C. SMITH/ C.TR. — 12/18/2024 FINAL APPROVAL — 08/31/2024 PLANS DATE — R-28-K — SHEET 5 OF 7

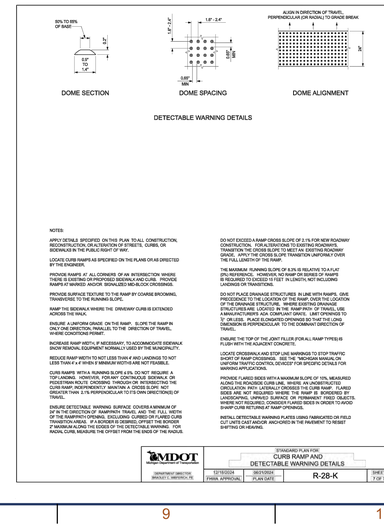


CURB RAMP TYPE R
(ROLLED SIDES)

CURB RAMP TYPE F
(FLARED SIDES, TWO RAMPS SHOWN)

APPROVED BY: ENGINEER OF DESIGN — APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES — APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT

STANDARD PLAN FOR: CURB RAMP AND DETECTABLE WARNING DETAILS
MDOT — DEPARTMENT DIRECTOR: PROJECT C. SMITH/ C.TR. — 12/18/2024 FINAL APPROVAL — 08/31/2024 PLANS DATE — R-28-K — SHEET 6 OF 7



CURB RAMP TYPE RF
(ROLLED / FLARED SIDES)

SECTION A-A

CURB TYPE	MAXIMUM RISE (INCHES) A	B
B1	6	1
B2	6	1
B3	6	1
D1	6	1
D2	6	1
D3	6	1
C1	6	1
C2	6	1
C3	6	1
C4	6	1
C5	6	1
C6	6	1
F1	6	1
F2	6	1
F3	6	1
F4	6	1
F5	6	1
F6	6	1

FOR CURB TYPES SEE STANDARD PLAN R-30-SERIES

SECTION THROUGH CURB RAMP OPENING
(TYPICAL ALL RAMP TYPES)

STANDARD PLAN FOR: CURB RAMP AND DETECTABLE WARNING DETAILS
MDOT — DEPARTMENT DIRECTOR: PROJECT C. SMITH/ C.TR. — 12/18/2024 FINAL APPROVAL — 08/31/2024 PLANS DATE — R-28-K — SHEET 7 OF 7

CURB RAMP TYPE R
(ROLLED SIDES)

CURB RAMP TYPE F
(FLARED SIDES, TWO RAMPS SHOWN)

STANDARD PLAN FOR: CURB RAMP AND DETECTABLE WARNING DETAILS
MDOT — DEPARTMENT DIRECTOR: PROJECT C. SMITH/ C.TR. — 12/18/2024 FINAL APPROVAL — 08/31/2024 PLANS DATE — R-28-K — SHEET 1 OF 7

(RADIAL DETECTABLE WARNING SHOWN)

(TANGENT DETECTABLE WARNING SHOWN)

CURB RAMP TYPE D
(DEPRESSED CORNER)
USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

STANDARD PLAN FOR: CURB RAMP AND DETECTABLE WARNING DETAILS
MDOT — DEPARTMENT DIRECTOR: PROJECT C. SMITH/ C.TR. — 12/18/2024 FINAL APPROVAL — 08/31/2024 PLANS DATE — R-28-K — SHEET 2 OF 7

DETECTABLE WARNING AT RAILROAD CROSSING

DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

STANDARD PLAN FOR: CURB RAMP AND DETECTABLE WARNING DETAILS
MDOT — DEPARTMENT DIRECTOR: PROJECT C. SMITH/ C.TR. — 12/18/2024 FINAL APPROVAL — 08/31/2024 PLANS DATE — R-28-K — SHEET 3 OF 7

* ENSURE GRADE BREAK AT THE TOP AND BOTTOM OF CURB RAMPS ARE PERPENDICULAR TO THE DIRECTION OF TRAVEL.
** TRANSITION ADJACENT GUTTER PAN CROSS SECTION TO PROVIDE 5.0% MAXIMUM COUNTER SLOPE ACROSS THE RAMP OPENING.
SEE SHEET 2 FOR CURB RAMP OPENING DETAILS.

SECTION B-B
CURB RAMP ORIENTATION

STANDARD PLAN FOR: CURB RAMP AND DETECTABLE WARNING DETAILS
MDOT — DEPARTMENT DIRECTOR: PROJECT C. SMITH/ C.TR. — 12/18/2024 FINAL APPROVAL — 08/31/2024 PLANS DATE — R-28-K — SHEET 8 OF 7

DETECTABLE WARNING DETAILS

NOTES:

APPLY DETAILS SPECIFIED ON THIS PLAN TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR BOULEVARDS IN THE PUBLIC RIGHT OF WAY.

LOCATE CURB RAMPS AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

PROVIDE RAMPS AT ALL CROSSINGS OF AN INTERSECTION WHERE ONE OR BOTH OF THE CROSSINGS HAVE A DESIGNATED WALKING PATH OF MARKED / MIDDLE SIGNALIZED MIDBLOCK CROSSWALK.

PROVIDE SURFACE TEXTURE TO THE RAMP BY COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

RAMP THE SIDEWALK WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

ENSURE A UNIFORM GRADE ON THE RAMP. SLOPE THE RAMP IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL, WHERE CONDITIONS PERMIT.

INCREASE RAMP WIDTH, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

REDUCE RAMP WIDTH TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' 4" WHEN 5' MINIMUM WIDTHS ARE NOT FEASIBLE.

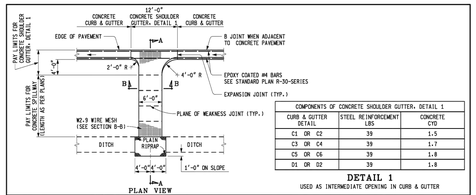
CURB RAMPS WITH A RUNNING SLOPE 4.5% TO 5.0% REQUIRE A HANDRAIL. CONSIDER HANDRAILS FOR RAMPS WITH SLOPES OVER 5.0%. PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP, INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT EXCEEDING 2.0% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

ENSURE DETECTABLE WARNING SURFACE COVERS A MINIMUM OF 24" IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING, EXCLUDING CURVED OR FLARED CURB RAMP SIDES. ENSURE THE EDGE NEAREST THE RAIL IS LOCATED A MINIMUM OF 6' AND A MAXIMUM ALONG THE EDGE OF THE DETECTABLE WARNING. FOR RADIAL CURB, MEASURE THE OFFSET FROM THE ENDS OF THE RADIUS.

DO NOT EXCEED A RAMP CROSS SLOPE OF 2.1% FOR NEW ROADWAY CONSTRUCTION. FOR ALTERATIONS TO EXISTING ROADWAYS, TRANSITION THE CROSS SLOPE TO MEET AN EXISTING ROADWAY GRADE. APPLY THE CROSS SLOPE TRANSITION UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

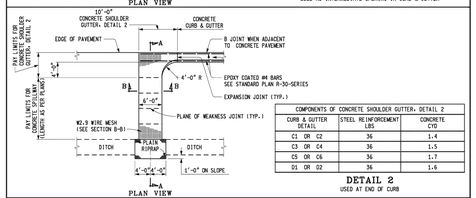
THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, NO RAMP OR BERMS OF RAMPS SHALL EXCEED 10.0% SLOPE OVER 6' IN LENGTH, NOT INCLUDING LANDINGS OR TRANSITIONS.

DO NOT PLACE DRAINAGE STRUCTURES IN LINE WITH RAMPS. GIVE PRECEDENCE TO THE LOCATION OF THE RAMP OVER THE LOC



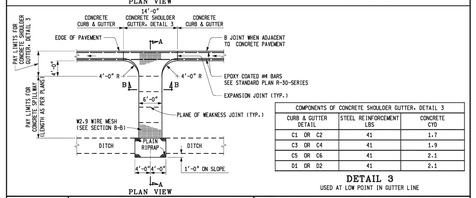
COMPONENTS OF CONCRETE SHOULDER GUTTER, DETAIL 1		
CURB & GUTTER DETAIL	STEEL REINFORCEMENT LBS	CONCRETE CYD
C1 OR C2	39	1.5
C3 OR C4	39	1.7
C5 OR C6	39	1.8
D1 OR D2	39	1.8

DETAIL 1
USED AS INTERMEDIATE OPENING IN CURB & GUTTER



COMPONENTS OF CONCRETE SHOULDER GUTTER, DETAIL 2		
CURB & GUTTER DETAIL	STEEL REINFORCEMENT LBS	CONCRETE CYD
C1 OR C2	36	1.4
C3 OR C4	36	1.5
C5 OR C6	36	1.7
D1 OR D2	36	1.6

DETAIL 2
USED AT END OF CURB



COMPONENTS OF CONCRETE SHOULDER GUTTER, DETAIL 3		
CURB & GUTTER DETAIL	STEEL REINFORCEMENT LBS	CONCRETE CYD
C1 OR C2	41	1.7
C3 OR C4	41	1.9
C5 OR C6	41	2.1
D1 OR D2	41	2.1

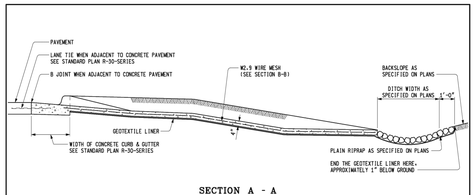
DETAIL 3
USED AT LOW POINT IN GUTTER LINE

MDOT Michigan Department of Transportation
PREPARED BY DESIGN DIVISION
DRAWN BY: B.L.T.
CHECKED BY: K.T.T.

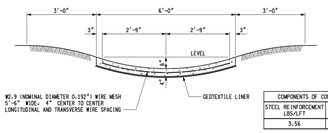
DEPARTMENT DIRECTOR
Paul C. Ajegba
APPROVED BY: Gregg Brunner, P.E. Jul 24, 2019 11:23 AM
DIRECTOR, BUREAU OF FIELD SERVICES
APPROVED BY: Bradley C. Wieferich Jul 3 2019 9:01 AM
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
CONCRETE SHOULDER GUTTER AND SPILLWAY

5-18-2020	7-30-2018	R-35-E	SHEET
F.H.W.A. APPROVAL	PLAN DATE		1 OF 2



SECTION A - A



COMPONENTS OF CONCRETE SPILLWAY	
STEEL REINFORCEMENT LBS/LFT	CONCRETE CYD/LFT
3.56	0.074

SECTION B - B

NOTE: REMOVE 6" DROP FROM EDGE TO CENTERLINE

NOTES:

A GRADUAL UNIFORM TRANSITION SHALL BE MADE FROM THE STANDARD CONCRETE CURB AND GUTTER TO THE CONCRETE SPILLWAY.

PLANE OF WEAKNESS JOINT SPACING SHALL BE AT UNIFORM INTERVALS OF APPROXIMATELY 4'-0".

THE SPILLWAY SHOULDERS AND FORESLOPES WILL BE UNDERLAID WITH GEOTEXTILE LINER FROM THE BACK SIDE OF CURB TO THE FAR END OF THE PLAIN RIPRAP INCLUDING THE ENTIRE FOOTPRINT OF THE PLAIN RIPRAP.

WHEN USING SPILLWAYS IN OTHER AREAS, SUCH AS BACKSLOPES, THE GEOTEXTILE LINER SHALL UNDERLAY THE FULL LENGTH OF THE SPILLWAY AND THE ENTIRE FOOTPRINT OF THE PLAIN RIPRAP. THE GEOTEXTILE LINER SHALL HAVE A MINIMUM WIDTH EQUAL TO THE WIDTH OF THE SPILLWAY.

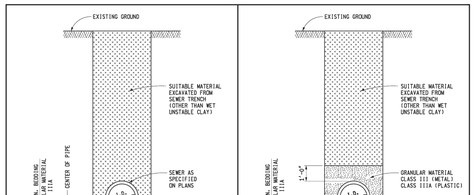
THE SPILLWAY SHALL BE GIVEN A TRANSVERSE COARSE BROOM FINISH.

WHILE CONCRETE SPILLWAY IS SHOWN ON THE FORESLOPE, IT MAY BE USED ON THE BACKSLOPE, AS SPECIFIED ON THE PLANS. CONCRETE SHOULDER GUTTER WOULD BE CORRESPONDINGLY OMITTED.

THE CURB AND GUTTER SHALL BE ALIGNED WITH THE BEAM GUARDRAIL AS SPECIFIED ON STANDARD PLAN R-67-SERIES. THE LOCATION OF GUARDRAIL POSTS SHOULD BE DETERMINED PRIOR TO LOCATING THE SPILLWAY OR DOWNSPOUT HEADER.

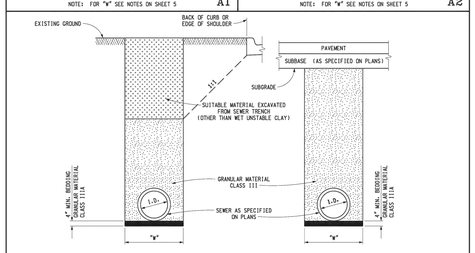
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
CONCRETE SHOULDER GUTTER AND SPILLWAY

5-18-2020	7-30-2018	R-35-E	SHEET
F.H.W.A. APPROVAL	PLAN DATE		2 OF 2



SEWER NOT UNDER ROADBED
CONCRETE
NOTE: FOR "e" SEE NOTES ON SHEET 5 — A1

SEWER NOT UNDER ROADBED
METAL & PLASTIC
NOTE: FOR "e" SEE NOTES ON SHEET 5 — A2



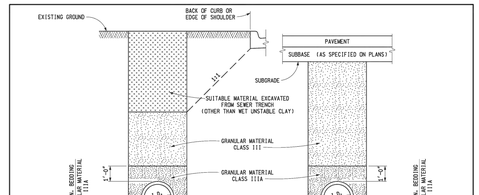
SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
CONCRETE & METAL PIPE — B1

MDOT Michigan Department of Transportation
PREPARED BY DESIGN DIVISION
DRAWN BY: B.L.T.
CHECKED BY: K.T.T.

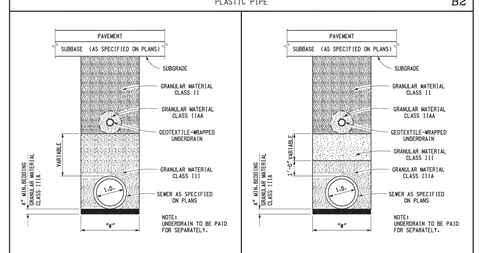
DEPARTMENT DIRECTOR
Kirk T. Steudle
APPROVED BY: Kimberly Avery Jul 3 2019 9:01 AM
DIRECTOR, BUREAU OF FIELD SERVICES
APPROVED BY: Bradley C. Wieferich Jul 3 2019 9:01 AM
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
UTILITY TRENCHES

7-25-2017	2-8-2016	R-83-C	SHEET
F.H.W.A. APPROVAL	PLAN DATE		1 OF 5



SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
PLASTIC PIPE — B2

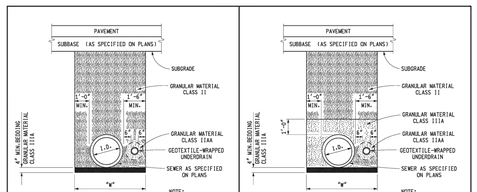


SEWER WITH UNDERDRAIN UNDER ROADBED
CONCRETE & METAL PIPE — C1

SEWER WITH UNDERDRAIN UNDER ROADBED
PLASTIC PIPE — C2

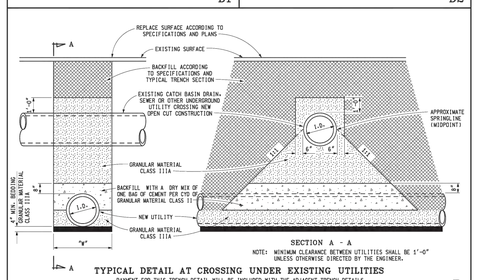
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
UTILITY TRENCHES

7-25-2017	2-8-2016	R-83-C	SHEET
F.H.W.A. APPROVAL	PLAN DATE		2 OF 5



SEWER WITH UNDERDRAIN UNDER ROADBED
CONCRETE & METAL PIPE
(FOR SHALLOW SEWERS) — D1

SEWER WITH UNDERDRAIN UNDER ROADBED
PLASTIC PIPE
(FOR SHALLOW SEWERS) — D2

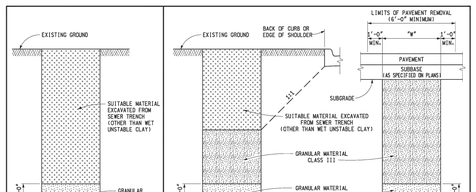


SECTION A - A
NOTE: MINIMUM CLEARANCE BETWEEN UTILITIES SHALL BE 1'-0" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TYPICAL DETAIL AT CROSSING UNDER EXISTING UTILITIES
PAYMENT FOR THIS TRENCH DETAIL WILL BE INCLUDED WITH THE ADJACENT TRENCH DETAILS — E

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
UTILITY TRENCHES

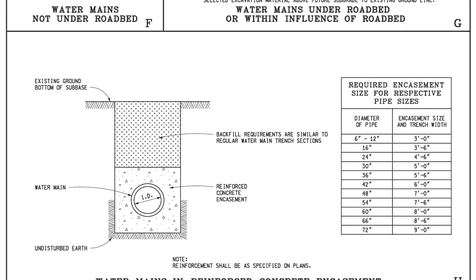
7-25-2017	2-8-2016	R-83-C	SHEET
F.H.W.A. APPROVAL	PLAN DATE		3 OF 5



WATER MAINS NOT UNDER ROADBED — F

NOTE: WHEN WATER MAIN IS PLACED IN PROPOSED ROADBED AREA, IT SHALL BE BACKFILLED WITH SELECTED EXCAVATION MATERIAL ABOVE FUTURE SUBGRADE TO EXISTING GROUND LINE.

WATER MAINS UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED — G



REQUIRED ENCASEMENT SIZE FOR RESPECTIVE PIPE SIZES	
DIAMETER OF PIPE	ENCASEMENT SIZE AND TRENCH WIDTH
6" – 12"	3'-0"
16"	3'-6"
24"	4'-6"
30"	5'-0"
36"	5'-6"
42"	6'-0"
48"	7'-0"
54"	7'-6"
60"	8'-0"
66"	8'-6"
72"	9'-0"

NOTE: REINFORCEMENT SHALL BE AS SPECIFIED ON PLANS.

WATER MAINS IN REINFORCED CONCRETE ENCASEMENT — H

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
UTILITY TRENCHES

7-25-2017	2-8-2016	R-83-C	SHEET
F.H.W.A. APPROVAL	PLAN DATE		4 OF 5

NOTES:

BACKFILLING SHALL BE ACCORDING TO THE STANDARD SPECIFICATION.

SUFFICIENT TRENCH WIDTH SHALL BE PROVIDED TO ALLOW FREE WORKING SPACE AND TO PERMIT COMPACTING THE BACKFILL AROUND THE PIPE.

THE FOLLOWING ARE MINIMUM TRENCH WIDTHS:

I.D. PIPE SIZE (INCHES)	LESS THAN 18	21	24	30	36
"e" TRENCH WIDTH (FEET)	3.0	3.5	4.0	5.0	6.0
I.D. PIPE SIZE (INCHES)	42	48	54	60	66	72
"e" TRENCH WIDTH (FEET)	7.0	8.0	9.5	10.0	10.5	11.0
I.D. PIPE SIZE (INCHES)	78	84	90	96	102	108
"e" TRENCH WIDTH (FEET)	11.5	12.0	12.5	13.0	13.5	14.0

ESTIMATED PAVEMENT REMOVAL WIDTH IS TO BE TRENCH WIDTH "e" PLUS 1'-0" EACH SIDE OF THE TRENCH (6'-0" MINIMUM).

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
UTILITY TRENCHES

7-25-2017	2-8-2016	R-83-C	SHEET
F.H.W.A. APPROVAL	PLAN DATE		5 OF 5

NOTE: R-83-C APPLIES TO STORM SEWER ONLY. SEE MHOG TRENCH EXCAVATION & PIPE BEDDING DETAILS FOR WATER AND SANITARY SERVICES.

CivilWorks
engineers | landscape architects
333 Albert Avenue, Ste. 622
East Lansing, Michigan 48823
Ph: 517.204.2178

PROJECT
NEW MHOG ADMINISTRATION BUILDING
GENOA TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

SHEET TITLE
MISC UTILITY AND MDOT DETAILS

COPYRIGHT © 2025 JW CIVILWORKS, LLC ALL DRAWINGS AND WRITTEN MATERIALS APPEARING HEREIN CONSTITUTE THE ORIGINAL AND UNPUBLISHED WORK OF JW CIVILWORKS, LLC AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF JW CIVILWORKS, LLC. ELECTRONIC DATA PROVIDED BY SEMCOG" ARE SUBJECT TO THE FOLLOWING (COPYRIGHT © 2019 SEMCOG. ALL RIGHTS RESERVED. REPRODUCTION OR USE WITHOUT PERMISSION IS PROHIBITED).

REV	DATE	DESCRIPTION
1	7/7/2026	REV PER MEETING WITH LCDC 7/2/2026
2	7/20/2026	REV PER GENOA TWP REVIEW PACKET
		RECEIVED 7/14/2026

FOR REVIEW

APPROVED	CHECKED
JCW	JCW
DRAWN	DATE
JAS	2026.07.20

SCALE: NO SCALE

JOB NO.: JN2026-050

SHEET NO.: 16

PIPE RESTRAINT SCHEDULE

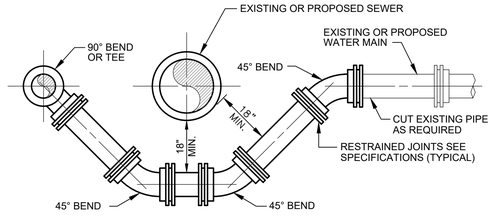
GROUND BURIED PRESSURE PIPE - POLYETHYLENE ENCASED DUCTILE IRON PIPE

PIPE DIAMETER	TEES, 90° BENDS	45° BENDS	22-1/2° BENDS	11-1/4° BENDS	DEAD ENDS	REDUCERS (ONE SIZE REDUCTION)*	REDUCERS (TWO SIZE REDUCTIION)*
4	13	5	3	1	40	--	--
6	19	8	4	2	58	31	--
8	24	10	5	2	75	30	70
12	34	14	7	3	107	57	116
16	43	18	9	4	139	59	137
20	52	22	10	5	169	59	134
24	61	25	12	6	199	60	132
30	73	30	15	7	242	85	168
36	84	35	17	8	281	84	168

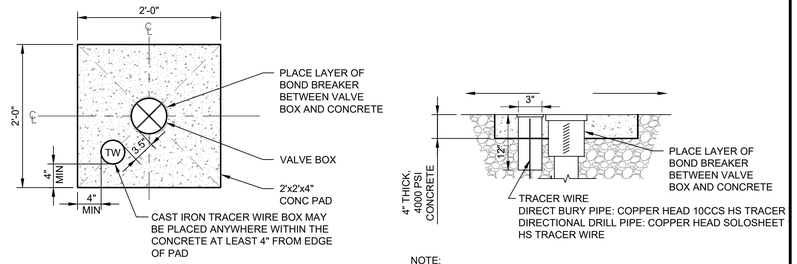
1. LENGTHS OF PIPE RESTRAINT ARE GIVEN IN FEET.
2. IF REQUIRED PIPE DIAMETER IS NOT LISTED IN THIS TABLE, THE NEXT LARGEST PIPE DIAMETER SHALL BE USED.
3. THIS TABLE IS BASED ON A TEST PRESSURE OF 180 PSI (OPERATING PRESSURE PLUS WATER HAMMER. FOR OTHER TEST PRESSURES, ALL VALUES TO BE INCREASED OR DECREASED PROPORTIONALLY.
4. THE VALUES PROVIDED OF RESTRAINT LENGTH ARE IN EACH DIRECTION FROM THE POINT OF DEFLECTION OR TERMINATION EXCEPT FOR TEES, AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE STEM.
5. IF TIE RODS ARE USED, USE FOUR RODS MINIMUM AND ADD 1/8-INCH TO BAR DIAMETER AS CORROSION ALLOWANCE.

* SIZE REDUCTION IS BASED UPON THE PIPE DIAMETER SHOWN IN THIS TABLE.

BASED UPON:
INTERNAL PRESSURE: 180
PIPE DEPTH: 5
BEDDING CLASS: TYPE 4
SOIL TYPE: GOOD SAND
SAFETY FACTOR: 2



WATER MAIN UTILITY OFFSET



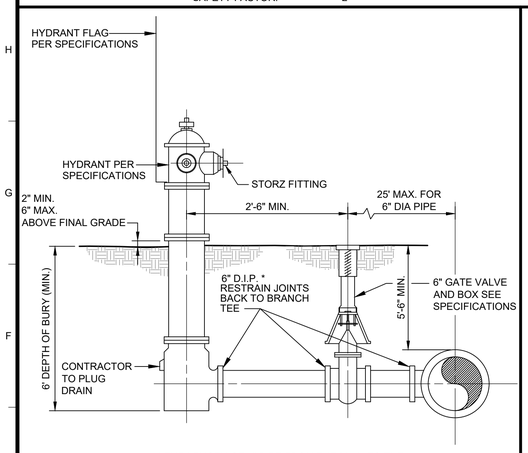
NOTE: ALL BOXES & ADJOINING TW BOXES SHALL BE ENCASED IN A CONC. PAD UNLESS OTHERWISE DETERMINED BY MHOG.

NOTE:
1. TRACER WIRE BOXES LOCATED WITHOUT A VALVE BOX ONLY REQUIRE AN 18" X 18" CONCRETE PAD.
2. TRACER WIRE BOX SHALL HAVE A LOCKING LID W/STANDARD AWWA PENTAGON KEY.
3. TRACER WIRE BOX SHALL BE COPPERHEAD RB14*TP IN ASPHALT INSTALLATIONS AND CD14*TP FOR ALL OTHER INSTALLATIONS.

PLAN SECTION

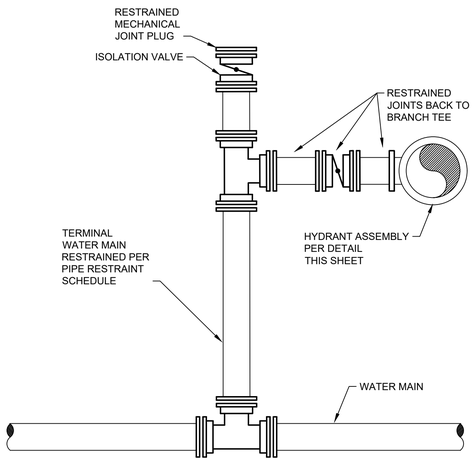
VALVE/TRACER WIRE BOX IN CONCRETE DETAIL

NO SCALE

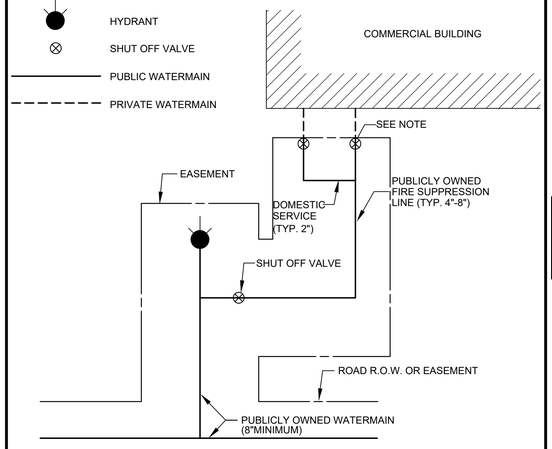


* THE LENGTH OF 6" PIPE FROM THE MAIN TO THE HYDRANT ASSEMBLY CANNOT EXCEED 25'. ANY PIPE OVER 25 FEET SHALL BE 8" DIAMETER MINIMUM AND DESIGNED PER MHOG SPECIFICATIONS.

FIRE HYDRANT ASSEMBLY

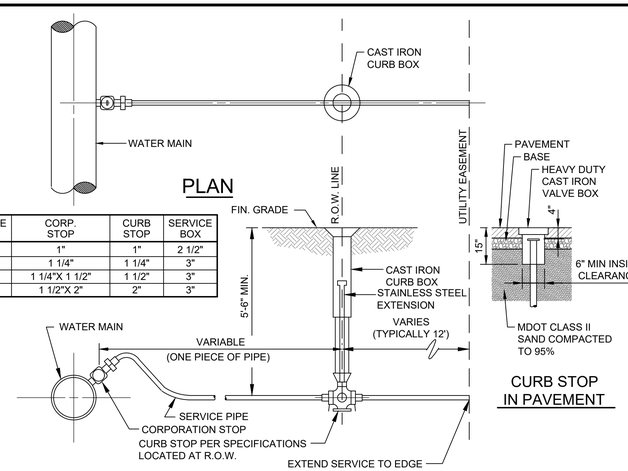


TERMINAL HYDRANT DETAIL



NOTE: FIRE SUPPRESSION LINE AND DOMESTIC SERVICE TO BE LOCATED WITHIN EASEMENT UP TO SHUTOFF VALVES OUTSIDE OF BUILDING.

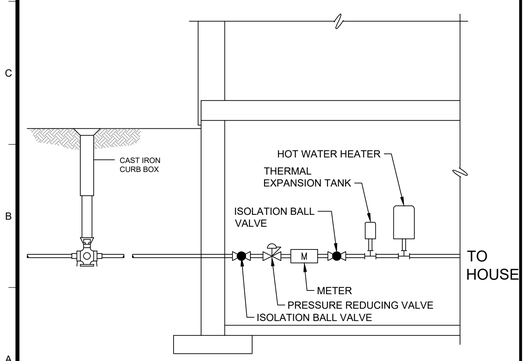
COMMERCIAL BUILDING WATER SERVICE LAYOUT



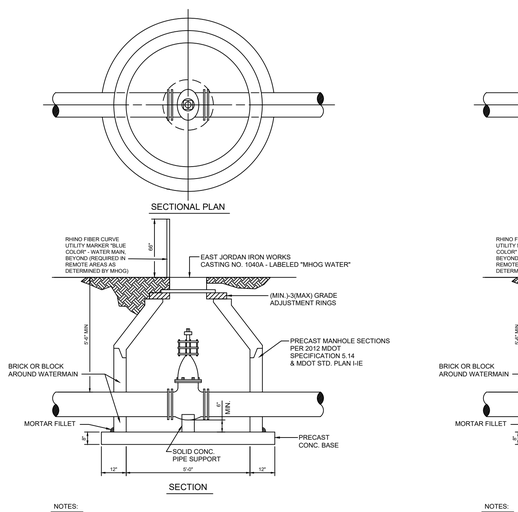
SERVICE PIPE	CORP. STOP	CURB STOP	SERVICE BOX
1"	1"	1"	2 1/2"
1 1/4"	1 1/4"	1 1/4"	3"
1 1/2"	1 1/4"X 1 1/2"	1 1/2"	3"
2"	1 1/2"X 2"	2"	3"

CURB STOP IN PAVEMENT

SECTION
WATER SERVICE LATERAL

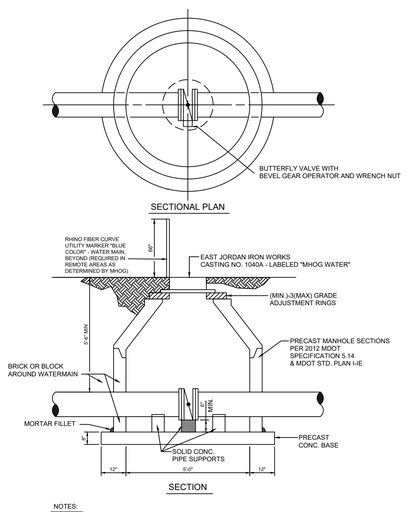


PRIVATE RESIDENCE
PRESSURE REDUCING VALVE (PRV)



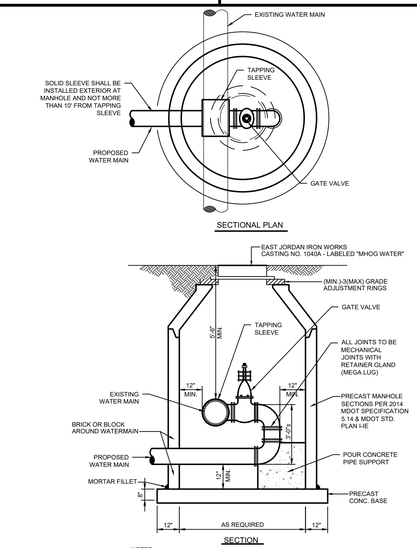
NOTES:
1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE.
2. BLOCK MANHOLES TO BE USED ONLY WITH ENGINEERS PERMISSION.
3. NO STEPS PERMITTED.

VALVE AND GATE WELL



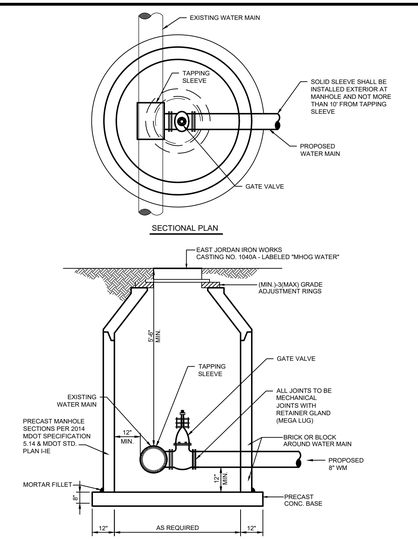
NOTES:
1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE.
2. BLOCK MANHOLES TO BE USED ONLY WITH ENGINEERS PERMISSION.
3. NO STEPS PERMITTED.

BUTTERFLY VALVE AND WELL



NOTES:
1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE.
2. BLOCK MANHOLES TO BE USED ONLY WITH ENGINEERS PERMISSION.
3. TAPPING SLEEVES ONLY PERMITTED FOR CONNECTIONS SMALLER THAN MAIN LINE.
4. NO STEPS PERMITTED.

REVERSE TAP GATE WELL



NOTES:
1. ALL LIFT HOLES AND JOINTS SHALL BE MORTARED BOTH INSIDE AND OUTSIDE.
2. BLOCK MANHOLES TO BE USED ONLY WITH ENGINEERS PERMISSION.
3. TAPPING SLEEVES ONLY PERMITTED FOR CONNECTIONS SMALLER THAN MAIN LINE.
4. NO STEPS PERMITTED.

REGULAR TAP GATE WELL

MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

STANDARD DETAILS

Scale: NONE

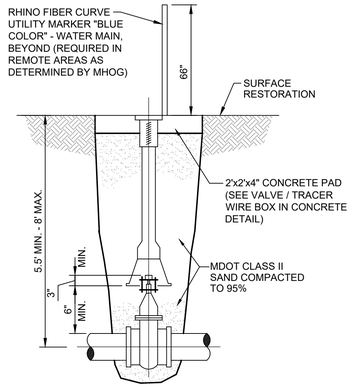
Issued Date JANUARY - 2014

UPDATED: MAY 2015
UPDATED: FEBRUARY 2016
UPDATED: APRIL 2016
UPDATED: OCTOBER 2017
UPDATED: FEBRUARY 2019
UPDATED: NOVEMBER 2022

JN2026-050

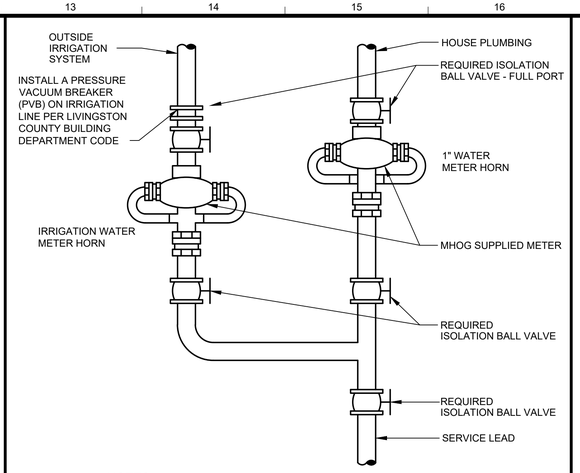
SHEET 17

Thursday, September 14, 2023 1:52:26 PM DRAWING: O:\Projects\Lansing\IER\127\9200-127719-000-000\CAD\SheetFiles\Mhog-std2.DWG



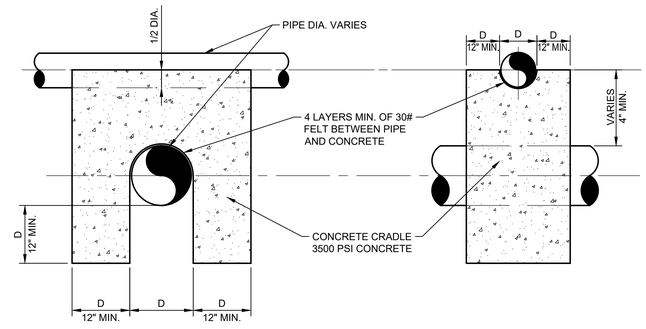
NOTES:
1. VALVE BOX SHALL NOT REST ON VALVE OR MAIN LINE PIPE.
2. A VALVE STEM EXTENSION WITH CENTERING RING IS REQUIRED FOR VALVES BURIED DEEPER THAN 6'.

GATE VALVE AND BOX



NOTES:
1. ALL METERS ARE TO BE INSTALLED HORIZONTALLY IN A DRY, CLEAN, SANITARY LOCATION THAT IS READILY ACCESSIBLE. THIS DRAWING IS NOT TO SCALE & IS ONLY A REPRESENTATION OF HOW THE VALVES AND METERS SHOULD BE INSTALLED. THE SECOND METER IS OPTIONAL FOR IRRIGATION USAGE. METERS SHOULD NOT BE INSTALLED IN LINE (ONE RIGHT AFTER THE OTHER).
2. PROPERTIES DESIGNATED "HIGH HAZARD" PER THE MHOG CROSS CONNECTION RULES MANUAL WILL REQUIRE THE INSTALLATION OF A REDUCED PRESSURE ZONE (RPZ) BACK FLOW PREVENTION DEVICE.

TYPICAL METER HORN INSTALLATION



CONCRETE CRADLE DETAIL

SCALE: NONE

MHOG CASTING DETAIL

NO SCALE

MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

STANDARD DETAILS

Scale: NONE

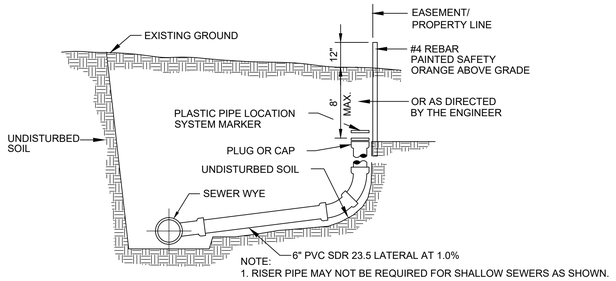
Issued Date JANUARY - 2014

UPDATED: MAY 2015
UPDATED: FEBRUARY 2016
UPDATED: APRIL 2016
UPDATED: OCTOBER 2017
UPDATED: FEBRUARY 2019
UPDATED: NOVEMBER 2022

JN2026-050

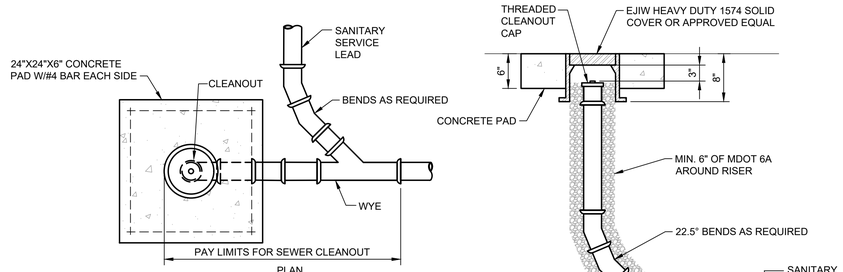
SHEET 18

Tuesday, November 8, 2022 1:47:13 PM DRAWING: O:\Projects\Lansing\IER\12719\200-12719-00-000\CAD\SheetFiles\Mhog-std.DWG



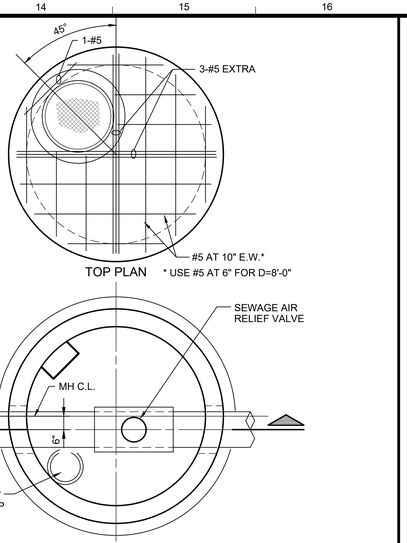
NOTE:
1. RISER PIPE MAY NOT BE REQUIRED FOR SHALLOW SEWERS AS SHOWN.
2. WHEN CONNECTING TO AN EXISTING SEWER THE AUTHORITY MAY REQUIRE CORING OF THE EXISTING PIPE AND INSTALLATION OF A SEWER SADDLE. SADDLE SHALL BE ROMAC "CB" SEWER SADDLE OR APPROVED EQUAL.

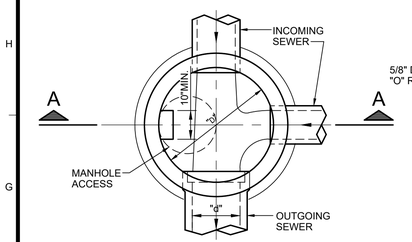
SANITARY SEWER LATERAL

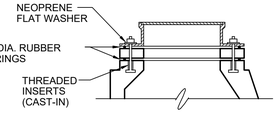


NOTES:
1. ALL CONNECTION SHALL BE BELL AND SPIGOT TYPE.
2. CLEANOUT IS TO BE SAME DIAMETER AS SERVICE LEAD.
3. CONCRETE PAD REQUIRED UNLESS OTHERWISE DETERMINED BY MHOG.
4. THERE MUST BE A 3" GAP FROM THE BOTTOM OF THE CLEAN OUT LID TO THE TOP OF THE THREADED CAP.

SEWER CLEANOUT DETAIL

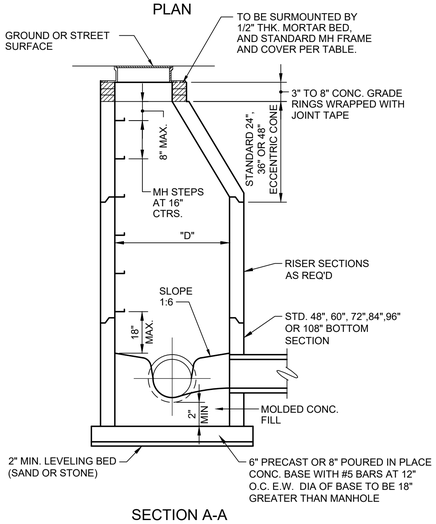






WATERTIGHT COVER ANCHORAGE

MANHOLE SCHEDULE	
PIPE SIZE (" d")	D
8"-24"	48"
27"-36"	60"
42"-48"	72"
54"	84"

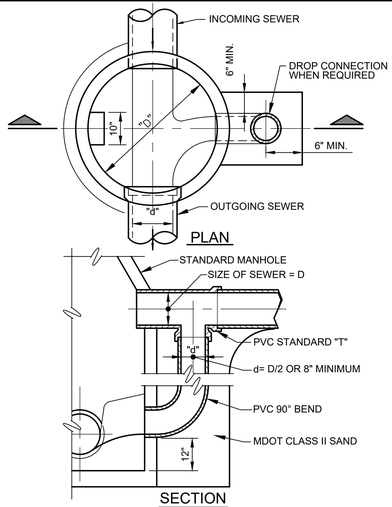


SECTION A-A

NOTES:
1. ALL SANITARY MANHOLES TO BE PRECAST REINFORCED CONCRETE WITH PREMIUM JOINTS. SEE SPECIFICATIONS FOR BASE SLAB AND PIPE OPENINGS AND CONNECTIONS.
2. MANHOLE CONES SHALL BE THE ECCENTRIC TYPE.
3. PROVIDE 6" OF COMPACTED GRANULAR MATERIAL UNDER ALL PRECAST CONCRETE BASE SLPVC.
4. FORCE MAINS CONNECT DIRECTLY TO A MANHOLE SHALL BE INSTALLED SO THAT THE ELEVATION OF THE PIPE CROWNS MATCH. THE FORCE MAIN SHALL BE DIRECTED DOWNWARD INTO THE FLOW CHANNEL.
5. FOR SANITARY SEWERS ALL PIPES SHALL ENTER MANHOLE THROUGH RUBBER BOOTED CONNECTION.

FRAME & COVER FOR SANITARY SEWER MANHOLES			
		MANUFACTURER OR EQUAL	
TYPE	TYPE OF COVER	EAST JORDAN	NEENAH
MH	SANITARY - SOLID SELF-SEALING	1040.0000	R-1642
MH	SANITARY - SOLID WATERTIGHT	1040-APT	R-1916-F
CO	SOLID	1574A	R-1973-A

STANDARD MANHOLE



REQUIRED WHEN AN INLET PIPE IS 24" OR MORE ABOVE THE OUTLET PIPE IN A MANHOLE

DROP CONNECTION

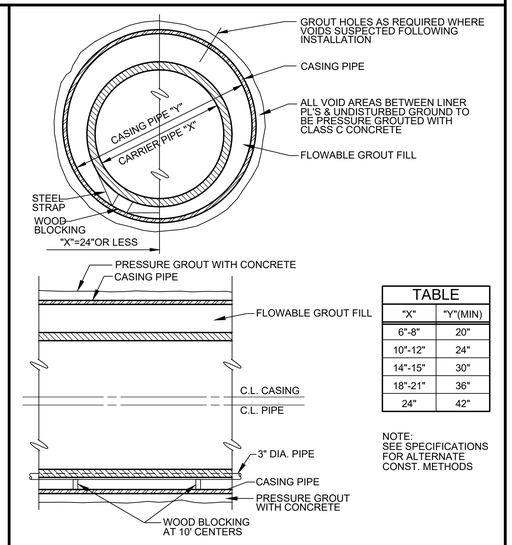
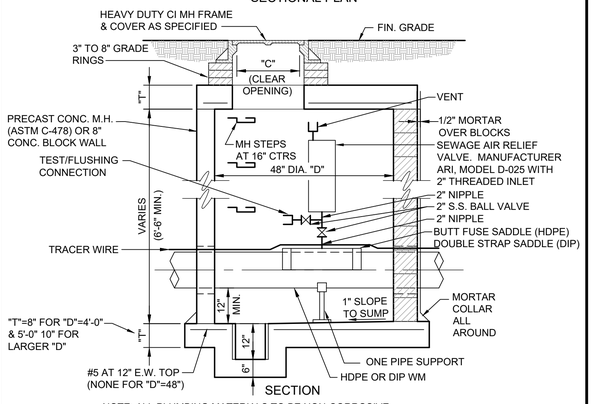


TABLE	
"X"	"Y"(MIN)
6"-8"	20"
10"-12"	24"
14"-15"	30"
18"-21"	36"
24"	42"

NOTE:
SEE SPECIFICATIONS FOR ALTERNATE CONST. METHODS

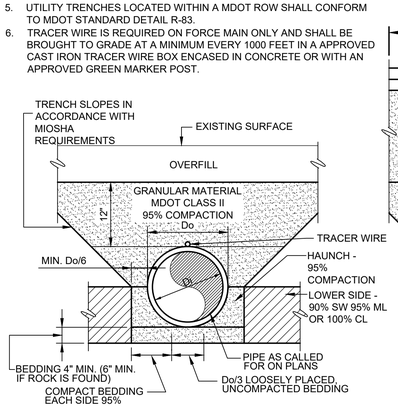
CASING PIPE



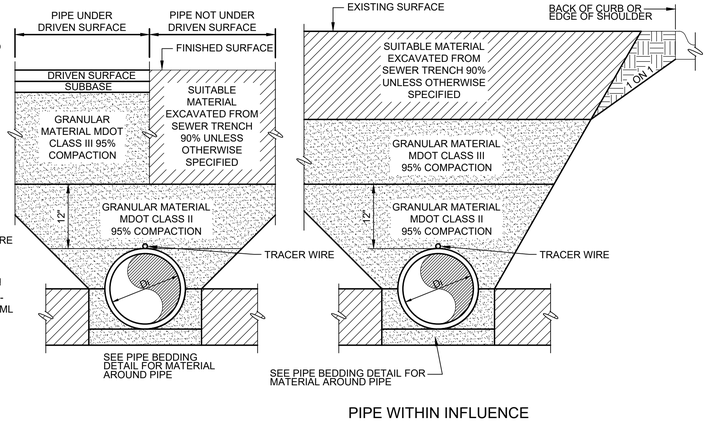
NOTE: ALL PLUMBING MATERIALS TO BE NON-CORROSIVE, ALL FITTINGS SHALL BE STAINLESS STEEL.

AIR RELIEF STRUCTURE

NOTES:
1. COMPACTION PRESENTED AS MINIMUM STANDARD PROCTOR VALUES.
2. MATERIALS AROUND THERMOPLASTIC PIPE WITH DIAMETER < 6 INCHES SHALL PASS 0.5 INCH SIEVE, MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SIEVE.
3. MATERIALS AROUND HDPE PIPE TO BE MDOT 6A OR 21AA.
4. DRIVEN SURFACE IS DRIVEWAY, PARKING AREA, ROAD BED OR SHOULDER.
5. UTILITY TRENCHES LOCATED WITHIN A MDOT ROW SHALL CONFORM TO MDOT STANDARD DETAIL R-83.
6. TRACER WIRE IS REQUIRED ON FORCE MAIN ONLY AND SHALL BE BROUGHT TO GRADE AT A MINIMUM EVERY 1000 FEET IN A APPROVED CAST IRON TRACER WIRE BOX ENCASED IN CONCRETE OR WITH AN APPROVED GREEN MARKER POST.



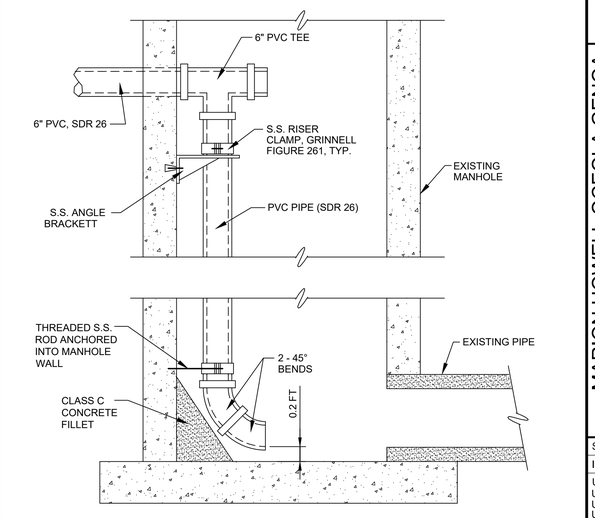
PIPE BEDDING



PIPE UNDER/NOT UNDER DRIVEN SURFACE

PIPE WITHIN INFLUENCE OF DRIVEN SURFACE

TRENCH EXCAVATION & PIPE BEDDING



INTERIOR SEWER LATERAL DROP CONNECTION

MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

STANDARD DETAILS

Scale: NONE

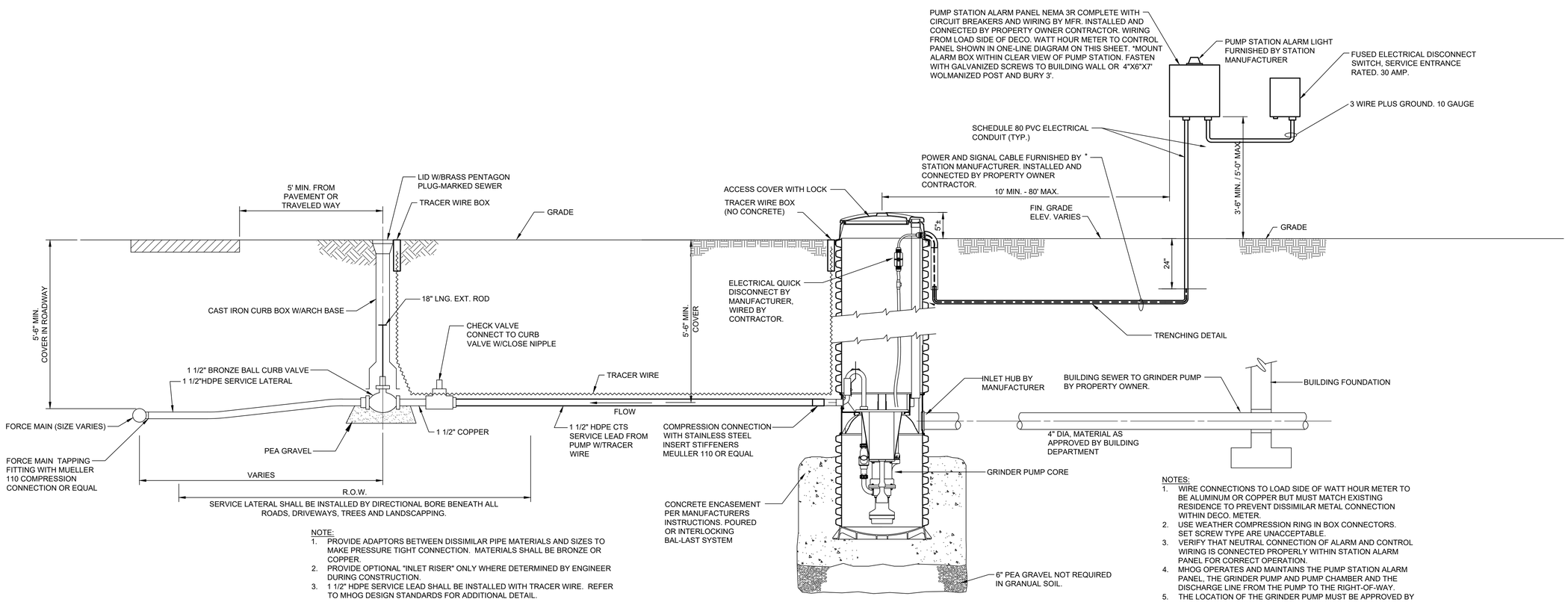
Issued Date JANUARY - 2014

UPDATED: MAY 2015
UPDATED: FEBRUARY 2016
UPDATED: APRIL 2016
UPDATED: OCTOBER 2017
UPDATED: FEBRUARY 2019

JN2026-050

SHEET 19

Friday, February 8, 2019 9:07:00 AM DRAWING: P:\IER\12719\200-12719-00-000\CAD\SheetFiles\Mhog-std.DWG

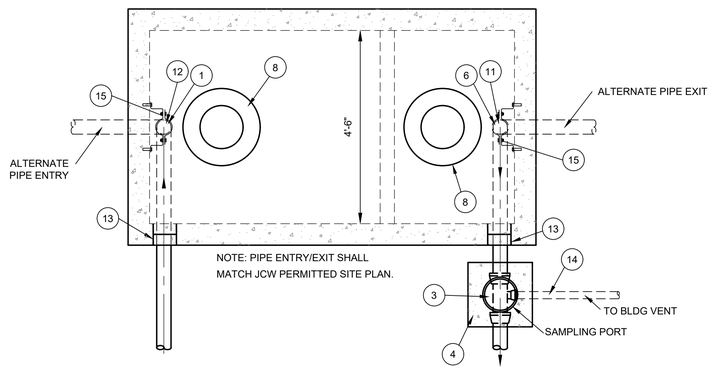


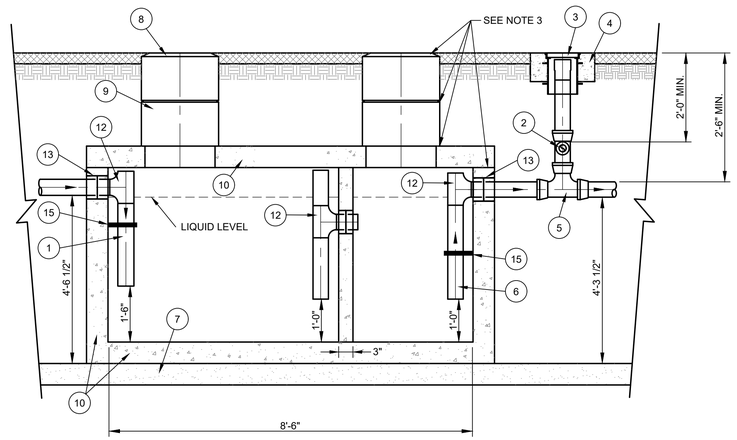
NOTE:
1. PROVIDE ADAPTORS BETWEEN DISSIMILAR PIPE MATERIALS AND SIZES TO MAKE PRESSURE TIGHT CONNECTION. MATERIALS SHALL BE BRONZE OR COPPER.
2. PROVIDE OPTIONAL "INLET RISER" ONLY WHERE DETERMINED BY ENGINEER DURING CONSTRUCTION.
3. 1 1/2" HDPE SERVICE LEAD SHALL BE INSTALLED WITH TRACER WIRE. REFER TO MHOG DESIGN STANDARDS FOR ADDITIONAL DETAIL.

NOTES:
1. WIRE CONNECTIONS TO LOAD SIDE OF WATT HOUR METER TO BE ALUMINUM OR COPPER BUT MUST MATCH EXISTING RESIDENCE TO PREVENT DISSIMILAR METAL CONNECTION WITHIN DECO. METER.
2. USE WEATHER COMPRESSION RING IN BOX CONNECTORS. SET SCREW TYPE ARE UNACCEPTABLE.
3. VERIFY THAT NEUTRAL CONNECTION OF ALARM AND CONTROL WIRING IS CONNECTED PROPERLY WITHIN STATION ALARM PANEL FOR CORRECT OPERATION.
4. MHOG OPERATES AND MAINTAINS THE PUMP STATION ALARM PANEL, THE GRINDER PUMP AND PUMP CHAMBER AND THE DISCHARGE LINE FROM THE PUMP TO THE RIGHT-OF-WAY.
5. THE LOCATION OF THE GRINDER PUMP MUST BE APPROVED BY MHOG PRIOR TO INSTALLATION. THE GRINDER PUMP MUST BE SERVICEABLE (ACCESSIBLE BY TRUCK) AND FREE FROM OBSTRUCTION.
6. MHOG MUST BE ONSITE FOR STARTUP OF ALL NEW GRINDER PUMPS.

SIMPLEX/DUPLEX GRINDER PUMPING STATION

NO SCALE





ITEM	DESCRIPTION
1	4" PVC INLET PIPE*
2	4"x4"x2" TEE WITH 2" PIPE TO BUILDING VENT*
3	THREADED C/O CAP JOSAM 58860 OR APP EQUAL**
4	CONCRETE PAD
5	4"x4"x4" TWO-WAY CLEANOUT TEE*
6	4" PVC OUTLET*
7	4" - 6" GRAVEL BEDDING
8	HEAVY-DUTY CAST IRON FRAME AND COVER ***
9	CONCRETE ADJUSTMENT RINGS
10	REINFORCE AS REQUIRED FOR SERVICE CONDITIONS
11	4" PVC 90° ELBOW*
12	4" PVC TEE*
13	A-LOK OR PRESS SEAL PSX PIPE/WALL CONNECTOR
14	2" VENT PIPE (IDENTIFY PIPE TYPE, CLASS & JOINT AS REQUIRED FOR PROJECT)
15	STAINLESS STEEL PIPE SUPPORT CLAMP ****

* 6" PIPE MAY BE SUBSTITUDED TO MATCH UPSTREAM PIPE DIAMETER.
** REFER TO CLEAN OUT DETAIL(S) ON STANDARD DETAIL SHEET.
*** CLAY & BAILEY 2008 BV OR EQUAL (FROST PROOF COVERS OPTIONAL)
****FM STAINLESS FASTNERS #63 OR EQUAL. 1/2"X2-1/2" SS BRACKET W/ 1/2"x1-1/2" FULLY THREADED SS HEX BOLT WITH 1/2" SS WASHER AND 1/2"X1-3/4" SS ANCHORS. CLAMP TO BE FACTORY INSTALLED.

NOTES:
1. THREE COVERS AND RISERS SHOWN. TWO COVERS AND RISERS CENTERED OVER UPPER TWO BAFFLES ARE OPTIONAL.
2. INTERCEPTOR SIZE - 1000 GAL MINIMUM (REVISE THE SIZE DIMENSIONS, AS NEEDED, FOR LARGER CAPACITY INTERCEPTORS)
3. ALL JOINTS AT THE FRAME & COVER*, CONCRETE ADJUSTMENT RINGS AND THE LID OF THE INTERCEPTOR SHALL BE SEALED WITH A MINIMUM OF TWO (2) ROWS OF 3/4 TO 1 INCH PREFORMED BUTYL JOINT SEALER AND A 6" BUTYL JOINT WRAP AROUND SLEEVE (EZ WRAP). THE ENDS OF THE 6" EZ WRAP SHALL OVERLAP BY 12".
4. PIPING ON THE INTERIOR OF THE INTERCEPTOR SHALL BE PVC WITH SOLVENT-CEMENTED JOINTS.
5. GREASE INTERCEPTOR INCLUDING ADJUSTMENT RINGS AND CASTINGS SHALL BE WATER TESTED FOR WATER TIGHTNESS AFTER THE BACKFILL OPERATIONS HAVE BEEN COMPLETED. WATER TESTING SHALL CONSIST OF THE FOLLOWING: 1. SEAL THE TANK, 2. FILL WITH WATER, 3. LET STAND FOR 24 HOURS, 4. REFILL TANK, 5. TANK IS APPROVED IS WATER LEVEL IS HELD FOR 1 HOUR.
6. ONLY KITCHEN WASTE SHALL BE DIVERTED TO THE GREASE TRAP.

GREASE INTERCEPTOR 1000 GALLON

NO SCALE

MARION HOWELL OCEOLA GENOA
Sewer and Water Authority

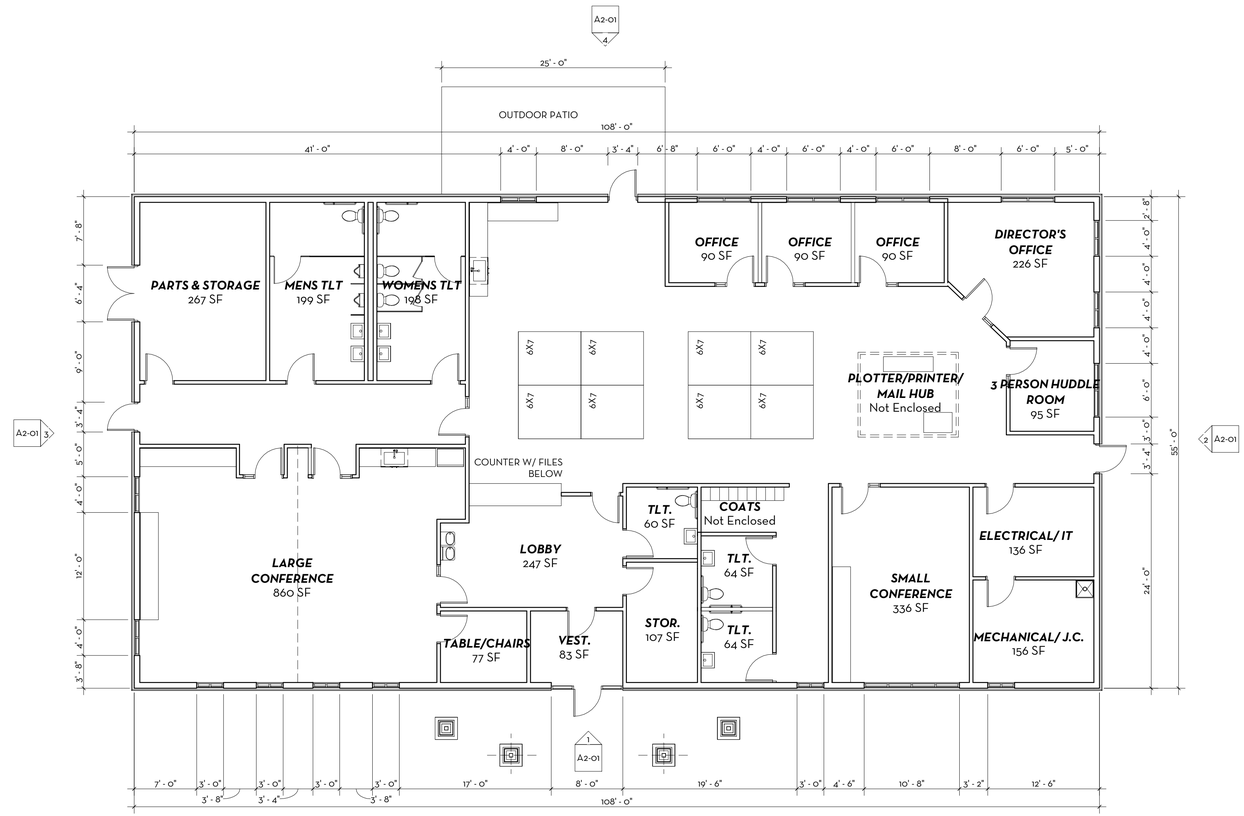
STANDARD DETAILS

Scale: NONE
Issued Date JANUARY - 2014

UPDATED: MAY 2015
UPDATED: FEBRUARY 2016
UPDATED: APRIL 2016
UPDATED: OCTOBER 2017
UPDATED: FEBRUARY 2019
UPDATED: NOVEMBER 2022

JN2026-050
SHEET 20

Tuesday, November 22, 2022 11:39:42 AM DRAWING: \\tt.local\IER\Projects\Lansing\IER\12719\200-12719-00-000\CAD\SheetFiles\Mhog-std.DWG



FIRST FLOOR PLAN

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

NORTH

FIKA ARCHITECTS L.L.C. COPYRIGHT © 2024

www.ByFika.com

916 FULL STREET
ANN ARBOR, MI 48104
INFO@BYFIKA.COM
(248) 946-1622

fika ARCHITECTS

CLIENT:

Schafer Construction, Inc.

#	ISSUE	DATE

MHOG SEWER & WATER UTILITIES
4288 Norton Rd.
Howell, MI 48843

FIRST FLOOR PLAN

SEAL:

DATE:
06/23/2026

SHEET NO.
A1-01

FACADE MATERIAL SCHEDULE - §12.01			
WALL MATERIAL	AREA FT2	PROPOSED %	MAX. ALLOWABLE %
EAST ELEVATION (FRONT FACING)			
STONE/BRICK	362	30.3% - OK	100%
SIDING	603	50.6 %	25 %
REFLECTIVE GLASS	230	19.2 % - OK	25 %
TOTAL	**1,195 FT2**		
SOUTH ELEVATION (PARKING FACING)			
STONE/BRICK	164	33.4% - OK	100%
SIDING	653	6.1 % - OK	25 %
REFLECTIVE GLASS	45	56.4 % - OK	25 %
TOTAL	**862 FT2**		

GENERAL NOTES:
1. REFER TO ORDINANCE 12.01 FOR PERCENTAGES REFERENCED ABOVE.
2. ROOF HAS NOT BEEN CALCULATED AS PART OF THE OVERALL PERCENTAGES ALTHOUGH HAS SIGNIFICANT BEARING ON THE FIELD OF VIEW.

NOTES TO THE REVIEWER:
1. ALL NON REFLECTIVE GLASS AND DOORS HAVE BEEN OMITTED FROM CALCULATION
2. ROOF AREAS ARE GREATER THAN 3: 12 PITCH AND HAVE NOT BEEN INCLUDED IN THE CALCULATION PER SECTION 12.
3. A WAIVER REQUEST WILL BE SUBMITTED IN ACCORDANCE WITH SECTION 12.01.04.

MATERIALS LEGEND:

1" CLEAR INSULATED GLASS UNIT,
ARGON FILLED WITH LOW-E COATING

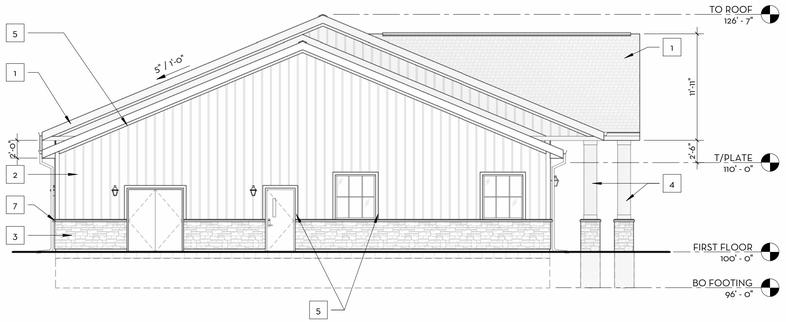
VERTICAL BATTEN BOARD - BASIS OF DESIGN
COLOR SHERWIN WILLIAMS TONY TAUPE (SW 7038)

LEDGE STONE VENEER - BASIS OF DESIGN
BELDEN ALAMO BLEND

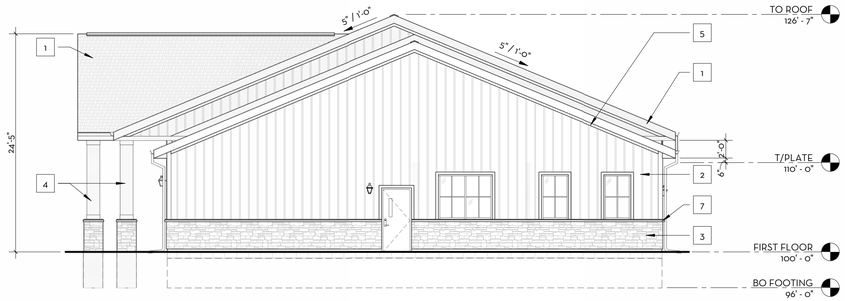
KEYED NOTES - ELEVATION

1 ASPHALT SHINGLE ROOFING
2 VERTICAL BATTEN BOARD SIDING
3 LEDGESTONE VENEER
4 COMPOSITE COLUMN ENCLOSURE - WOOD GRAIN WALNUT FINISH
5 2X4 TRIM - COLOR SHERWIN WILLIAMS TONY TAUPE (SW 7038) -TYPICAL
6 COMPOSITE TRUSS - WOOD GRAIN WALNUT FINISH
7 LIMESTONE SILL CAP
8 GUTTER & DOWNSPOUT

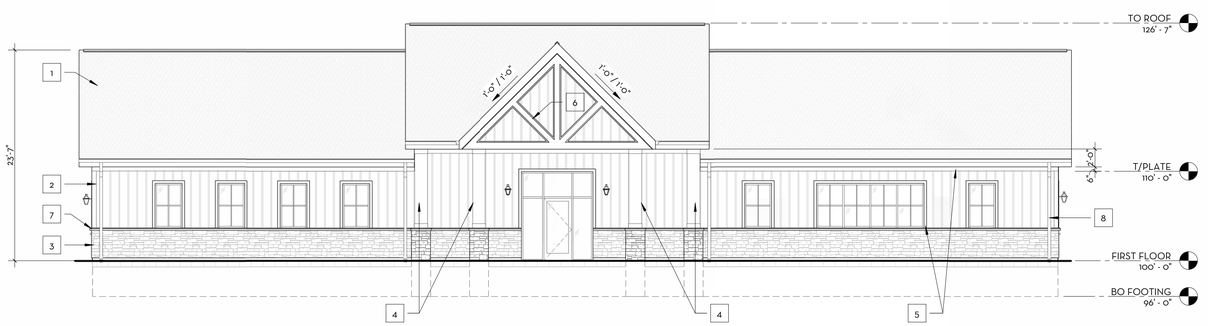
4 WEST ELEVATION
SCALE: 1/8" = 1'-0"



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



2 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



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

FIKA ARCHITECTS L.L.C. COPYRIGHT © 2024

www.ByFika.com
916 FULLER STREET
ANN ARBOR, MI 48104
INFO@BYFIKA.COM
(248) 946-1622
fika ARCHITECTS

CLIENT:
Schafer Construction, Inc.

#	ISSUE	DATE

MHOG SEWER & WATER UTILITIES
4288 Norton Rd.
Howell, MI 48843

EXTERIOR ELEVATIONS

SEAL:

DATE:
07/17/2026

SHEET NO.
A2-01

GENOA CHARTER TOWNSHIP
Application for Site Plan Review

GENOA TOWNSHIP
JUL 14 2026
RECEIVED

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:
(Application must be completed in its entirety)

APPLICANT NAME & ADDRESS: Tiffany Spano
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: 7575 Grand River Avenue, Brighton, MI 48114

SITE ADDRESS: 7575 Grand River Avenue, Brighton, MI 48114 PARCEL #(s): 4711-13-200-009

LOCATION AND BRIEF DESCRIPTION OF SITE:
Project Site is located at 7575 Grand River Avenue, Brighton, MI 48114. Project to include 318 additional parking spaces needed for the recent Hospital Addition and Medical office building.

BRIEF STATEMENT OF PROPOSED USE:
Project to include 318 additional parking spaces needed for the recent Hospital Addition and Medical office building.

THE FOLLOWING BUILDINGS ARE PROPOSED:
No buildings are proposed as part of this project.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: Tiffany Spano

ADDRESS: 7575 Grand River Avenue, Brighton, MI 48114

APPLICANT INFORMATION:

Applicant Phone: [redacted] Owner Phone: [redacted]

Owner Email: [redacted]

Contact Information - Review Letters and Correspondence shall be forwarded to the following:

1.) Tiffany Spano of [redacted]

Name | Business Affiliation | E-mail Address

FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE: Tiffany Spano DATE: July 14, 2026

PRINT NAME: Tiffany Spano PHONE: [redacted]

ADDRESS: 7575 Grand River Avenue, Brighton, MI 48114

August 4, 2026

Ms. Amy Ruthig
Genoa Township
2911 Dorr Road
Brighton, MI 48116

Re: St. Joe's Parking Expansion
Site Plan Review No. 1

Dear Ms. Ruthig:

Tetra Tech conducted a review of the site plan submittal for Trinity Health – Parking Expansion last dated July 14, 2026. The site plan was prepared by PEA Group on behalf of Trinity Health of Michigan. The development is located on 77.59 acres north of Grand River Ave, 0.3 miles east of Euler Road. The Petitioner is proposing a new parking lot expansion. The proposed site includes sidewalk improvements, underground detention system and new storm sewer.

We offer the following comments:

GENERAL

1. The land use summary table on the cover sheet seems to indicate the proposed plans will decrease the impervious area of the site when this is not the case. Table should be updated as necessary.

DRAINAGE AND GRADING

1. Easements should be provided and shown in plans for proposed storm if required by LCDC.

2. Drainage areas for CB 9 and 11 exceed the maximum drainage area allowed for the inlet type assumed by Genoa Township Engineering Standards for open areas. A double inlet should be added in both locations to meet the drainage requirements and avoid ponding during rain events.

3. Soil borings should be provided for the proposed underground detention system as required by the Township's Engineering Standards. Soil borings shall be provided to a depth of 20 feet below the proposed bottom elevation and documented groundwater elevations provided.

4. Structural calculations should be provided where the underground detention is located under pavement to ensure the system will not fail under normal loading conditions.

5. A system maintenance plan shall be submitted to ensure the underground detention will be taken care of properly.

Tetra Tech
3497 Coolidge Road, East Lansing, MI 48823
Tel 517.316.3930 Fax 517.484.8140 www.tetratech.com

PARKING LOT

1. Spot elevations or slope arrows should be provided within the proposed parking lot to ensure grades meet Genoa Township Engineering Standards

2. Township requirements define the minimum subbase thickness for sidewalk as 6-inches. The sidewalk details provided do not meet this requirement and should be updated accordingly.

3. For the asphalt cross sections, the subbase thickness and material should be called out and meet Genoa Township Standards.

4. The asphalt cross sections show the bond coat to be 0.05 Gal/SY. Genoa Township Engineering Standards require that the bond coat be 0.10 Gal/SY and should be updated accordingly.

We recommend that the petitioner address the above comments and resubmit for additional review. Please call or email if you have any questions.

Sincerely,

Sydney Streveler, EIT
Civil Engineering Group

BRIGHTON AREA FIRE AUTHORITY
615 W. Grand River Ave.
Brighton, MI 48116
o: 810-229-6640 f: 810-229-1619

August 3, 2026

Bobby Foster, Planner
Genoa Charter Township
2911 Dorr Rd.
Brighton, MI 48116

RE: St. Joseph Mercy Brighton - Parking Lot Expansion
7575 Grand River
Site Plan Review

Dear Bobby:

The Brighton Area Fire Department has reviewed the above-mentioned site plan. The plans were received for review on July 15, 2026, and the drawings are dated July 14, 2026. The proposed project is for a parking lot expansion. The plan review is based on the requirements of the International Fire Code (IFC) 2024 edition.

The fire authority has no objection to the proposed parking lot expansion. As the drives are not emergency vehicle access, they are not required to meet width and radius dimensions. Improvements will be required if the "future development" area is developed.

If you have any questions about the comments on this plan review, please contact me at 810-229-6640.

Cordially,

Rick Boisvert, CFPS
Fire Marshal

cc: Amy Ruthig (amy@genoa.org)

IMPACT ASSESSMENT
Trinity Health of Michigan
July 2, 2026

INTRODUCTION

The proposed development is additional parking for a 77.59-acre medical use site located north of Grand River Ave. Potential areas of concern are noted along with the proposed methods of addressing each item. The format conforms to the impact assessment requirements as outlined in section 18.07 of the published zoning ordinance for Genoa Township.

a. **Name(s) and address(es) of person(s) responsible for preparation of the impact assessment.**

Trinity Health of Michigan
7575 Grand River Ave Rd, Brighton, MI 48114
(810) 844-7575

PEA Group
7927 Nemco Way, Suite 115, Brighton, MI 48116
(517) 546-8583

Janet Evans | PLA
jevans@peagroup.com | (248) 509-7229

Tristan Larson | Civil, PE
tlarson@peagroup.com | (810) 819-7007

b. **Map(s) and written description/analysis of the project site**

The Trinity Health of Michigan site (Parcel ID: 4711-13-200-009) is in Section 13 of Livingston County, north on Grand River Road, west of South Hacker Road and east of the Genoa Business Park. It is a 77.59-acre site that currently has a medical facility and a senior living facility residing on it. These establishments are supported by surface parking as well as an access road that has shared connections shared with the Business Park. Please see attached documentation PEA Group Existing Conditions Plan – Overall (sheet C-1.0) for easement information and surrounding zoning.

c. **Impact on natural features:**

1. Slopes and Grade: The site presents steeper slopes in some areas between the proposed parking and the water body to the northeast. It is intended that this plan will minimize the amount of grading that will need to be done on-site. This grading will be performed on 4 acres of the site. Sidewalks being replaced will be ADA accessible. Refer to PEA Group Grading Plan (sheets C-4.0 and C-4.1).

2. Wetland and Soils: The site contains two creeks and two wetland/detention ponds north of the existing medical building. The proposed development is staying out of wetlands as delineated previously by SmithGroup. The proposed outlet will be over restricted from 0.15 cfs/acre to 0.10 cfs/acre in compliance with Livingston County Drain Commissioner due to flooding concerns.

3. Vegetation: There is minimal vegetation on the proposed site, as shown on the Existing Conditions Plan sheets. Most of this vegetation tends to be undergrowth and brush. Some of this vegetation will need to be removed to accommodate the proposed additional parking. It is the intent of this design to minimize vegetation removal, and the improvements will not be removing more than 25% of existing vegetation on site. Refer to PEA Group Demolition Plan (sheets C-2.0 and C-2.1) and PEA Group Landscape Plans.

d**. Impact on stormwater management:**

The existing stormwater drainage is contained within the site and drain to a regional pond/detention system. An existing wet pond with forebay is currently functioning as the stormwater mitigation system for the entirety of the site's drainage area. Existing on-site underground storm sewer will be utilized to continue to convey stormwater to the existing wet pond. Proposed underground storm sewer and an underground detention system will be added to support the additional parking areas and impervious cover. The improvements to the existing detention system are to enhance the overall quality of the stormwater system. Surface runoff during construction will be controlled by silt fences, inlet filters, and seed and mulch.

e. **Impact on surrounding land used:**

The proposed land banked parking is planned to benefit the community by providing more parking spaces at the medical center. Currently, there is not an adequate number of spaces and visitors are having to park across the street at 242 Community Church. The land banked parking will increase the safety of the community since visitors will not need to cross a busy road to get to the medical center. Site improvements include 318 parking spaces, relocation of sidewalks and ramps associated with land banked parking entrances, relocation of signs and light poles, and curb and gutter in newly paved areas. There will be no impact to the current noise level and air pollution at the site.

f**. Impact on public facilities and services:**

The proposed development will include demolition of sidewalk and curb, relocation of light poles and signs, grading, paving, and installation of storm sewer. There will be no impact to public schools. Police and fire protection will not be needed for the project.

g. **Impact on public utilities:**

Sanitary sewer and water utilities are reviewed by Marion, Howell, Oceola, and Genoa (MHOG) Sewer and Water Utilities. The proposed development does not include any changes to the sanitary sewer or water utilities.

h. **Storage and handling of any hazardous materials:**

The proposed development will include demolition of sidewalk and curb, relocation of light poles and signs, grading, paving, and installation of storm sewer. There will be no hazardous materials needing storage or handling on the site as part of this project.

i**. Impact on Traffic and Pedestrians:**

The proposed development does not have a current traffic study as it will not have an impact on traffic or pedestrians. The proposed land banked parking will not affect any adjacent streets or rights-of-way. The proposed land banked parking will provide more parking spaces in the Trinity Health site, as there are not enough parking spaces currently and visitors are having to park elsewhere.

A traffic study was completed for the previous project (Trinity Health building) by Bergmann on March 24, 2022. The report covers all of the items listed below apart from the crash analysis as it was not requested by LCRC or MDOT. Please see attached Appendix I for the Traffic study's executive summary and full report.

Description of existing daily and peak hour traffic on adjacent street(s) and a description of any sight distance limitations along the right-of-way frontage of the site.

Forecasted trip generation of the proposed use for the a.m. and p.m. peak hour and average daily traffic generated.

For any project with a completion date beyond one year at the time of site plan approval, the analysis shall also include a scenario analyzing forecasted traffic at date of completion along the adjacent street

network using a forecast based either on historic annual percentage increases and/or on expected development in the area.

Projected traffic generated shall be distributed (inbound v. outbound, left turn v. right turn) onto the existing street network to project turning movements at site driveways and nearby intersections. Rationale for the distribution shall be provided.

Capacity analysis at the proposed driveway(s) using the procedures outlined in the most recent edition of the Highway Capacity Manual published by the Transportation Research Board. Capacity analyses shall be provided for all street intersections where the excepted traffic will comprise at least five-percent (5%) of the existing intersection capacity.

Accident data for the previous three (3) years for roadway sections and intersections experiencing congestion or a relatively high accident rate, as determined by the township or staff from the Livingston County Road Commission or Michigan Department of Transportation.

Analysis of any mitigation measures warranted by the anticipated traffic impacts. Where appropriate, documentation shall be provided from the appropriate road agency regarding time schedule for improvements and methods of funding.

A map illustrating the location and design of proposed access, including any sight distance limitations, dimensions from adjacent driveways and intersections within 250 feet of the edge of the property frontage, and other data to demonstrate that the driveway(s) will provide safe and efficient traffic operation and be in accordance with Article 15.

j. **Special Provisions:** General description of any deed restrictions, protective covenants, master deed or association bylaws.

All easements are shown on PEA Group Existing Conditions Plan – Overall (sheet C-1.0).

k. **A list of all sources shall be provided.**

PEA Group Survey and Plans

Refer to sources from previous project:
Traffic Study Appendix I
Preliminary Wetland Analysis Appendix II
Title Search Appendix III

PRELIMINARY SITE - CONSTRUCTION PLANS

TRINITY HEALTH - PARKING EXPANSION

7575 GRAND RIVER AVE.

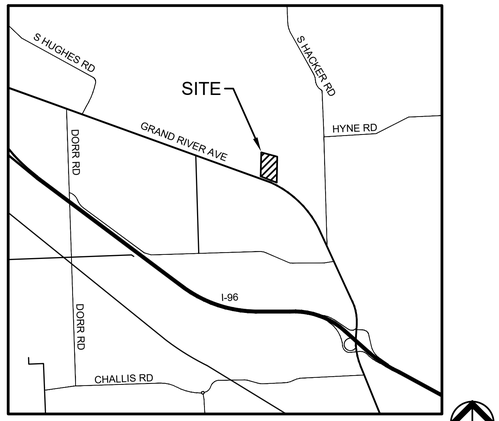
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

PERMIT / APPROVAL SUMMARY		
DATE SUBMITTED	DATE APPROVED	PERMIT / APPROVAL
7/14/2026		SITE PLAN SUBMITTAL
7/14/2026		LCDC DRAINAGE/SESC
7/14/2026		LCDC ENGINEERING REVIEW

Land Use Summary -Trinity Additional Parking

Characteristic	Existing Conditions	Proposed Conditions
Total Development Area (AC)	4.18 acres	4.18 acres
Impervious Area (AC)	2.42 acres	2.33 acres
Total Pervious Area (AC)	1.76 acres	1.85 acres
Pervious Area Breakdown by cover type		
Meadow/fallow/natural areas (non-cultivated)	1.76 acres	1.76 acres
Predominant NCRS Soil Type (A, B, C, or D)	B	B
Improved areas (turf grass, landscape, row crops)	NA	0.09 acres
Predominant NCRS Soil Type (A, B, C, or D)	B	B
Wooded Areas	NA	NA
Predominant NCRS Soil Type (A, B, C, or D)		
CPVC Volume Calculated		12,230 cf
CPVC Volume Provided		12,230 cf
CPRC Volume Provided		12,230 cf

The professional engineer who signs and seals this plan certifies that the values in the table reflect the LCDC stormwater calculations required for this development and that geotechnical investigations were performed that provide conclusive documentation that demonstrates whether infiltration (CPVC) Volume Control is practicable.



LOCATION MAP

LEGAL DESCRIPTION (AS SURVEYED):

PARCEL 1:

BEGINNING AT THE NORTH ¼ CORNER OF SECTION 13, T02N, R05E, TOWNSHIP OF GENOA, LIVINGSTON COUNTY, MICHIGAN; THENCE N 89D 24M 13S E 1241.8 FEET ALONG THE NORTH LINE OF SAID SECTION 13 ALSO PART OF THE SOUTH LINE OF "BIRKENSTOCK FARMS" AS RECORDED IN LIBER 30 OF PLATS, PAGE 49–52, INCLUSIVE, LIVINGSTON COUNTY RECORDS; THENCE THE FOLLOWING THREE COURSES ALONG THE LINE ESTABLISHED BY CIRCUIT COURT CONSENT JUDGEMENT DATED MARCH 23, 1987, FILE # CZ 84–73090CZ; (1) S 02D 24M 41S E 763.54 FEET ALONG THE WEST LINE OF "PEBBLE CREEK" AS RECORDED IN LIBER 37 OF PLATS, PAGE 30–36, INCLUSIVE, LIVINGSTON COUNTY RECORDS, AND THE SOUTHERLY EXTENSION THEREOF; (2) N 87D 58M 26S E 6.57 FEET; (3) S 02 D 22 M 37S E 1733.94 FEET; THENCE S 86 D 35 M 20S W 7.47 FEET' ; THENCE S 03D 19 M 49S E 92.41 FEET; THENCE S 89D 13M 40S W 38.78 FEET; THENCE S 03M 12D 06S E 176.42 FEET, THENCE N 69D 58M 42S W 1402.31 FEET ALONG THE NORTHERLY RIGHT – OF–WAY LINE OF GRAND RIVER (VARIABLE WIDTH) AS DEFINED IN THE RELEASE OF RIGHT OF WAY RECORDED IN LIBER 153 OF DEEDS, PAGE 81 LIVINGSTON COUNTY RECORDS; THENCE N 02D 36M 45S W 2272.71 FEET ALONG THE NORTH – SOUTH ¼ OF SAID SECTION 13 AND THEN EAST LINE OF "GENOA ONE CONDOMINIUM" REPLAT NO. 2 OF LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 275, MASTER DEED RECORDED IN LIBER 5002, PAGE 603, LIVINGSTON COUNTY RECORDS TO THE POINT OF BEGINNING, BEING PART A PART OF THE NORTHEAST ¼ OF SAID SECTION 13 CONTAINING 77.59 ACRES OF LAND, MORE OR LESS, BEING SUBJECT TO ANY TERMS, CONDITIONS, OR RESTRICTIONS OF RECORD, IF ANY

INDEX OF DRAWINGS	
Sheet Number	Sheet Title
--	COVER
C-1.0	EXISTING CONDITIONS PLAN - OVERALL
C-1.1	EXISTING CONDITIONS PLAN - NORTH
C-1.2	EXISTING CONDITIONS PLAN - SOUTH
C-2.0	DEMOLITION PLAN - NORTH
C-2.1	DEMOLITION PLAN - SOUTH
C-3.0	DIMENSION & PAVING PLAN - OVERALL SITE
C-3.1	DIMENSION & PAVING PLAN - NORTH
C-3.2	DIMENSION & PAVING PLAN - SOUTH
C-4.0	GRADING PLAN - NORTH
C-4.1	GRADING PLAN - SOUTH
C-5.0	SESC PLAN - NORTH
C-5.1	SESC PLAN - SOUTH
C-6.0	UTILITY PLAN - NORTH
C-6.1	UTILITY PLAN - SOUTH
C-7.0	UTILITY PROFILES
C-7.1	UTILITY PROFILES
C-7.2	UTILITY PROFILES
C-8.0	DRAINAGE AREA PLAN
C-8.1	STORMWATER MANAGEMENT CALCS
C-9.0	UNDERGROUND STORMWATER DETAILS
C-9.1	UNDERGROUND STORMWATER DETAILS
C-9.2	WATER QUALITY UNIT DETAILS
C-10.0	CONSTRUCTION NOTES AND DETAILS
C-10.1	CONSTRUCTION NOTES AND DETAILS
C-10.2	CONSTRUCTION NOTES AND DETAILS
C-10.3	CONSTRUCTION NOTES AND DETAILS
L-1.0	OVERALL LANDSCAPE PLAN
L-1.1	LANDSCAPE PLAN NORTH
L-1.2	LANDSCAPE PLAN SOUTH
L-2.1	LANDSCAPE SPECIFICATIONS
L-2.2	LANDSCAPE SPECIFICATIONS
	PHOTOMETRIC PLAN
	PHOTOMETRIC DETAILS

DESIGN TEAM

OWNER/APPLICANT/DEVELOPER

TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE.
BRIGHTON, MI 48114
CONTACT: TIFFANY SPANO
EMAIL: TIFFANY.SPANO@TRINITY-HEALTH.ORG

CIVIL ENGINEER

PEA GROUP
7927 NEMCO WAY, STE. 115
BRIGHTON, MI 48116
CONTACT: TRISTAN LARSON, PE
PHONE: 844.813.2949
EMAIL: TLARSON@PEAGROUP.COM

LANDSCAPE ARCHITECT

PEA GROUP
7927 NEMCO WAY, STE. 115
BRIGHTON, MI 48116
CONTACT: JANET EVANS, PLA
PHONE: 844.813.2949
EMAIL: JEVANS@PEAGROUP.COM

PEA GROUP

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201059865
LICENSED PROFESSIONAL ENGINEER

REVISIONS	
DESCRIPTION	DATE
ORIGINAL ISSUE DATE	7/14/2026

NOT FOR CONSTRUCTION

PEA GROUP | TRINITY HEALTH - PARKING EXPANSION | PEA JOB NO. 2026-0604 | PRELIMINARY SITE - CONSTRUCTION PLANS

LEGAL DESCRIPTION (AS SURVEYED):

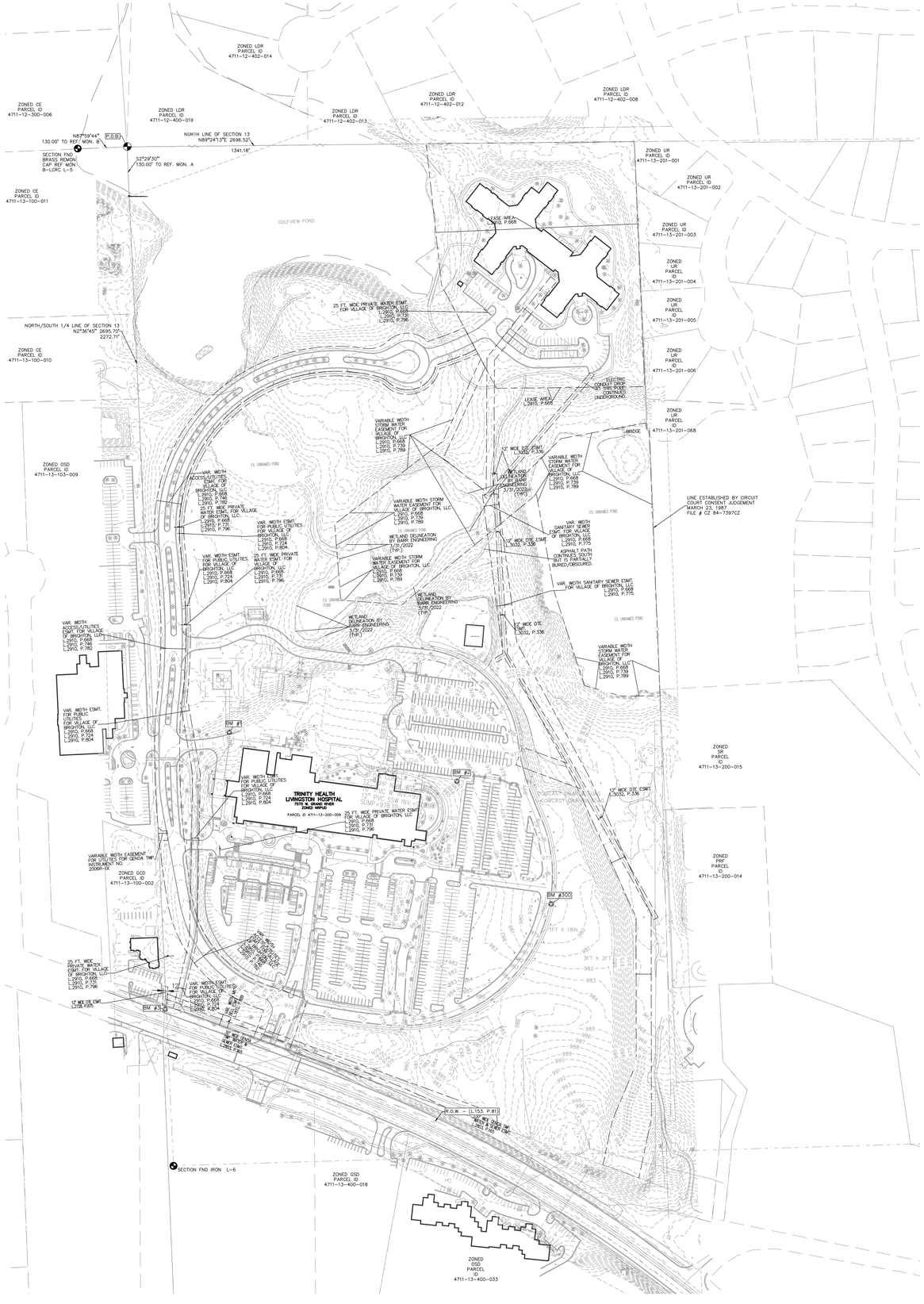
PARCEL 1:

BEGINNING AT THE NORTH ¼ CORNER OF SECTION 13, T02N, R05E, TOWNSHIP OF GENOA, LIVINGSTON COUNTY, MICHIGAN; THENCE N 89D 24M 13S E 1241.8 FEET ALONG THE NORTH LINE OF SAID SECTION 13 ALSO PART OF THE SOUTH LINE OF "BIRKENSTOCK FARMS" AS RECORDED IN LIBER 30 OF PLATS, PAGE 49–52, INCLUSIVE, LIVINGSTON COUNTY RECORDS; THENCE THE FOLLOWING THREE COURSES ALONG THE LINE ESTABLISHED BY CIRCUIT COURT CONSENT JUDGEMENT DATED MARCH 23, 1987, FILE # CZ 84–7309CZ; (1) S 02D 24M 41S E 763.54 FEET ALONG THE WEST LINE OF "PEBBLE CREEK" AS RECORDED IN LIBER 37 OF PLATS, PAGE 30–36, INCLUSIVE, LIVINGSTON COUNTY RECORDS, AND THE SOUTHERLY EXTENSION THEREOF; (2) N 87D 58M 26S E 6.57 FEET; (3) S 02 D 22 M 37S E 1733.94 FEET; THENCE S 86 D 35 M 20S W 7.47 FEET ; THENCE S 03D 19 M 49S E 92.41 FEET; THENCE S 89D 13M 40S W 38.78 FEET; THENCE S 03M 12D 06S E 176.42 FEET, THENCE N 69D 58M 42S W 1402.31 FEET ALONG THE NORTHERLY RIGHT – OF–WAY LINE OF GRAND RIVER (VARIABLE WIDTH) AS DEFINED IN THE RELEASE OF RIGHT OF WAY RECORDED IN LIBER 153 OF DEEDS, PAGE 81 LIVINGSTON COUNTY RECORDS; THENCE N 02D 36M 46S W 2272.71 FEET ALONG THE NORTH – SOUTH ¼ OF SAID SECTION 13 AND THEN EAST LINE OF "GENOA ONE CONDOMINIUM" REPLAT NO. 2 OF LIVINGSTON COUNTY CONDOMINIUM SUBDIVISION PLAN NO. 275, MASTER DEED RECORDED IN LIBER 5002, PAGE 603, LIVINGSTON COUNTY RECORDS TO THE POINT OF BEGINNING, BEING PART A PART OF THE NORTHEAST ¼ OF SAID SECTION 13 CONTAINING 77.59 ACRES OF LAND, MORE OR LESS, BEING SUBJECT TO ANY TERMS, CONDITIONS, OR RESTRICTIONS OF RECORD, IF ANY

SOIL INVESTIGATION

PER THE US DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SOILS MAP FOR LIVINGSTON COUNTY, SITE SOILS CONSIST OF:

Wh – WASHTENAW SILT LOAM
BtA – BOYER–OSHTEMO LOAMY SANDS, 0–2% SLOPES
FrB – FOX–BOYER COMPLEX, 2–6% SLOPES
FrC – FOX–BOYER COMPLEX, 6–12% SLOPES
FrD – FOX–BOYER COMPLEX, 12–18% SLOPES
FrE – FOX–BOYER COMPLEX, 18–25% SLOPES



LEGEND:

- EX. OH, ELEC, POLE & GUY WIRE
- EX. U.G. CABLE TV & PEDESTAL
- EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
- EX. U.G. ELEC.MANHOLE, METER & HANDHOLE
- EX. GAS LINE
- EX. GAS VALVE & GAS LINE MARKER
- EX. TRANSFORMER & IRRIGATION VALVE
- EX. WATER MAIN
- EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
- EX. WATER VALVE BOX & SHUTOFF
- EX. SANITARY SEWER
- EX. SANITARY CLEANOUT & MANHOLE
- EX. COMBINED SEWER MANHOLE
- EX. STORM SEWER
- EX. CLEANOUT & MANHOLE
- EX. SQUARE, ROUND & BEEHIVE CATCH BASIN
- EX. YARD DRAIN, U.G. ROOF DRAIN & DOWNSPOUT
- EX. UNIDENTIFIED STRUCTURE
- EX. MAILBOX, SIGN, LIGHTPOLE & GUARD POST
- EX. FENCE
- EX. GUARD RAIL
- EX. DEC. TREE, CONIFEROUS TREE & SHRUB
- EX. TREE TAG, & TREE LINE
- EX. SPOT ELEVATION
- EX. CONTOUR
- EX. WETLAND
- IRON FOUND / SET
- NAIL FOUND / NAIL & CAP SET
- BRASS PLUG SET
- MONUMENT FOUND / SET
- SECTION CORNER FOUND
- R M C — RECORDED / MEASURED / CALCULATED
- GNSS — GLOBAL NAVIGATION SATELLITE SYSTEM

BENCHMARKS:

BM #1
ELEV. - 982.97
BM DESCRIPTION... TOP OF ARROW ON HYDRANT

BM #2
ELEV. - 987.83
BM DESCRIPTION... TOP OF ARROW ON HYDRANT

BM #3
ELEV. - 977.49
BM DESCRIPTION... TOP OF ARROW ON HYDRANT

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 75 150 300
SCALE: 1" = 150'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE OR WARRANTY IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
EXISTING CONDITIONS PLAN - OVERALL

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-1.0

NOT FOR CONSTRUCTION

\\peainc\jobs\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-1.0) TOPO-26-0604.dwg PLOT DATE: 7/13/2026 12:15 PM BY: Allison Gray

SEE SHEET C-1.2 FOR CONTINUATION

LEGEND:

- EX. OH, ELEC, POLE & GUY WIRE
- EX. U.G. CABLE TV & PEDESTAL
- EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
- EX. U.G. ELEC,MANHOLE, METER & HANDHOLE
- EX. GAS LINE
- EX. GAS VALVE & GAS LINE MARKER
- EX. TRANSFORMER & IRRIGATION VALVE
- EX. WATER MAIN
- EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
- EX. WATER VALVE BOX & SHUTOFF
- EX. SANITARY SEWER
- EX. SANITARY CLEANOUT & MANHOLE
- EX. COMBINED SEWER MANHOLE
- EX. STORM SEWER
- EX. CLEANOUT & MANHOLE
- EX. SQUARE, ROUND & BEEHIVE CATCH BASIN
- EX. YARD DRAIN, U.G. ROOF DRAIN & DOWNSPOUT
- EX. UNIDENTIFIED STRUCTURE
- EX. MAILBOX, SIGN, LIGHTPOLE & GUARD POST
- EX. FENCE
- EX. GUARD RAIL
- EX. DEC, TREE, CONIFEROUS TREE & SHRUB
- EX. TREE TAG, & TREE LINE
- EX. SPOT ELEVATION
- EX. CONTOUR
- EX. WETLAND

- IRON FOUND / SET
- NAIL FOUND / NAIL & CAP SET
- BRASS PLUG SET
- MONUMENT FOUND / SET
- SECTION CORNER FOUND
- R M C — RECORDED / MEASURED / CALCULATED
- GNSS — GLOBAL NAVIGATION SATELLITE SYSTEM

TOPOGRAPHIC AND BOUNDARY SURVEY DISCLAIMER:
TOPOGRAPHIC AND BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, EXISTING ELEVATIONS, EXISTING PHYSICAL FEATURES AND STRUCTURES WAS PROVIDED BY SMITH GROUP.

PEA GROUP WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF THE SURVEY OR FOR DESIGN ERRORS/OMISSIONS RESULTING FROM SURVEY INACCURACIES.

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
EXISTING CONDITIONS PLAN - NORTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-1.1

NOT FOR CONSTRUCTION

\\peainc\proj\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-1.0) TOPO-26-0604.dwg PLOT DATE: 7/13/2026 12:15 PM BY: Jillian Gray

SEE SHEET C-1.1 FOR CONTINUATION

LEGEND:

OH ELEC	EX. OH: ELEC, POLE & GUY WIRE
UG CATV	EX. U.G. CABLE TV & PEDESTAL
UG COMM	EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
UG ELEC	EX. U.G. ELEC,MANHOLE, METER & HANDHOLE
GAS	EX. GAS LINE
GAS	EX. GAS VALVE & GAS LINE MARKER
T	EX. TRANSFORMER & IRRIGATION VALVE
W	EX. WATER MAIN
W	EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
W	EX. WATER VALVE BOX & SHUTOFF
S	EX. SANITARY SEWER
S	EX. SANITARY CLEANOUT & MANHOLE
C	EX. COMBINED SEWER MANHOLE
ST	EX. STORM SEWER
ST	EX. CLEANOUT & MANHOLE
CB	EX. SQUARE, ROUND & BEEHIVE CATCH BASIN
YD	EX. YARD DRAIN, U.G. ROOF DRAIN & DOWNSPOUT
?	EX. UNIDENTIFIED STRUCTURE
M	EX. MAILBOX, SIGN, LIGHTPOLE & GUARD POST
X	EX. FENCE
	EX. GUARD RAIL
	EX. DEC. TREE, CONIFEROUS TREE & SHRUB
	EX. TREE TAG, & TREE LINE
+698.91	EX. SPOT ELEVATION
670	EX. CONTOUR
	EX. WETLAND
	IRON FOUND / SET
	NAIL FOUND / NAIL & CAP SET
	BRASS PLUG SET
	MONUMENT FOUND / SET
	SECTION CORNER FOUND
R M C	RECORDED / MEASURED / CALCULATED
GNSS	GLOBAL NAVIGATION SATELLITE SYSTEM

TOPOGRAPHIC AND BOUNDARY SURVEY DISCLAIMER:
TOPOGRAPHIC AND BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, EXISTING ELEVATIONS, EXISTING PHYSICAL FEATURES AND STRUCTURES WAS PROVIDED BY SMITH GROUP.

PEA GROUP WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF THE SURVEY OR FOR DESIGN ERRORS/OMISSIONS RESULTING FROM SURVEY INACCURACIES.

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

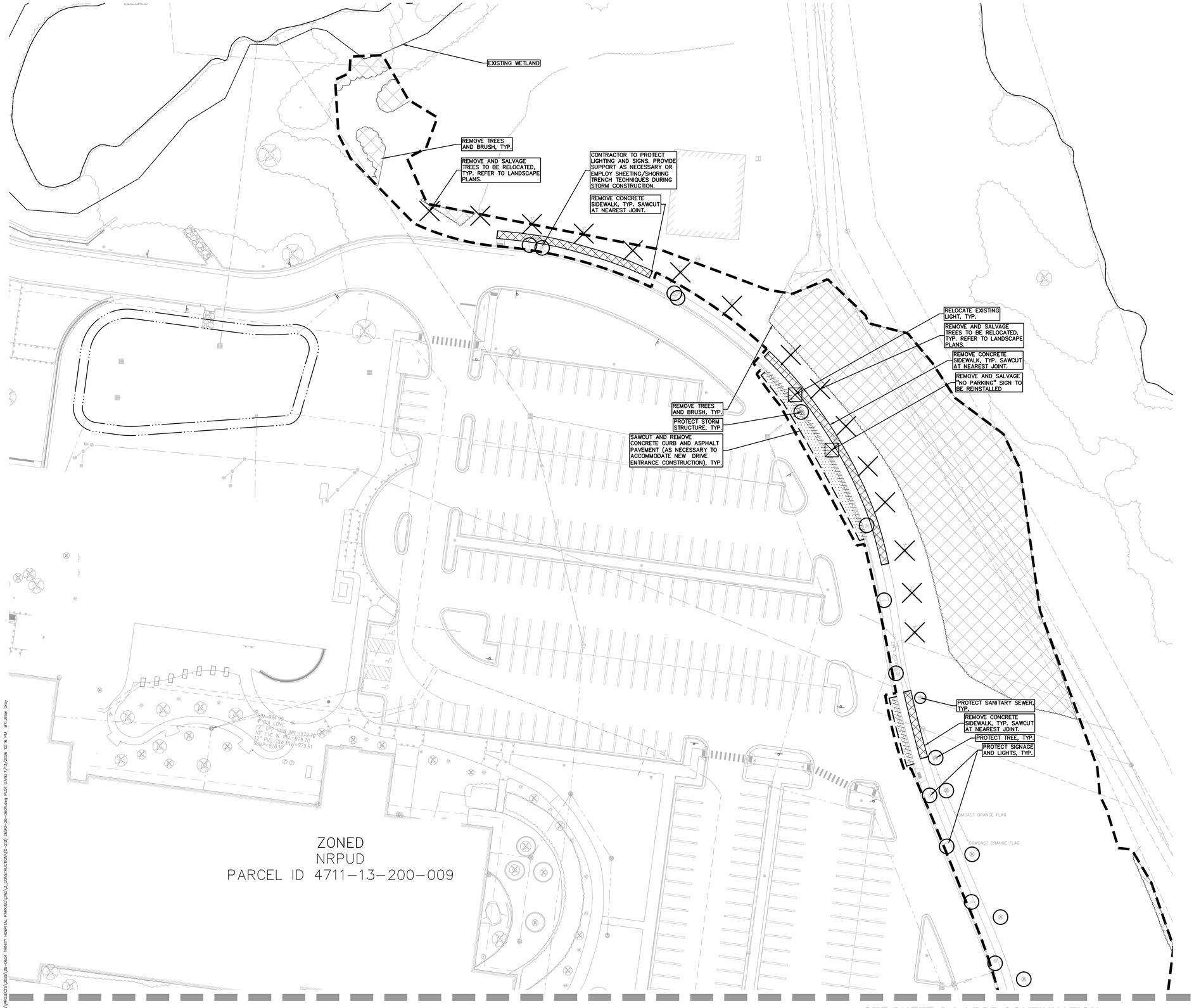
ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
EXISTING CONDITIONS PLAN - SOUTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-1.2

\\peainc\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\C-1.0_TOPO_26-0604.dwg PLOT DATE: 7/13/2026 12:15 PM BY: Brian Gray



\\peainc\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DEMO\3_CONSTRUCTION\(C-2.0) DEMO- 26--0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

GENERAL DEMOLITION NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT:

1. ALL MATERIAL TO BE REMOVED, WHETHER SPECIFICALLY NOTED IN THE PLANS OR NOT, SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF OFF-SITE IN A LEGAL MANNER. NO ON-SITE BURY OR BURN PITS SHALL BE ALLOWED.
2. ALL DEMOLITION WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES.
3. STAGING/PHASING OF DEMOLITION AND CONSTRUCTION IS TO BE COORDINATED WITH THE OWNER AND THE CONTRACTOR PRIOR TO CONSTRUCTION.
4. SPECIFIC DEMOLITION ITEMS HAVE BEEN INDICATED ON THE PLANS AS A GUIDE TO THE GENERAL SCOPE OF THE WORK. IT IS THE INTENT THAT THESE ITEMS SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR ABOVE AND BELOW GROUND, UNLESS SPECIFICALLY NOTED OTHERWISE, AND THAT DEMOLITION WILL INCLUDE BUT WILL NOT NECESSARILY BE LIMITED TO THESE ITEMS. CONTRACTOR SHALL VISIT SITE TO VERIFY EXISTING CONDITIONS AND EXTENTS OF THE DEMOLITION THAT WILL BE REQUIRED PRIOR TO SUBMITTING A BID.
5. REMOVE ALL STRUCTURES DESIGNATED FOR REMOVAL ACCORDING TO THE DEMOLITION PLAN. THIS INCLUDES FOUNDATIONS, FOOTINGS, FOUNDATION WALLS, FLOOR SLABS, UNDERGROUND UTILITIES, CONCRETE, ASPHALT, TREES, ETC.
6. THE CONTRACTOR SHALL, AS A MINIMUM, PROVIDE TREE PROTECTION FENCING AROUND EXISTING TREES TO BE SAVED THAT ARE WITHIN 15 FEET OF CONSTRUCTION ACTIVITIES AND AS INDICATED IN THE PLANS OR PER LOCAL AGENCY REQUIREMENTS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPING AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
8. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SIGNAGE, MARKINGS, LIGHTS AND OTHER TRAFFIC CONTROL DEVICES TO PROTECT THE WORK ZONE AND SAFELY MAINTAIN TRAFFIC PER AGENCY REQUIREMENTS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES TO CONFIRM THAT UTILITY LEADS HAVE BEEN TAKEN OUT OF SERVICE PRIOR TO DEMOLITION.
10. ALL BUILDING GAS LEADS, METERS AND ASSOCIATED EQUIPMENT SHALL BE REMOVED AS SHOWN ON THE PLANS. COORDINATE ALL ASSOCIATED WORK WITH THE APPROPRIATE UTILITY COMPANY.
11. REMOVE ALL OVERHEAD AND UNDERGROUND ELECTRICAL LINES WITHIN THE AREA OF CONSTRUCTION AS SHOWN ON THE PLANS. COORDINATE SHUTDOWNS AND REMOVALS WITH ELECTRICAL SERVICE PROVIDER OR THE APPROPRIATE UTILITY COMPANY. (NOTE: PHONE AND CABLE T.V. SERVICES MAY ALSO BE LOCATED ON OVERHEAD LINES.)
12. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF SIGNS AND SUPPORTS WITHIN THE WORK AREA, AS NECESSARY TO FACILITATE CONSTRUCTION. SIGNS SHALL BE PROTECTED OR STOCKPILED FOR REUSE AS SPECIFIED IN THE PLANS OR AS REQUIRED BY THE AGENCY OF JURISDICTION. THE CONTRACTOR SHALL REPLACE ANY DAMAGED SIGNS AND SUPPORTS AT NO ADDITIONAL COST TO THE OWNER.
13. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE 811/ONE CALL UTILITY LOCATING CENTER, THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

DEMOLITION LEGEND:

- ITEM TO BE PROTECTED
- ITEM TO BE REMOVED
- CURB/FENCE REMOVAL
- CONCRETE PAVEMENT AND SIDEWALK REMOVAL
- AREA OR ITEMS TO BE REMOVED
- UTILITY REMOVAL
- ABANDON UTILITY
- ASPHALT REMOVAL
- TREE REMOVAL
- SAWCUT LINE
- LIMITS OF DISTURBANCE

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT NECESSARILY COMPLETE OR ACCURATE 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

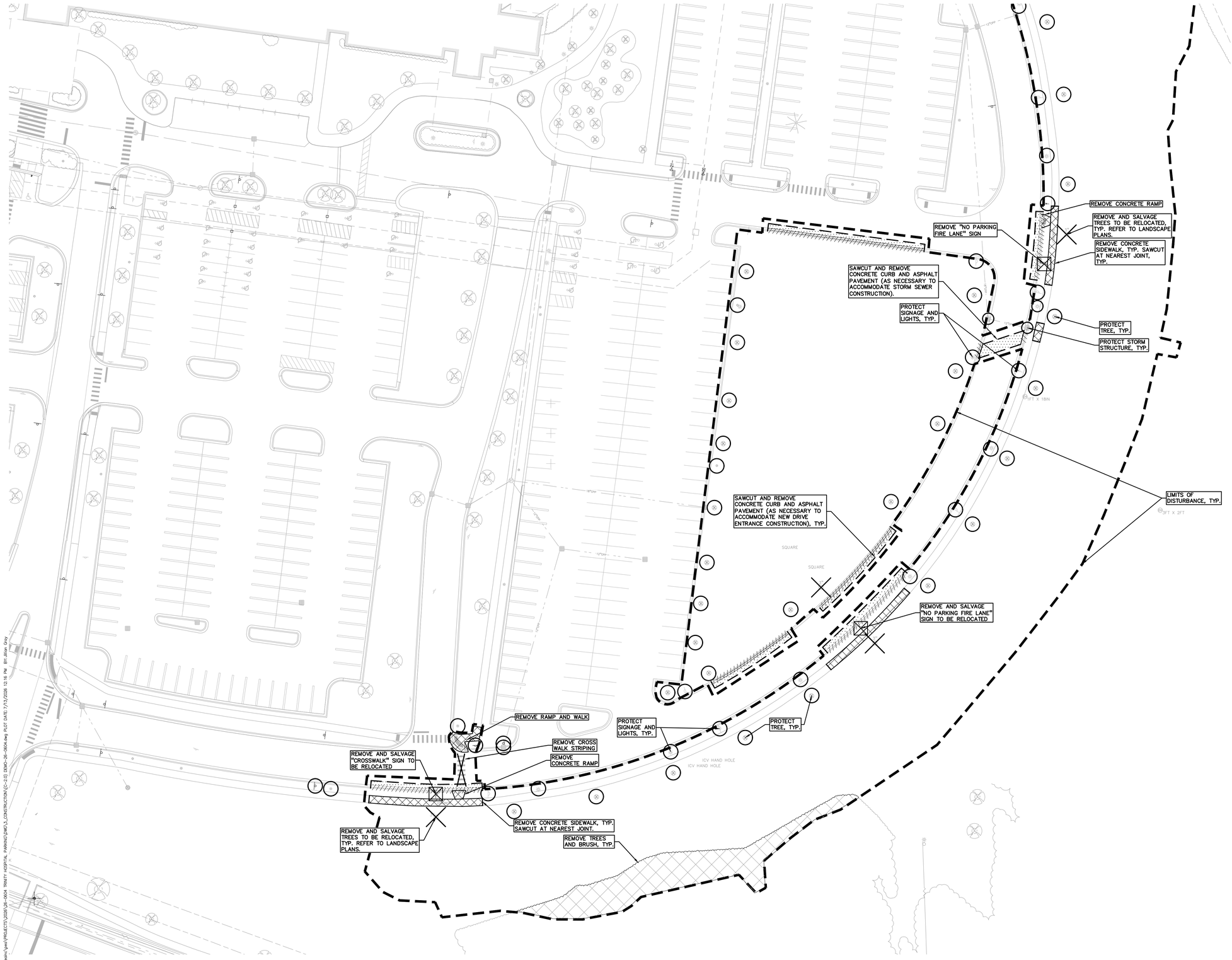
DRAWING TITLE
DEMOLITION PLAN - NORTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-2.0

NOT FOR CONSTRUCTION

SEE SHEET C-2.0 FOR CONTINUATION



GENERAL DEMOLITION NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT:

1. ALL MATERIAL TO BE REMOVED, WHETHER SPECIFICALLY NOTED IN THE PLANS OR NOT, SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF OFF-SITE IN A LEGAL MANNER. NO ON-SITE BURY OR BURN PITS SHALL BE ALLOWED.
2. ALL DEMOLITION WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES.
3. STAGING/PHASING OF DEMOLITION AND CONSTRUCTION IS TO BE COORDINATED WITH THE OWNER AND THE CONTRACTOR PRIOR TO CONSTRUCTION.
4. SPECIFIC DEMOLITION ITEMS HAVE BEEN INDICATED ON THE PLANS AS A GUIDE TO THE GENERAL SCOPE OF THE WORK. IT IS THE INTENT THAT THESE ITEMS SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR ABOVE AND BELOW GROUND, UNLESS SPECIFICALLY NOTED OTHERWISE, AND THAT DEMOLITION WILL INCLUDE BUT WILL NOT NECESSARILY BE LIMITED TO THESE ITEMS. CONTRACTOR SHALL VISIT SITE TO VERIFY EXISTING CONDITIONS AND EXTENTS OF THE DEMOLITION THAT WILL BE REQUIRED PRIOR TO SUBMITTING A BID.
5. REMOVE ALL STRUCTURES DESIGNATED FOR REMOVAL ACCORDING TO THE DEMOLITION PLAN. THIS INCLUDES FOUNDATIONS, FOOTINGS, FOUNDATION WALLS, FLOOR SLABS, UNDERGROUND UTILITIES, CONCRETE, ASPHALT, TREES, ETC.
6. THE CONTRACTOR SHALL, AS A MINIMUM, PROVIDE TREE PROTECTION FENCING AROUND EXISTING TREES TO BE SAVED THAT ARE WITHIN 15 FEET OF CONSTRUCTION ACTIVITIES AND AS INDICATED IN THE PLANS OR PER LOCAL AGENCY REQUIREMENTS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPING AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
8. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SIGNAGE, MARKINGS, LIGHTS AND OTHER TRAFFIC CONTROL DEVICES TO PROTECT THE WORK ZONE AND SAFELY MAINTAIN TRAFFIC PER AGENCY REQUIREMENTS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES TO CONFIRM THAT UTILITY LEADS HAVE BEEN TAKEN OUT OF SERVICE PRIOR TO DEMOLITION.
10. ALL BUILDING GAS LEADS, METERS AND ASSOCIATED EQUIPMENT SHALL BE REMOVED AS SHOWN ON THE PLANS. COORDINATE ALL ASSOCIATED WORK WITH THE APPROPRIATE UTILITY COMPANY.
11. REMOVE ALL OVERHEAD AND UNDERGROUND ELECTRICAL LINES WITHIN THE AREA OF CONSTRUCTION AS SHOWN ON THE PLANS. COORDINATE SHUTDOWNS AND REMOVALS WITH ELECTRICAL SERVICE PROVIDER OR THE APPROPRIATE UTILITY COMPANY. (NOTE: PHONE AND CABLE T.V. SERVICES MAY ALSO BE LOCATED ON OVERHEAD LINES.)
12. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF SIGNS AND SUPPORTS WITHIN THE WORK AREA, AS NECESSARY TO FACILITATE CONSTRUCTION. SIGNS SHALL BE PROTECTED OR STOCKPILED FOR REUSE AS SPECIFIED IN THE PLANS OR AS REQUIRED BY THE AGENCY OF JURISDICTION. THE CONTRACTOR SHALL REPLACE ANY DAMAGED SIGNS AND SUPPORTS AT NO ADDITIONAL COST TO THE OWNER.
13. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE 811/ONE CALL UTILITY LOCATING CENTER, THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

DEMOLITION LEGEND:

- ITEM TO BE PROTECTED
- ITEM TO BE REMOVED
- CURB/FENCE REMOVAL
- CONCRETE PAVEMENT AND SIDEWALK REMOVAL
- AREA OR ITEMS TO BE REMOVED
- UTILITY REMOVAL
- ABANDON UTILITY
- ASPHALT REMOVAL
- TREE REMOVAL
- SAWCUT LINE
- LIMITS OF DISTURBANCE

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60

SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

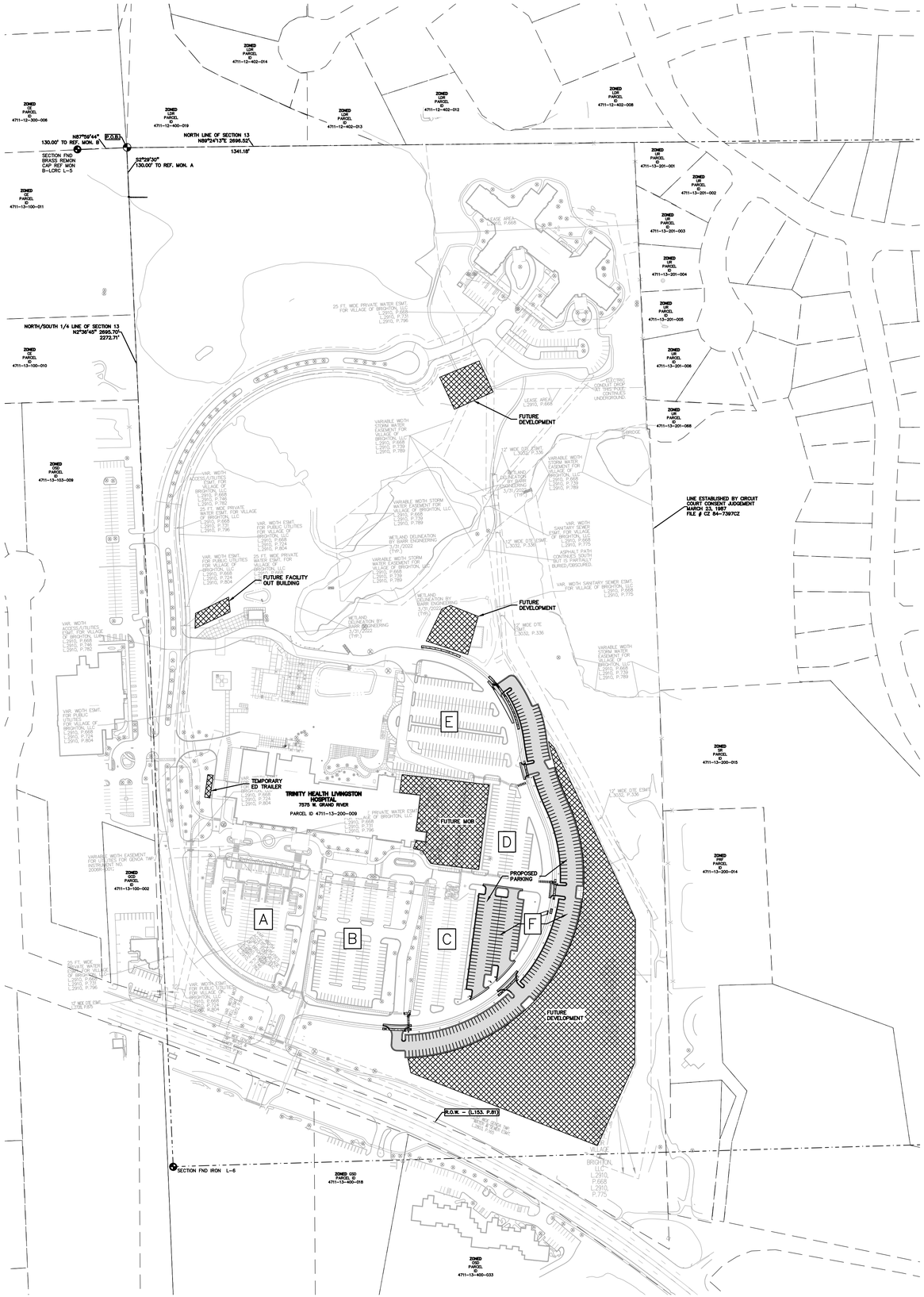
DRAWING TITLE
DEMOLITION PLAN - SOUTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-2.1

NOT FOR CONSTRUCTION

\\peainc\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-2.0) DEMO- 26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray



\\peainc\jobs\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-3.0) DWG - 26-0604.dwg PLOT DATE: 7/13/2026 12:15 PM BY: Jillian Gray

LEGEND:

- CONCRETE PAVEMENT (STD DUTY, HEAVY DUTY, R.O.W. ONLY)
- ASPHALT PAVEMENT (STD DUTY, HEAVY DUTY, DEEP STRENGTH)
- GRAVEL
- WETLAND
- CONCRETE CURB AND GUTTER
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL
- FUTURE DEVELOPMENT

SITE DATA TABLE:

SITE AREA: 77.59 ACRES (~3379820 SFT) NET AND GROSS

ZONING: NRPUD

EXISTING BUILDING INFORMATION:
- BUILDING HEIGHT = 2 STORIES
- BUILDING FOOTPRINT AREA = 76,500 SF.
- BUILDING LOT COVERAGE = 2.2%

PARKING CALCULATIONS:

REQUIRED = 1 SPACE PER 275 SF OF 80% OF GROSS BUILDING AREA.

EXISTING PARKING
- LOT A (EMERGENCY) = 156 SPACES
- LOT B (MAIN) = 175 SPACES
- LOT C (CANCER CENTER) = 135 SPACES
- LOT D+E (STAFF) = 325 SPACES

PROPOSED PARKING
- LOT F (LAND BANKED PARKING) = 318 SPACES

TOTAL EXISTING PARKING = 791 SPACES
TOTAL PROPOSED PARKING = 318 SPACES
TOTAL PROPOSED + EXISTING PARKING = 1,109 SPACES

REQUIRED ADA PARKING (20 + 1 FOR EACH 100 OVER 1,000) = 21 SPACES
PROVIDED ADA PARKING = 61 SPACES

REQUIRED VAN ACCESSIBLE (⅕ OF ADA SPACES) = 4 SPACES
PROVIDED VAN ACCESSIBLE SPACES = 20

SITE SOILS INFORMATION:
PER THE US DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SOILS MAP FOR LIVINGSTON COUNTY, SITE SOILS CONSIST OF:

WH - WASHTENAW SILT LOAM
BTA - BOYER-OSHTEMO LOAMY SANDS, 0-2% SLOPES
FRB - FOX-BOYER COMPLEX, 2-6% SLOPES
FRC - FOX-BOYER COMPLEX, 6-12% SLOPES
FRD - FOX-BOYER COMPLEX, 12-18% SLOPES
FRE - FOX-BOYER COMPLEX, 18-25% SLOPES

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

1. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
2. 'NO PARKING-FIRE LANE' SIGNS SHALL BE POSTED ALONG ALL FIRE LANES AT 100 FOOT INTERVALS OR AS DIRECTED BY THE FIRE OFFICIAL.
3. REFER TO NOTES & DETAILS SHEET FOR ON-SITE PAVING DETAILS.
4. REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 75 150 300
SCALE: 1" = 150'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

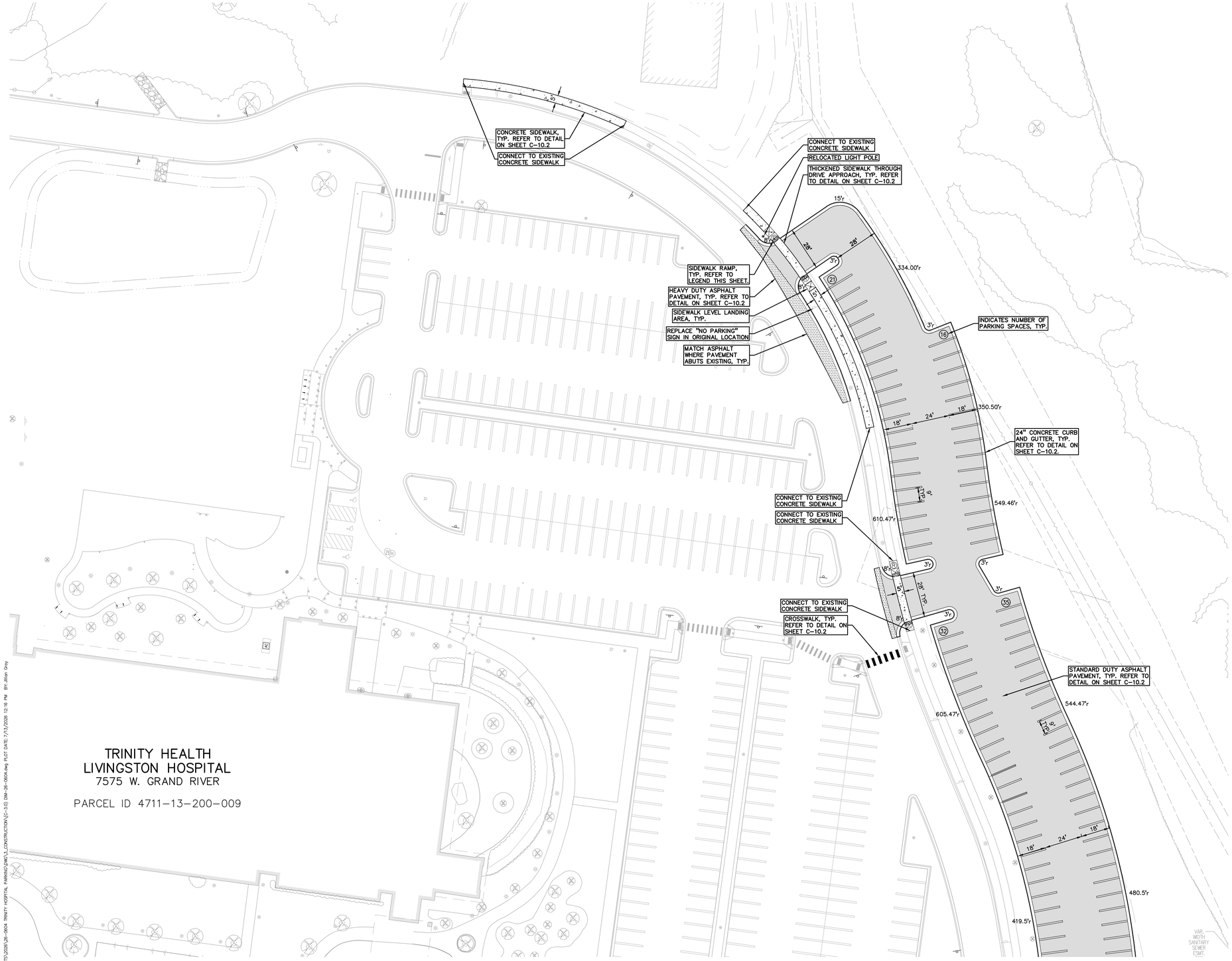
ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
DIMENSION & PAVING PLAN - OVERALL SITE

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-3.0

NOT FOR CONSTRUCTION



LEGEND:

- CONCRETE PAVEMENT (STD DUTY / HEAVY DUTY / R.O.W. ONLY)
- ASPHALT PAVEMENT (STD DUTY / HEAVY DUTY / DEEP STRENGTH)
- GRAVEL
- WETLAND
- CONCRETE CURB AND GUTTER
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL

SIGN LEGEND:

'NO PARKING FIRE LANE' SIGN	[1]
'STOP' SIGN	[2]
'CROSSWALK' SIGN	[3]

REFER TO DETAIL SHEET FOR SIGN DETAILS

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

1. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
2. 'NO PARKING-FIRE LANE' SIGNS SHALL BE POSTED ALONG ALL FIRE LANES AT 100 FOOT INTERVALS OR AS DIRECTED BY THE FIRE OFFICIAL.
3. REFER TO NOTES & DETAILS SHEET FOR ON-SITE PAVING DETAILS.
4. REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS

SIDEWALK RAMP LEGEND:

SIDEWALK RAMP 'TYPE R'	Ⓡ
CURB DROP ONLY	Ⓧ

REFER TO MDOT STANDARD RAMP AND DETECTABLE WARNING DETAILS

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
DIMENSION & PAVING PLAN - NORTH

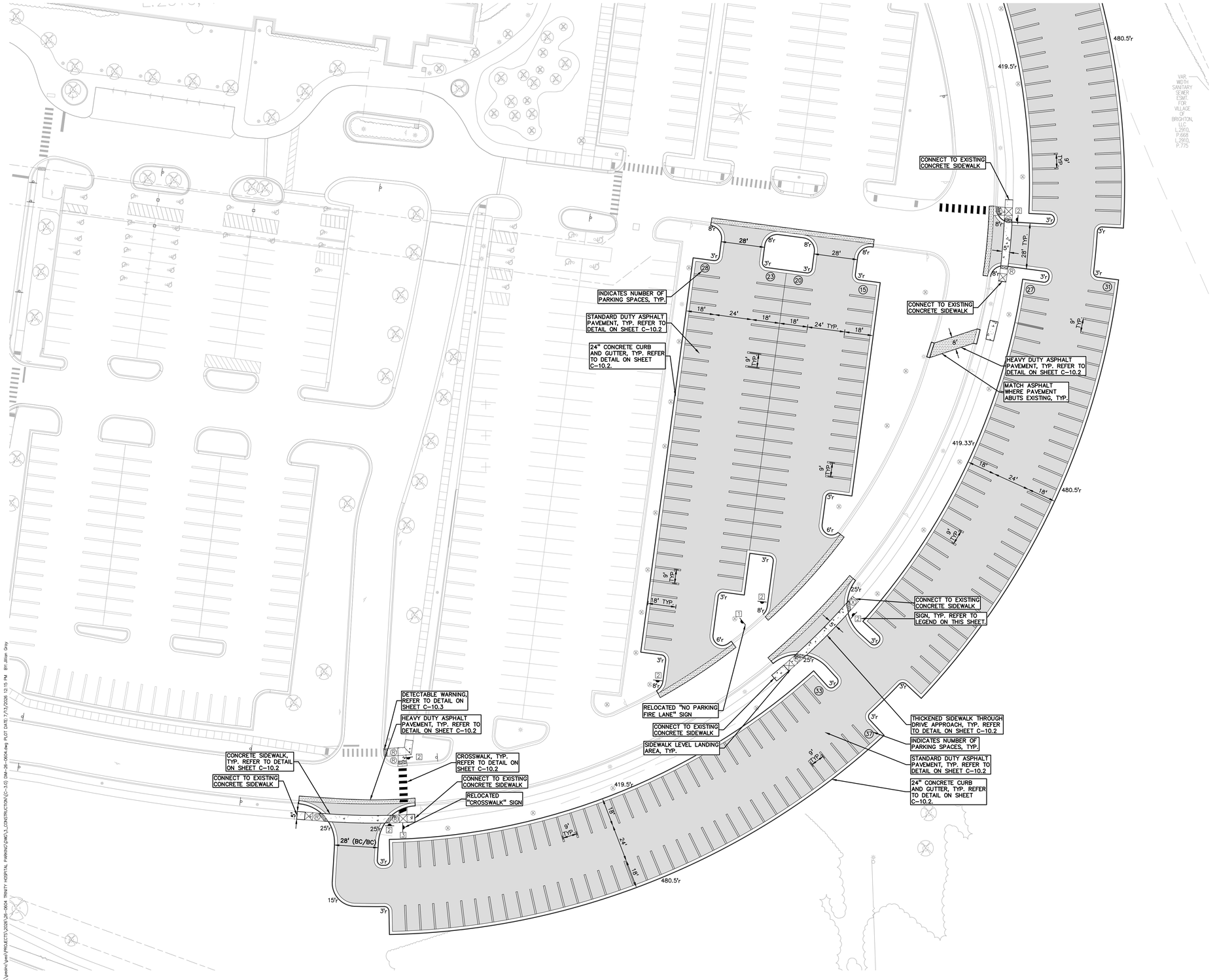
PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-3.1

NOT FOR CONSTRUCTION

\\peainc\proj\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-3.0) DIM-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

SEE SHEET C-3.1 FOR CONTINUATION



LEGEND:

- CONCRETE PAVEMENT (STD DUTY, HEAVY DUTY, R.O.W. ONLY)
- ASPHALT PAVEMENT (STD DUTY, HEAVY DUTY, DEEP STRENGTH)
- GRAVEL
- WETLAND
- CONCRETE CURB AND GUTTER
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL

SIGN LEGEND:

'NO PARKING FIRE LANE' SIGN	[1]
'STOP' SIGN	[2]
'CROSSWALK' SIGN	[3]

REFER TO DETAIL SHEET FOR SIGN DETAILS

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

1. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
2. 'NO PARKING-FIRE LANE' SIGNS SHALL BE POSTED ALONG ALL FIRE LANES AT 100 FOOT INTERVALS OR AS DIRECTED BY THE FIRE OFFICIAL.
3. REFER TO NOTES & DETAILS SHEET FOR ON-SITE PAVING DETAILS.
4. REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS

SIDEWALK RAMP LEGEND:

SIDEWALK RAMP 'TYPE R'	(R)
CURB DROP ONLY	(X)

REFER TO MDOT STANDARD RAMP AND DETECTABLE WARNING DETAILS

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

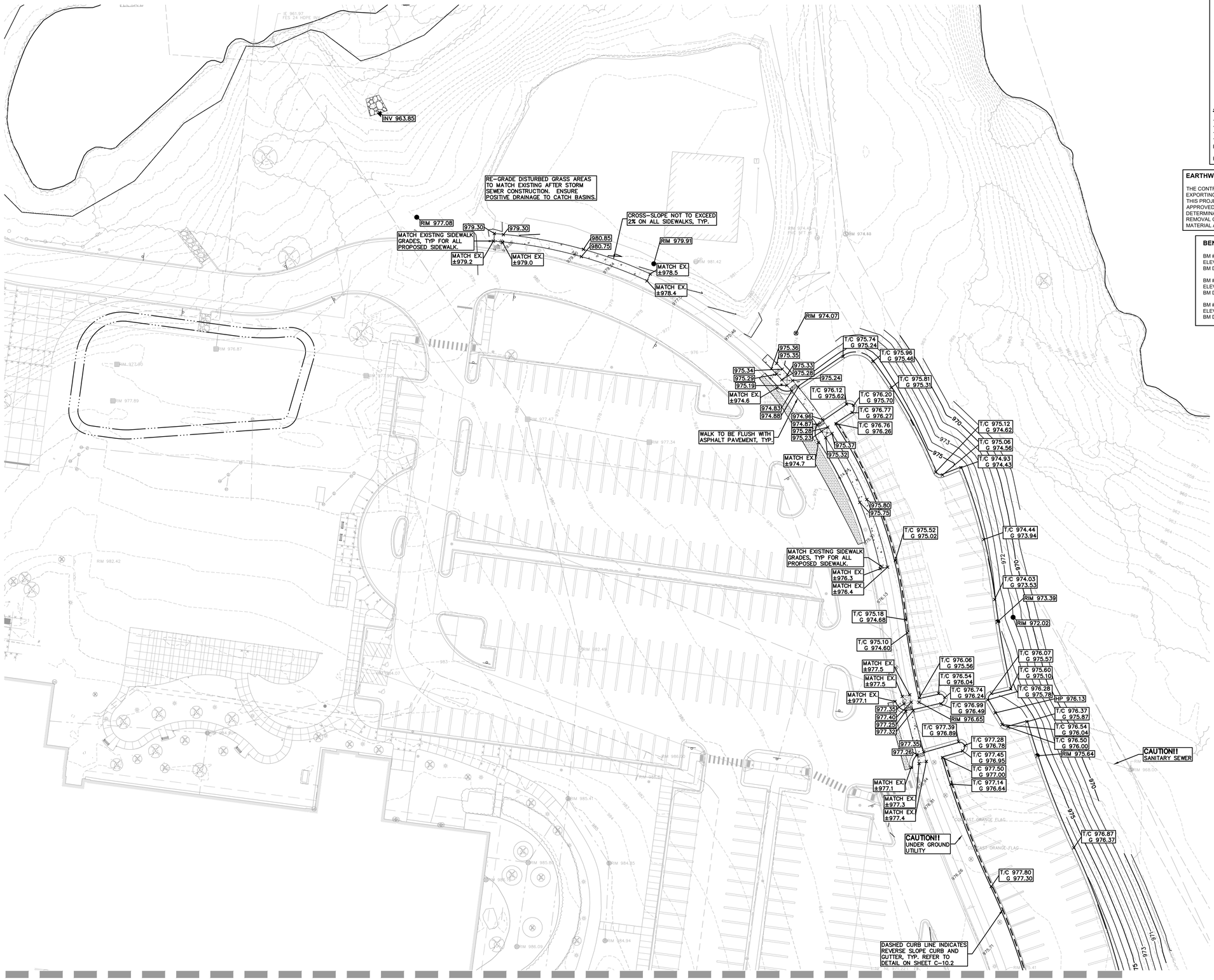
DRAWING TITLE
DIMENSION & PAVING PLAN - SOUTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-3.2

NOT FOR CONSTRUCTION

\\peanet\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-3.0) DIM-26-0604.dwg PLOT DATE: 7/13/2026 12:15 PM BY: Allison Grey



GRADING LEGEND:

698.31	EXISTING SPOT ELEVATION
698.35	PROPOSED SPOT ELEVATION: TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES.
670	EXISTING CONTOUR
922	PROPOSED CONTOUR
	PROPOSED REVERSE GUTTER PAN
	PROPOSED RIDGE LINE
	PROPOSED SWALE/DITCH

ABBREVIATIONS

T/C = TOP OF CURB	F = FLUSH WALK
T/P = TOP OF PAVEMENT	G = GUTTER GRADE
T/S = TOP OF SIDEWALK	FF = FINISH FLOOR
T/W = TOP OF WALL	FG = FINISH GRADE
B/W = BOTTOM OF WALL	RIM = RIM ELEVATION

REFER TO GRADING NOTES ON SHEET C-10.0.

EARTHWORK BALANCING NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPORTING OR EXPORTING ALL MATERIALS AS REQUIRED TO PROPERLY GRADE THIS PROJECT TO THE FINISHED ELEVATIONS SHOWN ON THE APPROVED PLANS. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF CUT AND FILL QUANTITIES AND ALLOW FOR REMOVAL OF EXCESS OR IMPORTATION OF ADDITIONAL MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

BENCHMARKS:

BM #1
ELEV. - 982.97
BM DESCRIPTION... TOP OF ARROW ON HYDRANT

BM #2
ELEV. - 987.83
BM DESCRIPTION... TOP OF ARROW ON HYDRANT

BM #3
ELEV. - 977.49
BM DESCRIPTION... TOP OF ARROW ON HYDRANT

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE LOCATIONS AND ARE NOT GUARANTEED 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
GRADING PLAN - NORTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-4.0

NOT FOR CONSTRUCTION

\\peainc\proj\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-4.0) GRADE-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

SEE SHEET C-4.0 FOR CONTINUATION

GRADING LEGEND:

+696.91	EXISTING SPOT ELEVATION
698.35	PROPOSED SPOT ELEVATION: TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES.
670	EXISTING CONTOUR
922	PROPOSED CONTOUR
	PROPOSED REVERSE GUTTER PAN
	PROPOSED RIDGE LINE
	PROPOSED SWALE/DITCH

ABBREVIATIONS

T/C = TOP OF CURB	F = FLUSH WALK
T/P = TOP OF PAVEMENT	G = GUTTER GRADE
T/S = TOP OF SIDEWALK	FF = FINISH FLOOR
T/W = TOP OF WALL	FG = FINISH GRADE
B/W = BOTTOM OF WALL	RIM = RIM ELEVATION

REFER TO GRADING NOTES ON SHEET C-10.0.

EARTHWORK BALANCING NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPORTING OR EXPORTING ALL MATERIALS AS REQUIRED TO PROPERLY GRADE THIS PROJECT TO THE FINISHED ELEVATIONS SHOWN ON THE APPROVED PLANS. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF CUT AND FILL QUANTITIES AND ALLOW FOR REMOVAL OF EXCESS OR IMPORTATION OF ADDITIONAL MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

BENCHMARKS:

BM #1
ELEV. - 982.97
BM DESCRIPTION... TOP OF ARROW ON HYDRANT

BM #2
ELEV. - 987.83
BM DESCRIPTION... TOP OF ARROW ON HYDRANT

BM #3
ELEV. - 977.49
BM DESCRIPTION... TOP OF ARROW ON HYDRANT

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT NECESSARILY ACCURATE 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

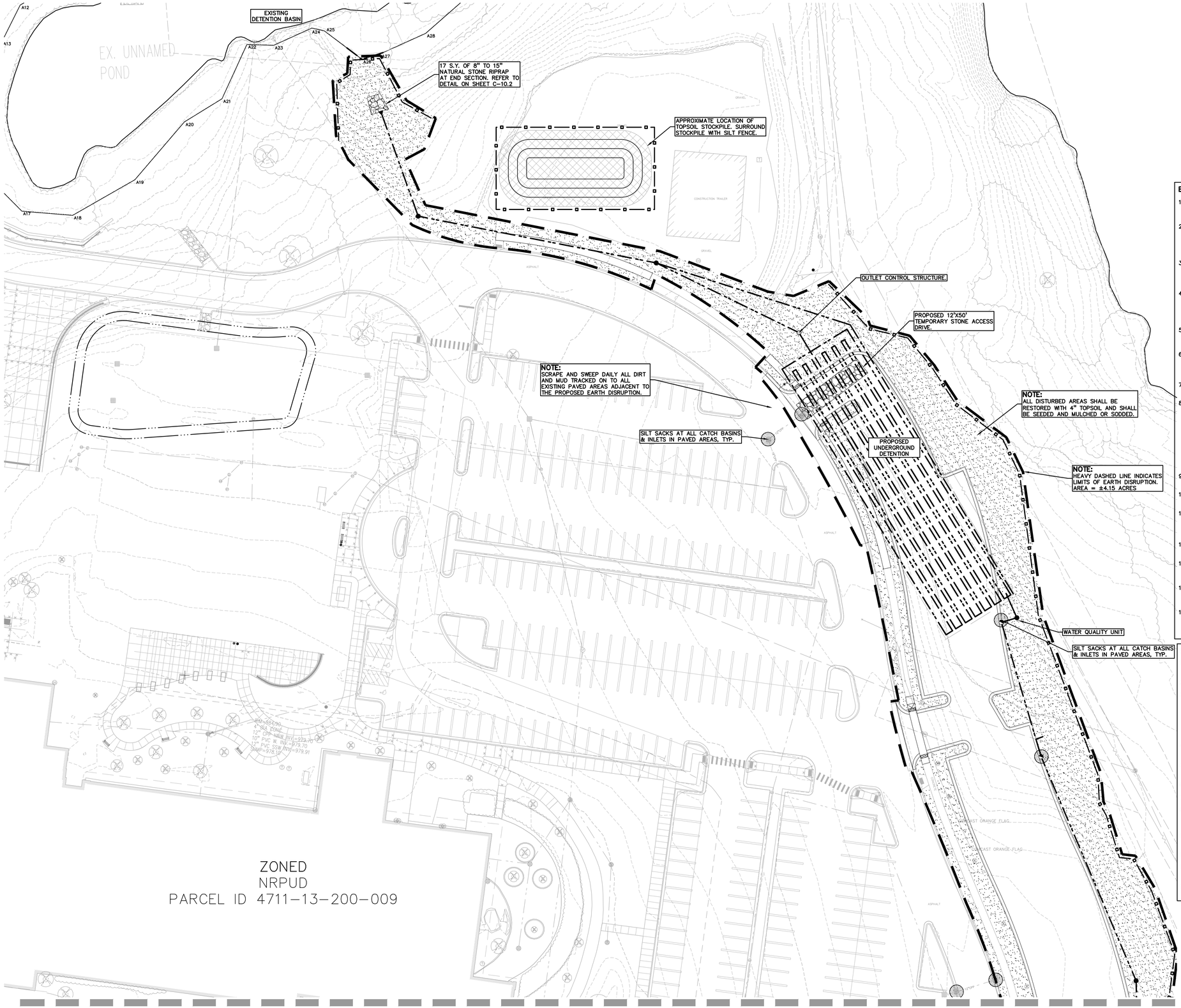
DRAWING TITLE
GRADING PLAN - SOUTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-4.1

NOT FOR CONSTRUCTION

\\peainc\jobs\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\C-4.0_GRADE-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Alton Gray



SYMBOLS: EROSION CONTROL:

- SILT FENCE
- INLET FILTER
- TEMPORARY STONE ACCESS DRIVE
- EROSION CONTROL BLANKET
- RIPRAP
- TOPSOIL SEED AND MULCH BLANKET

REFER TO LCDC SOIL EROSION AND SEDIMENTATION CONTROL DETAILS INCLUDED ON THE DETAIL SHEETS.

EROSION CONTROL STANDARDS:

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL AGENCY UNDER PART 91 OF ACT 451 OF 1994, AS AMENDED.
2. DAILY INSPECTIONS SHALL BE MADE BY CONTRACTOR WHILE WORKING TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES. ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY. ALL SOIL EROSION CONTROL PROVISIONS SHALL BE PROPERLY MAINTAINED DURING CONSTRUCTION.
3. EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF– SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN–MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES, AND PONDS.
4. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. CONTRACTOR SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGE AREAS HAVE BEEN COMPLETED.
5. STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
6. SOIL EROSION CONTROL PRACTICES WILL BE ESTABLISHED IN EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
7. DUST SHALL BE CONTROLLED BY WATERING OR BY OTHER APPROVED MEANS THROUGHOUT ALL CONSTRUCTION OPERATIONS.
8. PERMANENT SOIL EROSION CONTROL MEASURES FOR SLOPES, CHANNELS, DITCHES OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED WITHIN 5 CALENDAR DAYS. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.
9. THE CONTRACTOR SHALL PRESERVE NATURAL VEGETATION AS MUCH AS POSSIBLE.
10. ANY WORK OUTSIDE OF THE LIMITS OF DISTURBANCE SHALL REQUIRE A SEPARATE GRADING PERMIT.
11. FOLLOWING THE PLACEMENT OF 4" OF TOPSOIL AND SEED, STRAW MULCH BLANKET IS TO BE INSTALLED PERPENDICULAR ALONG THE PROPOSED SLOPES 1:4 OR STEEPER FROM TOP OF SLOPE TO TOE OF SLOPE, INCLUDING DITCH BOTTOMS, AND IT MUST BE PEGGED IN PLACE.
12. ALL MUD/DIRT TRACKED ONTO EXISTING COUNTY/CITY ROADS FROM THIS SITE, DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
13. THE INFILTRATION/SEDIMENTATION/DETENTION PONDS SHALL BE EXCAVATED, TOP SOILED, SEEDED, MULCHED, TACKED AND RINGED WITH SILT FENCE PRIOR TO THE START OF MASSIVE EARTH DISRUPTION.
14. TEMPORARY STABILIZATION OF THE ENTIRE SITE SHALL BE COMPLETED AND APPROVAL OBTAINED FROM THE LIVINGSTON COUNTY DRAIN COMMISSIONERS OFFICE PRIOR TO THE ISSUANCE OF INDIVIDUAL BUILDING PERMITS.
15. PERMANENT STABLIZATION WILL REQUIRE GRASS SEED APPLIED AT 210 LBS./AC, FERTILIZER APPLIED AT 150 LBS./AC., AND STRAW MULCH 3" DEPTH, 1.5 TO 2 TONS/AC. NOTE ALL MULCH MUST HAVE TIE DOWN, SUCH AS TACKIFIER, NET BINDING ETC.

SOIL EROSION SCHEDULE AND SEQUENCE OF CONSTRUCTION:

1. PLACE SILT FENCE AND SEDIMENT TRAPS AS INDICATED ON PLANS. NOTE THAT ALL SILT FENCE SHALL BE 36" HIGH, NO EXCEPTIONS.(SEPT 2026)
2. INSTALL MUD MAT AT SITE ENTRANCE. (SEPT 2026)
3. REMOVE ALL TOPSOIL, ORGANIC MATTER, AND DELETERIOUS MATERIALS FROM AREAS TO BE GRADED. TOPSOIL MAY BE STORED ON SITE IN AREAS INDICATED, AND USED FOR FUTURE PLANTING AND FILL AREAS IN GREENSPACE. TRUCK TOPSOIL OFF SITE AT OWNER'S REQUEST. STOCKPILE AREAS SHALL BE SEEDED AND MULCHED OR MATTED WITH STRAW, AND PROVIDED WITH A PERIMETER OF SILT FENCE IMMEDIATELY FOLLOWING THE STRIPPING PROCESS. (SEPT 2026)
4. ROUGH GRADE SITE TO WITHIN 0.5' OF FINAL GRADE PRIOR TO BEGINNING UTILITY CONSTRUCTION. (SEPT 2026)
5. INSTALL STORM WATER MANAGEMENT SYSTEM AND STORM SEWERS (OCTOBER 2026)
6. GRADE ROADS TO PAVEMENT SUBGRADE ELEVATION. (OCTOBER 2026)
7. PLACE ROAD PAVING. (OCTOBER 2026)
8. REDISTRIBUTE TOPSOIL. SITE SHALL BE GRADED ACCORDING TO GRADING PLAN. FINAL GRADES WILL BE SET AT THE TIME SITE PLANS ARE AVAILABLE FOR EACH APARTMENT BUILDING. (OCTOBER 2026)
9. ESTABLISH VEGETATION AND/OR LANDSCAPE ANY REMAINING DISTURBED AREAS. (OCTOBER 2026)
10. CLEAN PAVEMENT AND STORM SEWERS.
11. REMOVE ALL SEDIMENT FROM WATER QUALITY UNIT AND UNDERGROUND DETENTION SYSTEM. (NOV 2026)
12. REMOVE ALL TEMPORARY SEDIMENTATION AND EROSION CONTROLS. (UPON SITE COMPLETEION)

EROSION CONTROL QUANTITIES:

SILT FENCE	4315 LF
INLET FILTER	18 EA
TEMPORARY CONSTRUCTION ACCESS DRIVE	3 EA
TOPSOIL, SEED, MULCH BLANKET	7092 SY
RIP RAP, PLAIN	17 SY

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE AS TO ACCURACY 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
SESC PLAN - NORTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-5.0

\\peainc\geo\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-5.0) SESC- 26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

SEE SHEET C-5.0 FOR CONTINUATION

SYMBOLS: EROSION CONTROL:

- SILT FENCE
- INLET FILTER
- TEMPORARY STONE ACCESS DRIVE
- EROSION CONTROL BLANKET
- RIPRAP
- TOPSOIL SEED AND MULCH BLANKET

REFER TO LCDC SOIL EROSION AND SEDIMENTATION CONTROL DETAILS INCLUDED ON THE DETAIL SHEETS.

EROSION CONTROL STANDARDS:

1. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL AGENCY UNDER PART 91 OF ACT 451 OF 1994, AS AMENDED.
2. DAILY INSPECTIONS SHALL BE MADE BY CONTRACTOR WHILE WORKING TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES. ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY. ALL SOIL EROSION CONTROL PROVISIONS SHALL BE PROPERLY MAINTAINED DURING CONSTRUCTION.
3. EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF– SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN–MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES, AND PONDS.
4. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. CONTRACTOR SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGE AREAS HAVE BEEN COMPLETED.
5. STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
6. SOIL EROSION CONTROL PRACTICES WILL BE ESTABLISHED IN EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
7. DUST SHALL BE CONTROLLED BY WATERING OR BY OTHER APPROVED MEANS THROUGHOUT ALL CONSTRUCTION OPERATIONS.
8. PERMANENT SOIL EROSION CONTROL MEASURES FOR SLOPES, CHANNELS, DITCHES OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED WITHIN 5 CALENDAR DAYS. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.
9. THE CONTRACTOR SHALL PRESERVE NATURAL VEGETATION AS MUCH AS POSSIBLE.
10. ANY WORK OUTSIDE OF THE LIMITS OF DISTURBANCE SHALL REQUIRE A SEPARATE GRADING PERMIT.
11. FOLLOWING THE PLACEMENT OF 4" OF TOPSOIL AND SEED, STRAW MULCH BLANKET IS TO BE INSTALLED PERPENDICULAR ALONG THE PROPOSED SLOPES 1:4 OR STEEPER FROM TOP OF SLOPE TO TOE OF SLOPE, INCLUDING DITCH BOTTOMS, AND IT MUST BE PEGGED IN PLACE.
12. ALL MUD/DIRT TRACKED ONTO EXISTING COUNTY/CITY ROADS FROM THIS SITE, DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
13. THE INFILTRATION/SEDIMENTATION/DETENTION PONDS SHALL BE EXCAVATED, TOP SOILED, SEEDED, MULCHED, TACKED AND RINGED WITH SILT FENCE PRIOR TO THE START OF MASSIVE EARTH DISRUPTION.
14. TEMPORARY STABILIZATION OF THE ENTIRE SITE SHALL BE COMPLETED AND APPROVAL OBTAINED FROM THE LIVINGSTON COUNTY DRAIN COMMISSIONERS OFFICE PRIOR TO THE ISSUANCE OF INDIVIDUAL BUILDING PERMITS.
15. PERMANENT STABLIZATION WILL REQUIRE GRASS SEED APPLIED AT 210 LBS./AC, FERTILIZER APPLIED AT 150 LBS./AC., AND STRAW MULCH 3" DEPTH, 1.5 TO 2 TONS/AC. NOTE ALL MULCH MUST HAVE TIE DOWN, SUCH AS TACKIFIER, NET BINDING ETC.

SOIL EROSION SCHEDULE AND SEQUENCE OF CONSTRUCTION:

1. PLACE SILT FENCE AND SEDIMENT TRAPS AS INDICATED ON PLANS. NOTE THAT ALL SILT FENCE SHALL BE 36" HIGH, NO EXCEPTIONS.(SEPT 2026)
2. INSTALL MUD MAT AT SITE ENTRANCE. (SEPT 2026)
3. REMOVE ALL TOPSOIL, ORGANIC MATTER, AND DELETERIOUS MATERIALS FROM AREAS TO BE GRADED. TOPSOIL MAY BE STORED ON SITE IN AREAS INDICATED, AND USED FOR FUTURE PLANTING AND FILL AREAS IN GREENSPACE. TRUCK TOPSOIL OFF SITE AT OWNER'S REQUEST. STOCKPILE AREAS SHALL BE SEEDED AND MULCHED OR MATTED WITH STRAW, AND PROVIDED WITH A PERIMETER OF SILT FENCE IMMEDIATELY FOLLOWING THE STRIPPING PROCESS. (SEPT 2026)
4. ROUGH GRADE SITE TO WITHIN 0.5' OF FINAL GRADE PRIOR TO BEGINNING UTILITY CONSTRUCTION. (SEPT 2026)
5. INSTALL STORM WATER MANAGEMENT SYSTEM AND STORM SEWERS (OCTOBER 2026)
6. GRADE ROADS TO PAVEMENT SUBGRADE ELEVATION. (OCTOBER 2026)
7. PLACE ROAD PAVING. (OCTOBER 2026)
8. REDISTRIBUTE TOPSOIL. SITE SHALL BE GRADED ACCORDING TO GRADING PLAN. FINAL GRADES WILL BE SET AT THE TIME SITE PLANS ARE AVAILABLE FOR EACH APARTMENT BUILDING. (OCTOBER 2026)
9. ESTABLISH VEGETATION AND/OR LANDSCAPE ANY REMAINING DISTURBED AREAS. (OCTOBER 2026)
10. CLEAN PAVEMENT AND STORM SEWERS.
11. REMOVE ALL SEDIMENT FROM WATER QUALITY UNIT AND UNDERGROUND DETENTION SYSTEM. (NOV 2026)
12. REMOVE ALL TEMPORARY SEDIMENTATION AND EROSION CONTROLS. (UPON SITE COMPLETEION)

EROSION CONTROL QUANTITIES:

SILT FENCE	4315 LF
INLET FILTER	18 EA
TEMPORARY CONSTRUCTION ACCESS DRIVE	3 EA
TOPSOIL, SEED, MULCH BLANKET	7092 SY
RIP RAP, PLAIN	17 SY

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT GUARANTEED TO BE CORRECT 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

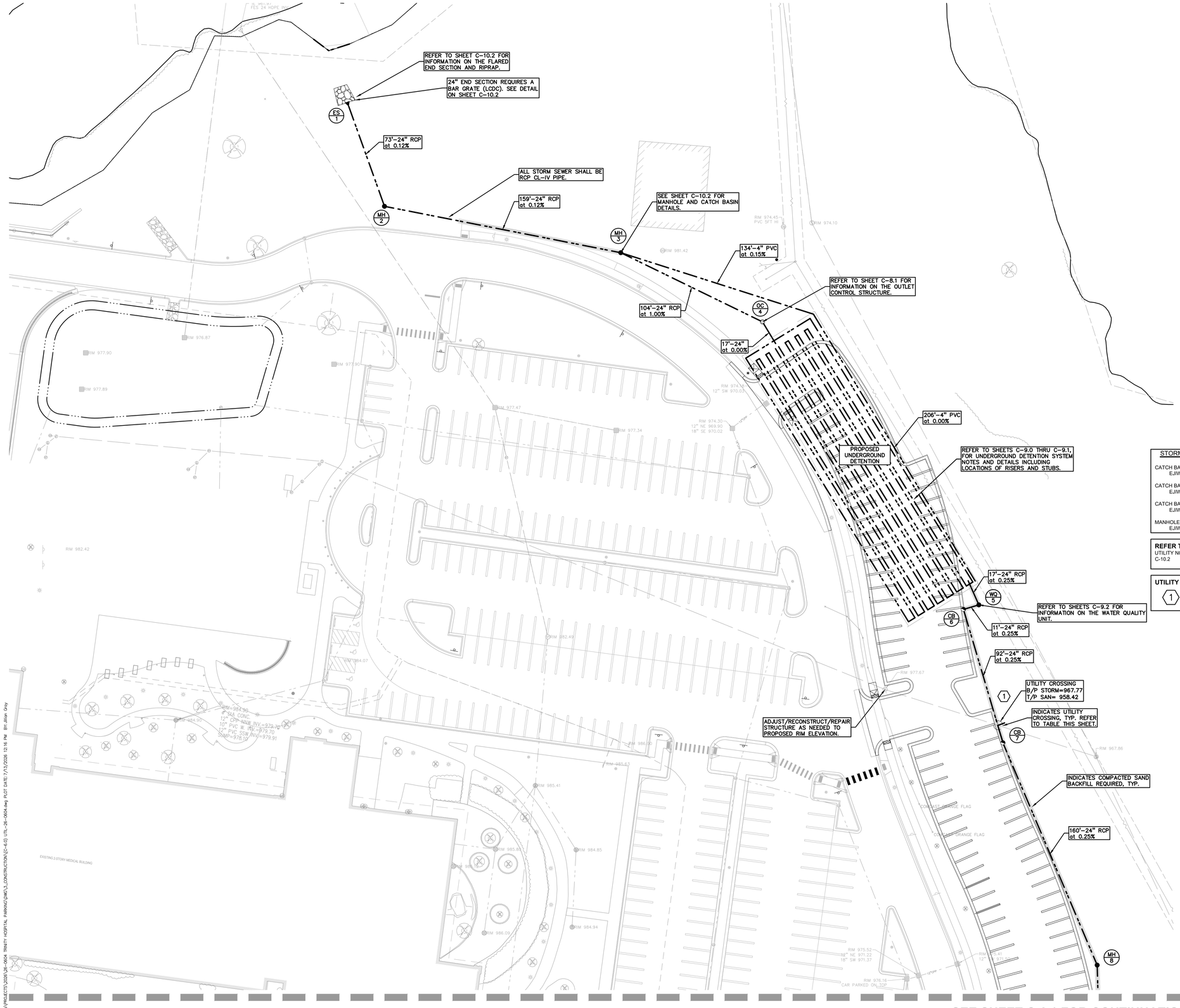
ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
SESC PLAN - SOUTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-5.1

\\peadcn\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG_CONSTRUCTION\C-5.0 SESC-26-0604.dwg PLOT DATE:7/13/2026 12:16 PM BY:Allison Gray



UTILITY LEGEND:

- EX. OH. ELEC, POLE & GUY WIRE
- EX. U.G. CABLE TV & PEDESTAL
- EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
- EX. U.G. ELEC.MANHOLE, METER & HANDHOLE
- EX. GAS LINE
- EX. GAS VALVE & GAS LINE MARKER
- EX. TRANSFORMER & IRRIGATION VALVE
- EX. WATER MAIN
- EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
- EX. WATER VALVE BOX & SHUTOFF
- EX. SANITARY SEWER
- EX. SANITARY CLEANOUT & MANHOLE
- EX. COMBINED SEWER MANHOLE
- EX. STORM SEWER
- EX. CLEANOUT & MANHOLE
- EX. SQUARE, ROUND, & BEEHIVE CATCH BASIN
- EX. YARD DRAIN & ROOF DRAIN
- EX. UNIDENTIFIED STRUCTURE
- PROPOSED WATER MAIN
- PROPOSED HYDRANT AND GATE VALVE
- PROPOSED TAPPING SLEEVE, VALVE & WELL
- PROPOSED POST INDICATOR VALVE
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY CLEANOUT & MANHOLE
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER CLEANOUT & MANHOLE
- PROPOSED CATCH BASIN, INLET & YARD DRAIN

STORM SEWER QUANTITIES:

4" PVC SDR 26	340 LF
12" RCP CL-IV PIPE	303 LF
15" RCP CL-IV PIPE	529 LF
24" RCP CL-IV PIPE	855 LF
24" FLARED END SECTION	1 EA.
4' DIA. CATCH BASIN	8 EA.
4' DIA. MANHOLE	4 EA.
6' DIA. OUTLET CONTROL STRUCTURE	1 EA.
6' DIA. WATER QUALITY UNIT	1 EA.

NOTE:
CONTRACTOR TO VERIFY ALL QUANTITIES. ANY DEVIATIONS TO THE PLAN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF PEA GROUP FOR VERIFICATION, PRIOR TO BIDDING.

PREMIUM TRENCH BACKFILL NOTE:
ALL UTILITIES UNDER PAVEMENT OR WITHIN 3' OF THE EDGE OF PAVEMENT (OR WITHIN THE 45° LINE OF INFLUENCE OF PAVEMENT) SHALL HAVE M.D.O.T. CLASS II GRANULAR BACKFILL COMPACTED TO 95% MAX. DRY DENSITY (ASTM D-1557).

STORM SEWER FRAME & COVER NOTES

CATCH BASIN/INLET IN CURB
EJIW #7000-T1-M1

CATCH BASIN/INLET IN PAVED AREA
EJIW #1020-M1

CATCH BASIN/INLET IN GRASS AREAS
EJIW #1020 WITH BEEHIVE 4" GRATE

MANHOLE
EJIW #1040 WITH VENTED COVER

REFER TO:
UTILITY NOTES AND DETAILS ON SHEET C-10.0 AND C-10.2

UTILITY CROSSING INFORMATION:

1 — BOTTOM OF STORM = 967.77
TOP OF SANITARY = 958.42

STORM STRUCTURES

ES	1	24" S 963.85
MH	2	(4' DIA./0' SUMP) RIM = 977.08 24" E 963.94 24" N 963.94
MH	3	(4' DIA./0' SUMP) RIM = 979.91 24" SE 964.13 4" E 964.13 24" W 964.13
OC	4	(6' DIA./2' SUMP) RIM = 974.07 24" SE 965.17 24" NW 965.17
WQU	5	(6' DIA./0' SUMP) RIM = 971.98 24" W 966.54 24" NW 966.54
CB	6	(4' DIA./2' SUMP) RIM = 973.45 24" S 967.57 24" E 966.57
CB	7	(4' DIA./2' SUMP) RIM = 975.64 24" SE 967.80 24" N 967.80
MH	8	(4' DIA./0' SUMP) RIM = 976.11 24" S 969.70 24" NW 968.20
CB	9	(4' DIA./2' SUMP) RIM = 979.76 15" SW 972.35 15" W 972.85 24" N 970.25
MH	10	(4' DIA./0' SUMP) RIM = 984.22 15" SW 973.09 15" NE 973.09
CB	11	(4' DIA./2' SUMP) RIM = 981.02 12" NW 974.16 15" NE 973.96
CB	12	(4' DIA./2' SUMP) RIM = 983.60 12" W 974.24 12" SE 974.24
CB	13	(4' DIA./2' SUMP) RIM = 979.28 12" E 974.87
CB	14	(4' DIA./2' SUMP) RIM = 978.03 12" W 973.40 15" E 973.20
CB	15	(4' DIA./2' SUMP) RIM = 980.24 12" E 973.90

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
UTILITY PLAN - NORTH

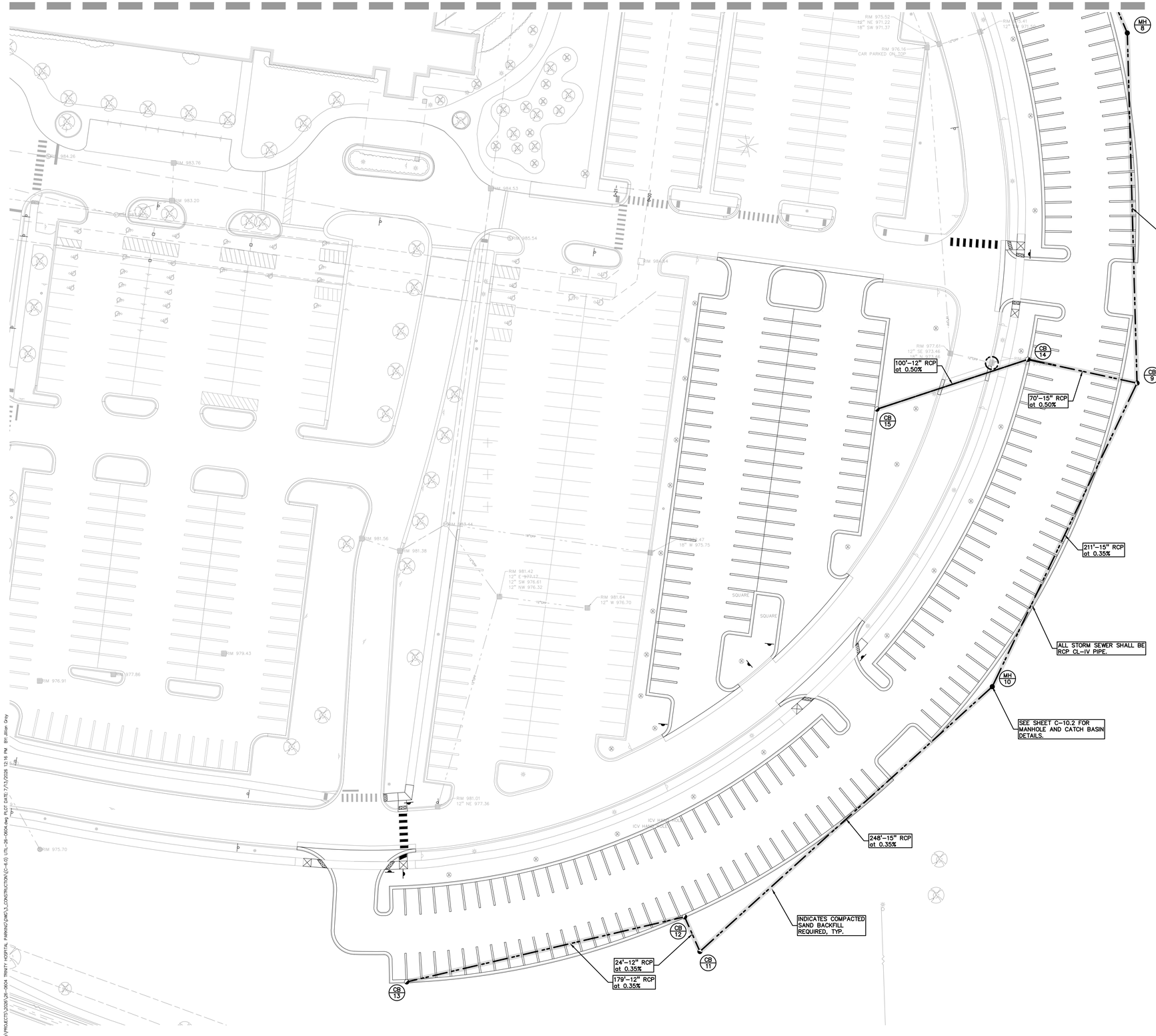
PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-6.0

NOT FOR CONSTRUCTION

\\peainc\proj\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG_CONSTRUCTION\C-6.0 UTIL-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Allison Grey

SEE SHEET C-6.0 FOR CONTINUATION



UTILITY LEGEND:

- EX. OH. ELEC, POLE & GUY WIRE
- EX. U.G. CABLE TV & PEDESTAL
- EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
- EX. U.G. ELEC.MANHOLE, METER & HANDHOLE
- EX. GAS LINE
- EX. GAS VALVE & GAS LINE MARKER
- EX. TRANSFORMER & IRRIGATION VALVE
- EX. WATER MAIN
- EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
- EX. WATER VALVE BOX & SHUTOFF
- EX. SANITARY SEWER
- EX. SANITARY CLEANOUT & MANHOLE
- EX. COMBINED SEWER MANHOLE
- EX. STORM SEWER
- EX. CLEANOUT & MANHOLE
- EX. SQUARE, ROUND, & BEEHIVE CATCH BASIN
- EX. YARD DRAIN & ROOF DRAIN
- EX. UNIDENTIFIED STRUCTURE
- PROPOSED WATER MAIN
- PROPOSED HYDRANT AND GATE VALVE
- PROPOSED TAPPING SLEEVE, VALVE & WELL
- PROPOSED POST INDICATOR VALVE
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY CLEANOUT & MANHOLE
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER CLEANOUT & MANHOLE
- PROPOSED CATCH BASIN, INLET & YARD DRAIN

STORM SEWER FRAME & COVER NOTES

CATCH BASIN/INLET IN CURB
EJIW #7000-T1-M1

CATCH BASIN/INLET IN PAVED AREA
EJIW #1020-M1

CATCH BASIN/INLET IN GRASS AREAS
EJIW #1020 WITH BEEHIVE 4" GRATE

MANHOLE
EJIW #1040 WITH VENTED COVER

REFER TO:
UTILITY NOTES AND DETAILS ON SHEET C-10.0 AND C-10.2

UTILITY CROSSING INFORMATION:

(1) BOTTOM OF STORM = 967.77
TOP OF SANITARY = 958.42

STORM SEWER QUANTITIES:

4" PVC SDR 26	340 LF
12" RCP CL-IV PIPE	303 LF
15" RCP CL-IV PIPE	529 LF
24" RCP CL-IV PIPE	855 LF
24" FLARED END SECTION	1 EA.
4' DIA. CATCH BASIN	8 EA.
4' DIA. MANHOLE	4 EA.
6' DIA. OUTLET CONTROL STRUCTURE	1 EA.
6' DIA. WATER QUALITY UNIT	1 EA.

NOTE:
CONTRACTOR TO VERIFY ALL QUANTITIES. ANY DEVIATIONS TO THE PLAN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF PEA GROUP FOR VERIFICATION, PRIOR TO BIDDING.

PREMIUM TRENCH BACKFILL NOTE:
ALL UTILITIES UNDER PAVEMENT OR WITHIN 3' OF THE EDGE OF PAVEMENT (OR WITHIN THE 45° LINE OF INFLUENCE OF PAVEMENT) SHALL HAVE M.D.O.T. CLASS II GRANULAR BACKFILL COMPACTED TO 95% MAX. DRY DENSITY (ASTM D-1557).

STORM STRUCTURES

ES	1	24" S 963.85
MH	2	(4' DIA./0' SUMP) RIM = 977.08 24" E 963.94 24" N 963.94
MH	3	(4' DIA./0' SUMP) RIM = 979.91 24" SE 964.13 4" E 964.13 24" W 964.13
OC	4	(6' DIA./2' SUMP) RIM = 974.07 24" SE 965.17 24" NW 965.17
WQU	5	(6' DIA./0' SUMP) RIM = 971.98 24" W 966.54 24" NW 966.54
CB	6	(4' DIA./2' SUMP) RIM = 973.45 24" S 967.57 24" E 966.57
CB	7	(4' DIA./2' SUMP) RIM = 975.64 24" SE 967.80 24" N 967.80
MH	8	(4' DIA./0' SUMP) RIM = 976.11 24" S 969.70 24" NW 968.20
CB	9	(4' DIA./2' SUMP) RIM = 979.76 15" SW 972.35 15" W 972.85 24" N 970.25
MH	10	(4' DIA./0' SUMP) RIM = 984.22 15" SW 973.09 15" NE 973.09
CB	11	(4' DIA./2' SUMP) RIM = 981.02 12" NW 974.16 15" NE 973.96
CB	12	(4' DIA./2' SUMP) RIM = 983.60 12" W 974.24 12" SE 974.24
CB	13	(4' DIA./2' SUMP) RIM = 979.28 12" E 974.87
CB	14	(4' DIA./2' SUMP) RIM = 978.03 12" W 973.40 15" E 973.20
CB	15	(4' DIA./2' SUMP) RIM = 980.24 12" E 973.90

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT NECESSARILY COMPLETE. NO GUARANTEE 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
UTILITY PLAN - NORTH

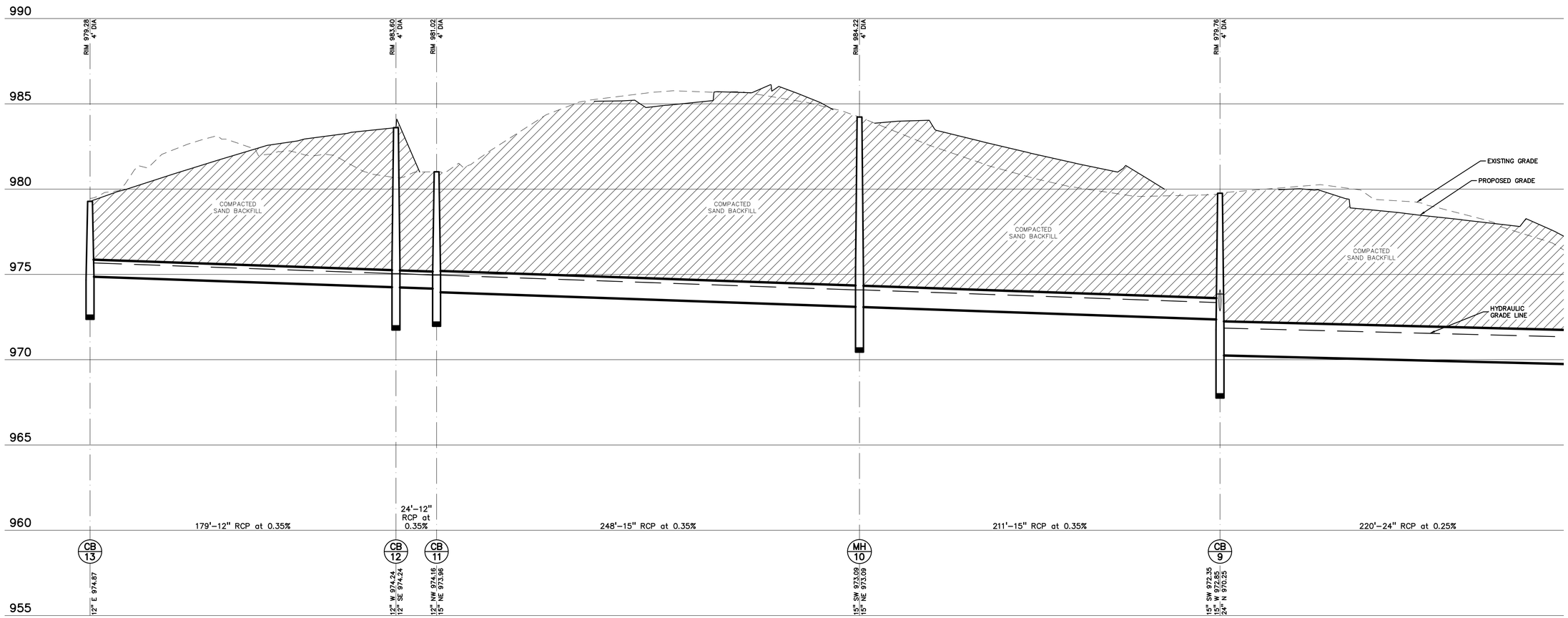
PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-6.1

NOT FOR CONSTRUCTION

\\peainc\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\PWK\3_CONSTRUCTION\C-6.0 UTIL-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

HORIZ: 1" = 30'
VERT: 1" = 3'



CB13 – DET PROFILE

SEE SHEET C-7.1 FOR CONTINUATION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

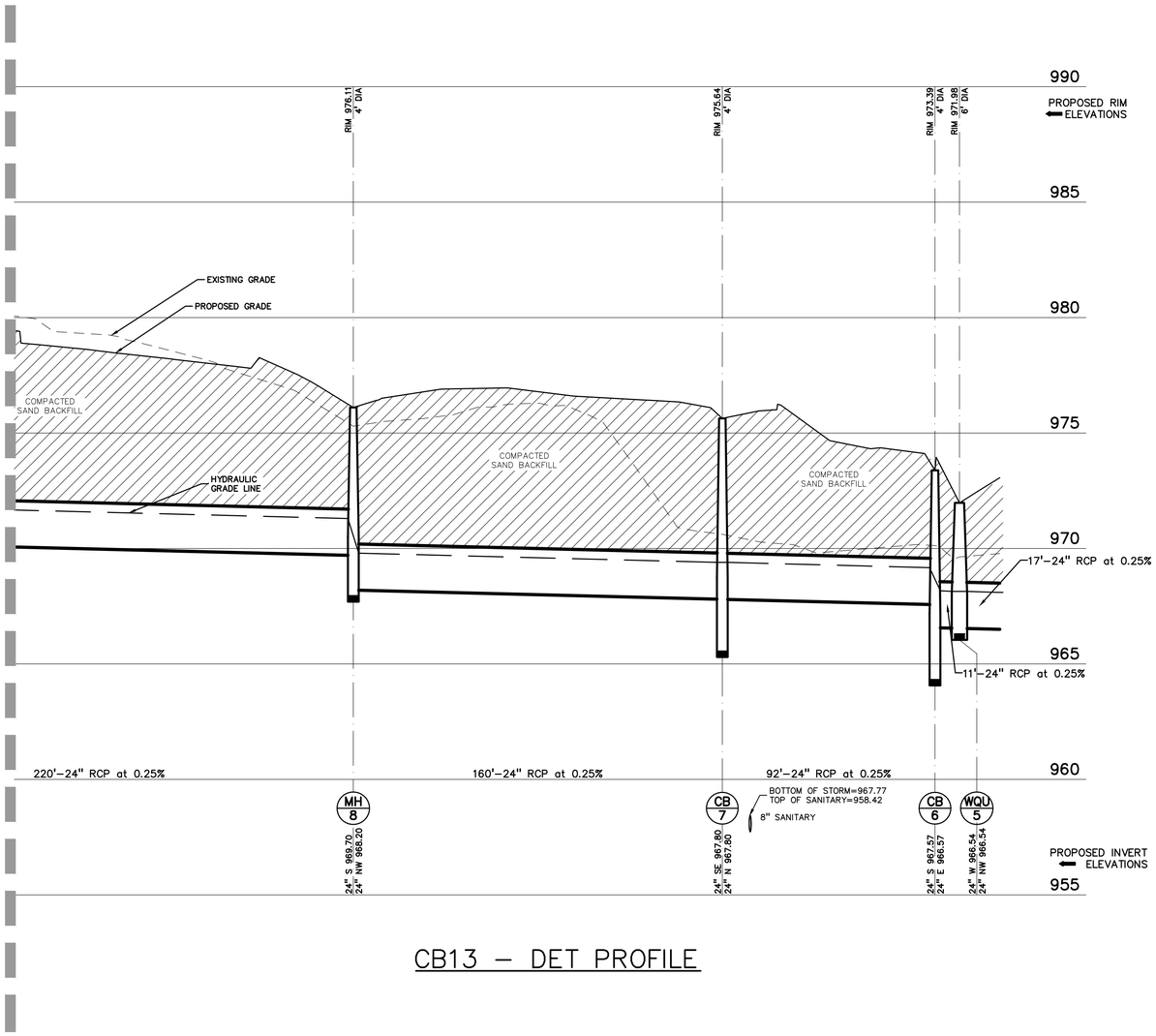
DRAWING TITLE
UTILITY PROFILES

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-7.0

NOT FOR CONSTRUCTION

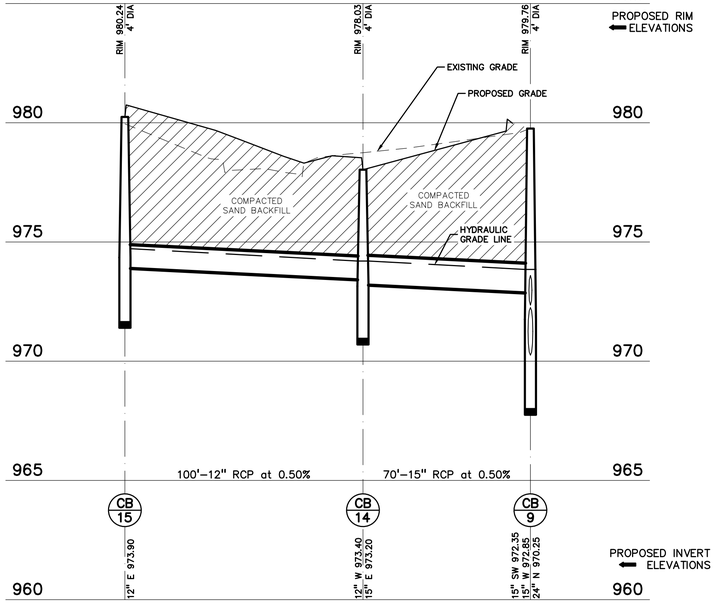
\\peainc\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-7.0) PROF -26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Grey



CB13 – DET PROFILE

SEE SHEET C-7.0 FOR CONTINUATION

HORIZ: 1" = 30'
VERT: 1" = 3'



CB15 – CB 9 PROFILE

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE LOCATIONS AND ARE NOT WARRANTEED 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

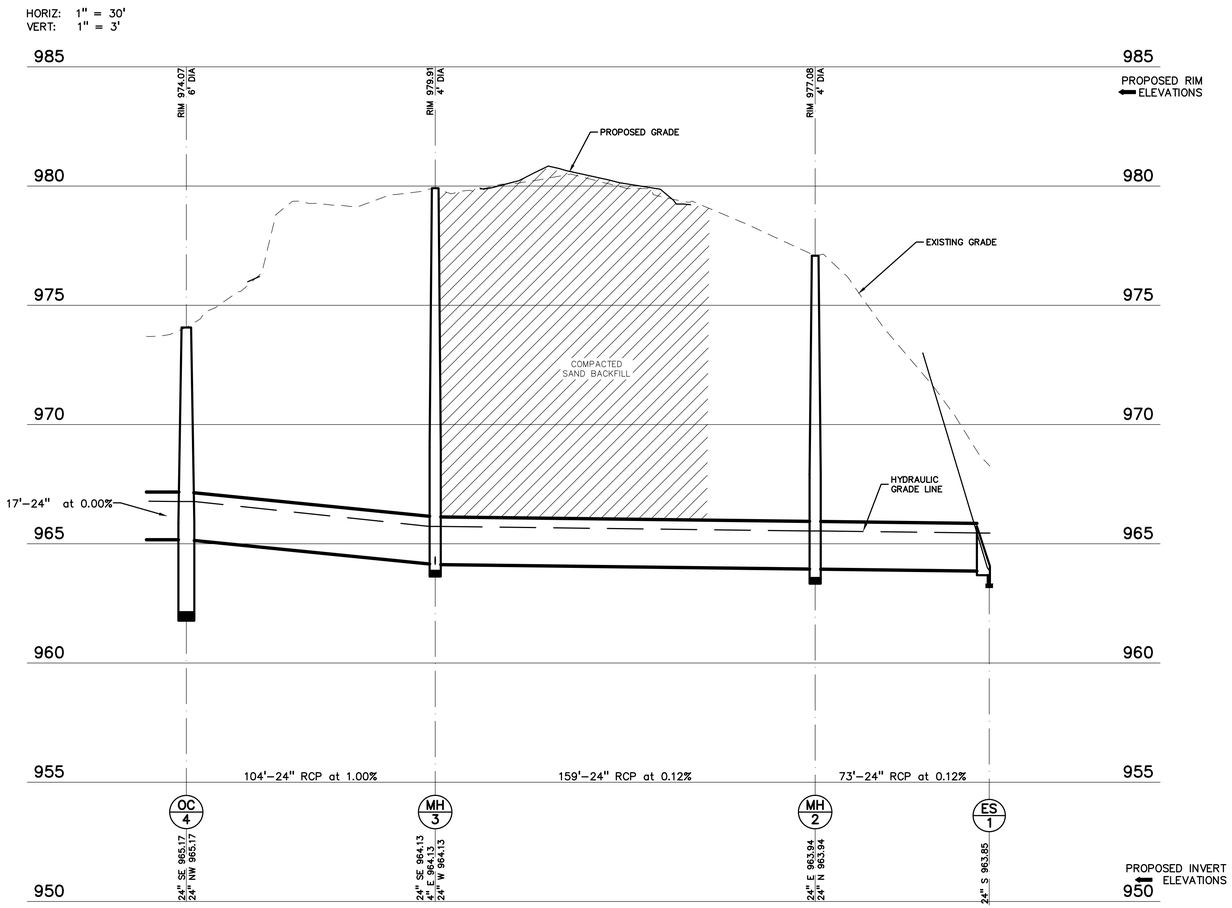
DRAWING TITLE
UTILITY PROFILES

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-7.1

NOT FOR CONSTRUCTION

\\peainc\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\LD_CONSTRUCTION\C-7.0 PROF-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray



DET – ES1 PROFILE

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT GUARANTEED. NO REPRESENTATION IS MADE 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
UTILITY PROFILES

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-7.2

NOT FOR CONSTRUCTION

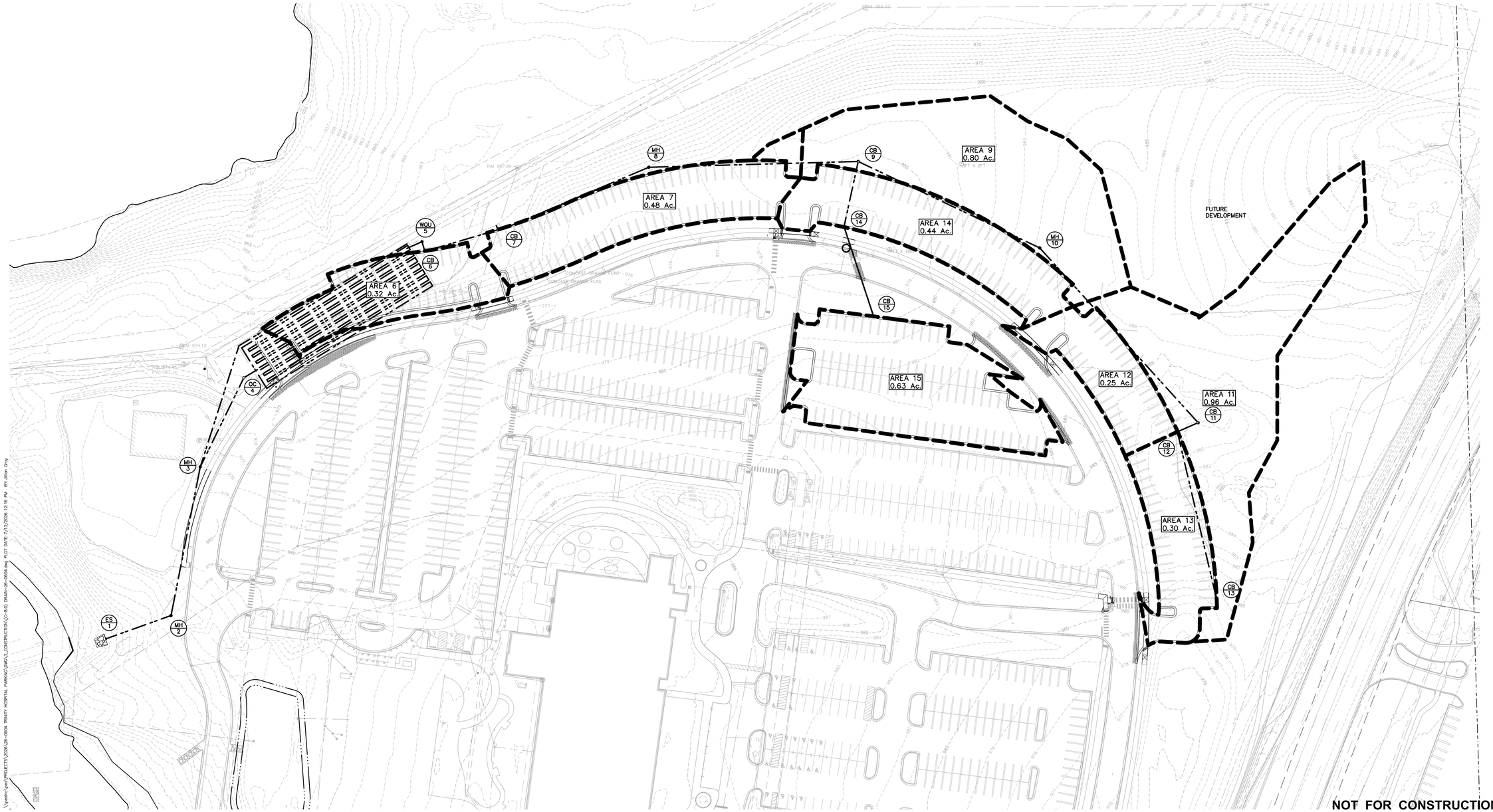
\\peainc\proj\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-7.0) PROF-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Allison Gray

STORM SEWER SYSTEM DESIGN

Region Michigan
Location: Livingston County

I = B/(T+D) ^ E B = 175.00 D = 25.00 E = 1.00
C = varies
T = 15 (min.) Pipe "n" Value = 0.013

FROM STR	TO STR	AREA (A) (Acres)	COEF. C	A x C	TOTAL AREA (AxC)	TOTAL AREA (Acres)	TIME t (min.)	INT. I (in/hr)	FLOW Q (cfs)	PIPE CAP. (cfs)	PIPE DIA. (in.)	PIPE LENGTH (ft.)	PIPE SLOPE (%)	MIN HG PER "Q"	VEL. FULL (ft./sec)	TIME FLOW (min.)	H.G.L. ELEV. UP STREAM	H.G.L. ELEV. DOWN STREAM	RIM ELEV. UP STREAM	RIM ELEV. DOWN STREAM	INVERT ELEV. UP STREAM	INVERT ELEV. DOWN STREAM	PIPE COVER UP STREAM	PIPE COVER DOWN STREAM	HGL COVER UP STREAM	HGL COVER DOWN STREAM
13	12	0.30	0.94	0.28	0.28	0.30	15.00	4.38	1.23	2.11	12	179	0.35	0.12%	2.7	1.1	975.67	975.05	979.28	983.60	974.87	974.24	3.24	8.19	3.61	8.56
12	11	0.25	0.94	0.23	0.51	0.54	16.10	4.26	2.18	2.11	12	24	0.35	0.38%	2.7	0.1	975.05	974.96	983.60	981.02	974.24	974.16	8.19	5.69	8.56	6.06
11	10	0.96	0.20	0.19	0.70	1.50	16.20	4.25	2.99	3.82	15	248	0.35	0.21%	3.1	1.3	974.96	974.09	981.02	984.22	973.96	973.09	5.62	9.70	6.06	10.13
10	9	0.00	0.00	0.00	0.70	1.50	17.50	4.12	2.99	3.82	15	211	0.35	0.21%	3.1	1.1	974.09	973.35	984.22	979.76	973.09	972.35	9.70	5.97	10.13	6.41
9	8	0.80	0.20	0.16	1.86	3.38	18.60	4.01	7.48	11.31	24	220	0.25	0.11%	3.6	1.0	971.85	971.30	979.76	976.11	970.25	969.70	7.26	4.16	7.91	4.81
8	7	0.00	0.00	0.00	1.86	3.38	19.60	3.92	7.48	11.31	24	160	0.25	0.11%	3.6	0.7	969.80	969.40	976.11	975.64	968.20	967.80	5.66	5.58	6.31	6.23
7	6	0.48	0.91	0.43	2.30	3.86	20.30	3.86	8.88	11.31	24	92	0.25	0.15%	3.6	0.4	969.40	969.17	975.64	973.45	967.80	967.57	5.58	3.63	6.23	4.28
6	5	0.32	0.91	0.29	2.59	4.18	20.70	3.83	9.92	11.31	24	11	0.25	0.19%	3.6	0.0	968.17	968.14	973.45	971.98	966.57	966.54	4.63	3.18	5.28	3.83
5	28	0.00	0.00	0.00	2.59	4.18	20.70	3.83	9.92	11.31	24	17	0.25	0.19%	3.6	0.1	968.14	968.10	971.98	973.07	966.54	966.50	3.18	4.32	3.83	4.97
15	14	0.63	0.92	0.59	0.59	0.63	15.00	4.38	2.56	2.52	12	100	0.50	0.52%	3.2	0.5	974.72	974.20	980.24	978.03	973.90	973.40	5.18	3.46	5.53	3.83
14	9	0.44	0.94	0.41	1.00	1.08	15.50	4.32	4.32	4.57	15	70	0.50	0.45%	3.7	0.3	974.20	973.85	978.03	979.76	973.20	972.85	3.39	5.47	3.83	5.91
20	4	4.18	0.62	2.59	2.59	4.18	42.80	2.58	6.69	0.01	24	17	0.00	0.09%	0.0	122.3	966.79	966.77	973.70	974.07	965.17	965.17	6.28	6.65	6.91	7.30
4	3	0.00	0.00	0.00	2.59	4.18	42.80	2.58	6.69	22.62	24	104	1.00	0.09%	7.2	0.2	966.77	965.73	974.07	979.91	965.17	964.13	6.65	13.53	7.30	14.18
3	2	0.00	0.00	0.00	2.59	4.18	42.80	2.58	6.69	7.84	24	159	0.12	0.09%	2.5	1.1	965.73	965.54	979.91	977.08	964.13	963.94	13.53	10.89	14.18	11.54
2	1	0.00	0.00	0.00	2.59	4.18	42.80	2.58	6.69	7.84	24	73	0.12	0.09%	2.5	0.5	965.54	965.45	977.08	966.18	963.94	963.85	10.89	0.08	11.54	0.73



NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

NORTH

0 25 50 100
SCALE: 1" = 50'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT NECESSARILY ACCURATE OR ASSUMED 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
DRAINAGE AREA PLAN

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-8.0

V:\pea\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\LD_CONSTRUCTION\(C-8.0) DRAIN- 26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

Site Drainage Data

Select County:	Livingston		
Select NCRS Soil type:	B		
Existing			
Dry/Wet Detention/Retention Basin	acre	C =	1.00
Water Surface	acre	C =	1.00
Roof	acre	C =	0.90
Asphalt or Concrete Pavement	acre	C =	0.95
Gravel, Brick, or Macadam	2.42 acre	C =	0.80
lawns & open space	1.76 acre	C =	0.20
Forested	acre	C =	0.20
Meadow/No-Mow area	acre	C =	0.20
Bioretention	acre	C =	
Porous Pavement/Green Roof	acre	C =	
Water Area:	0.00 acre	C =	0.00
Impervious Area:	2.42 acre	C =	0.80
Pervious Area:	1.76 acre	C =	0.20
Total Area (A):	**4.18 acre**		
Weighted Coefficient of Runoff (C):	**0.55**		
Proposed			
Dry/Wet Detention/Retention Basin	acre	C =	1.00
Water Surface	acre	C =	1.00
Roof	acre	C =	0.90
Asphalt or Concrete Pavement	2.33 acre	C =	0.95
Gravel, Brick, or Macadam	acre	C =	0.80
lawns & open space	1.85 acre	C =	0.20
Forested	acre	C =	0.20
Meadow/No-Mow area	acre	C =	0.20
Bioretention	acre	C =	
Porous Pavement/Green Roof	acre	C =	
Water Area:	0.00 acre	C =	0.00
Impervious Area:	2.33 acre	C =	0.95
Pervious Area:	1.85 acre	C =	0.20
Total Area (A):	**4.18 acre**		
Weighted Coefficient of Runoff (C):	**0.62**		

Rainfall Intensity

Flood Control Time of Concentration, Tc =	20.00 minutes
	15.00

DetCalcs V3.00 — 7/10/2026 — 3/1/2022

Time of Concentration (T_C)	20.00 min
Site Area (A)	4.18 acres
Runoff Coefficient (C)	0.62

Rainfall Intensity

Since 15<Tc<60, use intensity equation	
$I_1 = 30.2 /[(Tc + 9.17)^{.81}$	1.97 in/hr
$I_{10}=175/(Tc + 25)$	3.89 in/hr
$I_{100} = 83.3/(Tc + 9.17)^{0.81}$	5.42 in/hr

Water Quality Volume

V_{WQ} = 3639CA	9,408 cf

Channel Protection Volume Control (CPVC) Volume

V_{CP} = 4719CA	12,230 cf

Channel Protection Rate Control (CPRC) Volume

V_{ED} = 6897CA	17,874 cf
$Q_{VED} = V_{ED}/(48*60*60)$	0.10 cfs

Detention and Flood Control Volume Release Rate

Q_{VRR} = 1.1055-0.206ln(A)	0.81 cfs/acre
If A < 2 acres, Q_{VRR} = 1.0	
If A > 100 acres, Q_{VRR} = 0.15 cfs/acre	
Mandated Outflow Rate:	0.10 cfs/acre
Q_{100ALL} is the lesser of the two rates multiplied by A.	
Q_{100ALL} =	0.42 cfs

100-year Peak Runoff Volume

V_{100R} = 18985CA	49,202 cf

100-year Peak Inflow Rate

$Q_{100N} = CI_{100}A$	14.05 cfs

100-year Post-Development Peak Flow Rate

$Q_{100P} = Q_{100ALL}A$	1.75 cfs

Storage Curve Factor for the 100-year Detention Volume

$R = [0.206 - 0.15\ln(Q_{100ALL}/Q_{100N})]$	0.73

100-Year Detention Size

$V_{100D} = V_{100R}R$	36,074 cf

Channel Protection Volume Credit

$V_{VC-CREDIT}$ is the volume infiltrated (cannot exceed V_{CP})	
Infiltration Volume Provided:	0 cf
$V_{VC-CREDIT}$ =	0 cf
$V_{100DET} = (V_{100R}R) - V_{VC-CREDIT}$	36,074 cf

Detention Basin Volume

The larger of V_{100D} and V_{ED} controls:	36,074 cf
Dewater at Q_{100ALL} rate:	0.42 cfs

Design Requirements for Trinity

C-Factor Calculation

Drainage Area	Area (acres)	C	CxA
6	0.32	0.91	0.29
7	0.48	0.91	0.43
9	0.80	0.20	0.16
11	0.96	0.20	0.19
13	0.30	0.94	0.28
14	0.44	0.94	0.41
15	0.63	0.92	0.59
12	0.25	0.94	0.23
Total	4.18	5.96	2.59

Weighted Runoff Coefficient (C) =	0.62	
WQU Tributary Area (A) =	4.18	AC
WQU Time of Concentration (T_C) =	20.80	min
(from Storm Sewer Calculations Spreadsheet)		

Design Requirements

CPRC Extended Detention: V_{ED}=	17,874	cf
CPRC Allowable Outlet Rate: Q_{VED} =	0.10	cfs
100-Year Storage Volume, V_{100D} =	36,074	cf
100-Year Allowable Outlet Rate: Q_{VRR} =	0.42	cfs
Detention Peak Inflow: Q_{100N}=	14.05	cfs

Design Requirements

CPRC Extended Detention: V_{ED}=	17,874	cf
CPRC Allowable Outlet Rate: Q_{VED} =	0.10	cfs
100-Year Storage Volume, V_{100D} =	36,074	cf
100-Year Allowable Outlet Rate: Q_{VRR} =	0.42	cfs
Detention Peak Inflow: Q_{100N}=	14.05	cfs

Underground Detention Storage

Required Storage Volume:	36,074	cf
Pipe Diameter:	60	in
Pipe Volume per Linear Foot:	19.63	cf/lf
Total Pipe Length, L:	1,450	ft
Pipe Storage Volume:	28,471	cf
Storage in Stone Backfill?	Y	
Porosity	0.3	%
Stone Storage Volume:	8,371	cf
Stone Storage Volume per Linear Foot:	5.77	cf/lf
Provided System Volume:	36,842	cft
Lowest Grade over system:	973.00	
Required Cover over system:	2.00	ft
Invert of Detention System:	965.17	
Invert of OCS:	965.17	

Pipe Manifold System Detention Design

Pipe Diameter (ft)	Spacing (ft)	Maximum Run (ft)	Number of Runs	Double Header?
5	2.5	200	7	N
Header Length	Total Pipe (ft)	Storage (cf)	Footprint Length	Footprint Width
50.00	1,450	28,471	205	50

Total length of pipe is equal to the number of runs times the maximum run, plus the spaces between all runs.

Storage in Stone Backfill

Stone Bed Thickness (ft)	Store in Bed ?	Porosity %	End Thickness (ft)	Perimeter Thickness (ft)
0.5	Y	30%		
Stone Storage Width (ft)	Stone Storage Depth (ft)	Stone Storage Length (ft)	Total Stone Storage	
50	5.5	205	8,371	

Storage in Circular Pipe Detention System

Effective End Area of Pipe:	25.41 sf
Effective Diameter of Pipe:	5.69 ft
Invert of System:	965.17

CPRC Volume — 17,874 cf

Fill Area of CPRC Storage Volume (CPRC/L):	12.33 sf
Φ:	177.33 degrees
Φ:	3.09 radians
Fill Area:	12.33 sf
Effective Fill Depth (per method above):	2.78 ft
V_{ED} Storage Elevation:	**967.94**
Fill Depth:	2.77 ft

Orifice Design

Q_{VED} Outlet Rate:	0.10 cfs
Avg. Head over Orifice (H_w): h=0.4y	1.11 ft
Area of Orifice (A):	0.0197 sf
$A=Q_w/(0.62*SQRT(2*g*Hw)$	
Enter Outlet Hole Diameter:	1.25 in
Restriction Hole Area:	0.0085 sft
Enter Number of Restriction Holes:	2
Set orifice elevation at	965.17
Total Restriction Hole Area:	0.017 sft
Actual Discharge (Q)	0.089 cfs
$Q = 0.62 * A * (2 * G * Hw)^{0.5}$	
Must be detained for at least 48 hours:	
Drain Time:	55.61 hrs

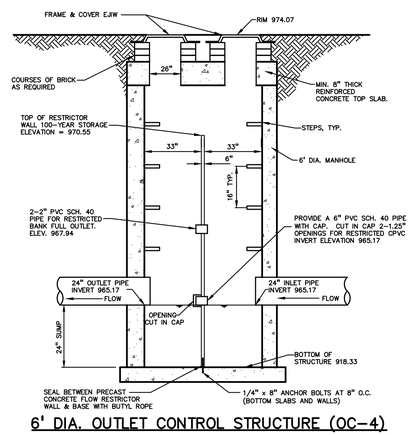
100-Year Volume — 36,074 cf

Fill Area of 100-Year Volume:	24.88 sf
Φ:	306.34 degrees
Φ:	5.35 radians
Fill Area:	24.88 sf
Effective Fill Depth (per method above):	5.38 ft
V_{DET} Storage Elevation:	**970.55**
Fill Depth:	5.38 ft

Orifice Design

Q_{VRR} Outlet Rate:	0.42 cfs
Avg. Head over Orifice (H_w): h=0.4y	2.15 ft
Flow through Q_{VED} Orifice at this head:	0.124 cfs
Q_{100D} Allowed:	0.29 cfs
Residual Head over Orifice (H_{res}):	1.04 ft
Area of Orifice (A):	0.0578 sf
$A=QR/(0.62*SQRT(2*g*H_{res})$	
Outlet Hole Diameter:	2 in
Restriction Hole Area:	0.0218 sf
Number of Restriction Holes:	2
Set orifice elevation at	967.94
Total Restriction Hole Area:	0.0436 sf
Actual Discharge (Q)	0.35 cfs
$A=QR/(0.62*SQRT(2*g*H_w)$	
Is this less than the Q_{VRR} of 0.42 cfs ?	Yes
Drain Time:	66.36 hrs

Total Dewatering Time	66.36 hrs



6' DIA. OUTLET CONTROL STRUCTURE (OC-4)

NOT TO SCALE

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN — TRISTAN JAY LARSON — License No. 6201058955 — LICENSED PROFESSIONAL ENGINEER

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NOT GUARANTEED TO BE CORRECT 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
STORMWATER MANAGEMENT CALCS

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-8.1

NOT FOR CONSTRUCTION

\\peainc\proj\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\C-8.0 DRAIN-26--0604.dwg PLOT DATE: 7/13/2026 12:15 PM BY: Jillian Gray

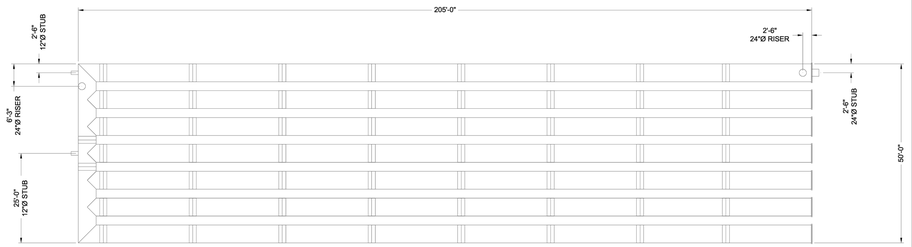
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 1,450 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = N/A
- PIPE STORAGE VOLUME = 28,471 CF
- BACKFILL STORAGE VOLUME = 10,135 CF
- TOTAL STORAGE PROVIDED = 38,617 CF
- STONE VOID = 40%

PIPE DETAILS
- DIAMETER = 60"
- CORRUGATION = 5x1
- GAGE = 14
- COATING = ALT2
- WALL TYPE = XFILTRATION
- BARREL SPACING = 30"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"



NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN. QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 20'

C:\DOPOSITE\TMP_ATCECHP_XSLDWG_10/3/2019 10:02 AM

The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by CONTECH ENGINEERED SOLUTIONS LLC. Neither all nor any part of this drawing, nor any part thereof, may be used, reproduced or modified in any manner without the prior written consent of CONTECH. Failure to comply is done at the user's own risk and CONTECH expressly disclaims any liability or responsibility for such use.

If discrepancies between the supplied information upon which the drawing is based and actual field conditions are encountered as the work progresses, these discrepancies must be reported to CONTECH immediately for re-evaluation of the design. CONTECH accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.

DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

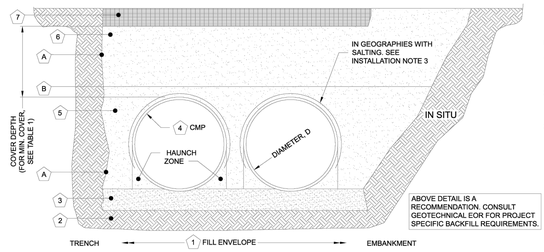
DYO633746 Trinity Hospital - Parking
60" CMP Detention System
Brighton, MI
DETENTION SYSTEM

PROJECT No.: 99171	SEQ. No.: 633746
DATE: 7/8/2026	
DESIGNED: DYO	DRAWN: DYO
CHECKED: DYO	APPROVED: DYO
SHEET NO.:	1

TABLE 1:

DIAMETER, D	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
>48"-96"	12"	3" x 1", 5" x 1"
>96"	D/8	3" x 1", 5" x 1"

- STRUCTURAL BACKFILL MUST EXTEND TO LIMITS OF THE TABLE
- TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.



MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT

INSTALLATION NOTES

1. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES.
2. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.
3. IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED OVER THE UPPER HALF OF THE PIPE. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

TABLE 2: xFiltration

XFILTRATION® JOINT STANDARD BACKFILL SPECIFICATIONS

	MATERIAL LOCATION	MATERIAL SPECIFICATION	DESCRIPTION	
1	FILL ENVELOPE WIDTH	PER ENGINEER OF RECORD	MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE SUGGESTED MINIMUM TRENCH WIDTH, OR EOR RECOMMENDATION: PIPE ≤ 12": D + 16" PIPE > 12": 1.5D + 12"	MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE: PIPE < 24": 3.00 PIPE 24" - 144": D + 4'0" PIPE > 144": D + 10'0"
2	FOUNDATION	**AASHTO 26.5.2** - PER ENGINEER OF RECORD	PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND FOUNDATION BROUGHT BACK TO GRADE WITH A FILL MATERIAL APPROVED BY THE ENGINEER OF RECORD.	
3	BEDDING	**AASHTO M 43: 3, 357, 4, 467, 5, 56, 57**	PIPE SHOULD BE PLACED ON THE FOUNDATION BOTTOM WITH A 4"-6" MINIMUM STONE DEPTH ROUGHLY SHAPPED TO FIT THE BOTTOM OF THE PIPE. IF THE ENGINEER OF RECORD DETERMINES THAT STONE BEDDING IS NOT NEEDED, THE PIPE MAY BE PLACED ON THE TRENCH BOTTOM SEPERATED WITH A NON-WOVEN GEOTEXTILE PLACED AT THE INVERT OF A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, 2" MIN DEPTH.	
4	CORRUGATED METAL PIPE			
5	BACKFILL	FREE-DRAINING, ANGULAR, NATURALLY OCCURRING WASHED-STONE PER **AASHTO M 43: 3, 357, 4, 467, 5, 56, 57** APPROVED EQUAL * OR	HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION WITHOUT SOFT SPOTS. BACKFILL SHALL BE PLACED IN 8" +/- LOOSE LIFTS AND COMPACTED TO 90% STANDARD PROCTOR PER AASHTO T 99. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHOULD BE ADVANCED ALONG THE LENGTH OF THE SYSTEM TO AVOID DIFFERENTIAL LOADING. WHERE CONVENTIONAL COMPACTION TESTING IS NOT PRACTICAL, THE MATERIAL SHALL BE MECHANICALLY COMPACTED UNTIL NO FURTHER YIELDING OF MATERIAL IS OBSERVED UNDER THE COMPACTOR. AREAS WITH HIGH WATER TABLE FLUCTUATIONS THAT INTERACT WITH THE PIPE ZONE, CONSIDER INSTALLING A GEOTEXTILE SEPARATION LAYER TO PREVENT SOIL MIGRATION.	**IN
6	COVER MATERIAL	UP TO MIN. COVER - **AASHTO M 145: A-1, A-2, A-3** ABOVE MIN. COVER - PER ENGINEER OF RECORD	COVER MATERIAL MAY INCLUDE NON-BITUMINOUS, GRANULAR ROADBASE MATERIAL WITHIN MIN COVER LIMITS	
7	RIGID OR FLEXIBLE PAVEMENT (IF APPLICABLE)	PER ENGINEER OF RECORD	FLEXIBLE PAVEMENT SHOULD NOT BE COUNTED AS PART OF THE FILL HEIGHT OVER THE CMP. FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.	
A	SIDE GEOTEXTILE	NONE	GEOTEXTILE LAYER IS RECOMMENDED ON SIDES OF EXCAVATION TO PREVENT SOIL MIGRATION WHEN STONE BEDDING IS USED. IF NO STONE BEDDING IS USED, THEN SIDE GEOTEXTILE IS REQUIRED.	
B	GEOTEXTILE BETWEEN LAYERS	NONE	IF SOIL TYPES DIFFER AT ANY POINT ABOVE PIPE INVERT, A GEOTEXTILE LAYER IS RECOMMENDED TO BE PLACED BETWEEN THE LAYERS TO PREVENT SOIL MIGRATION.	

NOTES:
- FOR MULTIPLE BARREL INSTALLATIONS, THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE THE PIPE DIAMETER /2 BUT NO LESS THAN 12" FOR DIAMETERS <72". FOR 72" AND LARGER DIAMETERS, THE MINIMUM SPACING IS 36". CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.
- * APPROVED REGIONAL EQUIVALENTS FOR SECTION 5 INCLUDE CA-7, MIDOT 6AA, 6A, OR 5G, PROVIDED THEY MEET THE PARTICLE SIZES INDICATED.

MANUFACTURER RECOMMENDED BACKFILL

NOT TO SCALE

C:\DOPOSITE\TMP_ATCECHP_XSLDWG_10/3/2019 10:02 AM

The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by CONTECH ENGINEERED SOLUTIONS LLC. Neither all nor any part of this drawing, nor any part thereof, may be used, reproduced or modified in any manner without the prior written consent of CONTECH. Failure to comply is done at the user's own risk and CONTECH expressly disclaims any liability or responsibility for such use.

If discrepancies between the supplied information upon which the drawing is based and actual field conditions are encountered as the work progresses, these discrepancies must be reported to CONTECH immediately for re-evaluation of the design. CONTECH accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.

DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO633746 Trinity Hospital - Parking
60" CMP Detention System
Brighton, MI
DETENTION SYSTEM

PROJECT No.: 99171	SEQ. No.: 633746
DATE: 7/8/2026	
DESIGNED: DYO	DRAWN: DYO
CHECKED: DYO	APPROVED: DYO
SHEET NO.:	1

\\peainc\proj\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\[C-9.0] SMP--26--0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE OR WARRANTY IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

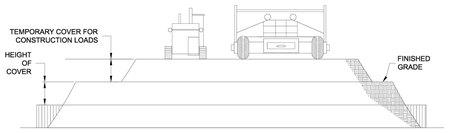
ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
UNDERGROUND STORMWATER DETAILS

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-9.0

NOT FOR CONSTRUCTION



CONSTRUCTION LOADS

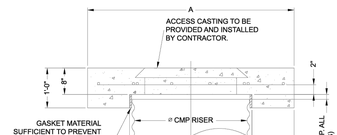
FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM

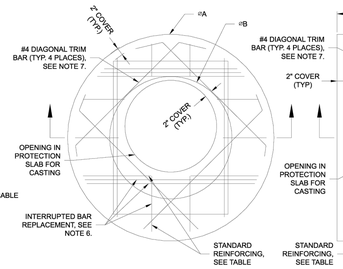
SCALE: N.T.S.



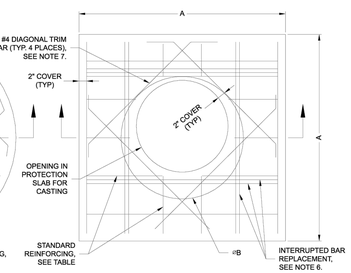
SECTION VIEW

REINFORCING TABLE				
⌀ CMP RISER	A	⌀ B	REINFORCING	**BEARING PRESSURE (PSF)
24"	⌀ 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	⌀ 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	⌀ 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	⌀ 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	⌀ 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

APPLICABLE POLYMER COATED: AASHTO M-245 OR ASTM A-762

ALUMINUM: AASHTO M-196 OR ASTM B-745
APPLICABLE HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSPS (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.
REQUIREMENTS INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

NOTE:
THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL

SCALE: N.T.S.

C:\CORPSTEMP\ACFEDCMP_XXLWG_10182019_10:02 AM
The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by CONTECH ENGINEERED SOLUTIONS LLC. The use and re-use of this drawing, nor any part thereof, may be used, reproduced or modified in any manner without the prior written consent of CONTECH. Failure to comply is done at the user's own risk and CONTECH expressly disclaims any liability or responsibility for such use.
If discrepancies between the supplied information upon which the drawing is based and actual field conditions are encountered as the work progresses, these discrepancies must be reported to CONTECH immediately for evaluation of the design. CONTECH accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.

DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO633746 Trinity Hospital - Parking
60" CMP Detention System
Brighton, MI
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
99171	633746	7/8/2026
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.:		

1

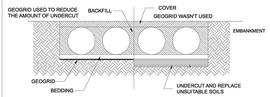
CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

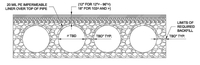
IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.



GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

GEOMEMBRANE BARRIER

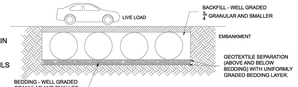
THE RESISTIVITY OF A PROJECT SITE MAY CHANGE OVER TIME DUE TO THE USE OF VARIOUS SALTING, DE-ICING, AND AGRICULTURAL AGENTS APPLIED ON OR NEAR THE AREA. TO MITIGATE THE POTENTIAL IMPACT OF THESE AGENTS, AN HDPE MEMBRANE LINER WILL BE INSTALLED ON THE CROWN OF EACH PIPE, CREATING AN IMPERMEABLE BARRIER. THIS MEASURE IS DESIGNED TO PROTECT THE SYSTEM FROM ENVIRONMENTAL CHANGES THAT COULD LEAD TO PREMATURE CORROSION AND REDUCE THE OVERALL SERVICE LIFE.



IN-SITU TRENCH WALL

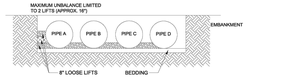
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



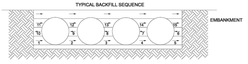
BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

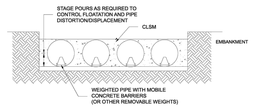


IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.



WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

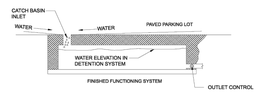


CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/DE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

C:\CORPSTEMP\ACFEDCMP_XXLWG_10182019_10:02 AM
The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by CONTECH ENGINEERED SOLUTIONS LLC. The use and re-use of this drawing, nor any part thereof, may be used, reproduced or modified in any manner without the prior written consent of CONTECH. Failure to comply is done at the user's own risk and CONTECH expressly disclaims any liability or responsibility for such use.
If discrepancies between the supplied information upon which the drawing is based and actual field conditions are encountered as the work progresses, these discrepancies must be reported to CONTECH immediately for evaluation of the design. CONTECH accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.

DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO633746 Trinity Hospital - Parking
60" CMP Detention System
Brighton, MI
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
99171	633746	7/8/2026
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.:		

1

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE APPROXIMATE. NO GUARANTEE IS MADE AS TO THEIR ACCURACY OR COMPLETENESS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

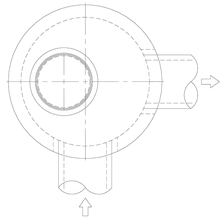
DRAWING TITLE
UNDERGROUND STORMWATER DETAILS

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

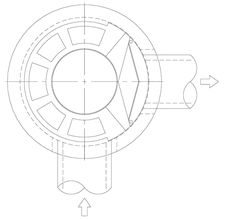
DRAWING NUMBER:
C-9.1

NOT FOR CONSTRUCTION

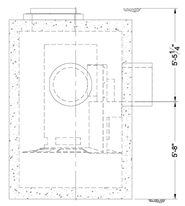
\\pwinfs1\pea\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\[C-9.0] SMP--26--0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray



PLAN VIEW
(INTERNALS NOT SHOWN)
SCALE: 1"=40'



SECTION FOR PIPE ORIENTATION
(TOP SLAB NOT SHOWN)
SCALE: 1"=40'



ELEVATION VIEW

SCALE: 1"=50'

PROJECT SUMMARY

DESIGN PARAMETERS
- TREATMENT METHOD = Cascade Separator
- MODEL = CS-6

MATERIAL LIST		
COUNT	DESCRIPTION	INSTALLED BY
1	CS-6 CYLINDER INSERT, STD	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	30"Ø 4" FRAME & COVER, EJ#41600484, OR EQUIV.	CONTRACTOR

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com
3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

* OUTSIDE TOP AND BOTTOM OF SYSTEM MAY DIFFER DEPENDING ON MANUFACTURING LOCATION.

CONTECH
DYOHDS
DRAWING

The design and information shown on this drawing is the property of CONTECH ENGINEERED SOLUTIONS LLC (CONTECH). The use or reproduction of this drawing in any form without the written permission of CONTECH, is prohibited. Any use of this drawing without the written permission of CONTECH, including but not limited to the reproduction of the drawing, submission of the drawing to any governing authority, or the use of the drawing for the construction of any structure, shall indemnify CONTECH against any claims, damages, losses, or expenses arising out of or resulting therefrom. CONTECH shall not be responsible for any modifications to this drawing made without the written permission of CONTECH.

MARK	DATE	REVISION DESCRIPTION	BY

Cascade Separator CS-6
TRINITY HOSPITAL - PARKING
CASCADE 6
BRIGHTON,MI

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
CASCADE separator™

DATE: 07/08/2026

DESIGNED:	DRAWN:
DYO	DYO
CHECKED:	APPROVED:
DYO	DYO
PROJECT No: 99171	DESIGN No: 633750

SHEET: 1 of 1

C:\EXPORTS\TEMP_FITTER\ROAD\DESIGN\CAD_TEMP\CAT1.DWG 3/5/2019 1:48 PM

\\pwdm-fpes\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(C-9.0) SMP--26--0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT NECESSARILY COMPLETE. NO REPRESENTATION IS MADE 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
WATER QUALITY UNIT DETAILS

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-9.2

NOT FOR CONSTRUCTION

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

1. ALL CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT OSHA, MDOT AND MUNICIPALITY STANDARDS AND REGULATIONS.

2. THE CONTRACTOR SHALL NOTIFY THE TOWNSHIP ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

3. THE CONTRACTOR SHALL CONTACT THE ENGINEER SHOULD THEY ENCOUNTER ANY DESIGN ISSUES DURING CONSTRUCTION. IF THE CONTRACTOR MAKES DESIGN MODIFICATIONS WITHOUT THE WRITTEN DIRECTION OF THE DESIGN ENGINEER, THE CONTRACTOR DOES SO AT HIS OWN RISK.

4. UNLESS OTHERWISE AGREED UPON BETWEEN THE OWNER AND CONTRACTOR, THE CONTRACTOR SHALL PAY ALL MUNICIPAL, COUNTY, AND STATE PERMIT, INSPECTION, AND/OR TESTING FEES. THE CONTRACTOR SHALL ALSO PROVIDE THE NECESSARY BONDS AND INSURANCE REQUIRED TO COMPLETE THE PROJECT

5. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE 811/ONE CALL UTILITY LOCATING CENTER, THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION. IF NO NOTIFICATION IS GIVEN AND DAMAGE RESULTS, SAID DAMAGE WILL BE REPAIRED AT SOLE EXPENSE OF THE CONTRACTOR. IF EXISTING UTILITY LINES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.

6. CONTRACTOR SHALL VERIFY THAT THE PLANS AND SPECIFICATIONS ARE THE VERY LATEST PLANS AND SPECIFICATIONS AND FURTHERMORE, VERIFY THAT THESE PLANS AND SPECIFICATIONS HAVE BEEN APPROVED. ALL ITEMS CONSTRUCTED BY THE CONTRACTOR PRIOR TO RECEIVING FINAL APPROVAL, HAVING TO BE ADJUSTED OR RE-DONE, SHALL BE AT THE CONTRACTORS EXPENSE. SHOULD THE CONTRACTOR ENCOUNTER A CONFLICT BETWEEN THESE PLANS AND/OR SPECIFICATIONS, THEY SHALL SEEK CLARIFICATION IN WRITING FROM THE ENGINEER BEFORE COMMENCEMENT OF CONSTRUCTION. FAILURE TO DO SO SHALL BE AT SOLE EXPENSE TO THE CONTRACTOR.

7. ANY WORK WITHIN THE STREET OR HIGHWAY RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION AND SHALL NOT BEGIN UNTIL ALL NECESSARY PERMITS HAVE BEEN ISSUED FOR THE WORK.

8. ALL PROPERTIES OR FACILITIES IN THE SURROUNDING AREAS, PUBLIC OR PRIVATE, DESTROYED OR OTHERWISE DISTURBED DUE TO CONSTRUCTION, SHALL BE REPLACED AND/OR RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR.

9. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADING, SIGNAGE, LIGHTS AND TRAFFIC CONTROL DEVICES TO PROTECT THE WORK AND SAFELY MAINTAIN TRAFFIC IN ACCORDANCE WITH LOCAL REQUIREMENTS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION). THE DESIGN ENGINEER, AND OWNER SHALL NOT BE HELD LIABLE FOR ANY CLAIMS RESULTING FROM ACCIDENTS OR DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO COMPLY WITH TRAFFIC AND PUBLIC SAFETY REGULATIONS DURING THE CONSTRUCTION PERIOD.

10. THE USE OF CRUSHED CONCRETE IS PROHIBITED ON THE PROJECT WITHIN 100 FEET OF ANY WATER COURSE (STREAM, RIVER, COUNTY DRAIN, ETC.) AND LAKE, REGARDLESS OF THE APPLICATION OR LOCATION OF THE WATER COURSE OR LAKE RELATIVE TO THE PROJECT LIMITS.

11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST THE TOP OF ALL EXISTING AND PROPOSED STRUCTURES (MANHOLES, CATCH BASINS, INLETS, GATE WELLS ETC.) WITHIN GRADED AND /OR PAVED AREAS TO FINAL GRADE SHOWN ON THE PLANS. ALL SUCH ADJUSTMENTS SHALL BE INCIDENTAL TO THE JOB AND WILL NOT BE PAID FOR SEPARATELY.

PAVING NOTES:

1. IN AREAS WHERE NEW PAVEMENTS ARE BEING CONSTRUCTED, THE TOPSOIL AND SOIL CONTAINING ORGANIC MATTER SHALL BE REMOVED PRIOR TO PAVEMENT CONSTRUCTION.

2. REFER TO ARCHITECTURAL PLANS FOR DETAILS OF FROST SLAB AT EXTERIOR BUILDING DOORS.

3. CONSTRUCTION TRAFFIC SHOULD BE MINIMIZED ON THE NEW PAVEMENT. IF CONSTRUCTION TRAFFIC IS ANTICIPATED ON THE PAVEMENT STRUCTURE, THE INITIAL LIFT THICKNESS COULD BE INCREASED AND PLACEMENT OF THE FINAL LIFT COULD BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. THIS ACTION WILL ALLOW REPAIR OF LOCALIZED FAILURE, IF ANY DOES OCCUR, AS WELL AS REDUCE LOAD DAMAGE ON THE PAVEMENT SYSTEM.

4. ALL EXPANSION JOINTS AND CONCRETE PAVEMENT JOINTS TO BE SEALED.

5. CONCRETE PAVEMENT JOINTING - UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE AUTHORITY HAVING JURISDICTION;
   - 5.1. WHERE PROPOSED CONCRETE ABUTS A STRUCTURE, PROVIDE A MINIMUM 1/2" EXPANSION JOINT. THE JOINT FILLER BOARD MUST BE AT LEAST THE FULL DEPTH OF THE CONCRETE AND HELD DOWN A 1/2" TO ALLOW FOR SEALING.
   - 5.2. WHERE PROPOSED CONCRETE ABUTS EXISTING CONCRETE OR IN BETWEEN POURS OF PROPOSED CONCRETE (CONSTRUCTION JOINT), PROVIDE 5/8" DOWELS EVERY 30" CENTER TO CENTER HALF WAY ALONG THE THICKNESS OF THE PROPOSED PAVEMENT. ALTERNATE DOWELS SIZES AND SPACING MUST BE APPROVED THE ENGINEER PRIOR TO COMMENCING WORK AND VIA THE SUBMITTAL PROCESS.
   - 5.3. WHERE PROPOSED CONCRETE ABUTS EXISTING OR PROPOSED SIDEWALK OR CURBING, PROVIDE A MINIMUM 1/2" EXPANSION JOINT.
   - 5.4. CONTROL, LONGITUDINAL AND/OR TRANSVERSE JOINTS SHALL BE PLACED TO PROVIDE PANELS WITHIN THE PAVEMENT AS SQUARE AS POSSIBLE WITH THE FOLLOWING MAXIMUM SPACING PARAMETERS:
     - 5.4.1. 6-INCH THICK CONCRETE PAVEMENT: 12' X 12'
     - 5.4.2. 8-INCH THICK CONCRETE PAVEMENT: 15' X 15'
   - 5.5. IRREGULAR-SHAPED PANELS MAY REQUIRE THE USE OF REINFORCING MESH OR FIBER MESH AS DETERMINED BY THE ENGINEER. THE USE OF MESH MUST BE APPROVED THE ENGINEER PRIOR TO COMMENCING WORK AND VIA THE SUBMITTAL PROCESS.
   - 5.6. IF A JOINT PLAN IS NOT PROVIDED IN THE PLANS, THE CONTRACTOR SHALL SUBMIT ONE TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCING WORK AND VIA THE SUBMITTAL PROCESS.

6. CONCRETE CURBING JOINTING - UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE AUTHORITY HAVING JURISDICTION
   - 6.1. JOINTS WHEN ADJACENT TO ASPHALT PAVEMENT
     - 6.1.1. PLACE CONTRACTION JOINTS AT 10' INTERVALS
     - 6.1.2. PLACE 1/2" EXPANSION JOINT AT CATCH BASINS, EXISTING AND PROPOSED SIDEWALK OR EXISTING CURBING.
     - 6.1.3. PLACE 1" EXPANSION JOINT:
       - 6.1.3.1. AT SPRING POINTS OF INTERSECTIONS OR ONE OF THE END OF RADIUS LOCATIONS IN A CURVE
       - 6.1.3.2. AT 400' MAXIMUM INTERVALS ON STRAIGHT RUNS
       - 6.1.3.3. AT THE END OF RADIUS AT OPPOSITE ENDS IN A CURBED LANDSCAPE ISLAND
   - 6.2. JOINTS WHEN TIED TO CONCRETE PAVEMENT
     - 6.2.1. PLACE CONTRACTION JOINTS OPPOSITE ALL TRANSVERSE CONTRACTION JOINTS IN PAVEMENT
     - 6.2.2. PLACE 1/2" EXPANSION JOINT AT CATCH BASINS, EXISTING AND PROPOSED SIDEWALK OR EXISTING CURBING.
     - 6.2.3. PLACE 1" EXPANSION JOINT OPPOSITE ALL TRANSVERSE EXPANSION JOINTS IN PAVEMENT
     - 6.2.4. CONCRETE CURB AND GUTTER AND CONCRETE PAVEMENT SHALL BE TIED TOGETHER SIMILAR TO A LONGITUDUNAL LANE TIE ON MDOT DETAIL R-30-G, OR LATEST VERSION. TIE BARS SHALL BE EPOXY COATED #5 DEFORMED BAR (1'-6" LONG FOR A 18" WIDE CURB AND GUTTER AND 2'6" OF A 24" CURB AND GUTTER) SIMILAR TO THE MDOT DETAIL R-41-H, OR LATEST VERSION, TYPE B.
   - 6.3. IN BETWEEN POURS OF PROPOSED CONCRETE CURBING (CONSTRUCTION JOINT):
     - 6.3.1. CARRY THE REBAR CONTINUOUSLY BETWEEN POURS
     - 6.3.2. IF THE REBAR IS NOT LONG ENOUGH TO CARRY CONTINUOUSLY, THEN TIE TWO PIECES OF REBAR PER THE LATEST MDOT SPECIFICATIONS

7. CONCRETE SIDEWALK JOINTING - UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE AUTHORITY HAVING JURISDICTION
   - 7.1. PLACE TRANSVERSE CONTRACTION JOINTS EQUAL TO THE WIDTH OF THE WALK WHEN WIDTH IS LESS THAN 8'
   - 7.2. PLACE TRANSVERSE AND LONGITUDINAL CONTRACTION JOINTS EQUAL TO 1/2 THE WIDTH OF THE WALK WHEN WIDTH IS EQUAL TO OR GREATER THAN 8'
   - 7.3. PLACE 1" EXPANSION JOINT WHERE ABUTTING SIDEWALK RAMP AND/OR RADIUS IN INTERSECTION
   - 7.4. PLACE TRANSVERSE 1/2" EXPANSION JOINT AT MAXIMUM OF 100' SPACING
   - 7.5. PLACE 1/2" EXPANSION JOINT WHEN ABUTTING A FIXED STRUCTURE, OTHER PAVEMENT (CONCRETE PAVEMENT AND DRIVE APPROACHES), UTILITY STRUCTURES, LIGHT POLE BASES AND COLUMNS

GENERAL GRADING AND EARTHWORK NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING TREES AND BRUSH AND REMOVE ALL THAT ARE NECESSARY TO GRADE SITE.

2. ALL GRADES ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.

3. THE STAGING OF CONSTRUCTION ACTIVITIES SHALL OCCUR ONLY WITHIN THE SITE BOUNDARIES. ANY CONSTRUCTION ACTIVITIES OUTSIDE OF THE SITE BOUNDARIES SHALL BE AT THE SOLE RESPONSIBILITY AND RISK OF THE CONTRACTOR.

4. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL MEET THE REQUIREMENTS OF THE AUTHORIZED PUBLIC AGENCY OF JURISDICTION. AN EROSION CONTROL PERMIT MUST BE SECURED FROM LIVINGSTON COUNTY PRIOR TO CONSTRUCTION.

5. ALL EARTHWORK AND GRADING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE SOILS INVESTIGATION.

6. REFER TO SOIL EROSION CONTROL PLAN FOR ADDITIONAL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND NOTES.

7. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SODDED IN ACCORDANCE WITH THE LANDSCAPE PLANS. PROVIDE A MINIMUM OF 3" OF TOPSOIL IN THESE AREAS UNLESS OTHERWISE NOTED.

8. THE CONTRACTOR SHALL NOTE EXISTING UNDERGROUND UTILITIES WITHIN AND ADJACENT TO THE SITE. BACKFILL FOR EXISTING UTILITY TRENCHES SHALL BE EXAMINED CRITICALLY. ANY TRENCHES FOUND TO HAVE SOFT, UNSTABLE OR UNSUITABLE BACKFILL MATERIAL, IN THE OPINION OF THE THIRD PARTY TESTING COMPANY, THAT ARE TO BE WITHIN THE ZONE OF INFLUENCE OF PROPOSED BUILDINGS OR PAVEMENT SHALL BE COMPLETELY EXCAVATED AND BACKFILLED WITH SUITABLE MATERIAL.

9. ON-SITE FILL CAN BE USED IF THE SPECIFIED COMPACTION REQUIREMENTS CAN BE ACHIEVED. IF ON-SITE SOIL IS USED, IT SHOULD BE CLEAN AND FREE OF FROZEN SOIL, ORGANICS, OR OTHER DELETERIOUS MATERIALS.

10. THE FINAL SUBGRADE/EXISTING AGGREGATE BASE SHOULD BE THOROUGHLY PROOFROLLED USING A FULLY LOADED TANDEM AXLE TRUCK OR FRONT END LOADER UNDER THE OBSERVATION OF A GEOTECHNICAL/PAVEMENT ENGINEER. LOOSE OR YIELDING AREAS THAT CANNOT BE MECHANICALLY STABILIZED SHOULD BE REINFORCED USING GEOGRIDS OR REMOVED AND REPLACED WITH ENGINEERED FILL OR AS DICTATED BY FIELD CONDITIONS.

11. SUBGRADE UNDERCUTTING, INCLUDING BACKFILLING SHALL BE PERFORMED TO REPLACE MATERIALS SUSCEPTIBLE TO FROST HEAVING AND UNSTABLE SOIL CONDITIONS. ANY EXCAVATIONS THAT MAY BE REQUIRED BELOW THE TOPSOIL IN FILL AREAS OR BELOW SUBGRADE IN CUT AREAS WILL BE CLASSIFIED AS SUBGRADE UNDERCUTTING.

12. SUBGRADE UNDERCUTTING SHALL BE PERFORMED WHERE NECESSARY AND THE EXCAVATED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ANY SUBGRADE UNDERCUTTING SHALL BE BACKFILLED AS RECOMMENDED IN THE GEOTECHNICAL ENGINEERING REPORT FOR THE PROJECT.

13. ANY SUB-GRADE WATERING REQUIRED TO ACHIEVE REQUIRED DENSITY SHALL BE CONSIDERED INCIDENTAL TO THE JOB.

GENERAL UTILITY NOTES:

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF GENOA TOWNSHIP.

1. ALL TRENCHES UNDER OR WITHIN THREE (3) FEET OR THE FORTY-FIVE (45) DEGREE ZONE OF INFLUENCE LINE OF EXISTING AND/OR PROPOSED PAVEMENT, BUILDING PAD OR DRIVE APPROACH SHALL BE BACKFILLED WITH MDOT CLII SAND COMPACTED TO AT LEAST NINETY-FIVE (95) PERCENT OF MAXIMUM UNIT WEIGHT (ASTM D-1557). ALL OTHER TRENCHES TO BE COMPACTED TO 90% OR BETTER.

2. WHERE EXISTING MANHOLES OR SEWER PIPE ARE TO BE TAPPED, DRILL HOLES 4" CENTER TO CENTER, AROUND PERIPHERY OF OPENING TO CREATE A PLANE OF WEAKNESS JOINT BEFORE BREAKING SECTION OUT.

3. THE LOCATIONS AND DIMENSIONS SHOWN ON THE PLANS FOR EXISTING UTILITIES ARE IN ACCORDANCE WITH AVAILABLE INFORMATION WITHOUT UNCOVERING AND MEASURING. THE DESIGN ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR THAT ALL EXISTING UNDERGROUND FACILITIES ARE SHOWN. CONTRACTOR SHALL FIELD VERIFY UTILITIES.

4. THE CONTRACTOR SHALL COORDINATE TO ENSURE ALL REQUIRED PIPES, CONDUITS, CABLES AND SLEEVES ARE PROPERLY PLACED FOR THE INSTALLATION OF GAS, ELECTRIC, PHONE, CABLE, IRRIGATION, ETC. IN SUCH A MANNER THAT WILL FACILITATE THEIR PROPER INSTALLATION PRIOR TO THE PLACEMENT OF THE PROPOSED PAVEMENT AND LANDSCAPING.

5. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE AND TO END OF FLARED END SECTION UNLESS NOTED OTHERWISE.

6. CONTRACTOR SHALL INSPECT ALL EXISTING PUBLIC STORM SEWER, SANITARY SEWER AND WATER MAIN STRUCTURES WITHIN THE LIMITS OF CONSTRUCTION AND WITH THE GOVERNING AGENCY INSPECTOR PRIOR TO ESTABLISHING FINAL GRADE. NOTIFY THE ENGINEER, OWNER/DEVELOPER, AND GOVERNING AGENCY IF STRUCTURE IS DEEMED TO BE STRUCTURALLY UNSOUND AND/OR IN NEED OF REPAIR.
7. COORDINATE MANHOLE

STORM SEWER NOTES:

1. ALL STORM SEWER 12" DIAMETER OR LARGER SHALL BE REINFORCED CONCRETE PIPE (RCP C-76) CLASS IV WITH MODIFIED TONGUE AND GROOVE JOINT WITH RUBBER GASKETS UNLESS SPECIFIED OTHERWISE (ASTM C-443).

2. REFER TO THE UNDERGROUND STORM WATER MANAGEMENT PLANS AND DETAILS.

CONSTRUCTION MATERIAL SUBMITTALS

UNLESS REQUIRED OTHERWISE IN THE PROJECT SPECIFICATIONS, THE CONTRACTOR SHALL ONLY SUBMIT THE FOLLOWING CONSTRUCTION MATERIAL SUBMITTALS, AS APPLICABLE TO THE PLANS, FOR REVIEW BY THE ENGINEER. UNLESS APPROVED IN ADVANCE AND IN WRITING BY THE ENGINEER, ANY MATERIAL SUBMITTALS PROVIDED TO THE ENGINEER FOR REVIEW IN ADDITION TO THIS LIST SHALL BE RETURNED TO THE CONTRACTOR WITHOUT A REVIEW BEING PERFORMED.

1. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

2. UTILITY TRENCH BACKFILL MATERIAL WITH ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER

3. RIP RAP MATERIAL WITH ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER

4. STORM AND SANITARY SEWER PIPING INCLUDING JOINTS

5. STORM AND SANITARY SEWER STRUCTURES

6. STORM SEWER STRUCTURE FRAME AND COVERS INCLUDING CLEAN OUTS

7. STORMWATER MANAGEMENT OUTLET CONTROL STRUCTURES INCLUDING COVERS OR GRATES

8. STORMWATER MANAGEMENT MECHANICAL PRE-TREATMENT UNITS INCLUDING COVERS. CONTRACTOR MUST OBTAIN APPROVAL FROM AUTHORITY HAVING JURISDICTION (AHJ) FOR ANY ALTERNATE SYSTEM PRIOR TO SUBMISSION TO THE ENGINEER.

9.
10. STORMWATER MANAGEMENT UNDERGROUND DETENTION SYSTEM MATERIAL AND SHOP DRAWINGS DEPICTING THE LAYOUT OF THE SYSTEM. CONTRACTOR MUST OBTAIN APPROVAL FROM AUTHORITY HAVING JURISDICTION (AHJ) FOR ANY ALTERNATE SYSTEM PRIOR TO SUBMISSION TO THE ENGINEER.

11. PAVEMENT AGGREGATE BASE MATERIAL WITH ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER

12. PAVEMENT MATERIAL AND BACKFILL WITH ALL BACKFILL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER

13. PAVEMENT MIX DESIGNS SUBMITTED FOR REVIEW BY THE ENGINEER MUST FOLLOW THE CURRENT MDOT REVIEW CHECKLISTS AS SUMMARIZED BELOW AND ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER:
   - 8.1. CONCRETE MIX DESIGN REVIEW CHECKLIST (FORM 2000)
   - 8.2. SUPERPAVE MIX DESIGN CHECKLIST (FORM 1862)
   - 8.3. MARSHALL MIX DESIGN CHECKLIST (FORM 1849)

14. ANY ITEMS SHOWN IN THE PLANS OR DETAIL SHEETS THAT SPECIFICALLY STATE FOR THE CONTRACTOR TO SUBMIT A SHOP DRAWING TO THE ENGINEER FOR REVIEW. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO:

•• TRENCH DRAIN MATERIAL AND SHOP DRAWING DEPICTING THE LAYOUT OF THE SYSTEM

•• ANY SPECIALITY ITEMS SHOWN IN THE PLANS OR DETAIL SHEETS THAT SPECIFICALLY DO NOT STATE FOR THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING TO THE ENGINEER FOR REVIEW BUT THE CONTRACTOR REQUESTS TO BE REVIEWED. THE CONTRACTOR'S REQUEST FOR REVIEW MUST BE IN WRITING AND APPROVED BY THE ENGINEER PRIOR TO SUBMITTING THE INFORMATION.

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-10.0

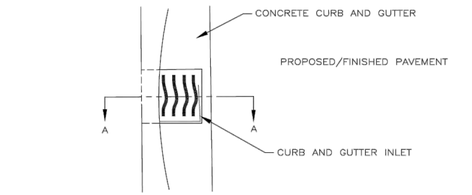
NOT FOR CONSTRUCTION

\\peainc\proj\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\GNCV\3_CONSTRUCTION\(C-10.0) DETAILS-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

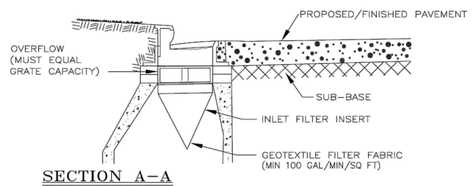
SILT SACK OR APPROVED EQUAL CURB AND GUTTER INLET FILTER

STANDARD CONTROL YEAR ROUND OR WINTER USE

APPROVED FOR USE DURING WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



PLAN VIEW

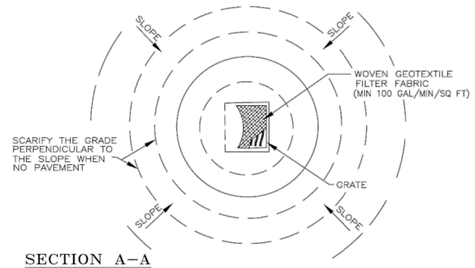


SECTION A–A

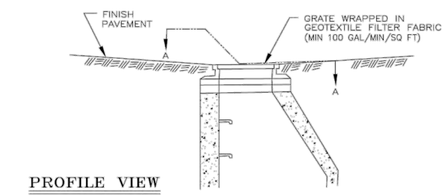
GEOTEXTILE FABRIC LOW POINT/YARD INLET FILTER

STANDARD CONTROL NON-WINTER USE

NOT FOR USE IN WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



SECTION A–A

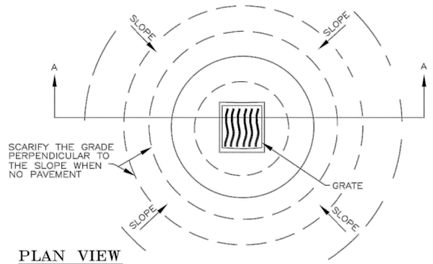


PROFILE VIEW

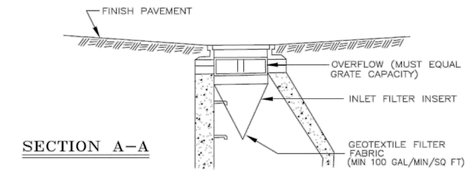
SILT SACK OR APPROVED EQUAL LOW POINT/YARD INLET FILTER

STANDARD CONTROL YEAR ROUND OR WINTER USE

APPROVED FOR USE DURING WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



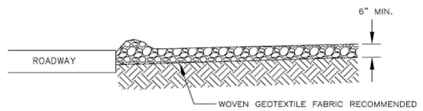
PLAN VIEW



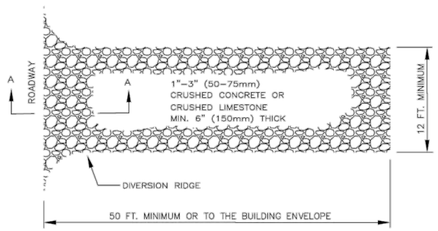
SECTION A–A

TRACKING MAT

STANDARD CONTROL



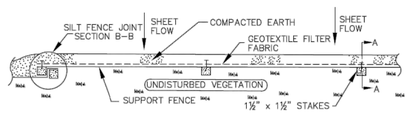
CROSS SECTION A–A



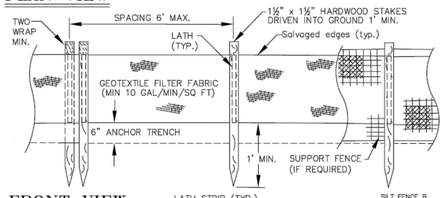
PLAN VIEW

36" SILT FENCE

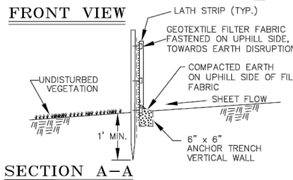
STANDARD CONTROL



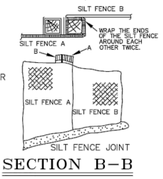
PLAN VIEW



FRONT VIEW



SECTION A–A

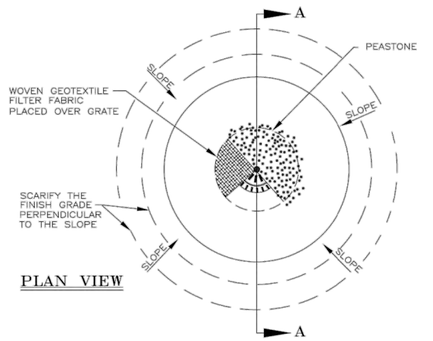


SECTION B–B

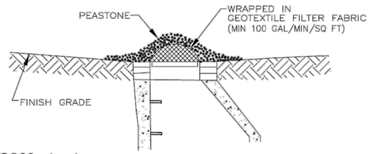
GEOTEXTILE & PEASTONE LOW POINT/YARD INLET FILTER

STANDARD CONTROL NON-WINTER USE

NOT FOR USE IN WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



PLAN VIEW



SECTION A–A

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058905
LICENSED PROFESSIONAL ENGINEER

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT NECESSARILY COMPLETE. NO WARRANTY IS MADE 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

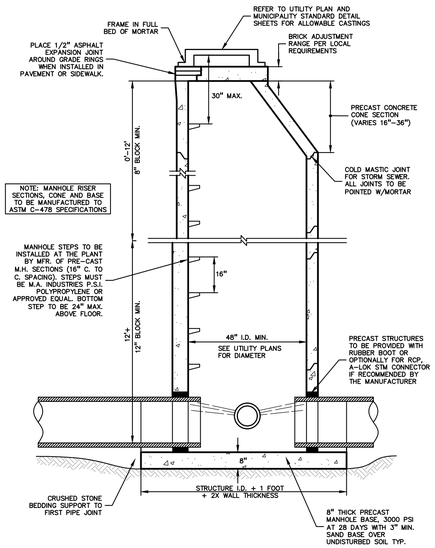
ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS

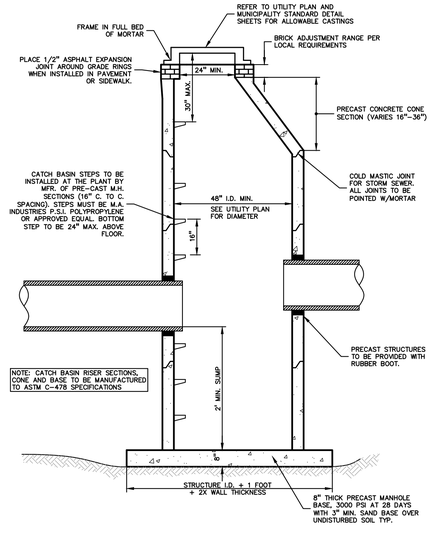
PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-10.1

\\peainc\jobs\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\C-10.0 DETAILS-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Grey



STANDARD STORM MANHOLE DETAIL
NOT TO SCALE



STANDARD CATCH BASIN DETAIL
NOT TO SCALE

30" x 30"
WHITE ON RED REFLECTORIZED
7'-0" MOUNTING HEIGHT
(R1-1)

STOP SIGN DETAIL
NOT TO SCALE

AGGREGATE BASE NOTE:
THIS PAVEMENT SECTION DESIGN ASSUMES THE USE OF MDOT 21AA CRUSHED LIMESTONE BASE MATERIAL THAT MEETS THE REQUIREMENTS OF MDOT STANDARD SPECIFICATION SECTION 902 FOR AGGREGATES. IF CRUSHED CONCRETE AGGREGATE BASE IS PROPOSED IN LIEU OF THE SPECIFIED CRUSHED LIMESTONE MATERIAL, PEA GROUP WILL REQUIRE A MINIMUM 25% INCREASE IN BASE THICKNESS. HOWEVER, IF TESTING DOCUMENTATION IS PROVIDED TO PEA GROUP THAT SHOWS THAT THE CRUSHED CONCRETE MATERIAL MEETS ALL REQUIREMENTS OF MDOT SPECIFICATION SECTION 902, THEN THE 25% INCREASE IN THICKNESS MAY BE REEVALUATED.

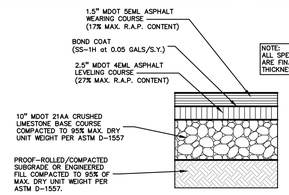
ASPHALT MATERIAL NOTES:
HOT MIX ASPHALT (HMA) MIXTURES UTILIZING RECYCLED ASPHALT PAVEMENT (RAP) SHALL MEET MDOT SPECIAL PROVISION 12SP501(E). REFER TO ADJACENT CHART FOR BINDER.

IF RAP IS USED IN ANY HMA MIX, THE ASPHALT BINDER GRADE MUST BE ADJUSTED IN ACCORDANCE WITH MDOT TIER1 OR TIER2 REQUIREMENTS (RAP BINDER CONTRIBUTION UP TO 27% MAXIMUM). TIER 3 MIXES ARE NOT PERMITTED.

AN APPROVED ASPHALT MIX DESIGN FOR EACH SPECIFIED MIX SHALL BE SUBMITTED TO PEA GROUP FOR REVIEW PRIOR TO CONSTRUCTION.

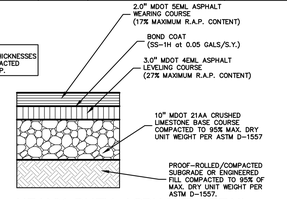
ASPHALT MIX DESIGN CHART

COMMERCIAL ADT 0-300	COMMERCIAL ADT 301-1000	COMMERCIAL ADT 1001-3400	COMMERCIAL ADT ≤3401	APPLICATION RATE (LB/YD²), MINIMUM – MAXIMUM	COURSE APPLICATION
2EL	2EML	2EMH	2EH	435-550	BASE
3EL	3EML	3EMH	3EH	330-410	BASE AND/OR LEVELING
4EL	4EML	4EMH	4EH	220-275	LEVELING AND/OR TOP
5EL	5EML	5EMH	5EH	165-220	TOP
PG 58-28	PG 64-28 (TIER 1) PG 64-22 (TIER 2)	PG 64-28 (TIER 1) PG 64-22 (TIER 2)	PG 70-28P		



STANDARD DUTY ASPHALT DETAIL
(NOT FOR USE IN THE RIGHT-OF-WAY)
NOT TO SCALE

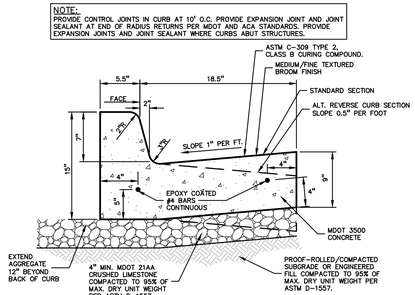
NOTE:
ALL SPECIFIED THICKNESSES ARE FINAL COMPACTED THICKNESSES, TYP.



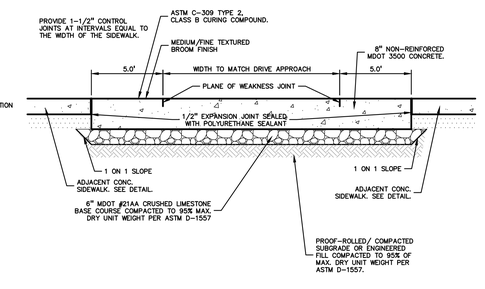
HEAVY DUTY ASPHALT DETAIL
(NOT FOR USE IN THE RIGHT-OF-WAY)
NOT TO SCALE

NOTE:
ALTERNATE REVERSE CURB SECTION TO BE USED ONLY WHEN DRAINING AWAY FROM CURB. SEE PLAN FOR LOCATION.

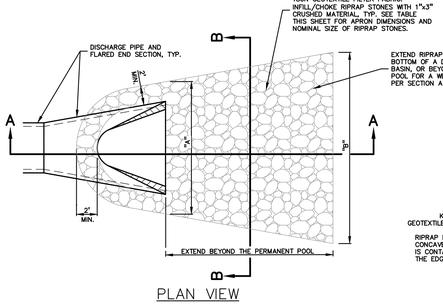
NOTE:
PROVIDE CONTROL JOINTS IN CURB AT 10' O.C. PROVIDE EXPANSION JOINT AND JOINT SEALANT AT END OF RADIUS RETURNS PER MDOT AND ACA STANDARDS. PROVIDE EXPANSION JOINTS AND JOINT SEALANT WHERE CURBS ABUT STRUCTURES.



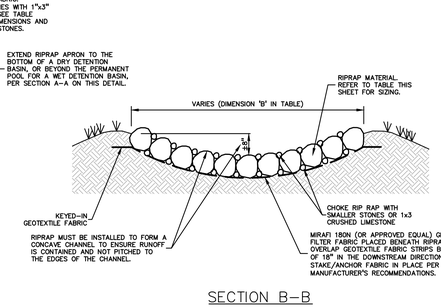
24" CONCRETE CURB AND GUTTER
NOT TO SCALE



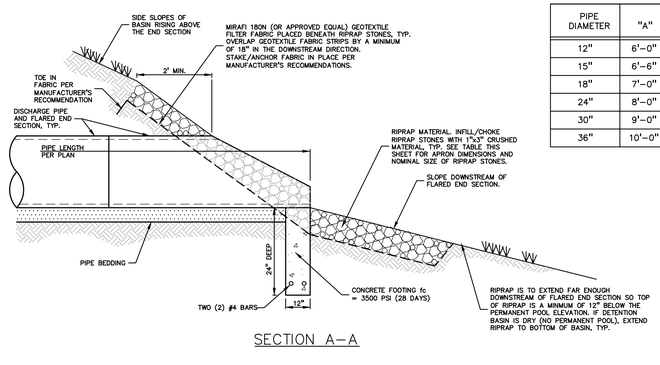
THICKENED SIDEWALK AT DRIVE APPROACH DETAIL
NOT TO SCALE



PLAN VIEW



SECTION B-B



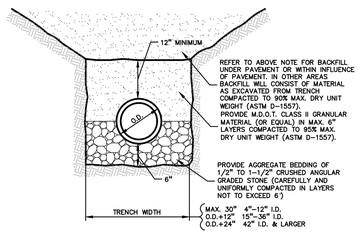
SECTION A-A

PIPE DIAMETER	"A"	"B"	RIPRAP THICKNESS (MIN).	RIPRAP SIZE
12"	6'-0"	8'-0"	8"	4"-8" APPROX.
15"	6'-6"	9'-0"	8"	4"-8" APPROX.
18"	7'-0"	10'-0"	10"	6"-12" APPROX.
24"	8'-0"	11'-6"	12"	8"-15" APPROX.
30"	9'-0"	13'-0"	12"	8"-15" APPROX.
36"	10'-0"	15'-0"	12"	8"-15" APPROX.

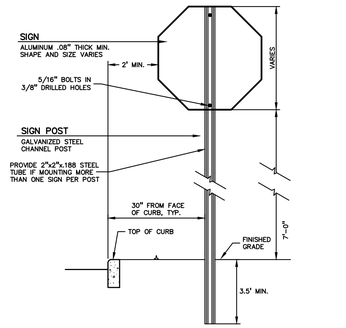
NOTE:
ALL FLARED SECTIONS ARE TO BE REINFORCED CONCRETE (R.C.P.). UNLESS SPECIFICALLY CALLED OUT ON THE PLANS. THE FINAL DOWNSTREAM PIPE SECTION CONNECTING TO THE FLARED END SECTION FROM THE UPSTREAM STORM STRUCTURE SHALL ALSO BE R.C.P. REFER TO UTILITY PLAN.

FLARED END SECTION AND RIPRAP DETAIL FOR DETENTION BASIN OUTLET
NOT TO SCALE

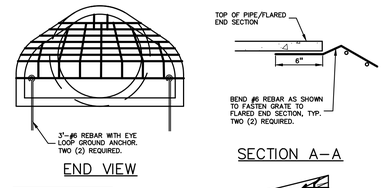
SAND BACKFILL NOTE:
ALL UTILITIES UNDER PAVEMENT OR WITHIN 5' OF THE EDGE OF PAVEMENT (OR WITHIN THE 45° LINE OF INFLUENCE OF PAVEMENT) SHALL HAVE M.D.O.T. CLASS II GRANULAR BACKFILL COMPACTED TO 95% MAX. DRY UNIT WEIGHT (ASTM D-1557)



STANDARD PIPE BEDDING FOR RIGID PIPE
NOT TO SCALE



SIGN AND POST INSTALLATION IN LANDSCAPED AREAS
NOT TO SCALE



BAR GRATE DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

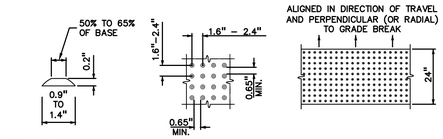
ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-10.2

\\peainc\geo\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWGS_CONSTRUCTION\C-10.0 DETAILS-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray

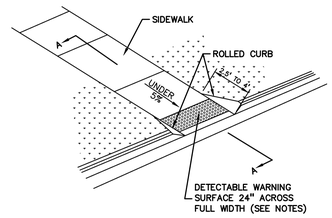


DETECTABLE WARNING DETAILS

NOT TO SCALE

1. SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.
2. SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.
3. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.
4. RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.
5. WHEN 5' MINIMUM WIDTHS ARE NOT PRACTICABLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' X 4'.
6. CURB RAMPS WITH A RUNNING SLOPE LESS THAN 5% DO NOT REQUIRE A TOP LANDING. HOWEVER, ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP MUST INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.
7. DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.
8. FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0% FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.
9. DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN 1/2". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.
10. THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.
11. CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
12. FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE CURB RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FAIRED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.
13. DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

MAXIMUM SIDEWALK SLOPE IS 5%



CURB RAMP TYPE X

(CURB CUT)
NOT TO SCALE

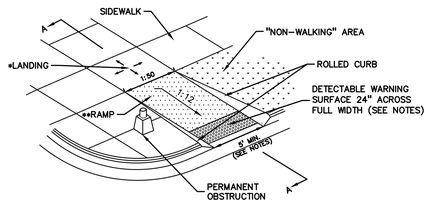
GENERAL ADA ACCESSIBILITY NOTES:

THE FOLLOWING NOTES PROVIDE AN OUTLINE OF SOME OF THE REQUIREMENTS CONTAINED WITHIN THE "STANDARDS FOR ACCESSIBLE DESIGN – AMERICANS WITH DISABILITIES ACT 2010", AND "ACCESSIBLE AND USEABLE BUILDINGS AND FACILITIES", ICC/ANSI A117.1–2009. THE CONTRACTOR IS RESPONSIBLE FOR ALL OF THE REQUIREMENTS PRESENTED WITHIN THESE DOCUMENTS, WHICH ARE AVAILABLE IN FULL UPON REQUEST.

1. AN ACCESSIBLE ROUTE CONSISTS OF WALK SURFACES, CURB RAMPS AND RAMPS. AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED WITHIN THE SITE FROM ACCESSIBLE PARKING SPACES, ACCESSIBLE PASSENGER LOADING ZONES, PUBLIC STREETS AND SIDEWALKS, AND PUBLIC TRANSPORTATION STOPS TO THE BUILDING OR FACILITY ENTRANCE THEY SERVE.
2. THE RUNNING SLOPE OF ALL WALKING SURFACES SHALL NOT EXCEED 5% (1:20) AND THE CROSS–SLOPE SHALL NOT EXCEED 2% (1:48).
3. WALKING SURFACES MUST BE LEVEL WITH PERMITTED VERTICAL CHANGES IN LEVEL NOT TO EXCEED 1/4", OR BEVELED CHANGES IN LEVEL NOT TO EXCEED 1/2". REFER TO DETAIL DET–8 THIS SHEET. ANY CHANGE IN LEVEL GREATER THAN 1/2" MUST BE RAMPED.
4. TURNING SPACES ALONG ACCESSIBLE ROUTES MUST BE AT LEAST 5 FEET WIDE IN ALL DIRECTIONS AND NOT EXCEED 2% SLOPE (1:48) IN ANY DIRECTION.
5. ACCESSIBLE ROUTES WILL BE DESIGNED TO BE A MINIMUM OF 5 FEET WIDE. THE MINIMUM CLEAR WIDTH IS 3 FEET.
6. RAMPS ALONG ACCESSIBLE ROUTES WILL HAVE A RUNNING SLOPE GREATER THAN 5% (1:20) AND LESS THAN 8.3% (1:12).
7. THE CROSS–SLOPE OF RAMP RUNS SHALL NOT EXCEED 2% (1:48)
8. THE MINIMUM CLEAR WIDTH OF ANY RAMP IS 36 INCHES.
9. THE MAXIMUM RISE FOR ANY RAMP (NOT INCLUDING CURB RAMPS) SHALL NOT EXCEED 30 INCHES. LANDINGS ARE REQUIRED AT THE TOP AND BOTTOM OF EACH RAMP. LANDINGS SHALL HAVE A CROSS–SLOPE NOT EXCEEDING 2% (1:48), SHALL BE 5 FEET LONG AND AT LEAST AS WIDE AS THE RAMP CLEAR WIDTH. IF THERE IS A CHANGE OF DIRECTION AT A LANDING, THEN THE LANDING MUST BE AT LEAST 5 FEET WIDE AND 5 FEET LONG.
10. HANDRAILS ARE REQUIRED FOR ANY RAMP (NOT INCLUDING CURB RAMPS) WITH A RISE GREATER THAN 6 INCHES. ALL HANDRAILS ARE REQUIRED TO HAVE EDGE PROTECTION UNLESS ADJOINING ANOTHER ACCESS POINT OR IF THE VERTICAL DROP–OFF AT THE EDGE OF THE RAMP DOES NOT EXCEED 1/2" IN 10 FEET. EDGE PROTECTION CAN BE PROVIDED BY MEANS OF A 4" MIN. CURB OR BARRIER.
11. CURB RAMPS ALONG ACCESSIBLE ROUTES SHALL NOT BE STEEPER THAN 8.3% (1:12). APPROACHING SLOPES TO THE RAMP CANNOT EXCEED 5%, WHICH INCLUDES SIDEWALKS, PAVEMENT, GUTTERS ETC.
12. IF CURB RAMP SIDES ARE FLARED, THE FLARES SHALL NOT BE STEEPER THAN 10% (1:10).
13. LANDINGS ARE REQUIRED AT THE TOP OF ALL CURB RAMPS. THE CLEAR LENGTH OF THE LANDING SHALL BE A MINIMUM OF 36" AND WILL BE AS WIDE AS THE CURB RAMP.
14. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES.
15. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS.
16. WHERE DETECTABLE WARNING IS REQUIRED AT CURB RAMPS, THE DETECTABLE WARNING SHALL BE 24" MINIMUM IN DEPTH AND SHALL EXTEND THE FULL WIDTH OF THE RAMP. THE DETECTABLE WARNING SHALL BE LOCATED SO THE EDGE NEAREST THE CURB IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE.
17. ACCESSIBLE PARKING SPACES ON SITE SHALL BE PROVIDED AS REQUIRED IN SECTION 502 OF THE ADA IF THE SITE HAS MORE THAN ONE PARKING *FACILITY*, EACH *FACILITY* IS REQUIRED TO MEET THESE REQUIREMENTS SEPARATELY. THE REQUIRED NUMBER OF SPACES SHALL BE BASED ON THE TOTAL NUMBER OF PARKING SPACES IN EACH PARKING FACILITY ON SITE.
18. FOR EVERY SIX OR FRACTION OF SIX ACCESSIBLE PARKING SPACES, ONE VAN ACCESSIBLE SPACE SHALL BE PROVIDED.
19. ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE FROM PARKING TO A BUILDING ENTRANCE. IF THERE IS MORE THAN ONE ACCESSIBLE ENTRANCE, PARKING SHALL BE DISPERSED ALONG THE SHORTEST ACCESSIBLE ROUTE TO THE ACCESSIBLE ENTRANCES.
20. ADA ACCESSIBLE CAR PARKING SPACES SHALL BE A MINIMUM OF 8 FEET WIDE WITH AN ACCESS AISLE 5 FEET WIDE MINIMUM. VAN ACCESSIBLE PARKING SPACES SHALL BE AT LEAST 11 FEET WIDE WITH A 5' WIDE ACCESS AISLE. VAN ACCESSIBLE SPACES ARE ALSO ACCEPTABLE WITH AN 8 FOOT WIDTH AND 8 FOOT WIDE ACCESS AISLE. THE ACCESS AISLE IN ALL CASES MUST EXTEND THE FULL LENGTH OF THE PARKING SPACE.
21. SURFACE SLOPES WITHIN THE PARKING SPACES AND AISLES SHALL NOT EXCEED 2% (1:48)
22. ACCESSIBLE AREAS INCLUDING PARKING SPACES, AISLES AND PATHWAYS, REQUIRE A MINIMUM VERTICAL CLEARANCE OF 98 INCHES.
23. ACCESSIBLE PARKING SPACES ARE REQUIRED TO BE IDENTIFIED BY SIGNS. THE SIGNS SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. VAN PARKING SPACES ARE REQUIRED TO BE DESIGNATED AS "VAN ACCESSIBLE". REFER TO DETAILS ON THIS SHEET.
24. ACCESSIBLE STAIRS SHALL HAVE A UNIFORM RISER HEIGHT AND UNIFORM TREAD DEPTH. RISERS SHALL BE 4 INCHES MINIMUM AND 7 INCHES MAXIMUM. TREADS SHALL BE AT LEAST 11 INCHES IN DEPTH. OPEN RISERS ARE NOT PERMITTED.
25. REFER TO DETAILS THIS SHEE
26. REGARDING TREAD SURFACE, NOSING AND HANDRAILS.

*MAXIMUM LANDING SLOPE IS 1:48 (2.08%) IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' X 5'. SEE NOTES.

**MAXIMUM RAMP CROSSING SLOPE IS 1:48 (2.08%). RUNNING SLOPE 5%–7% (8.33% MAXIMUM). SEE NOTES.



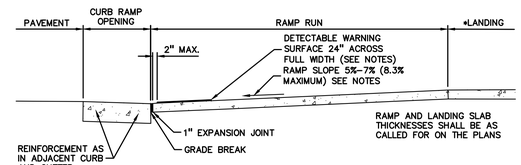
CURB RAMP TYPE R

(ROLLED SIDES)
NOT TO SCALE

RAMP NOTES

CURB TYPE	MAXIMUM RISE (INCHES) A	B
B1	3/4	1
B2	3/4	1
B3	3/4	1
D1	3/4	1
D2	3/4	1
D3	3/4	1
C1	1/2	1/2
C2	1/2	1/2
C3	3/4	1/2
C4	3/4	1/2
C5	1	1/2
C6	1	1/2
F1	1/2	1/2
F2	1/2	1/2
F3	3/4	1/2
F4	3/4	1/2
F5	1	1/2
F6	1	1/2

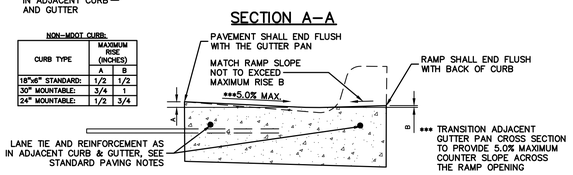
FOR CURB TYPES SEE STANDARD PLAN R–30–SERIES



SECTION A–A

NON–MDOT CURB:

CURB TYPE	MAXIMUM RISE (INCHES) A	B
18"x6" STANDARD:	1/2	1/2
30" MOUNTABLE:	3/4	1
24" MOUNTABLE:	1/2	3/4



SECTION THROUGH CURB RAMP OPENING

(TYPICAL ALL RAMP TYPES)
NOT TO SCALE

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
TRISTAN JAY LARSON
License No. 6201058955
LICENSED PROFESSIONAL ENGINEER

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE APPROXIMATE. NO GUARANTEE IS 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
-

ORIGINAL ISSUE DATE:
July 14, 2026

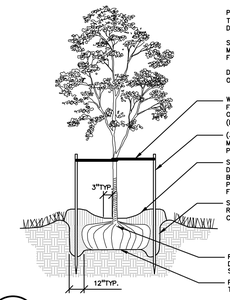
DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS

PEA JOB NO.	26-0604
P.M.	TL
DN.	JMR
DES.	JMR

DRAWING NUMBER:
C-10.3

NOT FOR CONSTRUCTION

\\peainc\jobs\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\C-10.0 DETAILS-26-0604.dwg PLOT DATE: 7/13/2026 12:16 PM BY: Jillian Gray



PLANT SO THAT TOP OF ROOT BALL IS FLUSH TO GRADE OR 1–2" HIGHER IF IN POORLY DRAINED SOILS.

SECURE TREE WRAP WITH BIODEGRADABLE MATERIAL AT TOP & BOTTOM, REMOVE AFTER FIRST WINTER.

DO NOT PRUNE TERMINAL LEADER PRUNE ONLY DEAD BROKEN BRANCHES.

WITH 2"–3" WIDE FABRIC STRAPS, CONNECT FROM TREE TO STATE. REMOVE AFTER (1) ONE YEAR, ALLOW FOR FLEXIBILITY. (DO NOT USE WIRE & HOSE)

(3) THREE 2"x2" HARDWOOD STAKES DRIVEN A MIN. OF 18" DEEP FIRMLY INTO SUBGRADE PRIOR TO BACKFILLING.

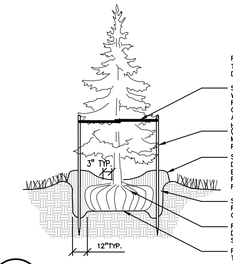
SHREDDED HARDWOOD BARK MULCH TO DRIPLINE. 3" DEEP AND LEAVE 3" CIRCLE OF BARE SOIL AROUND TREE TRUNK. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK. FORM SAUCER AROUND PLANT PIT.

SPECIFIED PLANTING MIX, WATER & TAMP TO REMOVE AIR POCKETS AMEND SOIL PER SITE CONDITIONS & TREE REQUIREMENTS.

REMOVE ALL BURLAP FROM TOP 1/3 OF ROOTBALL. DISCARD ALL NON–BIODEGRADABLE MATERIAL OFF SITE.

PLACE ROOTBALL ON UNEXCAVATED OR TAMPED SOIL.

3 DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



PLANT SO THAT TOP OF ROOT BALL IS FLUSH TO GRADE OR 1–2" HIGHER IF IN POORLY DRAINED SOILS.

STAKE JUST BELOW BRANCHES WITH 2"–3" WIDE NYLON OR PLASTIC STRAPS. CONNECT FROM TREE TO STAKE, OPPOSITE FROM EACH OTHER, AND ALLOW FOR FLEXIBILITY. REMOVE AFTER (1) ONE YEAR. (DO NOT USE WIRE & HOSE)

(3) THREE 2"x2" HARDWOOD STAKES DRIVEN A MIN. OF 18" DEEP FIRMLY INTO SUBGRADE PRIOR TO BACKFILLING.

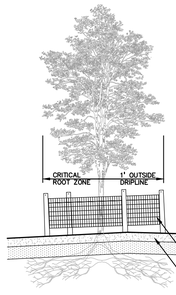
SHREDDED HARDWOOD BARK MULCH TO DRIPLINE. 3" DEEP AND LEAVE 3" CIRCLE OF BARE SOIL AROUND TREE TRUNK. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK. FORM SAUCER WITH 4" CONTINUOUS RIM.

SPECIFIED PLANTING MIX, WATER & TAMP TO REMOVE AIR POCKETS AMEND SOIL PER SITE CONDITIONS & TREE REQUIREMENTS.

REMOVE ALL BURLAP FROM TOP 1/3 OF ROOTBALL. DISCARD ALL NON–BIODEGRADABLE MATERIAL OFF SITE.

PLACE ROOTBALL ON UNEXCAVATED OR TAMPED SOIL.

2 EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



TREE PROTECTION WILL BE ERECTED PRIOR TO START OF CONSTRUCTION ACTIVITIES AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.

NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN;INCLUDING, BUT NOT LIMITED TO PLACING SOLVENTS, BUILDING MATERIAL, CONSTRUCTION EQUIPMENT OR SOIL DEPOSITS WITHIN DRIP LINES.

GRADE CHANGES MAY NOT OCCUR WITHIN THE DRIP LINE OF PROTECTED TREES.

DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE.

ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.

TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.

TREES TO BE PRESERVED SHALL BE IDENTIFIED WITH FLAGGING PRIOR TO THE TREE CLEARING OPERATIONS.

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.

4' HIGH PROTECTIVE FENCING WITH STEEL POSTS – 10' O.C. LOCATE FENCE 1' OUTSIDE DRIPLINE.

EXISTING SOIL

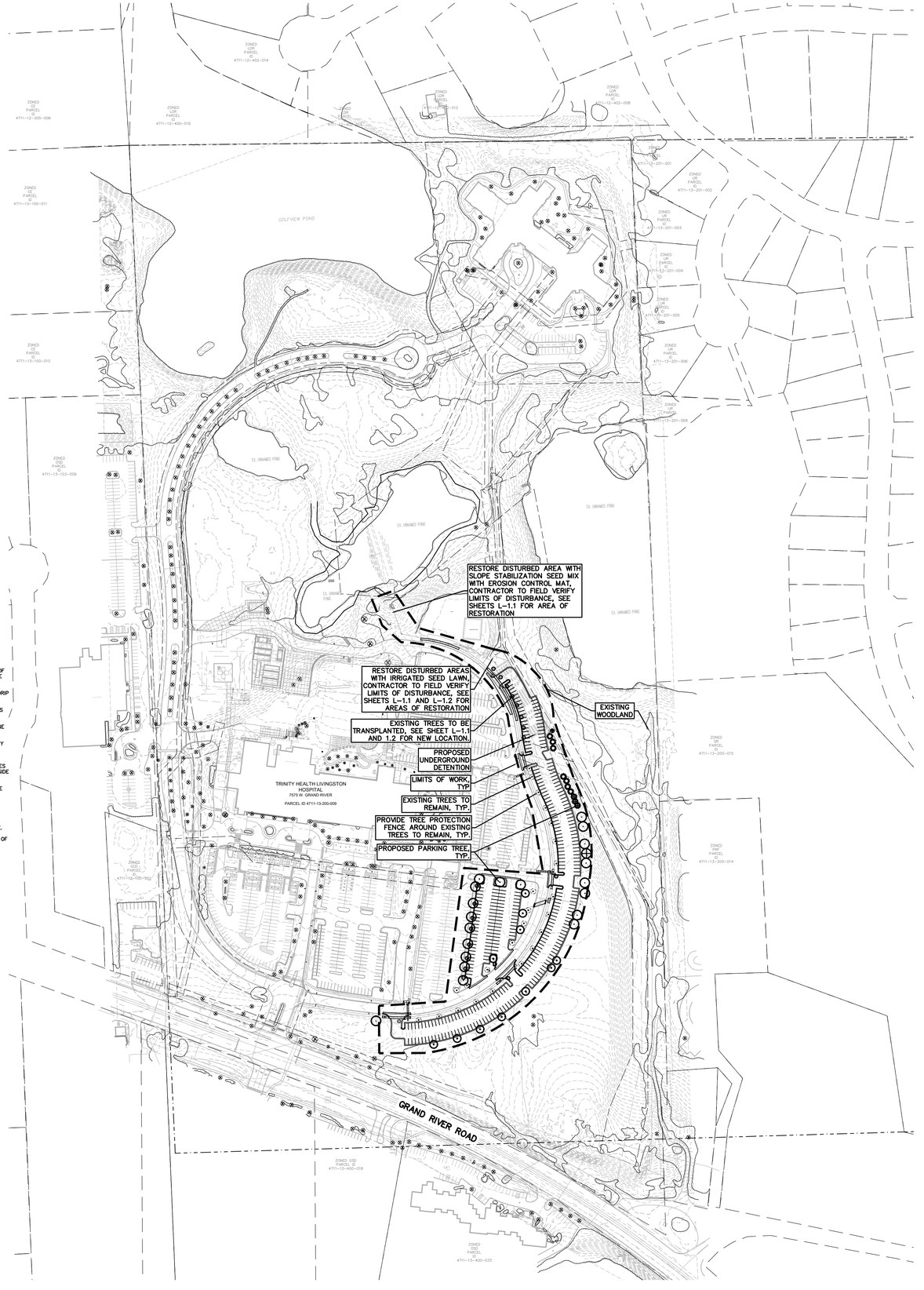
1 TREE PROTECTION DETAIL
NOT TO SCALE

NATIVE SEED MIX, BY STANTEC NATIVE PLANT NURSERY, 574-586-2412, OR EQUAL SPECIES TO BE NATIVE TO COUNTY, NO INVASIVE SPECIES ALLOWED

FOR ALL SEED MIXES, PROVIDE EROSION MAT ON SLOPES AND AREAS OF WASH OUT TYP. INSTALL AND PREP PER MANUFACTURES SPECIFICATIONS.

Slope Stabilization Seed Mix
Stantec Native Plant Nursery 574-586-2412
stantec.com/native-plant-nursery

Botanical Name	Common Name
Permanent Grasses:	
Andropogon gerardii	Big Bluestem
Bouteloua curtipendula	Side-Oats Grama
Carex spp.	Prairie Sedge Mix
Elymus canadensis	Canada Wild Rye
Elymus virginicus	Virginia Wild Rye
Panicum virgatum	Switch Grass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indian Grass
Temporary Cover:	
Avena sativa	Common Oat
Lolium multiflorum	Annual Rye



TRANSPLANTED MATERIAL GUIDELINES

1. ALL TRANSPLANTED TREES SHALL BE FROM ON-SITE. TREES MAY BE REJECTED FOR REASONS OF INSECT INFESTATION, DISEASE OR TREE DAMAGE.
2. THE ROOT BALL OF ANY TRANSPLANTED TREE SHALL MEASURE 1 FOOT FOR EACH INCH OF TRUNK DIAMETER MEASURED 12" ABOVE THE GROUND.
3. IF THERE IS AN OPTION BETWEEN IMMEDIATELY TRANSPLANTING OR TEMPORARILY STOCKPILING TREES, TREES SHOULD BE IMMEDIATELY TRANSPLANTED
4. IF TREES ARE TO BE STORED, THEY SHALL BE BURLAPPED AND HEELED IN WITH MULCH IN A PRE-DETERMINED AREA PROVIDED BY CONTRACTER.
5. THE TREES SHALL BE PROVIDED WITH ACCESSIBLE WATER TO ENSURE THEIR VIABILITY DURING STORAGE.
6. TREES TRANSPLANTED IN CLOSE PROXIMITY TO CONSTRUCTION AREAS ARE TO HAVE TREE PROTECTION FENCING INSTALLED AT THEIR DRIP LINE.

TREE TRANSPLANT NOTES:

CONTRACTOR SHALL PROVIDE A DESIGNATED STAGING AREA FOR HEELING-IN ALL TRANSPLANT MATERIALS AND SHALL MAINTAIN THEM WITH TEMPORARY IRRIGATION UNTIL INSTALLATION.

ANY TREE THAT DOES NOT SURVIVE TRANSPLANT WILL BE REPLACED IN KIND WITH LIKE SIZE AND SPECIES.

20, 3" CAL. TREES TO BE TRANSPLANTED
SEE SHEETS L-1.1 AND 1.2 FOR RELOCATION LOCATION
CLIENT TO APPROVE

KEY:

= PROPOSED DECIDUOUS TREES

= PROPOSED EVERGREEN TREES

= PROPOSED TRANSPLANTED TREES DESTINATION

= PROPOSED TRANSPLANTED TREES ORIGIN

= EXISTING TREES TO REMAIN WITH TREE PROTECTION FENCE

FOR TRANSPLANT TREE SYMBOLS SEE TRANSPLANT SCHEDULE ON SHEETS L-1.1 AND L-1.2

FOR LANDSCAPE SPECIFICATIONS SEE SHEET L-2.1 AND L-2.2

FOR LANDSCAPE PLAN NORTH SEE SHEET L-1.1

FOR LANDSCAPE PLAN SOUTH SEE SHEET L-1.2

LANDSCAPE CALCULATIONS:
PER CITY OF GENOA TOWNSHIP ZONING ORDINANCE

PARKING LOT LANDSCAPE

REQUIRED: 1 CANOPY TREE AND 100 SF OF LANDSCAPED AREA PER 15 SPACES. NO SINGLE SPECIES TO EXCEED 33% OF THE TOTAL

318 SPACES / 15 = 21.2, 22 TREES AND 2,120 SF OF LANDSCAPED AREA. SEE SPECIES DIVERSITY CALCULATION THIS SHEET

PROVIDED: 12 DEC TREES AND 10 EVG TREES

SPCBES DIVERSITY CALCULATION

DECIDUOUS TREES	QTY	UNIT	BOTANICAL NAME	COMMON NAME	DESIGNATION	%	GENUS (%)
AO2.5	2	ea	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	NATIVE	9.1%	9.1%
GB2.5	3	ea	GINKGO BILOBA	MAIDENHAIR TREE	NON-NATIVE	13.6%	13.6%
NS2.5	7	ea	NYSSA SYLVATICA	TUPELO	NATIVE	31.8%	31.8%
SUBTOTAL:	12						

EVERGREEN TREES	QTY	UNIT	BOTANICAL NAME	COMMON NAME	DESIGNATION	%	GENUS (%)
AP8	4	ea	ABIES BALSAMEA PHANEROLEPIS	CANAAN BALSAM FIR	NATIVE	18.2%	18.2%
PA8	3	ea	PICEA ABIES	NORWAY SPRUCE	NON-NATIVE	13.6%	27.3%
PG8	3	ea	PICEA GLAUCA	WHITE SPRUCE	NATIVE	13.6%	
SUBTOTAL:	10						

GENERAL PLANTING NOTES:

1. LANDSCAPE CONTRACTOR SHALL VISIT SITE, INSPECT EXISTING SITE CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, PLAN SHALL GOVERN QUANTITIES. CONTACT LANDSCAPE ARCHITECT WITH ANY CONCERNS.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIS/HER PHASE OF WORK. ELECTRIC, GAS, TELEPHONE, CABLE TELEVISION MAY BE LOCATED BY CALLING MISS DIG 1-800-482-7171. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES ON THE JOB AND SHALL REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER'S REPRESENTATIVE PRIOR TO COMMENCING.
3. ALL PLANT MATERIAL TO BE PREMIUM GRADE NURSERY STOCK AND SHALL SATISFY AMERICAN ASSOCIATION OF NURSERYMEN STANDARD FOR NURSERY STOCK. ALL LANDSCAPE MATERIAL SHALL BE NORTHERN GROWN, NO. 1. GRADE.
4. ALL PLANT MATERIAL SIZES INDICATED IN THE PLANT SCHEDULE ARE THE MINIMUM SIZE AT TIME OF INSTALLATION.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON LANDSCAPE PLAN PRIOR TO PRICING THE WORK.
6. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL NOT MEETING SPECIFICATIONS.
7. ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
8. ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER; TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
9. ALL MULTI STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS. ONE SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS SHALL NOT BE ACCEPTED.
10. ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
11. ALL TREES TO HAVE CLAY OR CLAY LOAM BALLS, TREES WITH SAND BALLS WILL BE REJECTED.
12. NO MACHINERY IS TO BE USED WITHIN THE DRIP LINE OF EXISTING TREES; HAND GRADE ALL LAWN AREAS WITHIN THE DRIP LINE OF EXISTING TREES.
13. ALL TREE LOCATIONS SHALL BE STAKED BY LANDSCAPE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF THE PLANT MATERIAL.
14. IT IS MANDATORY THAT POSITIVE DRAINAGE IS PROVIDED AWAY FROM ALL BUILDINGS.
15. ALL PLANTING BEDS SHALL RECEIVE 3" SHREDDED HARDWOOD BARK MULCH WITH PRE EMERGENT, SEE SPECIFICATIONS. SHREDDED PALETTE AND DYED MULCH WILL NOT BE ACCEPTED.
16. ALL LANDSCAPED AREAS SHALL RECEIVE 3" COMPACTED TOPSOIL.
17. SEE SPECIFICATIONS FOR ADDITIONAL COMMENTS, REQUIREMENTS, PLANTING PROCEDURES AND WARRANTY STANDARDS.
18. FOR NON-LAWN SEED MIX AREAS, AS NOTED ON PLAN, BRUSH MOW ONCE SEASONALLY FOR INVASIVE SPECIES CONTROL.
19. CONTRACTOR SHALL NOT INSTALL PLANTS UNDER BUILDING OVERHANG AND SHALL NOTIFY LANDSCAPE ARCHITECT IF DRAWINGS CONFLICT WITH BUILDING OVERHANGS.
20. TREES SHALL NOT CONFLICT/ BLOCK PROPOSED REGULATORY/ DIRECTION SIGNAGE, MONUMENT SIGNS, ADDRESS OR LIGHT POLES. SHIFT TREES AS NECESSARY TYP.

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
JANET L EVANS
LANDSCAPE ARCHITECT
NO. 3302
REGISTERED LANDSCAPE ARCHITECT

NORTH
0 75 150 300
SCALE: 1" = 150'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT NECESSARILY ACCURATE 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

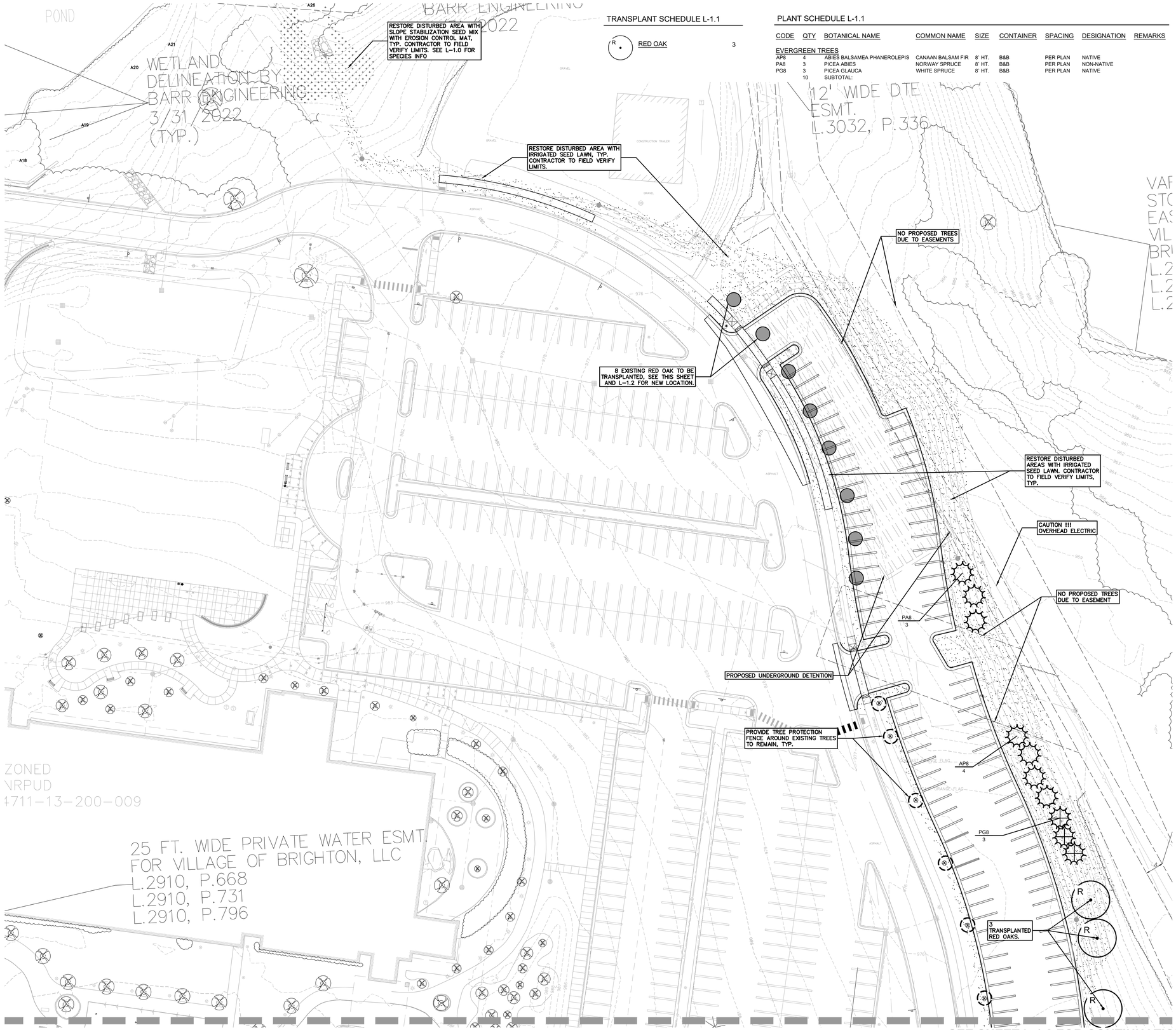
DRAWING TITLE
OVERALL LANDSCAPE PLAN

PEA JOB NO.	26-0604
P.M.	TL
DN.	CAL
DES.	JLE

DRAWING NUMBER:
L-1.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG_CONSTRUCTION\L-1.0 LANDSCAPE_26-0604.dwg PLOT DATE: 7/13/2026 11:52 AM BY: Charlotte L'Esperance



TRANSPLANT SCHEDULE L-1.1

R	RED OAK	3

PLANT SCHEDULE L-1.1

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	DESIGNATION	REMARKS
EVERGREEN TREES								
AP8	4	ABIES BALSAMEA PHANEROLEPIS	CANAAN BALSAM FIR	8' HT.	B&B	PER PLAN	NATIVE	
PA8	3	PICEA ABIES	NORWAY SPRUCE	8' HT.	B&B	PER PLAN	NON-NATIVE	
PG8	3	PICEA GLAUCA	WHITE SPRUCE	8' HT.	B&B	PER PLAN	NATIVE	
	10	SUBTOTAL:						

KEY:

- = PROPOSED DECIDUOUS TREES
- = PROPOSED EVERGREEN TREES
- = PROPOSED TRANSPLANTED TREES DESTINATION
- = PROPOSED TRANSPLANTED TREES ORIGIN
- = RESTORE WITH IRRIGATED SEED LAWN
- = RESTORE WITH SLOPE STABILIZATION SEED MIX WITH EROSION MAT, SEE L-1.0 FOR SPECIES INFO
- = EXISTING TREES TO REMAIN WITH TREE PROTECTION FENCE

FOR TRANSPLANT TREE SYMBOLS SEE TRANSPLANT SCHEDULE THIS SHEET

FOR LANDSCAPE SPECIFICATIONS SEE SHEET L-2.1 AND L-2.2

FOR LANDSCAPE PLAN SOUTH SEE SHEET L-1.2

FOR OVERALL LANDSCAPE , LANDSCAPE CALCULATIONS, LANDSCAPE DETAILS AND TRANSPLANT GUIDELINES SEE SHEET L-1.0

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN — JANET L. EVANS — LANDSCAPE ARCHITECT — NO. 1302 — REGISTERED LANDSCAPE ARCHITECT

NORTH

0 15 30 60

SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE LOCATIONS AND ELEVATIONS ARE NOT GUARANTEED 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
LANDSCAPE PLAN NORTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	CAL
DES.	JLE

DRAWING NUMBER:
L-1.1

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\(L-1.0) LANDSCAPE -26-0604 .dwg PLOT DATE: 7/13/2026 11:36 AM BY: Charlotte L'Esperance

TRANSPLANT SCHEDULE L-1.2

R	RED OAK	14
L	AMERICAN LINDEN	1
E	ELM	2

PLANT SCHEDULE L-1.2

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	DESIGNATION	REMARKS
DECIDUOUS TREES								
AO2.5	2	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2.5" CAL.	B&B	PER PLAN	NATIVE	
GB2.5	3	GINKGO BILOBA	MAIDENHAIR TREE	2.5" CAL.	B&B	PER PLAN	NON-NATIVE	MALE ONLY
NS2.5	7	NYSSA SYLVATICA	TUPELO	2.5" CAL.	B&B	PER PLAN	NATIVE	
	12	SUBTOTAL:						

KEY:

- = PROPOSED DECIDUOUS TREES
- = PROPOSED EVERGREEN TREES
- = PROPOSED TRANSPLANTED TREES (DESTINATION)
- = PROPOSED TRANSPLANTED TREES (ORIGIN)
- = RESTORE WITH IRRIGATED SEED LAWN
- = EXISTING TREES TO REMAIN WITH TREE PROTECTION FENCE

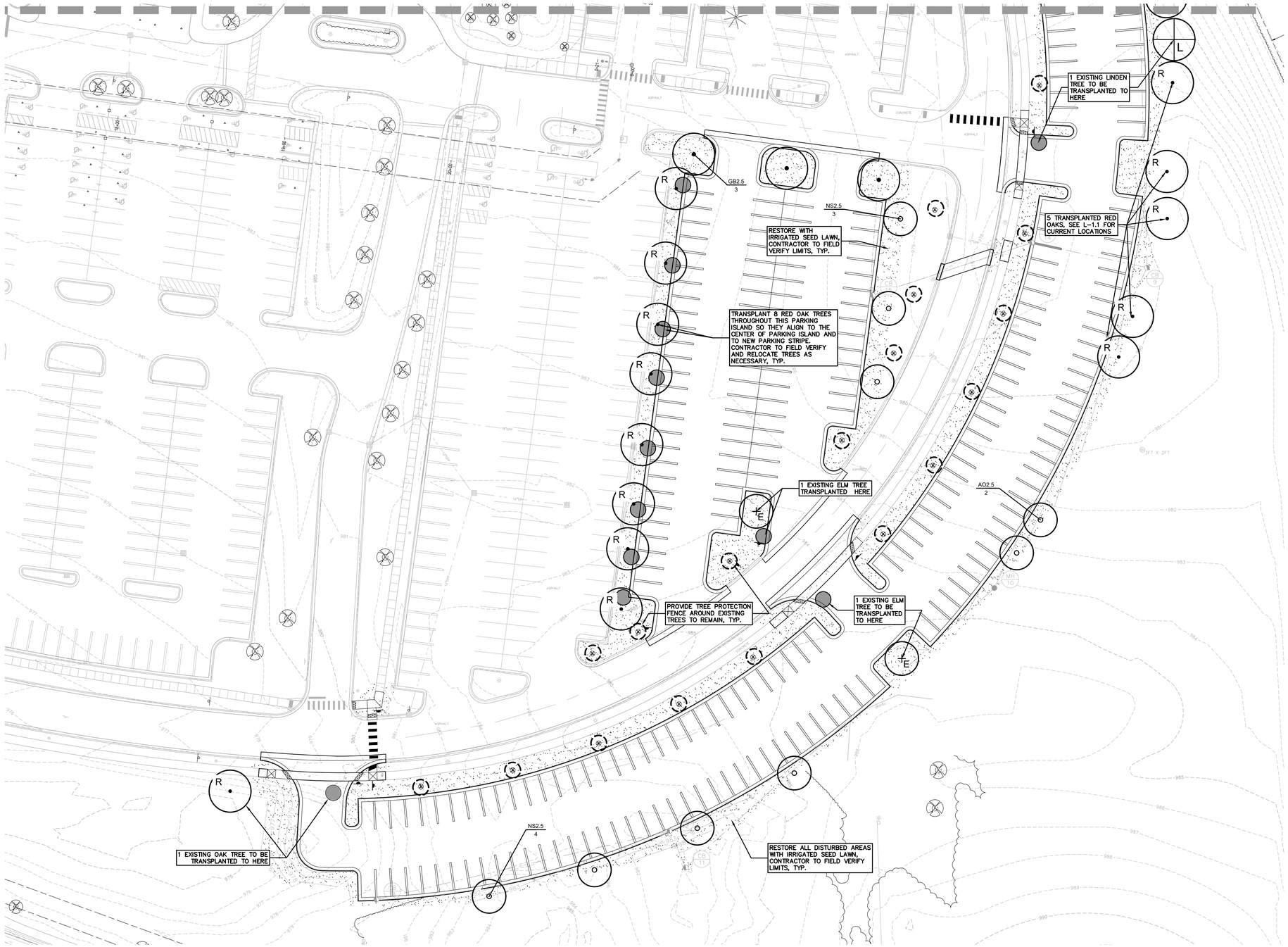
FOR TRANSPLANT TREE SYMBOLS SEE TRANSPLANT SCHEDULE THIS SHEET

FOR LANDSCAPE SPECIFICATIONS SEE SHEET L-2.1 AND L-2.2

FOR LANDSCAPE PLAN NORTH SEE SHEET L-1.1

FOR OVERALL LANDSCAPE , LANDSCAPE CALCULATIONS, LANDSCAPE DETAILS AND TRANSPLANT GUIDELINES SEE SHEET L-1.0

SEE SHEET L-1.1 FOR CONTINUATION



NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 3302
REGISTERED

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE LOCATIONS AND ARE NOT GUARANTEED 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
-

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
LANDSCAPE PLAN SOUTH

PEA JOB NO.	26-0604
P.M.	TL
DN.	CAL
DES.	JLE

DRAWING NUMBER:
L-1.2

S:\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG\3_CONSTRUCTION\L-1.0 LANDSCAPE -26-0604 .dwg PLOT DATE: 7/13/2026 9:59 AM BY: Charlotte L'Esperance

GENERAL LANDSCAPING REQUIREMENTS

1.0 GENERAL

1.1 SUMMARY

1.1.1 Includes But Not Limited To

1. General procedures and requirements for Site Work.

2.0 PRODUCTS - Not Used

3.0 EXECUTION

3.1 PREPARATION

3.1.1 Protection

1. Spillage:

A. Avoid spillage by covering and securing loads when hauling on or adjacent to public streets or highways.

B. Remove spillage and sweep, wash, or otherwise clean project, streets, and highways.

2. Erosion Control:

A. Take precautions necessary to prevent erosion and transportation of soil downstream, to adjacent properties, and into on-site or off-site drainage systems.

B. Develop, install, and maintain an erosion control plan if required by law.

C. Repair and correct damage caused by erosion.

3. Existing Plants And Features:

A. Do not damage tops, trunks, and roots of existing trees and shrubs on site which are intended to remain.

B. Do not use heavy equipment within branch spread. Interfering branches may be removed only with permission of Landscape Architect.

C. Do not damage other plants and features which are to remain.

3.1.2 If specified precautions are not taken or corrections and repairs made promptly, Owner may take such steps as may be deemed necessary and deduct costs of such from monies due to Contractor. Such action or lack of action on Owner's part does not relieve Contractor from responsibility for proper protection of the Work.

END OF SECTION

LANDSCAPING PREPARATION

1.0 GENERAL

1.1 SUMMARY

1.1.1 Includes But Not Limited To

1. General landscape work requirements.

1.2 QUALITY ASSURANCE

1.2.1 Comply with all applicable local, state and federal requirements, regarding materials, methods of work, and disposal of excess and waste materials.

1.2.2 Obtain and pay for all required inspections, permits, and fees.

1.2.3 Provide notices required by governmental authorities.

1.3 PROJECT CONDITIONS

1.3.1 Locate and identify existing underground and overhead services and utilities within contract limit work areas. (Call Miss Dig: 1-800-482-7171 in Michigan).

1.3.2 Provide adequate means to protect utilities and services designated to remain.

1.3.3 Repair utilities damaged during site work operations at Subcontractor's expense.

1.3.4 When uncharted or incorrectly charted underground piping or other utilities and services are encountered during site work operations, notify the applicable utility company immediately to obtain procedure directions. Cooperate with the applicable utility company in maintaining active services in operation.

1.3.5 Locate, protect, and maintain benchmarks, monuments, control points and project engineering reference points. Re-establish disturbed or destroyed items at Subcontractor's expense.

1.3.6 Perform landscape work operations and the removal of debris and materials to assure minimum interference with streets, walks, and other adjacent facilities.

1.3.7 Obtain governing authorities' written permission when required to close or obstruct streets, walks and adjacent facilities. Provide alternate routes around closed or obstructed traffic ways when required by governing authorities.

1.3.8 Protect and maintain street lights, utility poles and services, traffic signal control boxes, curb boxes, valves and other services, except items designated for removal.

1.3.9 The General Contractor will occupy the premises and adjacent facilities during the entire period of construction. Perform landscape work operations to minimize conflicts and to facilitate General Contractor's use of the premises and conduct of his normal operations.

1.3.10 Perform landscape preparation work before commencing landscape construction.

1.3.11 Provide necessary barricades, coverings and protection to prevent damage to existing improvements indicated to remain.

1.3.12 Protect existing trees scheduled to remain against injury or damage including cutting, breaking or skinning of roots, trunks or branches, smothering by stockpiled construction materials, excavated materials or vehicular traffic within branch spread.

2.0 PRODUCTS

2.1 MATERIALS/EQUIPMENT

2.1.1 As selected by the General Contractor, except as indicated.

1. Tree protection:

A. Wood fencing - Snow fencing 4' height.

B. Posts - Steel fence post.

C. Herbicide for lawn restoration - "Round-up" by Monsanto.

3.0 EXECUTION

3.1 EXISTING UTILITIES

3.1.1 Call "MISS DIG" 811 before construction begins. Information on the drawings related to existing utility lines and services is from the best sources presently available. All such information is furnished only for information and is not guaranteed. Excavate test pits as required to determine exact locations of existing utilities.

3.2 CLEARING

3.2.1 Locate and suitably identify trees and improvements indicated to remain.

3.2.2 Fencing/soil erosion fence is to be installed.

3.2.3 Any equipment that compacts the soil in the areas of existing trees is not allowed.

3.2.4 Protect trees scheduled to remain with 4' high snow fence per plans.

3.2.5 No vehicular traffic is permitted beneath drip line at any time. All lawn areas are to be worked by hand.

3.2.6 Clear and grub areas within contract limits as required for site access and execution of the work.

3.2.7 Remove trees, plants, undergrowth, other vegetation and debris, except items indicated to remain.

3.2.8 Treat planting and lawn areas as required with herbicide per manufacturer recommendations to kill existing vegetation prior to planting, seeding and sodding.

3.2.9 Remove stumps and roots to a clear depth of 36" below subgrades. Remove stumps and roots to their full depth within 5'0" of underground structures, utility lines, footings, and paved areas.

3.3 DISPOSAL OF WASTE MATERIALS

3.3.1 Stockpile, haul from site and legally dispose of waste materials and debris. Accumulation is not permitted.

3.3.2 Maintain disposal routes, clear, clean and free of debris.

3.3.3 On site burning of combustible cleared materials is not permitted.

3.3.4 Upon completion of landscape preparation work, clean areas within contract limits, remove tools and equipment. Site to be clear, clean and free of materials and debris and suitable for site work operations.

3.3.5 Materials, items and equipment not scheduled for reinstallation or salvaged for the General Contractor are the property of the Landscape Contractor. Remove cleared materials from the site as the work progresses. Storage and sale of Landscape Contractors salvage items on site is not permitted.

END OF SECTION

FINISH GRADING AND TOPSOIL PLACEMENT

1.0 GENERAL

1.1 SUMMARY

1.1.1 Includes But Not Limited To

1. Perform finish grading and topsoil placement required to prepare site for installation of landscaping as described in Contract Documents.

1.2 SUBMITTALS

1.2.1 Quality Assurance

1. Submit test on imported topsoil and on site stockpiled topsoil by independent licensed testing laboratory prior to use. Imported topsoil shall meet minimum specified requirements and be approved by Landscape Architect prior to use.

2. Provide and pay for testing and inspection during topsoil operations. Laboratory, inspection services, and Soils Engineer shall be acceptable to the Landscape Architect.

3. Submit report stating location of source of imported topsoil and account of recent use.

4. Test for pH factor, mechanical analysis, and percentage of organic content.

5. Submit test reports to General Contractor.

6. Sub-Contractor, or testing agency to make recommendations on type of quantity of additives required to establish satisfactory pH factor and supply of nutrients to bring nutrients to satisfactory level for planting.

1.3 QUALITY ASSURANCE

1.3.1 Participate in pre-installation meeting with Landscape Architect.

1.4 PROJECT CONDITIONS

1.4.1 Also see Landscape Preparation Section.

1.4.2 Protect existing trees, plants, lawns, and other features designated to remain as part of the landscaping work.

1.4.3 Promptly repair damage to adjacent facilities caused by topsoil operations. Cost of repair at Subcontractor's expense.

1.4.4 Promptly notify the General Contractor and Landscape Architect of unexpected subsurface conditions.

2.0 PRODUCTS

2.1 MATERIALS

2.1.1 Topsoil: supplied and stockpiled topsoil proposed for use must meet the testing criteria results specified. Topsoil must conform to adjustments and recommendations from the soil test and by the Landscape Architect.

2.1.2 Existing topsoil: existing topsoil from on-site stockpile shall be utilized. All processing, cleaning, and preparation of this stored topsoil to render it acceptable for use is the responsibility of the Subcontractor.

2.1.3 Provide additional topsoil as required to complete the job. Topsoil must meet testing criteria results specified.

2.1.4 All processing, cleaning, and preparation of this supplied topsoil to render it acceptable for use is the responsibility of the Subcontractor.

2.1.5 Supplied and stockpiled topsoil, shall be fertile, friable, dark in color and representative of local productive soil, capable of sustaining vigorous plant growth and free of clay lumps, subsoil, noxious weeds or other foreign matter such as stones of 1" in any dimension, roots, sticks, and other extraneous material: not frozen or muddy. PH of soil range between 5.0 and 7.5

2.1.6 Soil shall not contain more than 2 percent of particles measuring over 2.0 mm in largest size

2.1.7 Prepared topsoil shall be used in planting mixtures as specified in Trees, Plants, and Ground Cover; all beds prepared as specified.

3.0 EXECUTION

3.1 EXAMINATION

3.1.1 Do not commence work of this Section until grading tolerances specified are met.

3.2 PREPARATION

3.2.2 Prior to grading, dig out weeds from planting areas by their roots and remove from site. Before placing top soil inlandscape areas, remove rocks larger than 1 inch in any dimension and foreign matter such as building rubble, wire, cans, sticks, concrete, etc.

3.2.3 Prior to placing topsoil, remove any imported base material present in planting areas down to natural subgrade or other material acceptable to Landscape Architect.

3.3 PERFORMANCE

3.3.1 Site Tolerances

1. Total Topsoil Depth -

A. Lawn And Groundcover Planting Areas - 3 inches minimum compacted.

B. Shrub Planting Areas - 12 inches minimum throughout entire shrub bed area.

2. Elevation of topsoil relative to walks or curbs -

A. Seeded Lawn Areas - 1/4 inch below

B. Sodded Lawn Areas - 1 1/2 inches below

C. Shrub And Ground Cover Areas - 3 inches below

3.3.2 Do not expose or damage existing shrub or tree roots.

3.3.3 Redistribute approved existing top soil stored on site as a result of rough grading. Remove organic material, rocks and clods greater than 1 inch in any dimension, and other objectionable materials. Provide additional approved imported topsoil required for specified topsoil depth and bring surface to specified elevation relative to walk or curb.

3.3.4 For trees, shrubs, ground cover beds and plant mix for beds see Exterior Plants section.

3.3.5 Provide earth berming where indicated on Plans.

3.3.6 Berming to be free flowing in shape and design, as indicated, and to blend into existing grades gradually so that the toe of slope is not readily visible. Landscape Architect or General Contractor's representative to verify final contouring before planting.

3.3.7 Regardless of finish grading elevations indicated, it is intended that grading be such that proper drainage of surface water away from buildings will occur and that no low areas are created to allow ponding. Subcontractor to consult the General Contractor and Landscape Architect regarding variations in grade elevations before rough grading is completed.

3.3.8 Slope grade away from building for 12 feet minimum from walls at slope of 1/2 inch per ft minimum unless otherwise noted. High point of finish grade at building foundation shall be 6 inches minimum below finish floor level. Direct surface drainage in manner indicated on Drawings by molding surface to facilitate natural run-off of water. Fill low spots and pockets with top soil and grade to drain properly.

3.3.9 Rake all topsoil to remove clods, rocks, weeds, and debris.

3.3.10 Grade and shape area to bring surface to true uniform planes free from irregularities and to provide proper drainage and slopes per plans.

3.4 CLEANING

3.4.1 Upon completion of topsoil operations, clean areas within contract limits, remove tools, equipment, and haul all excess topsoil off-site. Site shall be clear, clean, free of debris, and suitable for site work operations.

END OF SECTION

LAWN SEEDING

1.0 GENERAL

1.1 SUMMARY

1.1.1 Includes But Not Limited To

1. Furnish and install seeded lawn as described in Contract Documents.

1.2 SUBMITTALS

1.2.1 Submit seed vendor's certification for required grass seed mixture, indicating percentage by weight, and percentage of purity, germination, and weed seed for each grass species.

1.3 DELIVERY AND STORAGE

1.3.1 Deliver seed and fertilizer materials in original unopened containers, showing weight, analysis, and name of manufacturer. Store in a manner to prevent wetting and deterioration.

1.4 PROJECT CONDITIONS

1.4.1 See landscape preparation section.

1.4.2 Work notification: Notify Landscape Architect of General Contractor's representative at least seven (7) working days prior to start of seeding operation.

1.4.3 Protect existing utilities, paving, and other facilities from damage caused by seeding operations.

1.4.4 Perform seeding work only after planting and other work affecting ground surface has been completed.

1.4.5 Provide hose and lawn watering equipment as required.

1.4.6 The irrigation system will be installed prior to seeding. Locate, protect, and maintain the irrigation system during seeding operations. Repair irrigation system components damaged during seeding operations at the Sub-Contractor's expense.

1.5 WARRANTY

1.5.1 See Landscape Maintenance and Warranty Section

2.0 PRODUCTS

2.1 MATERIALS

2.1.1 Topsoil for Seeded Areas: See Topsoil Placement and Drawings.

2.1.2 Lawn seeded areas: Fresh, clean and new crop seed mixture. Mixed by approved methods.

2.1.3 Seed mixture composed of the following varieties, mixed to the specified proportions by weight and tested to minimum percentages of purity and germination.

2.1.4 Irrigated Lawn Seed Mixture proportioned by volume as indicated below:

SEED TYPE	PROPORTION	PURITY	GERMINATION
Kentucky Bluegrass	50%	90%	75%
Penn Lawn Fescue	30%	95%	80%
Annual Ryegrass	20%	95%	80%

2.1.5 Non-Irrigated Seed Mixture proportioned by volume as indicated below:

SEED TYPE	PROPORTION	PURITY	GERMINATION
Penn Lawn Fescue	60%	90%	85%
Kentucky 28# Common Bluegrass	20%	90%	90%
Pennfine Perennial Rye	20%	90%	90%

2.1.6 Fertilizer: granular, non burning product composed of not less that 50% organic slow acting, guaranteed analysis professional fertilizer.

2.1.7 Ground Limestone: Used if required by soil test report: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20% mesh sieve.

2.1.8 Straw Mulch: Used in crimping process only. Clean oat or wheat straw well seasoned before bailing, free from mature seed-bearing status, or roots of prohibited or noxious weeds.

2.1.9 Water: Free of substance harmful to seed growth. Hoses or other methods to transpiration furnished by Sub Contractor.

3.0 EXECUTION

3.1 INSPECTION

3.1.1 Landscape Architect or General Contractor's representative must approve finish surfaces, grades, topsoil quality and depth. Do not start seeding work until unsatisfactory conditions are corrected.

3.2 PREPARATION

3.2.1 SURFACE PREPARATION

1. Seven days maximum prior to seeding, -

A. Treat Lawn areas if required with "Round-Up" by Monsanto, per label direction to kill existing vegetation prior to seeding.

B. Loosen topsoil areas to minimum depth of 4", dampen thoroughly, and cultivate to properly break up clods and lumps.

C. Rake area to remove clods, rocks, weeds, roots, debris, and stones over 1" in any dimension.

D. Grade lawn areas to smooth, free draining even surface with a loose, moderately coarse texture. Roll and rake, remove ridges, and fill depressions as required to drain.

E. Apply limestone to supplied topsoil if required by soil test report at rate determined by the soil test, to adjust pH of topsoil to not less than 6.0 no more that 6.8. Distribute evenly by machine and incorporate thoroughly into topsoil.

F. Apply fertilizers to indicated turf areas at a rate equal to 1 lb. of actual nitrogen 1,000 sq. ft. (43 lbs / acre).

G. Apply fertilizers by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with soil to a depth of 1" by approved method. Fertilize areas inaccessible to power equipment with hand tools and incorporate into soil.

H. After lawn areas have been prepared, take no heavy objects over them except lawn rollers.

I. After preparation of lawn areas and with topsoil in semi-dry condition, roll lawn planting areas in two directions at approximately right angles with water ballast roller weighing 100 to 300 lbs according to soil type.

J. Rake or scarify and cut or fill irregularities that develop as required until area is true and uniform, free from lumps, depressions, and irregularities.

K. Restore prepared areas to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to seeding.

3.3 INSTALLATION

3.3.1 SEEDING

1. Seed lawns only between April 1, and June 1, and fall seeding between August 15, and October 15, or at such other times acceptable to Landscape Architect.

2. Seed immediately after preparation of bed. Seed indicated areas within contract Limits and areas adjoining contract limits disturbed as a result of construction operations.

3. Perform seeding operations when the soil is dry and when the winds do not exceed five(5) miles per hour velocity.

4. Apply seed with a rotary or drop type distributor. Install seed evenly by sowing equal quantities in two (2) directions, at right angles to each other.

5. Sow seed at a rate of 300 lbs./acre.

6. After seeding, rake or drag surface of soil lightly to incorporate seed into top 1/8" of soil. Roll with light lawn roller.

7. Provide soil erosion planting mat where grade conditions required to stabilize the planting area.

3.3.2 HYDRO-SEEDING

1. Hydro-seeding: The application of grass seed and a wood cellulose fiber mulch tinted green shall be accomplished in one operation by use of an approved spraying machine.

A. Mix seed, fertilizer, and wood cellulose fiber in required amount of water to produce a homogeneous slurry. Add wood cellulous fiber after seed, water, and fertilizer have been thoroughly mixed and apply at the rate of 200 pounds per acre dry weight.

B. For hydro-seeding, wood cellulose fiber shall be used. Silva-Fiber Mulch by Weyerhaeuer Company, Tacoma, WA (800-443-9179).

C. Hydraulically spray material on ground to form a uniform cover impregnated with grass seed.

D. Immediately following application of slurry mix, make separate application of wood cellulose mulch at the rate of 1,000 pounds, dry weight, per acre.

E. Apply cover so that rainfall or applied water will percolate to underlying soil.

3.3.3 MULCHING

1. Place straw mulch on seeded areas within 24-hours after seeding.

2. Place straw mulch uniformly in a continuous blanket at a rate of 2-1/2 tons per acre, or two (2) 50 lb. bales per 1,000 sq. ft. of area. A mechanical blower may be used for straw mulch application when acceptable to the Landscape Architect.

3. Crimp straw into soil by use of a "crimper". Two passes in alternate direction required. Alternative methods on areas too small for crimper must be approved by the Landscape Architect or Owner's Representative.

3.3.3 ESTABLISH LAWN

1. Establish dense lawn of permanent grasses, free from lumps and depressions. Any area failing to show uniform germination to be reseeded; continue until dense lawn established.

2. Damage to seeded area resulting from erosion to be repaired by Sub Contractor.

3. In event Sub Contractor does not establish dense lawn during first germination period, return to project to refertilize and reseed to establish dense lawn.

4. Should the seeded lawn become largely weeds after germination, Sub Contractor is responsible to kill the weeds and reseed the proposed lawn areas to produce a dense turf, as specified.

3.4 CLEANING

3.4.1 Perform Cleaning during installation of the work and upon completion of the work to the approval of the Landscape Architect. Remove from site all excess materials, debris, and equipment. Repair damage resulting from seeding operations.

3.5 MAINTENANCE

3.5.1 See Landscape Maintenance and Warranty Section.

3.6 ACCEPTANCE

3.6.1 See Landscape Maintenance and Warranty Section.

END OF SECTION

LAWN SODDING

1.0 GENERAL

1.1 SUMMARY

1.1.1 Includes But Not Limited To

1. Furnish and install sodded lawn as described in Contract Documents.

1.2 QUALITY ASSURANCE

1.2.1 Sod: Comply with American Sod Producers Association (ASPA) classes of sod materials.

1.3 SUBMITTALS

1.3.1 Submit sod growers certification of grass species. Identify source location.

1.3.2 Submit manufacturer's certification of fertilizer.

1.4 DELIVERY, STORAGE, AND HANDLING

1.4.1 Cut, deliver, and install sod within 24 hour period.

1.4.2 Do not harvest or transport sod when moisture content may adversely affect sod survival.

1.4.3 Protect sod from sun, wind, and dehydration prior to installation. Do not tear, stretch, or drop sod during handling and installation.

1.4.4 Sod which dries out before installation will be rejected.

1.5 PROJECT CONDITIONS

1.5.1 See Landscape Preparation section.

1.5.2 Work notification: Notify Landscape Architect or General Contractor's representative at least seven (7) working days prior to start of sodding operation.

1.5.3 Protect existing utilities, paving, and other facilities from damage caused by sodding operations.

1.5.4 Perform sodding work only after planting and other work affecting ground surface has been completed.

1.5.5 Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.

1.5.6 Provide hose and lawn watering equipment as required.

1.5.7 The irrigation system will be installed prior to sodding. Locate, protect, and maintain the irrigation system during sodding operations. Repair irrigation system components damaged during sodding operations at the Subcontractor's expense.

1.6 WARRANTY

1.6.1 See Landscape Maintenance and Warranty Section.

2.0 PRODUCTS

2.1 MATERIALS

2.1.1 Sod: An "approved" nursery grown blend of improved Kentucky Bluegrass varieties.

2.1.2 Sod containing Common Bermudagrass, Quackgrass, Johnsongrass, Poison Ivy, Nutsedge, Nimblewill, Canada Thistle, Timothy, Bentgrass, Wild Garlic, Ground Ivy, Perennial Sorrel, or Bramegrass weeds will not be acceptable.

2.1.3 Provide well rooted, healthy sod, free of diseases, nematodes and soil borne insects. Provide sod uniform in color, leaf texture, density, and free of weeds, undesirable grasses, stones, roots, thatch, and extraneous material; viable and capable of growth and development when planted.

2.1.4 Furnish sod, machine stripped in square pads or strips not more than 3'-0" long; uniformly 1" to 1-1/2" thick with clean cut edges. Mow sod before stripping.

2.1.5 Fertilizer: granular, non burning product composed of not less that 50% organic slow acting, guaranteed analysis professional fertilizer.

2.1.6 Type A: starter fertilizer containing 20% nitrogen, 12% phosphoric acid, and 8% potash by by weight or similar approved composition.

2.1.7 Ground Limestone: Used if required by soil test report: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20% mesh sieve.

2.1.8 Stakes: softwood, 3/4" x 8" long.

2.1.9 Water: Free of substance harmful to seed growth. Hoses or other methods to transpiration furnished by Sub Contractor.

2.1.10 Topsoil: see Topsoil Placement section.

3.0 EXECUTION

3.1 INSPECTION

3.1.1 Landscape Architect or General Contractor's representative must approve finish surfaces, grades, topsoil quality and depth. Do not start sodding work until unsatisfactory conditions are corrected.

3.2 PREPARATION

3.2.1 Surface Preparation:

1. Seven days maximum prior to sodding, -

a. Treat Lawn areas if required with herbicide per manufacturer recommendations to kill existing vegetation prior to sodding.

b. Loosen topsoil areas to minimum depth of 4", dampen thoroughly, and cultivate to properly break up clods and lumps.

c. Rake area to remove clods, rocks, weeds, roots, debris, and stones over 1" in any dimension.

d. Grade lawn areas to smooth, free draining even surface with a loose, moderately coarse texture. Roll and rake, remove ridges, and fill depressions as required to drain.

e. Apply limestone to supplied topsoil if required by soil test report at rate determined by the soil test, to adjust pH of topsoil to not less than 6.0 no more that 6.8. Distribute evenly by machine and incorporate thoroughly into topsoil.

f. Apply fertilizers to indicated turf areas at a rate equal to 1 lb. of actual nitrogen 1,000 sq. ft. (43 lbs / acre).

g. Apply fertilizers by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with soil to a depth of 1" by approved method. Fertilize areas inaccessible to power equipment with hand tools and incorporate into soil.

h. After lawn areas have been prepared, take no heavy objects over them except lawn rollers.

i. After preparation of lawn areas and with topsoil in semi-dry condition, roll lawn planting areas in two directions at approximately right angles with water ballast roller weighing 100 to 300 lbs.

j. Rake or scarify and cut or fill irregularities that develop as required until area is true and uniform, free from lumps, depressions, and irregularities.

k. Restore prepared areas to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to sodding.

l. Dampen dry soil prior to sodding.

3.3 INSTALLATION

3.3.1 Sodding:

1. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips. Do not overlay edges. Stagger strips to offset joints in adjacent course. Remove excess sod to avoid othering of adjacent grass. Provide sod pad top flush with adjacent curbs, sidewalks, drains, and seeded areas.

2. Do not lay dormant sod or install sod on saturated, frozen soil.

3. Install initial row of sod in a straight line, beginning at the bottom of slopes, perpendicular to direction of the sloped area. Place subsequent rows parallel to and lightly against previously installed row.

4. Peg sod on slopes greater than 3 to 1 or in centerline of swales to prevent slippage at a rate of 2 stakes per yard of sod.

5. Water sod thoroughly with a fine spray immediately after laying to obtain moisture penetration through sod into top 4 inches of topsoil.

6. Roll with light lawn roller in two directions perpendicular to each other to ensure contact with sub grade.

7. Install sod at indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.

8. Damage to sodded area resulting from erosion to be repaired by Subcontractor.

3.4 CLEANING

3.4.1 Perform Cleaning during installation of the work and upon completion of the work to the approval of the Landscape Architect. Remove from site all excess materials, debris, and equipment. Repair damage resulting from sodding operations.

3.5 MAINTENANCE

3.5.1 See Landscape Maintenance and Warranty Section.

3.6 ACCEPTANCE

3.6.1 See Landscape Maintenance and Warranty Section.

END OF SECTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 390
REGISTERED
LANDSCAPE ARCHITECT

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT NECESSARILY ACCURATE 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

DRAWING TITLE
LANDSCAPE SPECIFICATIONS

PEA JOB NO.	26-0604
P.M.	TL
DN.	CAL
DES.	JLE

DRAWING NUMBER:
L-2.1

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG_CONSTRUCTION\[L-2.0] LANDSCAPE SPECS-26-0604.dwg PLOT DATE: 7/13/2026 10:08 AM BY:Charlotte L'Esperance

EXTERIOR PLANTS

1.0 GENERAL

1.1 SUMMARY

1.1.1 Includes But Not Limited To

1. Furnish and install landscaping plants as described in Contract Documents.

1.2 QUALITY ASSURANCE

1.2.1 Plant names indicated, comply with "Standardized Plant Names" as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature. Names of varieties not listed conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged.

1.2.2 Comply with sizing and grading standards of the latest edition of "American Standard for Nursery Stock". A plant shall be dimensioned as it stands in its natural position.

1.2.3 All plants shall be nursery grown under climatic conditions similar to those in the locality of the project for a minimum of two years.

1.2.4 Stock furnished shall be at least the minimum size indicated. Larger stock is acceptable, at no additional charge. Larger plants shall not be cut back to size indicated.

1.2.5 Provide "specimen" plants with a special height, shape, or character of growth. Landscape Subcontractor is to tag specimen trees or shrubs at the source of supply. The Landscape Subcontractor shall inspect all plant material at source prior to Landscape Architect's approval. Landscape Subcontractor shall accompany Landscape Architect on final selection trip. The Landscape Architect will inspect specimen selections for suitability and adaptability to selected location. When specimen plants cannot be purchased locally, provide sufficient photographs of the proposed specimen plants for approval.

1.2.6 Plants may be inspected and approved at the place of growth for compliance with specification requirements for quality, size, and variety.

1.2.7 Approval of plant selection at the place of growth shall not impair the right of inspection and rejection upon delivery at the site or during progress of the work.

1.2.8 Provide percolation testing by filling plant pits with water and monitoring length of time for water to completely percolate into soil. Submit test results to Landscape Architect prior to starting work.

1.2.9 Before proceeding with work, check and verify dimensions and quantities. Report variations between Drawings and site to Landscape Architect before proceeding with work of this section.

1.2.10 Plant totals are for convenience only and are not guaranteed. Verify amounts shown on Drawings. All plantings indicated on Drawings are required unless indicated otherwise.

1.3 SUBMITTALS

1.3.1 Provide and pay for material testing. Testing agency shall be acceptable to the Landscape Architect. Provide the following data:

1. The loss of weight by ignition and moisture absorption capacity shall be tested for peat moss.

1.3.2 Submit the following material samples to Landscape Architect:

1. Peat moss, shredded hardwood bark mulch, planting accessories, pre-emergent herbicides, and plant fertilizers.

1.3.3 Submit the following materials certification to Landscape Architect:

1. Topsoil source and ph value, peat moss, and plant fertilizer.

1.4 DELIVERY, STORAGE, AND HANDLING

1.4.1 Deliver fertilizer materials in original, unopened and undamaged containers showing weight, analysis, and name of manufacturer. Store in manner to prevent wetting and deterioration.

1.4.2 Take all precautions customary in good trade practice in preparing plants for moving. Workmanship that fails to meet the highest standards will be rejected.

1.4.3 Spray deciduous plants in foliage with an approved "Anti-Desiccant" immediately after digging to prevent dehydration.

1.4.4 Dig, pack, transport, and handle plants with care to ensure protection against injury.

1.4.5 Inspection certificates required by law shall accompany each shipment invoice or order to stock on arrival. The certificate shall be filed with the General Contractor's representative.

1.4.6 Protect all plants from drying out. If plants cannot be planted immediately upon delivery, properly protect them with soil, shredded hardwood bark mulch, or in a manner acceptable to the General Contractor's representative.

1.4.7 Water heeled in plantings daily.

1.4.8 No plant shall be bound with rope or wire in a manner that could damage or break the branches.

1.4.9 Cover plants transported on open vehicles with a protective covering to prevent wind burn.

1.4.10 Frozen or muddy topsoil is not acceptable.

1.5 PROJECT CONDITIONS

1.5.1 See Landscape Preparation Section.

1.5.2 Work notification: notify Landscape Architect at least seven working days prior to installation of plant material.

1.5.3 Protect existing utilities, paving, and other facilities from damage caused by landscaping operations.

1.5.4 A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the proposal form. In the event that quantity discrepancies or material omissions occur in the proposal form, Subcontractor shall notify the Landscape Architect during the proposal bidding process.

1.5.5 An irrigation system will be installed prior to planting. Locate, protect, and maintain the irrigation system during planting operations. Repair irrigation system components, damaged during planting operations, at the Landscape Subcontractor's expense.

1.5.6 The Landscape Subcontractor shall inspect existing soil conditions in all areas of the site where his operations will take place, prior to the beginning of work. It is the responsibility of the Landscape Subcontractor to notify the General Contractor's representative and the Landscape Architect in writing of any conditions which could affect the survivability of plant material to be installed.

1.6 WARRANTY

1.6.1 See Landscape Maintenance and Warranty Standards.

2.0 PRODUCTS

2.1 MATERIALS

2.1.1 Plants: Provide plants typical of their species or variety; with normal, densely developed branches and vigorous, fibrous root systems. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sunscald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation. All plants shall have a fully developed form without voids and open spaces.

1. Dig balled and burlapped plants with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the "American Standard for Nursery Stock". Cracked or mushroomed balls are not acceptable.
2. All trees shall have clay or clay loam balls. Trees with sand balls will be rejected.
3. Provide tree species that mature at heights over 25'-0" with a single, main trunk. Trees that have the main trunk forming a "Y" shape are not acceptable.
4. Plants planted in rows shall be matched in form, (see specimen stock).
5. Plants larger than those specified in the plant list may be used when acceptable to the Landscape Architect.
6. No pruning wounds shall be present with a diameter of more than 1" and such wounds must show vigorous bark on all edges.
7. Evergreen trees shall be unsheared and branched to the ground.
8. Shrubs and small plants shall meet the requirements for spread and height indicated on the drawings.
9. Plant materials shall be subject to approval by the Landscape Architect as to size, health, quality, and character.
10. Bare root trees are not acceptable.
11. Provide plant materials from licensed nursery or grower.

2.1.2 Bare root plants: dug with adequate fibrous roots, to be covered with a uniformly thick coating of mud by being puddled immediately after they are dug or packed in moist straw or peat moss.

2.1.3 Container grown stock: grown in a container for sufficient length of time for the root system to have developed to hold its soil together, firm, and whole.

1. No plants shall be loose in the container.
2. Container stock shall not be root bound.
3. Single stemmed or thin plants will not be accepted.
4. Side branches shall be generous, well twigged, and the plant as a whole well bushed to the ground.
5. Plants shall be in a moist, vigorous condition, free from dead wood, bruises or other root or branch injuries.

2.1.4 Collected stock consists of plants growing under natural conditions in soils and climate as exist at location to be planted, in locations lending themselves to proper collecting practices. Root system (balls) to be at least twenty-five (25%) percent larger than specified for nursery grown material.

2.1.5 Specimen stock: all specimen designated plantings are to be nursery grown, fully developed, excellent quality, and typical example of the species. Plants designated to be planted in rows must be matched, symmetrical, and uniform in height, spread, caliper, and branching density.

1. Matched plantings should be obtained from the same nursery and, preferably, from the same row or line. All specimen material will be approved by the Landscape Architect at nursery.

2.1.6 Topsoil for planting mix: fertile, friable, natural topsoil of loamy character, without admixture of subsoil material, obtained from a well drained arable site, reasonably free from clay, lumps, coarse sands, stones, plants, roots, sticks, and other foreign materials with acidity range of between ph 6.0-6.8 for ericaceous plants.

2.1.7 Peat moss: brown to black in color, weed and seed free granulated raw peat.

1. Provide ASTM D2607 sphagnum peat moss with a ph below 6.0 for ericaceous plants.

2.1.8 Planting mixture Type A - trees: standard planting backfill shall be a mixture of ½ native soil (excavated from plant pits), ¼ topsoil, and ¼ sand. Add fertilizer Type "A" and "B" to planting mixture per manufacturer's requirements. Follow planting details.

2.1.9 Planting mixture Type B for perennial flowers, groundcover beds, and ericaceous plants: planting backfill shall be a mixture of 1/3 screened topsoil, 1/3 sand and 1/3 peat. All existing soil shall be excavated and removed. Adding fertilizer types "A" and "B" to mixture per manufacturer's requirements. Follow planting details.

2.1.10 Planting mixture Type C for annual flower beds: same as Type "B". Submit a sample to the Landscape Architect for approval prior to installation.

2.1.11 Planting mixture Type D for Bioretention Soil Mix, for use with shrubs and perennials in a bioswale,rain garden or bioretention area. Planting backfill shall be a mixture of 50%-60% coarse sand, 25%-35% screened topsoil, and 10-15% Compost by volume. The following criteria for bioretention soil mix shall be provided:

1. Maximum clay content: 15%
2. Clay and silt content: 25%-40%
3. Nutrient content: 15-30 mg/kg
4. Hydraulic Conductivity: 1-4 inches per hour
5. Organic Matter Content: 2%-5%

Adding fertilizer to mixture per manufacturer's requirements and soil testing recommendations. Follow detail for installation. Submit a sample and testing results to the Landscape Architect for approval prior to installation.

2.1.12 Planting mixture Type E for Planter Soil Mix, Metro Mix 900 in 3 cubic foot bags or approved equal.

2.1.13 Plant fertilizer Type A to be "Drimanure" applied per manufacturer recommendations.

2.1.14 Plant fertilizer Type B to be "14-14-14". Apply per manufacturer recommendations.

2.1.15 Bone Meal - 5 lbs. per cubic yard of soil mixes.

2.1.16 Lime to be ground dolomitic limestone, ninety-five percent (95%) passing through #100 mesh screen. Use to adjust soil pH only, under direction of Landscape Architect.

2.1.17 Sand to be clean, coarse, ungraded conforming to ASTM-C-3 for fine aggregates.

2.1.18 Anti-Desiccant: protective film emulsion providing a protective film over plant surfaces; permeable to permit transpiration. Mixed and applied in accordance with Manufacturer's instructions.

2.1.19 Shredded bark mulch shall be double processed, dark shredded hardwood bark that is clean, free of debris and sticks. Materials shall be uniform in size, shape, and texture. Submit samples to Landscape Architect for approval prior to installation. Install mulch to finish grade, level smooth, without ridges, humps, or depressions.

2.1.20 Water: free of substances harmful to plant growth. Hoses or other methods of transportation shall be furnished by Sub Contractor.

2.1.21 Stakes for staking :(3) Three Hardwood, 2" x 2" x 8'-0" long. Driven a min. of 18" deep firmly into subgrade prior to backfilling. Stakes for guying: Hardwood, 2" x 2" x 36" long.

2.1.22 Guying/staking material:With 2"-3" wide fabric straps, connect from tree to stake. Remove after (1) year, allow for flexibility (do not use wire & hose).

2.1.23 Tree wrap: standard waterproofed tree wrapping paper, 2-1/2" wide, made of 2 layers of crepe kraft paper weighing not less than 30 lbs. per ream, cemented together with asphalt. Secure tree wrap with biodegradable material at top and bottom. Remove after first winter.

2.1.21 Twine: two-ply jute material.

2.2 MEASUREMENTS

2.2.1 Measure height and spread of specimen plant materials with branches in their normal positions as indicated on Drawings or Plant List.

2.2.2 The measurements for height shall be taken from the ground level to the average height of the top of the plant and not the longest branch.

2.2.3 Measurement should be average of plant, not greatest diameter. For example, plant measuring 15 inches in widest direction and 9 inches in narrowest direction would be classified as 12 inch stock.

2.2.4 Plants properly trimmed and transplanted should measure same in every direction.

2.2.5 Measure caliper of trees 6 inches above surface of ground.

2.2.6 Where caliper or other dimensions of plant materials are omitted from Plant List, plant materials shall be normal stock for type listed.

2.2.7 Plant materials larger than those specified may be supplied, with prior written approval of Landscape Architect, and:

1. If complying with Contract Document requirements in all other respects.
2. If at no additional cost to Owner.
3. If sizes of roots or balls are increased proportionately.

2.2.8 The height of the trees, specified by height, measured from the crown of the roots to the top of the top branch, shall not be less than the minimum size designated on the drawings.

3.0 EXECUTION

3.1 INSPECTION

3.1.1 Landscape Architect or General Contractor's representative must approve proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected.

3.1.2 Individual plant locations shall be staked on the project site by the Landscape Contractor and approved by the Landscape Architect before any planting pits are dug. The Landscape Architect reserves the right to adjust plant material locations to meet field conditions, without additional cost to the General Contractor / Owner.

3.1.3 Accurately stake plant material according to the Drawings. Stakes shall be above grade, painted a bright color, and labeled with the name of the plant material to be installed at that location.

3.2 TIME OF PLANTING

3.2.1 Evergreen material: Plant Evergreen materials between September 1 and October 15 or in spring before new growth begins. If project requirements require planting at other times, plants shall be sprayed with anti-desiccant prior to planting operations.

3.2.2 Deciduous material: Plant deciduous materials in a dormant condition. If deciduous trees are planted in leaf, they shall be sprayed with anti-desiccant prior to planting operation.

3.2.3 Planting times other than those indicated must be acceptable to the Landscape Architect.

3.3 PREPARATION

3.3.1 General: See Landscape Preparation Section

3.3.2 Vegetation Removal

1. Strip existing grass and weeds, including roots from all bed areas leaving the soil surface one (1") inch below finish grade.
2. Herbicide: as required to prepare area for new planting applied to all ground cover, evergreen and shrubbery beds and all mulch areas before application of preemergence herbicide, per manufacture's recommendations. Clean area of all dead material after five (5) days.
3. Pre-Emergence Herbicide: applied per manufacturer recommendations to same area where "Herbicide" has been applied and to planting bed areas, after area is cleared of dead vegetation.
4. Herbicides to be applied by licensed applicator as required by the State.
5. Excavate circular plant pits with vertical sides, except for plants specifically indicated to be planted in beds. Provide plant pits per planting details. Depth of pit shall accommodate the root system. Scarify the bottom of the pit to a depth of 6".
6. Roughen sides of excavations.
7. Provide premixed planting mixture Type "A" for use around the balls and roots of all deciduous and evergreen tree plantings.

3.3.3 Percolation Testing of Plant Beds

Provide percolation testing by filling plant pits with water and monitoring length of time for water to completely percolate into soil. Submit test results to Landscape Architect prior to starting work.

1. Dig a hole at least 12" in diameter by 12" in depth, with straight sides, In excavated plant beds.
2. Fill hole with water and let it sit overnight.
3. Refill hole the next day.
4. Measure the water level by laying a straight edge across the top of the hole, then use a tape measure or yardstick to determine the water level. Continue to measure the water level every hour until the hole is empty, noting the number of inches the water level drops per hour.

Any test holes with a rate of 1" or less an hour is considered to slow and recommendations to remedy issue shall be provided to Architect and Owner.

3.3.4 Ground Cover Beds, Perennial Flower Beds, and Ericaceous Plant Beds

1. Excavate existing soil to 12" depth over entire bed area and remove soil from site. Scarify bottom of bed to a 4" depth. Set plants according to drawings and backfill entire bed with premixed planting mixture "Type B". Ground Cover shall be planted after bed has been backfilled with plant mix and mulched. Plant ground cover through mulch and into plant mix.

3.3.5 Mass Shrub Beds / Hedge Beds:

1. Excavate existing soil to 18" depth over entire bed area and remove soil from site. Scarify bottom of the bed to a 4" depth. Set plants according to drawings and Specifications. Backfill entire bed with (premixed) specified planting mixture Type "A".

3.3.6 Annual Flower Beds:

1. Excavate existing soil to 8" depth over entire bed area and remove soil from site. Scarify bottom of bed to a 4" depth. Backfill entire bed to an 8" depth with premixed planting mixture "Type B".

3.4 INSTALLATION

3.4.1 Planting shall be performed only by experienced workman familiar with planting procedures under the supervision of a qualified supervisor.

3.4.2 Planting pits shall be round, with vertical sides and flat bottoms, and sized in accordance with outlines and dimensions shown on the planting details.

3.4.3 See drawings for planting details.

3.4.4 If obstructions are encountered that are not indicated, do not proceed with planting operations until alternative plant locations have been selected and approved in writing by the Landscape Architect. Where location or spacing dimensions are not clearly shown, request clarification by the Landscape Architect.

3.4.5 Set plant material in the planting pit to proper grade and alignment.

1. Set plants upright, plumb, and faced to give the best appearance or relationship to each other or adjacent structure.
2. Set plant material so it is flush to finish grade after settling, or 1-2" higher in poorly drained soil, or as directed by Landscape Architect.
3. No filling will be permitted around the trunks or stems.
4. Do not cover top of root ball with soil.
5. Backfill pit with planting mixture. Do not use frozen or muddy mixtures for backfilling.
6. Form a ring of soil around the edge of the planting pit to retain water.

3.4.6 After balled and burlapped plants are set, tamp planting mixture around of balls and fill all voids and remove air pockets.

3.4.7 Remove all burlap, ropes, and wires from top 1/3 of balls.

3.4.8 Space ground cover plants in accordance with indicated dimensions. Adjust spacing as necessary to evenly fill planting bed with indicated quantity of plants. Plant to within 12" of trunks and shrubs and to within 6" of planting bed.

3.4.9 Spread and arrange roots of bare rooted plants in their natural position. Work in planting mixture. Do not mat roots together. Cut all broken and frayed roots before installing planting mixture.

3.4.10 Water immediately after planting.

3.4.11 Apply pre-emergent herbicide to bed areas per manufacturer's recommendations before mulching.

3.5 MULCHING

3.5.1 Mulch trees and shrub planting pits and shrub beds with shredded hardwood bark mulch 3" deep to dripline immediately after planting. Leave 3" circle of bare soil around tree trunk. Thoroughly water mulched areas. After watering, rake mulch to provide a uniform finished surface.

3.5.2 Mulch shall not be placed in contact with trunks or stems.

3.5.3 Mulch ground cover beds with shredded bark mulch 2" to 3" deep prior to planting.

3.5.4 Plant ground cover through mulch.

3.6 WRAPPING, GUYING, AND STAKING

3.6.1 Inspect trees for injury to trunks, evidence of insect infestation and improper pruning before wrapping.

3.6.2 Wrap trunks of all trees spirally from bottom to top with specified tree wrap and secure in place.

3.6.3 Stake deciduous trees under 4" caliper. Stake evergreen trees under 6'-0" tall and over with metal fence post, three (3)per tree.

3.6.4 Stake/guy all trees immediately after installation. When high winds or other conditions which may effect tree survival or appearance occur during the warranty period, the Sub-Contractor shall immediately repair the staking/guying.

3.6.5 Guy deciduous trees 4" caliper and over. Stake evergreen trees 6'-0" tall and over with metal fence post, three (3) per tree.

3.6.6 All work shall be acceptable to the Landscape Architect/Owner's representative.

3.7 PRUNING

3.7.1 Remove or cut back broken, damaged, and unsymmetrical growth of new wood.

3.7.2 Multiple leader plants: preserve the leader which will best promote the symmetry of the plant. Do not prune terminal leader.
Cut branches flush with the trunk of the main branch, at a point beyond a lateral shoot or bud a distance of not less than ½ the diameter of the supporting branch. Make cut on an angle.

3.7.3 Prune evergreens only to remove broken or damaged branches.

3.8 MAINTENANCE

3.8.1 See Landscape Maintenance and Warranty Standards.

3.9 CLEANING

3.9.1 Perform cleaning during installation of the work and upon completion of the work. Remove from all site excess materials, soil, debris, and equipment. Repair damage resulting from planting operations.

END OF SECTION

LANDSCAPE MAINTENANCE AND WARRANTY STANDARDS

1.0 GENERAL

1.1 SUMMARY

1.1.1 Includes But Not Limited To

1. Provide maintenance for new landscaping as described in Contract Documents.
2. The requirements of the Section include a one (1) year warranty period from date of acceptance of installation performed by the General Contractor's Representative and Landscape Architect.

2.0 PRODUCTS - Not Used

3.0 EXECUTION

3.1 PERFORMANCE

3.1.1 Acceptance of Installation

1. At the completion of all landscape installation, or pre-approved portions thereof, the Landscape Subcontractor shall request in writing an inspection for Acceptance of Installation in which the Landscape Subcontractor, Landscape Architect, and General Contractor's Representative shall be present.
   a. Following the acceptance inspection a punch list will be issued by the Landscape Architect.
   b. Upon completion of all punch list items, the Landscape Architect and/or General Contractor's Representative shall reinspect the project and issue a written statement of Acceptance of Installation and establish the beginning of the Project Warranty Period.
   c. At the time of acceptance all plant material shall be of vigorous health and planting bed and mulch rings are weed free.
   d. It is the responsibility of the Landscape Subcontractor to make the written request for inspection of installation in a timely fashion.
   e. If there is plant material loss prior to the Landscape Subcontractor's written request for inspection of installation, the Landscape Contractor shall make all replacements of this dead material at no additional cost These replacements are not considered to be the required one (1) replacement of dead plant material by the Landscape Subcontractor during the one (1) year project warranty period, as outlined below.
2. Landscape work may be inspected for acceptance in parts agreeable to the General Contractor's Representative and Landscape Architect provided work offered for Inspection is complete, including maintenance as required.
3. For work to be inspected for partial acceptance, the Landscape Subcontractor shall provide a drawing outlining work completed and supply a written statement requesting acceptance of this work completed to date.

3.1.2 Project Warranty

1. The Project Warranty Period begins upon written preliminary acceptance of the project installation by the Landscape Architect and General Contractor's representative.
2. The Landscape Subcontractor shall guarantee trees, shrubs, ground cover beds and seeded or sodded areas through construction and for a period of one (1) year after date of Acceptance of Installation against defects including death and unsatisfactory growth, except for defects resulting from neglect, abuse or damage by others or unusual phenomena or incidents which are beyond Landscape Subcontractor's control.

3.1.3 Maintenance During One (1) Year Project Warranty

1. To insure guarantee standards, the following maintenance procedures for trees, shrubs, and ground covers shall be executed during construction and for the full Project Warranty Periods.
   a. Landscape Subcontractor shall be responsible for only one (1) replacement of any plant materials during the one (1) year Project Warranty Period. These include those which are dead or in the opinion of the Landscape Architect are in an unhealthy or unsightly condition, or having lost natural shape, resulting from dieback, excessive pruning, or inadequate or improper maintenance as part of the guarantee.
   b. Prior to any replacements, Landscape Subcontractor shall review individual plants in question with Landscape Architect to determine reason for plant demise.
   c. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.
   d. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
   e. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
   f. The contractor will be responsible for irrigation system operation, watering schedules, watering amounts and general monitoring of irrigation system throughout construction, maintenance, and warranty period. Over watering or lack of water from the irrigation system is the responsibility of the landscape contractor and any required replacements at the cost of the contractor and not part of the warranty replacement.
2. Replacements must meet the standards specified on the Landscape plans and in the specifications, i.e. quality, species of plant material and planting procedures to receive approval of replacement materials by Landscape Architect.
3. Costs for replacements are assumed part of bid quotations and therefore will not result in an additional cost to General Contractor or Landscape Architect.
4. Areas damaged as a result of replacement operation are to be restored by Landscape Subcontractor at no cost to the General Contractor or Landscape Architect.
5. The Landscape Subcontractor shall be responsible for watering all plantings through the warranty period and shall keep guy wires taut, raise tree balls which settle, furnish and apply sprays as necessary to keep the plantings free of disease and insects until the end of the warranty period.
6. The Landscape Subcontractor shall remove and replace trees, shrubs or other plants found to be dead or in unhealthy condition.
   a. Rejected plants and materials shall be removed promptly.
   b. Replacements shall be made during the following normal planting schedule.
   c. Trees and shrubs which are in doubt shall be replaced, unless, in the opinion of the Landscape Architect, it is advisable to extend Project Warranty Period for full growing Season.
7. The Landscape Contractor shall apply anti-desiccants on evergreen trees and evergreen shrub beds within 150' of major streets and drives, no later than December 1, during the one (1) year project warranty.
8. The first spring after plant installation the contractor shall check all trees to insure twine has rotted from around the trunk. If twine is still present, it shall be removed and disposed of off-site.
9. All stakes, guy wires, tree wrap paper, dead twigs and branches shall be removed from tree and plant materials at the end of this warranty period.

3.1.4 Maintenance of Seeded Lawn Areas

1. The Landscape Subcontractor shall maintain seeded lawn areas.
   a. Water, fertilize, weed, and apply chemicals until a dense lawn of permanent grasses, free from lumps and depressions or any bare spots, none of which is larger than one (1) foot of area up to a maximum of 3% of the total seeded lawn area is established.
   b. Seeded lawn that fails to show a uniform growth and/or germination shall be reseeded until a dense cover is established, regardless of what season the seed was installed.
2. The Landscape Subcontractor shall maintain and mow all lawn areas for until acceptance of installation (typically 3 mows) . When lawn reaches 3" in height it shall be cut to 2" in height.
3. The Owner assumes cutting responsibilities following the Acceptance of Installation of the seeded lawn.
4. At conclusion of Project Warranty Period and after receiving Written Final Acceptance by General Contractor's representative and Landscape Architect, the Owner shall assume all seeded lawn maintenance responsibilities.

3.1.5 Maintenance of Sodded Lawn Areas

1. The Landscape Subcontractor shall maintain sodded lawn areas.
   a. Water, fertilize, spot weed, apply herbicides, fungicides, insecticides and resod until a full uniform, smooth stand of sod is knitted to topsoil, and accepted by the Landscape Architect or his or her representative.
2. Water sod thoroughly, as required to establish proper rooting.
3. Repair, rework, and resod all areas that have washed out or are eroded. Replace undesirable or dead areas with new sod.
4. Mow lawn areas once as soon as sod has rooted sufficiently and knitted to the topsoil. Cut back to 2" height. Not more than 40% of grass leaf shall be removed at any single mowing. Excess clipping to be removed by the Landscape Subcontractor. The Landscape Subcontractor shall be responsible for lawn mowing until acceptance of installation (typically 3-mows).
5. The Owner assumes mowing responsibilities following the Acceptance of Installation of the sodded lawn.
6. At conclusion of Project Warranty Period and after receiving Written Final Acceptance by General Contractor's representative and Landscape Architect, the Owner shall assume all sodded lawn maintenance responsibilities.

3.1.6 Maintenance of Seeded Meadow/Prairie Lawn Areas

1. The Landscape Subcontractor shall maintain seeded meadow/prairie lawn.
   a. Water, fertilize, weed, and apply chemicals until a dense lawn of permanent grasses, free from lumps and depressions or any bare spots, none of which is larger than one (1) foot of area up to a maximum of 3% of the total seeded lawn area is established.
   b. Seeded lawn that fails to show a uniform growth and/or germination shall be reseeded until a dense cover is established, regardless of what season the seed was installed.
   c. Damage to seeded area resulting from erosion are to be repaired by the Contractor.
   d. In event Sub Contractor does not establish dense meadow lawn during first germination period, contractor is to return to project to re-fertilize and reseed to establish dense meadow lawn the next growing season.
   e. Should the seeded meadow lawn become largely weeds after germination, Sub Contractor is responsible to kill the weeds with a spot herbicide application and reseed the proposed meadow lawn areas to produce a dense meadow, as specified.
2. The Landscape Subcontractor shall maintain and mow all meadow/prairie areas for 1 year acceptance of installation.
3. During the first growing season, mow meadow/prairie lawn once they reach 10-12" in height and cut it to to 4-6" in height. Stop mowing at the end of the growing season, late September.
4. The Owner assumes cutting responsibilities following the 1 year maintenance and warranty period. During the second growing season, the owner shall maintain meadow/prairie lawn vegetation at a height of 8". Mow when vegetation reaches 12-18" height. Stop mowing at the end of the growing season, late September. During the third and following seasons, mow meadow lawn only once in the early spring, late February through early April, to a height of 8".
5. At conclusion of Project Warranty Period and after receiving Written Final Acceptance by General Contractor's representative and Landscape Architect, the Owner shall assume all seeded lawn maintenance responsibilities.

3.1.7 Final Acceptance Upon Conclusion of the Warranty Period

1. At the conclusion of the Project Warranty Period the Landscape Subcontractor shall request a project inspection for final acceptance in which the Landscape Contractor, Landscape Architect and Owner's Representative shall be present.
2. After the inspection for final acceptance, a punch list will be issued by the Landscape Architect. Upon completion of all punch list items, the Landscape Architect and the Owner's Representative shall inspect the project and issue a Written Statement of Final Acceptance.

END OF SECTION

NOTE: The Owners may at their option elect to utilize a Construction Manager in lieu of a General Contractor for all matters pertaining to these specifications and the site work.

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN — JANET L. EVANS — LANDSCAPE ARCHITECT — NO. 1302 — REGISTERED — 7/13/26

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT WARRANTED 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.

CLIENT
TRINITY HEALTH OF MICHIGAN
7575 GRAND RIVER AVE
BRIGHTON, MI 48114

PROJECT TITLE
TRINITY HOSPITAL - PARKING
7575 GRAND RIVER AVE
GENOA TWP, LIVINGSTON COUNTY, MICHIGAN

REVISIONS
- -

ORIGINAL ISSUE DATE:
July 14, 2026

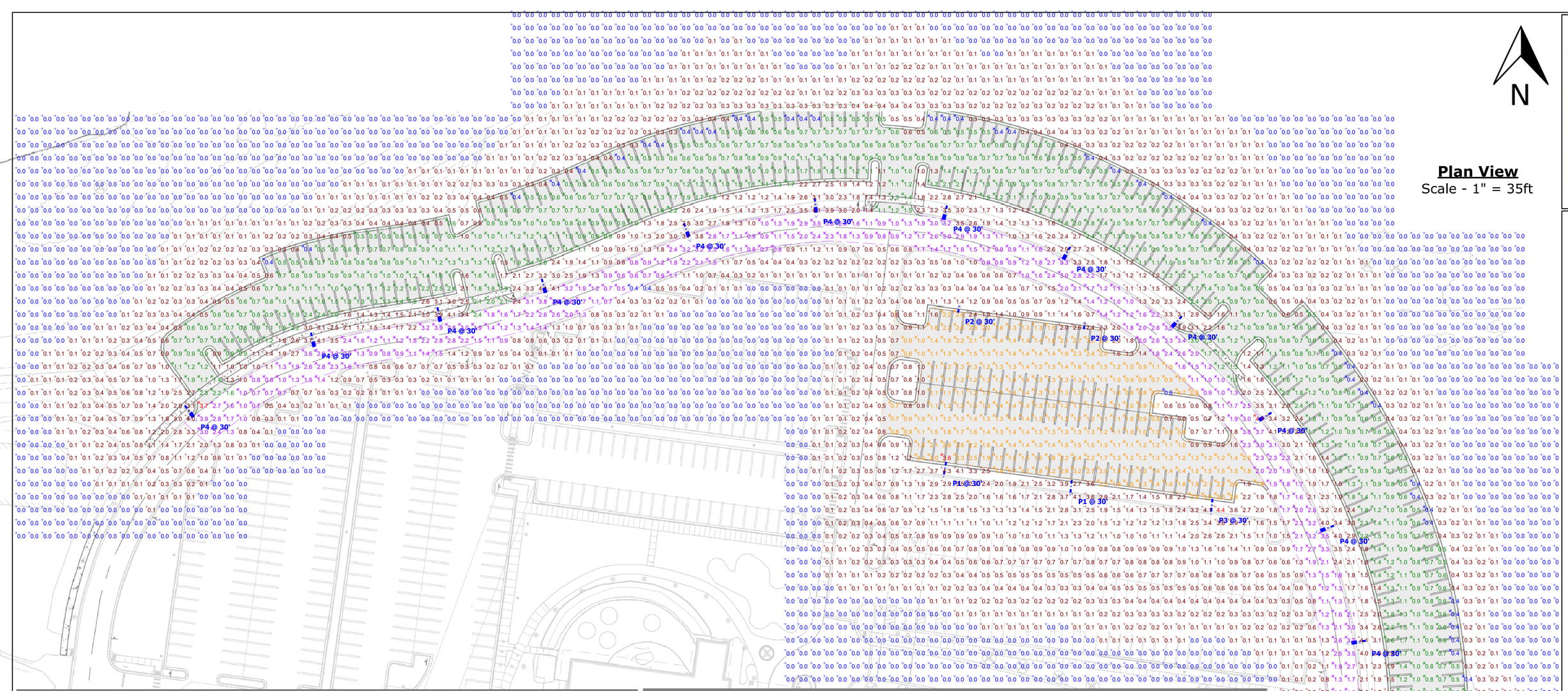
DRAWING TITLE
LANDSCAPE SPECIFICATIONS

PEA JOB NO.	26-0604
P.M.	TL
DN.	CAL
DES.	JLE

DRAWING NUMBER:
L-2.2

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0604 TRINITY HOSPITAL PARKING\DWG_CONSTRUCTION\L-2.0 LANDSCAPE SPECS-26-0604.dwg PLOT DATE: 7/13/2026 10:08 AM BY: Charlotte L'Esperance



N

Plan View

Scale - 1" = 35ft

Schedule

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lumens per Lamp	LLF	Wattage
	P1	2	Lithonia Lighting	RSX1 LED P3 40K R4 EGS	RSX Area Fixture Size 1 P3 Lumen Package 4000K CCT Type R4 Distribution with EGS Shield	12083	0.9	218.884
			EXISTING	EXISTING FIXTURE	EXISTING FIXTURE TO BE CONFIRMED BY OWNER	12083	0.9	109.442
			Lithonia Lighting	RSX1 LED P3 40K R4 EGS	RSX Area Fixture Size 1 P3 Lumen Package 4000K CCT Type R4 Distribution with EGS Shield	12083	0.9	109.442
	P2	2	Lithonia Lighting	RSX1 LED P3 40K R4 EGS	RSX Area Fixture Size 1 P3 Lumen Package 4000K CCT Type R4 Distribution with EGS Shield	12083	0.9	109.442
	P3	1	Lithonia Lighting	[...]	[...]	[. . .]	0.9	218.884
			Lithonia Lighting	RSX1 LED P3 40K R3 EGS	RSX Area Fixture Size 1 P3 Lumen Package 4000K CCT Type R3 Distribution with EGS Shield	12009	0.9	109.442
			EXISTING	EXISTING FIXTURE	EXISTING FIXTURE TO BE CONFIRMED BY OWNER	12083	0.9	109.442
	P4	12	Lithonia Lighting	[...]	[...]	[. . .]	0.9	160.7855
			EXISTING	EXISTING FIXTURE	EXISTING FIXTURE TO BE CONFIRMED BY OWNER	6520	0.9	51.3435
			Lithonia Lighting	RSX1 LED P3 40K R4 EGS	RSX Area Fixture Size 1 P3 Lumen Package 4000K CCT Type R4 Distribution with EGS Shield	12083	0.9	109.442
	P5	1	Lithonia Lighting	RSX1 LED P3 40K R5 EGS	RSX Area Fixture Size 1 P3 Lumen Package 4000K CCT Type R5 Distribution with EGS Shield	9809	0.9	109.442

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Drive Lanes	+	1.8 fc	4.1 fc	0.4 fc	10.3:1	4.5:1
Overall/Grade	+	0.6 fc	4.4 fc	0.0 fc	N/A	N/A
Parking Addition 1	+	1.0 fc	3.7 fc	0.4 fc	9.3:1	2.5:1
Parking Addition 2	+	1.5 fc	3.6 fc	0.6 fc	6.0:1	2.5:1

General Note

1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
2. SEE LUMINAIRE SCHEDULE FOR LIGHT LOSS FACTOR.
3. CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: GRADE

THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIRMENTS DEFINED IN ASHRAE 90.1 2019. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT CONTROLS@GASSERBUSH.COM OR 734-266-6705.

Alternates Note

THE USE OF FIXTURE ALTERNATES MUST BE RESUBMITTED TO THE CITY FOR APPROVAL.

Ordering Note

FOR INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.

Mounting Height Note

MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

Drawing Note

THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

TRINITY HEALTH PARKING EXPANSION - BRIGHTON, MI
EXTERIOR PHOTOMETRIC PLAN
GASSER BUSH ASSOCIATES
WWW.GASSERBUSH.COM

Designer BK
Date 07/08/2026
Scale Not to Scale
Drawing No. #26-60131 V2

RSX1 LED
Area Luminaire

Catalog Number

Notes

Type

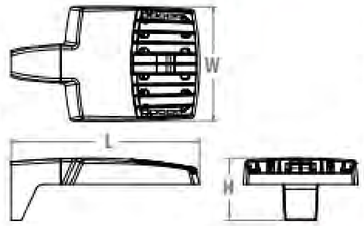
Introduction

The new RSX LED Area family delivers maximum value by providing significant energy savings, long life and outstanding photometric performance at an affordable price. The RSX1 delivers 7,000 to 17,000 lumens allowing it to replace 70W to 400W HID luminaires.

The RSX features an integral universal mounting mechanism that allows the luminaire to be mounted on most existing drill hole patterns. This "no-drill" solution provides significant labor savings. An easy-access door on the bottom of mounting arm allows for wiring without opening the electrical compartment. A mast arm adaptor, adjustable integral slipfitter and other mounting configurations are available.

Specifications

EPA (ft²@0°):	0.57 ft² (0.05 m²)
Length:	21.8" (55.4 cm) (SPA mount)
Width:	13.3" (33.8 cm)
Height:	3.0" (7.6 cm) Main Body 7.2" (18.4 cm) Arm
Weight: (SPA mount):	22.0 lbs (10.0 kg)



Design Select options indicated by this color background.

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: RSX1 LED P4 40K R3 MVOLT SPA DDBXD

RSX1 LED

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting
RSX1 LED	P1	30K 3000K	R2 Type 2 Wide	MVOLT (120V-277V) [2]	SPA Square pole mounting (3.0" min. SD pole for 1 at 90°; 3.5" min. SD pole for 2, 3, 4 at 90°) [3]
	P2	40K 4000K	R3 Type 3 Wide	HVOLT (347V-480V) [3]	RPA Round pole mounting (3.2" min. dia. RND pole for 2, 3, 4 at 90°; 3.0" min. dia. RND pole for 1 at 90°, 2 at 180°, 3 at 120°)
	P3	50K 5000K	R3S Type 3 Short	XVOLT (277V-480V) [4]	MA Mast arm adapter (fits 2-3/8" OD horizontal tenon)
	P4		R4 Type 4 Wide	(use specific voltage for options as noted)	IS Adjustable slipfitter (fits 2-3/8" OD tenon) [4]
			R4S Type 4 Short	120 [5] 277 [5]	WBA Wall bracket [1]
			R5 Type 5 Wide [1]	208 [5] 347 [5]	WBASC Wall bracket with surface conduit box
			R5S Type 5 Short [1]	240 [5] 480 [5]	AASP Adjustable tilt arm square pole mounting [6]
			AFR Automotive Front Row		AARP Adjustable tilt arm round pole mounting [6]
			AFRR90 Automotive Front Row Right Rotated		AAWB Adjustable tilt arm with wall bracket [6]
			AFRL90 Automotive Front Row Left Rotated		AAWSC Adjustable tilt arm wall bracket and surface conduit box [6]

Options		Finish	
Shipped Installed		DDBXD	Dark Bronze
HS	House-side shield	DBLXD	Black
PE	Photocontrol, button style [7,8]	DNAXD	Natural Aluminum
PER7	Seven-pin twist-lock receptacle only (no controls) [1,8,9]	DWHXD	White
SF	Single fuse (120, 277, 347) [5]	DDBTXD	Textured Dark Bronze
DF	Double fuse (208, 240, 480) [5]	DBLBXD	Textured Black
SPD20KV	20KV Surge pack (10KV standard)	DNATXD	Textured Natural Aluminum
FAO	Field adjustable output [1]	DWHGXD	Textured White
DMG	0-10V dimming extend out back of housing for external control (control ordered separately) [1]		

Shipped Installed

***Standalone and Networked Sensors/Controls (factory default settings, see table page 9)**

NLTAIR2 PIRHN	nLight AIR generation 2, with Networked, Bi-Level motion/ambient sensor [1,8,10,11]
BAA	Buy American(n) Act and/or Build America Buy America Qualified
CCE	Coastal Construction [12]

***Note: NLTAIR2 PIRHN with nLight Air can be used as a standalone or networked solution. Sensor coverage pattern is affected when luminaire is tilted.**

Shipped Separately (requires some field assembly)

EGS	External glare shield [1]
EGFV	External glare full visor (360° around light aperture) [1]
BS	Bird spikes [13]

1 Acuity Way • Decatur, GA 30035 • Phone: 1-800-705-SERV (7378) •

© 2018-2026 Acuity Brands Lighting, Inc. All rights reserved.

TRINITY HEALTH PARKING EXPANSION - BRIGHTON, MI
EXTERIOR PHOTOMETRIC PLAN
GASSER BUSH ASSOCIATES
WWW.GASSERBUSH.COM

Designer BK
Date 07/08/2026
Scale Not to Scale
Drawing No. #26-60131 V2

GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:
(Application must be completed in its entirety)

APPLICANT NAME & ADDRESS: Zaremba Group, LLC
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: RLG Howell, LLC

SITE ADDRESS: TBD Grand Oaks Drive, Howell (Genoa Township), Michigan
PARCEL #(s): 11-08-200-022

LOCATION AND BRIEF DESCRIPTION OF SITE: Site is located along Grand Oaks Drive between Fendt Drive and South Latson Road. The site is undeveloped and is currently a grass lot.

BRIEF STATEMENT OF PROPOSED USE: Applicant proposes a +- 6,600 SF Firestone Complete Auto Care center, which includes minor automotive repair & tire sales. The proposed site would include onsite parking as well as a screened dumpster and used tire enclosure.

THE FOLLOWING BUILDINGS ARE PROPOSED: A +- 6,600 sf structure consisting of 8-service bays for all automotive repair operations to be conducted inside the building. Additionally, a separate remote trash and used tire enclosure is proposed.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: Justin Bruce – Development Manager for Zaremba Group, LLC

ADDRESS: 14600 Detroit Avenue, Suite 1500, Lakewood, Ohio 44107

Bruce Langos
RLG Howell LLC & GGG Howell LLC
10050 Innovation Drive Suite 100
Miamisburg, Ohio 45342

June 5, 2026

RE: **Real Estate Purchase Agreement dated February 4, 2026 ("Agreement") by and between RLG Howell LLC, as Seller, and Dearborn Land Investment, LLC, as Buyer, for 1.15± acres of real property located on Grand Oaks Drive in Howell (Genoa Township), Livingston County, Michigan and identified by Tax Parcel Number 11-08-200-022 ("Property")**

To Whom It May Concern:

Pursuant to the above referenced Agreement, Seller hereby authorizes Zaremba Group, LLC, the sole member of Dearborn Land Investment, LLC, as designated agent of Buyer, and/or AR Engineering, a consultant of Zaremba Group, LLC are authorized to submit to the Genoa Charter Township for Site Plan Review for the proposed Bridgestone/Firestone Complete Auto Care to the Genoa Township Planning Commission & Township Board.

Please contact the undersigned if you have any questions regarding this matter.

Very truly yours,

RLG Howell LLC

Bruce Langos, President

July 31, 2026

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Amy Ruthig, Planning Director
Subject:	Firestone Complete Auto Care – Site Plan Review #2
Location:	Grand Oaks Drive – south side of Grand Oaks, west of S. Latson Road
Zoning:	NR-PUD Non-Residential Planned Unit Development

Dear Commissioners:

At the Township's request, we have reviewed the revised submittal materials requesting site plan review/approval for development of a Firestone Complete Auto Care business (plans dated 7/20/26).

A. Summary

1. Use Conditions (Section 7.02.02(k)):

1. We suggest that approval of the land division request be included as a condition (if favorable action is considered).
2. The applicant must address any comments from the Brighton Area Fire Authority and obtain all necessary permits related to the storage of hazardous materials.

2. Site Plan Review:

a. Building materials and colors are subject to review/approval by the Planning Commission.
b. We suggest the 2 parallel parking spaces be reserved for employees only.
c. The landscape plan is slightly deficient in buffer zone and parking lot plantings. Additional shrubs are provided that offset the buffer zone deficiency; however, we suggest the applicant provide the additional 2 parking lot trees required.
d. The applicant must address any comments provided by the Township Engineer and/or Brighton Area Fire Authority.

B. Proposal/Process

The applicant requests review/approval of a site plan for a Firestone Complete Auto Care business, which includes a 6,515 square foot building with 8 vehicle bays for a minor auto repair establishment.

Per the PUD Agreement for Livingston Commons Phase II, minor auto repair establishments are permitted by right, though such uses are subject to the conditions of Section 7.02.02(k) of the Township Zoning Ordinance.

Procedurally, the Planning Commission is to review the final PUD site plan and Environmental Impact Assessment and put forth recommendations on both to the Township Board for their final consideration.

Aerial view of site and surroundings (looking north prior to hotel and gas station development)

C. Use Conditions

Minor auto repair establishments are subject to the use requirements of Section 7.02.02(k), as follows:

1. **There shall be a minimum lot area of one (1) acre and minimum lot frontage of two hundred fifty (250) feet.**

Part of the overall development review process includes a land division to create the subject parcel.

The revised submittal depicts a new parcel with 1.12 acres of lot area and 250.5 feet of lot frontage, as required.

If the Commission considers favorable recommendations, we suggest that approval of the land division request be included as a condition.

2. **Pump islands shall be a minimum of twenty (20) feet from any public right of way or lot line, and at least forty (40) feet from any residential lot line.**

This standard is not applicable to the request.

3. **Access driveways shall meet the standards of Article 15; turning movements may be restricted in consideration of traffic conditions. Only one driveway shall be permitted from each street unless the Planning Commission determines additional driveways will be consistent with the purpose of Article 15.**

The site plan includes shared/cross access with the 2 abutting properties (gas station to the east and undeveloped to the west), but does not propose direct access to/from Grand Oaks Drive.

4. **Where adjoining residentially zoned or used property, a solid fence or wall six (6) feet in height shall be erected along any common lot line. Such fence or wall shall be continuously maintained in good condition. The Planning Commission may approve a landscaped berm as an alternative.**

This standard is not applicable to the request.

5. **All repair work shall be conducted completely within an enclosed building. Garage doors shall not face any public roadway except as approved by the Planning Commission under the following circumstances: a. For through garages where doors are provided on the front and rear of the building; b. Garages located on corner or through lots; and, c. Where the Planning Commission determines that a rear garage would have a negative impact on an abutting residential district. Under these circumstances the Planning Commission may require additional landscape screening above and beyond what is required for street frontage landscaping.**

Work on vehicles will occur within an enclosed building and overhead doors do not face a public roadway.

6. **There shall be no outdoor storage or display of vehicle components and parts, supplies, or equipment or other merchandise, 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.**

The applicant has noted that outdoor storage or display is not proposed as part of this project.

7. **Storage of wrecked, partially dismantled, or other derelict vehicles is prohibited, unless such storage is required under police or court order. Vehicles shall not be stored outdoors for more than seven (7) days in any thirty (30) day period.**

The applicant has noted that storage of such vehicles is not proposed as part of this project.

8. **Storage of gasoline shall be at least four hundred (400) feet from churches, schools or similar public/quasi public places of assembly.**

This standard is not applicable to the request.

9. **Below ground fuel storage tanks shall be at least two thousand (2000) feet from any drinking water well serving two or more residential units.**

This standard is not applicable to the request.

10. **The design and materials of the canopy shall be compatible with the main building. The proposed clearance of any canopy shall be noted on the site plan. Any signs, logo or identifying paint scheme on the canopy shall be reviewed by the Planning Commission and considered part of the maximum wall sign permitted. Details on the canopy lighting shall be provided to ensure there is no glare on the public streets or adjacent property, and that lighting levels are in accordance with Section 12.03. Canopy lighting shall be recessed such that the light source cannot be seen from off site.**

This standard is not applicable to the request.

11. **The applicant shall submit a Pollution Incidence Protection Plan (PIPP) as part of the Impact Assessment. The PIPP shall describe measures to prevent groundwater contamination caused by accidental gasoline spills or leakage, such as: special check valves, drain back catch basins and automatic shut off valves.**

The submittal includes a “Spill Management SOP,” which services as the required PIPP.

12. In the event that an automobile service station use has been abandoned or terminated for a period of more than one (1) year, all underground gasoline storage tanks shall be removed from the premises.

This standard is not applicable to the request.

13. The establishment of a new automobile service station shall require the lot to be separated a minimum of five hundred (500) feet from any other lot containing an existing automobile service station.

This standard is not applicable to the request.

14. Automobile service stations and maintenance establishments shall comply with the requirements of Section 13.07 Hazardous Materials and Fuel Storage.

The project does not include fuel storage and the PIPP is provided (as noted above). The applicant will need to comply with additional standards under this Section, including addressing any comments from the Brighton Area Fire Authority and obtaining all necessary permits.

D. Site Plan Review

1. Dimensional Requirements. As noted in the table below, the site plan complies with the dimensional requirements of this PUD:

	Min. Lot Req.		Minimum Yard Setbacks (feet)				Max. Lot Coverage (%)	Max. Height
	Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking Lot		
NR-PUD	1	175	50	20	20	20 front 10 side/rear	35% building 85% impervious	75' 5 stories
Proposed	1.12	250.5	83	22 (E) 72 (W)	50	20 front 10 side/rear	14% building 70% impervious	25.5' 1 story

2. Building Design and Materials. The primary building materials are brick and stone with EIFS accents.

The revised submittal includes building material calculations, which demonstrate compliance with the standards of Section 12.01.

The applicant should be prepared to present building material and color samples to the Commission for their consideration. Ultimately, building materials and colors are subject to review and approval by the Planning Commission.

3. Pedestrian Circulation. A public sidewalk/pathway is not required (nor proposed) in this location, though the site plan does include sidewalks and a crosswalk between the parking lot and building entrances.

4. Vehicular Circulation. The site plan proposes access to/from the shared driveway for the gas station to the east, with no direct access to/from Grand Oaks Drive. The plan also includes a cross access connection for the undeveloped parcel to the west.

Internal drive aisles are of sufficient width for two-way traffic around the proposed development area.

The applicant must address any comments provided by the Township Engineer and/or the Brighton Area Fire Authority with respect to vehicular circulation, including the proposed driveway design and location.

5. **Parking.** The parking calculations on Sheet C01 result in the need for 30 spaces, which are provided.

   Similar to the comment in our initial review letter, we suggest the 2 parallel parking spaces on the west side of the site be signed and used for employees only.

   The dimensions and design of parking spaces and drive aisles comply with Ordinance standards. The number of barrier-free spaces is also compliant.

6. **Exterior Lighting.** The lighting plan identifies 5 parking lot light poles and 11 wall mounted fixtures. The fixture depiction is that of a downward directed, cut-off LED.

   Photometric readings (on-site and along property lines) comply with current Ordinance standards.

7. **Landscaping.** The landscape plan has been reviewed for compliance with the standards of Section 12.02, as follows:

Standard	Required	Proposed	Comments
Front yard greenbelt	20' width 6 canopy trees	20' width 6 trees	Requirements met
Buffer Zone C (S)	10' width 10 trees OR 40 shrubs	10' width 7 trees 12 shrubs	Requirements met
Buffer Zone C (E)	10' width 11 trees OR 43 shrubs	18' width 45 shrubs	Requirement met
Buffer Zone C (W)	10' width 11 trees OR 43 shrubs	10' width 6 trees 12 shrubs	Deficient by 2 trees OR 8 shrubs
Parking lot	4 canopy trees 310 SF landscaped area	2 canopy trees 440+ SF landscaped area	Deficient by 2 canopy trees

   It is worth noting that the Grand Oaks greenbelt contains approximately 40 shrubs, which more than offsets the buffer zone deficiency; however, we suggest the applicant provide the additional 2 trees required for the parking lot.

8. **Waste Receptacle.** As noted in the table below, the proposed waste receptacle and enclosure comply with the requirements of Section 12.04:

	Requirement	Proposed	Comments
Location	Rear yard or non-required side yard AND not less than 20' from residential	Rear yard	Requirements met
Access	Clear access w/ out damaging buildings/vehicles	Sufficient maneuvering area	Requirements met
Base design	9' x 15' concrete pad	Base pad and extension depicted	Requirements met
Enclosure	3-sided enclosure w/ gate Masonry walls 6' height/taller than receptacle	3-sided enclosure w/ gate Masonry walls 8'	Requirements met

9. **Accessory Building.** The proposal includes a used tire storage building connected to the waste receptacle enclosure in the southwesterly corner of the site.

   The revised submittal includes details depicting the use of stone and brick matching that used on the principal building.

Additionally, the applicant has included a note stating that no used tires will be stored outside of or above the building, as requested.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFEBUILT

Brian V. Borden, AICP
Planning Manager

August 4, 2026

Ms. Amy Ruthig
Genoa Township
2911 Dorr Road
Brighton, MI 48116

Re: Howell Firestone
Site Plan Review No. 2

Dear Ms. Ruthig:

Tetra Tech conducted a review of the site plan submittal for Howell Firestone Complete Auto Care last dated July 20, 2026. The site plan was prepared by AR Engineering, LLC on behalf of RLG Howell, LLC. The development is located on 1.09 acres south of Grand Oaks Drive, 400 feet west of South Latson Road. The Petitioner is proposing a new auto service center. The proposed site includes a new parking lot and storm sewer.

We offer the following comments:

GENERAL

1. Plans should be signed and sealed.

DRAINAGE AND GRADING

1. Easements should be provided for any public proposed storm sewer as required by LCDC Standards.

We recommend that the petitioner address the above comments and resubmit for additional review. Please call or email if you have any questions.

Sincerely,

Sydney Streveler, EIT
Civil Engineering Group

Tetra Tech
3497 Coolidge Road, East Lansing, MI 48823
Tel 517.316.3930 Fax 517.484.8140 www.tetratech.com

BRIGHTON AREA FIRE AUTHORITY
615 W. Grand River Ave.
Brighton, MI 48116
o: 810-229-6640 f: 810-229-1619

July 22, 2026

Bobby Foster, Planner
Genoa Charter Township
2911 Dorr Rd.
Brighton, MI 48116

RE: Firestone Tire
TBD Grand Oaks Dr.
Site Plan Review

Dear Bobby:

The Brighton Area Fire Department has reviewed the above-mentioned site plan. The plans were received for review on July 22, 2026 and the drawings are not dated. The project is based on an approximately 1.09-acre parcel being developed for a ~6,600-square-foot S-1 Vehicle Repair facility. The plan review is based on the requirements of the International Fire Code (IFC) 2024 edition.

The initial site plan and drawings received were very limited in site detail and dimensions. Comments were based on what was provided. No response was provided regarding the previous letter comments dated July 9, 2026.

1. The building shall be provided with an automatic sprinkler system in accordance with NFPA 13, *Standard for the Installation of Automatic Sprinkler Systems*.

   IFC 903.2.9.1(4)

   A. The FDC shall be located on the front of the building (Grand Oaks).

   B. The location, size, gate valve, and connection of the fire protection lead shall be indicated on the utility site plan. *The fire protection line shall be a minimum of 6".*

   NFPA 13 5.1.3.1

   C. A hydrant shall be located within 100' of the fire department connection. **(This appears to be in compliance.)**

   IFC 912.8

2. The access drive into the site and the future connection drive to the adjacent site shall be at least 26 feet wide. With a width of 26 feet, one side (building side) of the drive shall be marked as a fire lane. Access roads to the site shall be provided and maintained during construction. Access roads shall be constructed to support the imposed load of fire apparatus weighing at least 84,000 pounds. **(This appears to be in compliance.)**

   IFC Appendix D

3. Access around the building shall provide emergency vehicles with a turning radius of 50 feet outside and 30 feet inside. Vehicle circulation shall account for non-emergency traffic and keep vehicles within the lanes of travel. **(This appears to be in compliance.)**

   IFC 503.2.4

4. A minimum vertical clearance of 13½ feet shall be maintained along the length of all apparatus access drives. This includes but is not limited to porte-cochere's, lighting, and large canopy trees. **(This appears to be in compliance.)**

   IFC 503.2.1

5. Future project submittals shall include the project's address and street name in the title block. **(This appears to be in compliance.)**

IFC 105.3.7

6. The building shall include the building address on the building. The address shall be a **minimum of 6"** high letters of contrasting colors and be clearly visible from the street. The location and size shall be verified prior to installation.

IFC 505.1

7. The location of a Knox Box shall be indicated on future submittals. The Knox box shall be located adjacent to the main entrance of the structure, in a location coordinated with the fire authority.

IFC 506.1

8. During the construction process, the building will be evaluated for emergency responder radio signal strength. If coverage is found to be questionable or inadequate; the contractor or the building owner shall hire an approved contractor to conduct a grid test of the facility. If the signal strength coverage is found to be non-compliant, an approved emergency responder radio coverage system shall be provided in the building.

IFC 510

9. Provide names, addresses, phone numbers, emails of owner or owner's agent, contractor, architect, on-site project supervisor.

Additional comments will be given during the building plan review process (specific to the building plans and occupancy). The applicant is reminded that the fire authority must review the fire protection systems submittals (sprinkler & alarm) prior to permit issuance by the Building Department and that the authority will also review the building plans for life safety requirements in conjunction with the Building Department.

If you have any questions about the comments on this plan review please contact me at 810-229-6640.

Cordially,

Rick Boisvert, CFPS
Fire Marshal

cc: Amy Ruthig (amy@genoa.org)

NOAA Atlas 14, Volume 8, Version 2
Location name: Howell, Michigan, USA*
Latitude: 42.5814°, Longitude: -83.8752°
Elevation: 1019 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**3.55** (3.05-4.12)	**4.18** (3.58-4.86)	**5.24** (4.48-6.12)	**6.17** (5.23-7.21)	**7.49** (6.16-9.07)	**8.54** (6.85-10.5)	**9.64** (7.46-12.1)	**10.8** (8.00-13.9)	**12.3** (8.82-16.3)	**13.6** (9.42-18.1)
10-min	**2.60** (2.23-3.02)	**3.06** (2.62-3.56)	**3.84** (3.28-4.48)	**4.52** (3.83-5.29)	**5.48** (4.51-6.64)	**6.25** (5.02-7.67)	**7.06** (5.47-8.85)	**7.89** (5.86-10.2)	**9.04** (6.46-11.9)	**9.94** (6.90-13.3)
15-min	**2.11** (1.81-2.45)	**2.49** (2.13-2.89)	**3.12** (2.67-3.64)	**3.67** (3.12-4.30)	**4.46** (3.67-5.40)	**5.08** (4.08-6.24)	**5.74** (4.44-7.20)	**6.42** (4.77-8.26)	**7.35** (5.25-9.70)	**8.08** (5.61-10.8)
30-min	**1.50** (1.29-1.75)	**1.77** (1.52-2.06)	**2.23** (1.91-2.60)	**2.62** (2.23-3.07)	**3.19** (2.62-3.86)	**3.64** (2.92-4.46)	**4.10** (3.18-5.14)	**4.59** (3.41-5.90)	**5.25** (3.75-6.93)	**5.77** (4.01-7.71)
60-min	**0.967** (0.830-1.12)	**1.15** (0.982-1.33)	**1.45** (1.24-1.69)	**1.72** (1.46-2.01)	**2.11** (1.74-2.56)	**2.42** (1.95-2.98)	**2.76** (2.14-3.46)	**3.10** (2.31-4.00)	**3.59** (2.57-4.75)	**3.97** (2.76-5.31)
2-hr	**0.592** (0.511-0.683)	**0.702** (0.605-0.811)	**0.894** (0.768-1.04)	**1.06** (0.908-1.24)	**1.31** (1.09-1.59)	**1.52** (1.23-1.85)	**1.73** (1.35-2.16)	**1.96** (1.47-2.51)	**2.28** (1.64-3.00)	**2.53** (1.77-3.36)
3-hr	**0.436** (0.378-0.502)	**0.517** (0.447-0.594)	**0.658** (0.567-0.759)	**0.785** (0.673-0.909)	**0.974** (0.813-1.18)	**1.13** (0.920-1.38)	**1.30** (1.02-1.62)	**1.48** (1.11-1.89)	**1.73** (1.25-2.27)	**1.93** (1.36-2.56)
6-hr	**0.259** (0.226-0.296)	**0.302** (0.263-0.345)	**0.379** (0.329-0.435)	**0.451** (0.389-0.518)	**0.559** (0.472-0.675)	**0.652** (0.535-0.793)	**0.752** (0.595-0.935)	**0.860** (0.653-1.10)	**1.02** (0.740-1.33)	**1.14** (0.806-1.50)
12-hr	**0.152** (0.133-0.172)	**0.172** (0.151-0.196)	**0.211** (0.184-0.240)	**0.247** (0.214-0.282)	**0.303** (0.258-0.364)	**0.352** (0.291-0.426)	**0.405** (0.323-0.501)	**0.463** (0.354-0.588)	**0.548** (0.402-0.712)	**0.617** (0.439-0.806)
24-hr	**0.087** (0.077-0.098)	**0.098** (0.087-0.111)	**0.119** (0.104-0.134)	**0.138** (0.121-0.157)	**0.168** (0.144-0.200)	**0.194** (0.161-0.233)	**0.222** (0.178-0.273)	**0.253** (0.195-0.319)	**0.298** (0.220-0.384)	**0.334** (0.239-0.433)
2-day	**0.049** (0.043-0.055)	**0.056** (0.049-0.062)	**0.068** (0.060-0.077)	**0.079** (0.070-0.090)	**0.096** (0.083-0.114)	**0.111** (0.092-0.132)	**0.126** (0.102-0.153)	**0.143** (0.110-0.178)	**0.166** (0.123-0.213)	**0.185** (0.133-0.239)
3-day	**0.035** (0.032-0.040)	**0.040** (0.036-0.045)	**0.049** (0.043-0.055)	**0.057** (0.050-0.064)	**0.069** (0.059-0.081)	**0.079** (0.066-0.093)	**0.089** (0.072-0.108)	**0.101** (0.078-0.125)	**0.117** (0.087-0.149)	**0.130** (0.094-0.167)
4-day	**0.028** (0.025-0.032)	**0.032** (0.029-0.036)	**0.039** (0.035-0.043)	**0.045** (0.040-0.050)	**0.054** (0.047-0.063)	**0.062** (0.052-0.073)	**0.070** (0.057-0.084)	**0.079** (0.061-0.097)	**0.091** (0.068-0.116)	**0.101** (0.073-0.130)
7-day	**0.019** (0.017-0.021)	**0.021** (0.019-0.024)	**0.025** (0.023-0.028)	**0.029** (0.026-0.033)	**0.035** (0.030-0.040)	**0.039** (0.033-0.046)	**0.044** (0.036-0.053)	**0.050** (0.039-0.061)	**0.057** (0.043-0.072)	**0.063** (0.046-0.080)
10-day	**0.015** (0.014-0.017)	**0.017** (0.015-0.019)	**0.020** (0.018-0.022)	**0.023** (0.020-0.025)	**0.027** (0.023-0.031)	**0.030** (0.025-0.035)	**0.034** (0.028-0.040)	**0.038** (0.029-0.046)	**0.043** (0.032-0.054)	**0.047** (0.035-0.060)
20-day	**0.010** (0.009-0.011)	**0.011** (0.010-0.012)	**0.013** (0.012-0.014)	**0.015** (0.013-0.016)	**0.017** (0.015-0.019)	**0.019** (0.016-0.022)	**0.021** (0.017-0.025)	**0.023** (0.018-0.028)	**0.026** (0.020-0.032)	**0.028** (0.021-0.036)
30-day	**0.008** (0.007-0.009)	**0.009** (0.008-0.010)	**0.010** (0.009-0.011)	**0.012** (0.010-0.013)	**0.013** (0.012-0.015)	**0.015** (0.013-0.017)	**0.016** (0.013-0.019)	**0.018** (0.014-0.021)	**0.020** (0.015-0.024)	**0.021** (0.016-0.027)
45-day	**0.007** (0.006-0.007)	**0.007** (0.007-0.008)	**0.009** (0.008-0.009)	**0.009** (0.009-0.010)	**0.011** (0.009-0.012)	**0.012** (0.010-0.013)	**0.013** (0.010-0.015)	**0.014** (0.011-0.017)	**0.015** (0.011-0.019)	**0.016** (0.012-0.020)
60-day	**0.006** (0.005-0.006)	**0.006** (0.006-0.007)	**0.007** (0.007-0.008)	**0.008** (0.007-0.009)	**0.009** (0.008-0.010)	**0.010** (0.009-0.011)	**0.011** (0.009-0.013)	**0.012** (0.009-0.014)	**0.012** (0.009-0.015)	**0.013** (0.010-0.016)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

Firestone Complete Auto
6.19.2026

Impact Assessment Narrative

a. **Name(s) and address(es) of person(s) responsible for preparation** of the impact assessment and a brief statement of their qualifications.

Whitney Pizzala as a licensed state of Michigan Professional Engineer.

b. **Map(s) and written description/analysis of the project site** including all existing structures, manmade facilities, and natural features. The analysis shall also include information for areas within 10 feet of the property. An aerial photograph or drawing may be used to delineate these areas.

An aerial site plan depicting these features is included. The site is primarily vacant with a small cluster of brushes to the south of the site. A survey is also included with the submittal packet depicting the site conditions at the time of the field work.

c. **Impact on natural features:** A written description of the environmental characteristics of the site prior to development and following development, i.e., topography, soils, wildlife, woodlands, mature trees (eight-inch caliper or greater), wetlands, drainage, lakes, streams, creeks or ponds. Documentation by a qualified wetland specialist shall be required wherever the Township determines that there is a potentially regulated wetland. Reduced copies of the Existing Conditions Map(s) or aerial photographs may accompany written material.

The existing site is a grassy vacant property. There are no records of the site having been previously developed. The existing site topography slopes towards the north to the existing road and with the grade of the road to the East.

d. **Impact on stormwater management:** Description of measures to control soil erosion and sedimentation during grading and construction operations and until a permanent ground cover is established. Recommendations for such measures may be obtained from the Livingston County Drain Commission at (517) 546-0040.

This site is under a stormwater agreement during the rework of I-96. There is a common storm basin to be used by the sites that will be used for conveying the storm and runoff from the site.

e. **Impact on surrounding land used:** Description of the types of proposed uses and other man-made facilities, including any project phasing, and an indication of how the proposed use conforms or conflicts with existing and potential development patterns. A description shall be provided of any increases of light, noise or air pollution which could negatively impact adjacent properties.

The surrounding developed areas are currently similar uses. Directly to the east is a gas station with a coffee shop. South is a hotel, to the North is a Lowes and the property to the west is vacant but expected to be a commercial site and is zoned as such.

f. **Impact on public facilities and services:** Describe the number of expected residents, employees, visitors, or patrons, and the anticipated impact on public schools, police protection and fire protection. Letters from the appropriate agencies may be provided, as appropriate.

The site will be staffed by 8-12 employees on a single day. There will be an average of 45 visitors per day at the location. There is no expected impact on and of the public agencies listed above for this development.

g. **Impact on public utilities**: Describe the method to be used to service the development with water and sanitary sewer facilities, the method to be used to control drainage on the site and from the site, including runoff control during periods of construction. For sites serviced with sanitary sewer, calculations for pre- and post development flows shall be provided in comparison with sewer line capacity. Expected sewage rates shall be provided in equivalents to a single-family home. Where septic systems are proposed, documentation or permits from the Livingston County Health Department shall be provided.

The site has an existing water service stub that will be used to connect with the 4" service for the business. The sanitary will have an onsite grease and oil separator for treatment before connecting to the township sanitary sewer at the north end of the site. The existing site sanitary discharge from is zero with an expected discharge rate of 600 gallons per day.

h. **Storage and handling of any hazardous materials:** A description of any hazardous substances expected to be used, stored or disposed of on the site. The information shall describe the type of materials, location within the site and method of containment. Documentation of compliance with federal and state requirements, and a Pollution Incident Prevention Plan (PIPP) shall be submitted, as appropriate.

Any hazardous chemicals inside the building will be stored properly according to local and federal guidelines. Used tire storage will be located outside the building with weekly pickups or more frequently as needed. They will be stored in their own separated enclosure next to the dumpster enclosure. The sanitary will have an onsite grease and oil separator for treatment before connecting to the township sanitary sewer at the north end of the site.

Bridgestone Retail Operations

Spill Management SOP

Purpose and Overview

The SOP outlines the steps that should be taken in the event of a spill or release of a regulated substance that occurs at a retail location. **Do not risk threat of injury or harm when completing your duties.**

Above all, the safety of Teammates and the Boss is our top priority.

Table of Contents

Purpose and Overview 1

Table of Contents 1

Scope 2

Key Terms 2

Why 2

Policy 2

Teammate Expectations 3

Process/Procedure 3

Spill Prevention. *3*

Spill Supplies *4*

Spill Response *5*

After the Spill *5*

Reporting/Auditing Responsibilities **6**

Leadership and Management **6**

Resources 6

Quest – Emergency Number – 844-347-3844 ..... *6*

Quest – Non-Emergency Number - 877-321-1811 ..... *6*

Do not duplicate or distribute without authorization. © Property of Bridgestone Retail Operations, LLC.

Scope

In Scope:

- Spill Prevention
- Spill Response
- Spill Management

Out of Scope:

- Records management
- Waste management
- Emergency Action Plan
- Media relations

Key Terms

- Absorbent Boom – Tube-shaped absorbent used to control or limit the spreading of a regulated substance after a spill (a.k.a. snakes, sausages, socks).
- EHSS – Environment, Health, Safety, and Sustainability.
- Regulated Substance – Hazardous, non-hazardous, or petroleum-based liquid or solid.
- Spill – An unplanned or unintended spill or release of a regulated material.
    - Large Spill – Meets at least one of the following criteria:
        - Greater than 5 gallons of a regulated material;
        - Any-sized spill that enters floor drains, sumps, or storm drains; and/or,
        - Any-sized spill or release to the exterior of the building.
    - Small Spill – Less than 5 gallons of a regulated material contained within the building.
- Spill Prevention – Using or implementing Best Management Practices (BMPs) to reduce or eliminate the likelihood of a spill or release.
- Spill Response – The act of responding to a spill or release by physically cleaning up a regulated material after the spill and properly reporting the spill to the emergency contacts.
- Spill Supplies – Inventory of absorbents and supplies only to be used during a spill response.

Why

- To ensure that procedures for spill prevention and response are clearly understood and properly implemented.

Policy

- N/A

Do not duplicate or distribute without authorization. © Property of Bridgestone Retail Operations, LLC.

Teammate Expectations

All Teammates must read, understand and adhere to this SOP

Store Manager:

- Ensures all Small Spills are cleaned up immediately regardless of the amount spilled.
- Ensures the inventory of spill supplies is sufficient (i.e. 2 cases of absorbent pads and 2 cases of absorbent booms).
- Contacts the waste disposal/emergency response contractor for Large Spills.
- Ensures the Area Manager, EHSS Team, and Region Office are contacted if the spill is classified as a Large Spill (See Key Terms).
- Manages Small Spill response.
- Implements Best Management Practices (BMPs) to decrease the likelihood of a leak, spill, or release

Area/Region Manager:

- Coordinates communications regarding Large Spill response with the store, the EHSS Team, and Region Office.
- Ensures BSRO's image and standards are being maintained.

EHSS Team:

- Fulfills reporting requirements with applicable local, state, and federal regulators, if required.
- Communicates clean-up requirements to the Store Manager and Area Manager.
- Engages additional environmental support teams to address spill or release (i.e., environmental consultants or emergency response team)
- Manages large spill response through the waste disposal/emergency response contractor.

Process/Procedure

Store Manager, Service Manager, and BSRO Teammates:

Spills, leaks or other releases of regulated substances are costly to BSRO in terms of cleanup expenses, business disruption (during the cleanup), potential negative public perception, legal fees, and/or fines. While spills are generally accidental, measures can be taken to prevent and to respond quickly to spills before they become an environmental issue.

Spill Prevention

The most cost-effective method to deal with spills is to establish Best Management Practices (BMPs) to minimize risk. Store Managers are responsible for implementing BMPs to decrease the likelihood of a leak, spill, or release. The BMPs listed below are the minimum standards required in our stores:

1. Reinforce proper materials handling techniques (e.g. secured lids on all containers holding fluids when not actively adding or removing fluids) with Store Teammates.
2. Ensure the Emergency Action Plan is reviewed and understood (**See Emergency Action Plan SOP)**.

Do not duplicate or distribute without authorization. © Property of Bridgestone Retail Operations, LLC.

3. Take extra precaution if/when any materials are moved or emptied (i.e. oil dollies, oil transfer containers, drums, EcoBoxes).
4. Ensure Store Teammates are aware of where spills are likely to occur (Waste Storage Areas and Near the Used Oil Tank).
5. Inspect containers used to hold fluids for signs of wear or damage. If the container integrity is compromised or damaged, make arrangements to transfer the fluids to a new container.
6. Inspect areas where fluids are stored for signs of leaks. If leaks are observed, make arrangements to transfer the fluids to a new container.
7. Inspect the area around aboveground storage tanks and totes. If a suspected leak is observed in the tank or tote, contact the Area Manager or EHSS Team to make arrangements with a vendor to inspect the tank (and possibly repair/replace equipment).
8. Ensure Store Teammates are aware of the location of floor drains in the shop and the location of stormwater drains in the parking area, if applicable.
9. Ensure Store Teammates are aware of the location of the spill response supplies in the store.
10. Enforce - BSRO prohibits using granular adsorbent material (a.k.a. kitty litter, oil dry, dry sweep) to cleanup spills in the service area as it can damage the piston seal on in-ground lifts. **Granular adsorbent should not be kept in the store**

Spill Supplies

Each store *must* continually have an adequate supply of spill materials for the cleanup of spills at the store. These supplies are for non-routine spills and can be used to block drains and to keep a large spill inside the store until it can be cleaned by an approved contractor. Spill supplies include absorbent booms to contain spills and block off drains, pads to absorb spilled materials, and a drum to hold the used materials (used absorbent material drum). The spill supplies are required to be readily available, fully stocked, and only be used for spill management. **Spill materials must not be used as a substitute for shop towels**.

A properly stocked store will have the following spill response and spill prevention materials which can be ordered through the POS using the following JDA numbers:

- Two cases of absorbent pads (JDA #7007984)
- Two cases of absorbent booms (JDA #7003015)
- One case of barrel top absorbent pads (JDA #7003014)

In addition, all stores will have one 55-gallon drum for used absorbent materials. This drum is to be used for saturated shop towels and used absorbent pads and booms. New or replacement drums for used absorbent materials can be ordered directly through the BSRO-approved waste disposal contractor.

Do not duplicate or distribute without authorization. © Property of Bridgestone Retail Operations, LLC.

Spill Response
All spills must be responded to immediately using the spill response supplies. In the event of a spill, the Store Manager must:

- Ensure that the safety of Store Teammates and the BOSS is not compromised. Store Teammate/BOSS safety ALWAYS takes precedence over spill response.
- Determine the reason or source of the spill. If possible, act to cease the source of the spill (i.e. stop the flow of oil or other fluids).
- Protect all drains and ensure that spills do not leave the shop. Utilize absorbent booms to stop the flow of material to sensitive areas (grass-covered surfaces, landscaped areas, and storm drains).
- Cease the use of all equipment that may cause ignition or sparks.
- Open doors and windows to ventilate the area
- Start spill cleanup at the perimeter of the spill and work towards the center for Small Spills (less than 5 gallons). Store Teammates should avoid walking through the spill.
- **A spill greater than 5 gallons, any size spill that enters floor drains, or any size spill on the exterior of the building (Large Spills), must immediately be reported to our waste disposal/emergency response contractor.**
    - **Quest – 844-347-3844**
        - **For normal business hours an operator will answer the phone.**
        - **For after hour spills, choose the emergency option and leave a message. A responder will return the call in approximately 15 minutes.**
- Immediately after contacting the waste disposal/emergency contractor for a Large Spill, report the spill to the Area Manager, the EHSS Team, and the Region Office. Please note: The waste disposal/emergency contractor will contact the EHSS Team to discuss response options.
- Dispose of used spill cleanup supplies in the 55-gallon drum containing used absorbent materials.
- Document spill cleanup activities using notes and pictures.

In case of a gasoline or solvent spill: Be aware of your surroundings and remove or move away from any potential ignition sources (i.e., torches, smoking, etc.).

After the Spill
After a spill is cleaned up, the Store Manager must ensure that:

- Wastes are managed as outlined in the appropriate waste management SOPs.
- Spill cleanup materials should be stored in the 55-gallon drum containing used absorbent materials. If the spill used absorbent drum is missing or the volume of spill debris is too great, spill cleanup material may be *temporarily* stored with the used oil filters.
- Contact the BSRO-approved disposal vendor to provide empty drums and to arrange for debris to be recycled/disposed.
- Ensure that any spill supplies used in the response are replaced as outlined above.

Do not duplicate or distribute without authorization. © Property of Bridgestone Retail Operations, LLC.

Reporting/Auditing Responsibilities

- The **Store Manager** must report any spill greater than 5 gallons, any size spill that enters floor drains, or any size spill on the exterior of the building to the Area Manager, the EHSS Team, and the Region Office immediately after contacting the waste disposal/emergency response contractor.
- The **Store Manager** must assist with the completion any spill documentation, if required by local, state, or federal agencies.
- The **EHSS Team** completes spill reporting requirements and communicates with local, state, and federal regulators, as required.

Leadership and Management

- The **Store Manager** must ensure that BMPs have been implemented and that the store is prepared to respond to a spill. The **Store Manager** must also ensure that any-sized spills are cleaned up immediately and that the Area Manager, EHSS Team, and Region Office are contacted in the case of a Large Spill as defined by this SOP.
- The **Area Manager** ensures that any-sized spill clean-ups have been coordinated with the EHSS Team and that communication has been maintained with waste disposal/emergency response contractor.
- The **EHSS Team** conveys clean-up requirements to the Store Manager, Area Manager, and Region Office, and oversees large spill response.

Resources

- If you have any questions regarding environmental issues, email a member of the Environmental Group at Retail-EnvironmentalTeam@bfusa.com, submit a Field Support Ticket or by reach out directly via the EHSS Contact List located in the Resource Library on SPD.
- EHSS Contact List
- A spill greater than 5 gallons, any size spill that enters floor drains, or any size spill on the exterior of the building (Large Spills), must immediately be reported to our waste disposal/emergency response contractor.
    - **Quest – Emergency Number – 844-347-3844**
        - For normal business hours an operator will answer the phone.
        - For after hour spills, choose the emergency option and leave a message. A responder will return the call in approximately 15 minutes.
    - Quest – Non-Emergency Number - 877-321-1811

Do not duplicate or distribute without authorization. © Property of Bridgestone Retail Operations, LLC.

TRIP GENERATION ASSESSMENT

Date:	June 19, 2026
To:	Whitney Pizzala, PE – AR Engineering
From:	Nick LaCroix, PE PTOE
Re:	Firestone Tire Store Development – Trip Generation

LTE has completed a trip generation assessment for the proposed Firestone tire store development based on *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, sponsored by the Tri-County Regional Planning Commission and the Michigan Department of Transportation (MDOT). In addition, Genoa Township thresholds for requiring a detailed traffic impact study were reviewed. The following sections summarize our findings regarding the potential trip generation projections for the proposed site.

INTRODUCTION

AR Engineering is working on a project to develop a Firestone tire store located in Genoa Township, Michigan. The site is located on the south side of Grand Oaks Drive just west of Latson Road. The proposed site includes a 6,515 square-foot tire store with access to Grand Oaks Drive via the adjacent private driveway. Figure 1 shows the proposed site location and access driveway. Figure 2 shows the proposed site plan.

As part of the project approval process, a trip generation analysis has been requested to determine if a traffic study should be required and to quantify the anticipated number of vehicular trips the site may generate upon completion of the proposed project.

Figure 1. Location Map

TRIP GENERATION

The Trip Generation Manual, Twelfth Edition, by the Institute of Transportation Engineers (ITE) was used to calculate the anticipated traffic that may be generated by the proposed Firestone tire store. Trips are measured individually for inbound and outbound movements; therefore, a visit to the site by an employee or visitor, for instance, generates two trips—one inbound and one outbound.

Based on the land use descriptions provided within the ITE Trip Generation Manual, the most applicable land use for the proposed site would be the Tire Store (ITE Code 848) land use.

Table 1 shows the anticipated trip generation for the proposed site. The proposed site is anticipated to generate approximately 186 (93 inbound, 93 outbound) new daily trips, 18 new weekday morning peak hour trips (11 inbound, 7 outbound) and 25 new weekday afternoon peak hour trips (11 inbound, 14 outbound) onto the roadway system.

Table 1. Typical Weekday Trip Generation

Land Use	ITE Code	Size	AM			PM			Daily Trips
			Total	Enter	Exit	Total	Enter	Exit	
Tire Store	848	6,515 sft	18	11	7	25	11	14	186

Source: ITE Trip Generation Manual, 12th Edition

CONCLUSIONS

As per the guidelines in *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, if a new or changed land use is projected to generate at least 100 directional trips during the peak hour, or at least 750 trips during an average day, a traffic impact study may be required. If the traffic generated by the site is projected to be between 50 and 99 directional trips during a peak-hour, or between 500 – 749 trips during an average day, a traffic impact assessment at the site driveways may be required.

Genoa Township standards state a detailed traffic impact study should be completed for any site over ten (10) acres in size which would be expected to generate 100 directional vehicle trips during the peak hours.

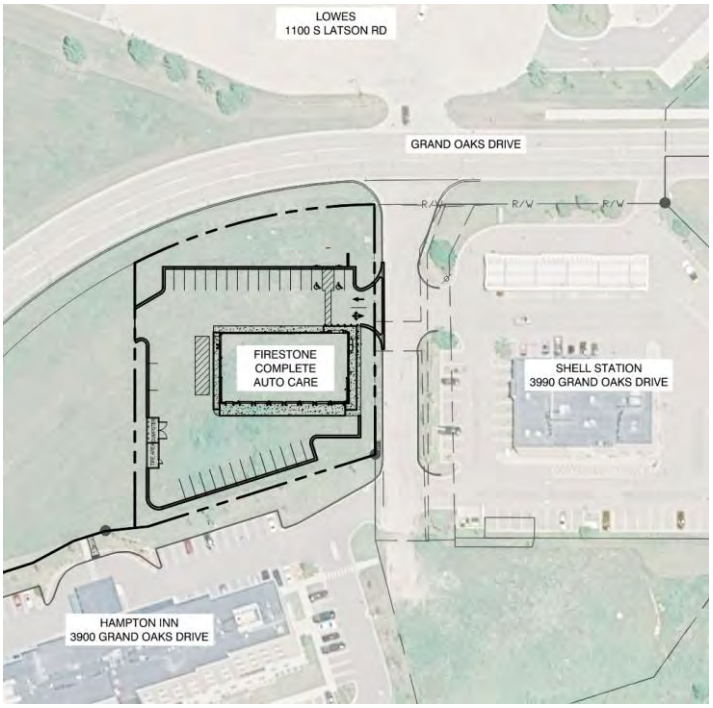


Figure 2. Site Plan

Based on the trip generation analyses performed, the proposed Firestone tire store development will generate well below the thresholds for requiring a traffic impact study or assessment with a maximum of 14 directional trips during the afternoon peak hour. In addition, the anticipated 186 daily trips indicates neither a traffic impact assessment nor traffic impact study would be recommended.

Based on the daily and peak hour trips anticipated to be generated, a traffic impact study or assessment would not be recommended for the proposed Firestone tire store development as the site is anticipated to have minimal impact on the site driveway and to the surrounding roadways.

HOWELL FIRESTONE COMPLETE AUTO CARE

GRAND OAKS DR
SECTION 08, T.02N, R.05E
GENOA CHARTER TOWNSHIP
LIVINGSTON COUNTY, MI

SITE DEVELOPMENT PLANS
JULY 20, 2026

ISSUED FOR: SITE PLAN REVISIONS

SHEET INDEX

No.	SHEET TITLE
C00	COVER SHEET
C01	SITE PLAN
C02	SITE DEMOLITION PLAN
C03	SITE GRADING PLAN
C03.1	SITE DRAINAGE PLAN
C04	EROSION CONTROL PLAN
C04.1	EROSION CONTROL PLAN NOTES & DETAILS
C05	SITE UTILITY PLAN
C05.1	STORM PROFILE
C06	PAVING PLAN
C07	LANDSCAPE PLAN
C09	DETAIL SHEET I
C01	PHOTOMETRIC PLAN
ALTA-1	ALTA SURVEY
PA01	FLOOR PLAN & NOTES
PA04	COLORED EXTERIOR ELEVATIONS & DETAILS

REVISIONS

No.	ISSUED FOR:	DATE:	BY:
0	SITE PLAN REVIEW	06/19/26	wp
1	SITE PLAN REVISIONS	07/20/26	.
2	.	.	.
3	.	.	.
4	.	.	.
5	.	.	.

CIVIL ENGINEER:

AR ENGINEERING, LLC.
5725 VENTURE PARK DRIVE, SUITE A
KALAMAZOO, MI 49008
TEL. (269) 250-5991 FAX. (866) 569-0604

AR Engineering

WHITNEY PIZZALA. P.E. DATE 07/20/2026

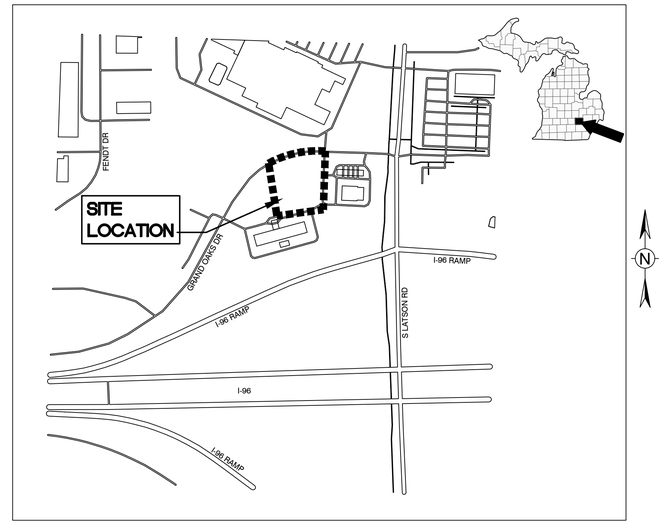
OWNERS:

RLG HOWELL LLC/GCG HOWELL LLC
10050 INNOVATION DR STE 100,
MIAMISBURG OH 45342

DEVELOPER:

ZAREMBA GROUP, LLC
14600 DETROIT AVE.
LAKEWOOD, OH 44107
TEL. (216) 226-5160

LOCATION MAP
NOT TO SCALE



42°34'53.9"N 83°52'34.5"W

LEGAL DESCRIPTION

PARCEL #: 4711-08-200-022

PROPERTY DESCRIBED IN SCHEDULE "C" OF FIRST AMERICAN TITLE INSURANCE COMPANY NATIONIAL COMMERCIAL SERVICES. COMMITMENT NO. NCS-1295414, DATED: 2/11/2026
LAND IN THE TOWNSHIP OF GENOA, LIVINGSTON COUNTY, MI, DESCRIBED AS FOLLOWS:

PART OF THE NORTHEAST 1/4 OF SECTION 8, TOWNSHIP 2 NORTH, RANGE 5 EAST, GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHEAST CORNER OF SECTION 8; THENCE ALONG THE NORTH LINE OF SECTION 8, SOUTH 87 DEGREES 16 MINUTES 42 SECONDS WEST, 3.27 FEET, TO THE CENTERLINE OF LATSON ROAD; THENCE ALONG THE CENTERLINE OF LATSON ROAD, THE FOLLOWING THREE (3) COURSES: 1) SOUTHERLY ALONG AN ARC RIGHT, HAVING A LENGTH OF 159.72 FEET, A RADIUS OF 10000.00 FEET, A CENTRAL ANGLE OF 00 DEGREES 54 MINUTES 55 SECONDS, AND A LONG CHORD WHICH BEARS SOUTH 00 DEGREES 40 MINUTES 20 SECONDS WEST, 159.72 FEET; 2) SOUTH 01 DEGREES 07 MINUTES 48 SECONDS WEST, 913.15 FEET; SOUTHERLY ALONG AN ARC LEFT, HAVING A LENGTH OF 148.82 FEET, A RADIUS OF 10000.00 FEET, A CENTRAL ANGLE OF 00 DEGREES 51 MINUTES 10 SECONDS, AND A LONG CHORD WHICH BEARS SOUTH 00 DEGREES 42 MINUTES 13 SECONDS WEST, 148.82 FEET, TO THE POINT OF INTERSECTION OF THE CENTERLINE OF LATSON ROAD AND THE CENTERLINE OF RELOCATED GRAND OAKS DRIVE; THENCE ALONG THE CENTERLINE OF RELOCATED GRAND OAKS DRIVE, SOUTH 89 DEGREES 48 MINUTES 26 SECONDS WEST, 159.53 FEET; THENCE SOUTH 00 DEGREES 15 MINUTES 45 SECONDS WEST, 40.00 FEET; THENCE ALONG A LIMITED ACCESS RIGHT OF WAY LINE OF I-96, THE FOLLOWING FOUR (4) COURSES: 1) SOUTH 45 DEGREES 13 MINUTES 54 SECONDS EAST, 112.47 FEET; 2) SOUTHEASTERLY ALONG AN ARC LEFT, HAVING A LENGTH OF 192.62 FEET, A RADIUS OF 10080.00 FEET, A CENTRAL ANGLE OF 01 DEGREES 05 MINUTES 42 SECONDS, AND A LONG CHORD WHICH BEARS SOUTH 00 DEGREES 57 MINUTES 11 SECONDS EAST, 192.62 FEET; 3) SOUTH 35 DEGREES 12 MINUTES 51 SECONDS WEST, 160.62 FEET; 4) SOUTH 72 DEGREES 24 MINUTES 04 SECONDS WEST, 200.33 FEET; THENCE NORTH 14 DEGREES 21 MINUTES 05 SECONDS WEST, 182.73 FEET; THENCE NORTH 00 DEGREES 11 MINUTES 34 SECONDS WEST, 72.82 FEET, TO THE POINT OF BEGINNING OF THE PARCEL TO BE DESCRIBED; THENCE SOUTH 72 DEGREES 24 MINUTES 02 SECONDS WEST, 202.29 FEET; THENCE SOUTH 84 DEGREES 01 MINUTES 59 SECONDS WEST, 36.37 FEET; THENCE SOUTH 72 DEGREES 24 MINUTES 04 SECONDS WEST, 28.77 FEET; THENCE SOUTH 61 DEGREES 39 MINUTES 33 SECONDS WEST, 39.34 FEET; THENCE SOUTH 72 DEGREES 24 MINUTES 06 SECONDS WEST, 84.00 FEET; THENCE SOUTH 12 DEGREES 24 MINUTES 06 SECONDS WEST, 20.00 FEET; THENCE SOUTH 17 DEGREES 35 MINUTES 54 SECONDS EAST, 10.72 FEET; THENCE SOUTHWESTERLY ALONG AN ARC LEFT, HAVING A LENGTH OF 78.87 FEET, A RADIUS OF 51.50 FEET, A CENTRAL ANGLE OF 87 DEGREES 44 MINUTES 44 SECONDS, AND A LONG CHORD WHICH BEARS SOUTH 26 DEGREES 16 MINUTES 26 SECONDS WEST, 71.39 FEET; THENCE SOUTH 17 DEGREES 35 MINUTES 56 SECONDS EAST, 214.73 FEET; THENCE ALONG A LIMITED ACCESS RIGHT OF WAY LINE OF I-96, SOUTH 63 DEGREES 09 MINUTES 04 SECONDS WEST, 433.52 FEET; THENCE ALONG THE SOUTHERLY RIGHT OF WAY LINE OF RELOCATED GRAND OAKS DRIVE (80 FOOT WIDE RIGHT OF WAY), THE FOLLOWING THREE (3) COURSES: 1) NORTHEASTERLY ALONG AN ARC LEFT, HAVING A LENGTH OF 301.01 FEET, A RADIUS OF 940.00 FEET, A CENTRAL ANGLE OF 18 DEGREES 20 MINUTES 51 SECONDS, AND A LONG CHORD WHICH BEARS NORTH 34 DEGREES 06 MINUTES 32 SECONDS EAST, 299.73 FEET; 2) NORTH 24 DEGREES 56 MINUTES 06 SECONDS EAST, 342.59 FEET; 3) NORTHEASTERLY ALONG AN ARC RIGHT, HAVING A LENGTH OF 517.66 FEET, A RADIUS OF 460.00 FEET, A CENTRAL ANGLE OF 64 DEGREES 28 MINUTES 38 SECONDS, AND A LONG CHORD WHICH BEARS NORTH 57 DEGREES 10 MINUTES 25 SECONDS EAST, 490.77 FEET; THENCE SOUTH 00 DEGREES 11 MINUTES 34 SECONDS EAST, 212.91 FEET, TO THE POINT OF BEGINNING

SITE DATA

1. PROPERTY INFORMATION:
   PART OF PARCEL #S: 4711-08-200-022

   SITE AREA: 48,927 SF (1.12AC)

   OWNER: RLG HOWELL LLC/GCG HOWELL LLC
   10050 INNOVATION DR STE 100
   MIAMISBURG, OH 45342

   DEVELOPER: ZAREMBA GROUP
   JUSTIN BRUCE, DEVELOPMENT MANAGER
   14600 DETROIT AVE. SUITE 1500
   LAKEWOOD, OH 44107
   PHONE: (216) 221-6600

2. ZONING:
   PROPERTY CURRENTLY ZONED:
   NRPUD- NON-RESIDENTIAL PLANNED UNIT DEVELOPMENT
   ABUTTING PROPERTY CURRENTLY ZONED:
   NORTH: NRPUD- NON-RESIDENTIAL PLANNED UNIT DEVELOPMENT
   SOUTH: NRPUD- NON-RESIDENTIAL PLANNED UNIT DEVELOPMENT
   EAST: NRPUD- NON-RESIDENTIAL PLANNED UNIT DEVELOPMENT
   WEST: NRPUD- NON-RESIDENTIAL PLANNED UNIT DEVELOPMENT

   PROPOSED LAND USE = MINOR AUTO REPAIR
   *PERMITTED USE WITH SPECIAL USE

3. SETBACKS
   FRONT = 50'
   SIDES = 20'
   REAR = 20'
   PARKING = 20' FRONT; 10' SIDE/REAR

4. PARKING:
   REQUIRED = (2) PARKING SPACE PER SERVICE BAY, PLUS (1) PARKING SPACE PER EMPLOYEE, PLUS (1) SPACE PER EACH TOW TRUCK
   (8 BAYS * 2) + 7 + 0= 16 + 14= 30

   PROVIDED = STANDARD 9'X20' SPACES = 26
   PROVIDED = PARALLEL 9'X23' SPACES = 2
   BARRIER FREE SPACES = 2
   TOTAL PROVIDED 30

5. BUILDING:
   SINGLE-STORY (25'-6")
   MAXIMUM HEIGHT: 75'
   TOTAL AREA OF 6,515 SFT. (SEE FLOOR PLAN AND ELEVATIONS FOR MORE DETAIL.)
   PROPOSED BUILDING COVERAGE: 14%
   PROPOSED IMPERVIOUS COVERAGE: 70%
   MAXIMUM BUILDING COVERAGE: 35%
   MAXIMUM IMPERVIOUS COVERAGE: 85%

6. LOT:
   MINIMUM LOT SIZE: 1 ACRE
   MINIMUM LOT WIDTH: 120FT
   LOT SIZE: 48,927 SFT / 1.12 ACRES
   LOT DIMENSIONS: IRREGULAR

7. LANDSCAPING:
   SHALL BE IN ACCORDANCE WITH LANDSCAPING PLAN.

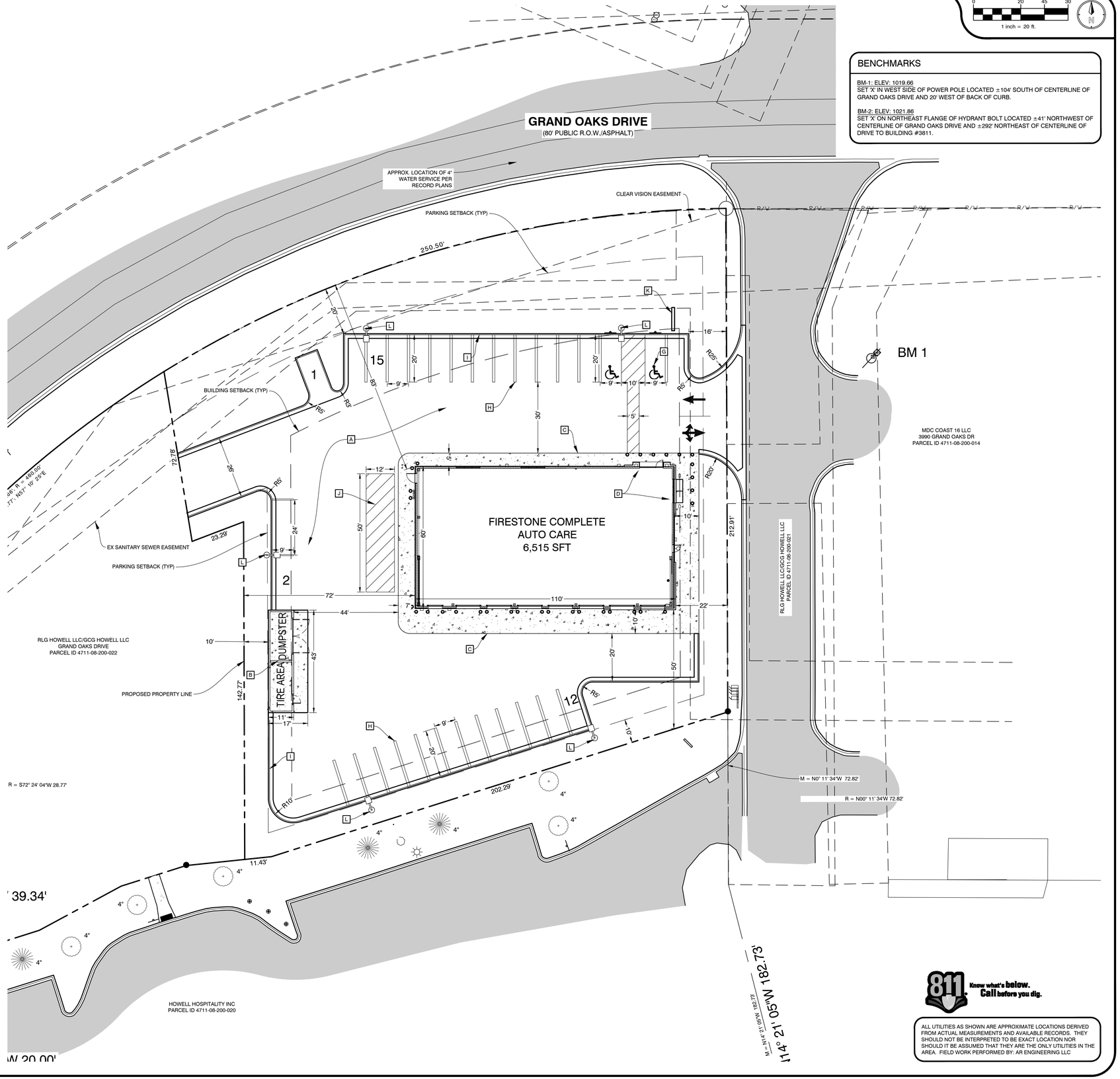
8. STORM WATER DETENTION REQUIRED:
   STORM WATER MANAGEMENT SHALL BE IN ACCORDANCE WITH TOWNSHIP STORM WATER GUIDELINES.

SITE PLAN NOTES

- A. PAVEMENT (SEE PAVING PLAN).
- B. TRASH AND TIRE ENCLOSER (SEE ARCH PLANS).
- C. CONCRETE WALK (SEE PAVING PLAN).
- D. PROPOSED BUILDING SIGN.
- E. BOLLARDS - (33 W/ DUMPSTER ENCLOSURE) TOTAL
- F. DOWNSPOUT (TYP.)
- G. PAINT/ STRIPING (SEE DETAIL SHEET)
- H. 4" PAINTED PARKING LOT MARKING/ STRIPING (TYP.)
- I. MDOT F4 CURB (SEE DETAIL SHEET)
- J. LOADING ZONE
- K. FREE STANDING SIGN (SEE ARCH PLANS)
- L. LIGHT POLES (SEE PHOTOMETRIC PLAN FOR DETAILS)

GENERAL NOTES

1. DIMENSIONS TAKE PRECEDENCE OVER SCALE. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD.
2. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
3. ALL CURB RADII AND DIMENSIONS ARE TO FACE OF CURB. CURB TO BE PROVIDED WHERE SHOWN AND INTEGRAL WITH SIDEWALK AT PAVING EDGE.
4. SLOPE GRADES UNIFORMLY BETWEEN ELEVATIONS SHOWN. NOMINAL GRADING, SLOPE SIDEWALKS AWAY FROM BUILDING AT 1/4" PER FOOT ON ENTRY WALK.



BENCHMARKS

BM-1: ELEV: 1019.66
SET 'X' IN WEST SIDE OF POWER POLE LOCATED ±104' SOUTH OF CENTERLINE OF GRAND OAKS DRIVE AND 20' WEST OF BACK OF CURB.

BM-2: ELEV: 1021.86
SET 'X' ON NORTHEAST FLANGE OF HYDRANT BOLT LOCATED ±41' NORTHWEST OF CENTERLINE OF GRAND OAKS DRIVE AND ±292' NORTHEAST OF CENTERLINE OF DRIVE TO BUILDING #3811.

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

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:

AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0804 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2		.	.
3		.	.
4		.	.

REPRODUCTION, COPYING OR CONVEYANCE OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED BY AR ENGINEERING - 2026

SITE PLAN
HOWELL, MI BRIDGESTONE
ZAREMBA GROUP, LLC
GRAND OAKS DR, HOWELL, MI 48843
SECTION 08, T02N, R05E.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
26012110

DATE
07/20/2026

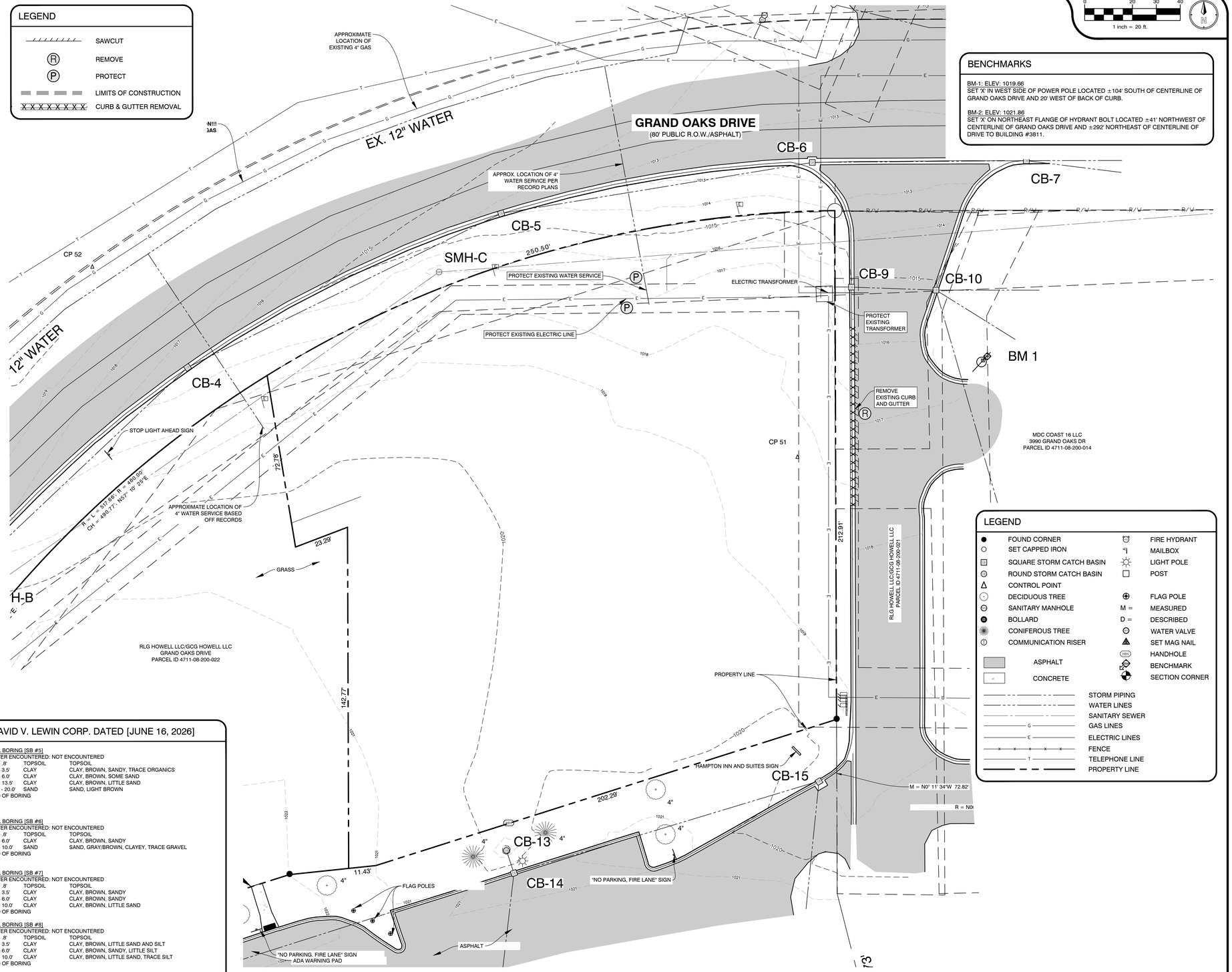
SHEET NUMBER
C01

DEMOLITION NOTES

1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE GENOA CHARTER TOWNSHIP, MICHIGAN AND LIVINGSTON COUNTY.
10. CONTACT 811 "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
11. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
12. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO DEMOLITION.
13. ALL EXCAVATION SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT FOR THIS SITE BY .
14. ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
15. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
16. ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEEDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.
17. REVIEW ALL THE REMOVALS AND PROTECTION WITH OWNER PRIOR TO COMMENCING CONSTRUCTION. INSTALL TEMPORARY SNOW FENCE AROUND ALL TREES REQUIRING PROTECTION. SNOW FENCE SHALL BE PLACED AT EDGE OF DRIP LINE.
18. SAWCUT ALL CURB, SIDEWALK, AND PAVEMENTS PRIOR TO REMOVAL. ADDITIONAL SAWCUT MAY BE NECESSARY PRIOR TO REPLACEMENT TO ENSURE CLEAN EDGE.
19. ALL REMOVALS SHALL BE TAKEN OFF-SITE AND DISPOSED OF PROPERLY. NO STOCKPILE OR BURNING OF DEBRIS IS ALLOWED.
20. ALL REMOVALS BE TO THE LIMITS INDICATED ABOVE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. UNAUTHORIZED REMOVALS AND SUBSEQUENT REPLACEMENT SHALL BE AT THE CONTRACTOR'S EXPENSE.
21. REMOVE, STORE, AND RESET ANY EXISTING SIGNS AS DIRECTED BY THE ENGINEER/OWNER.
22. REMOVE ALL TREES TO THE CLEARING LIMITS AS SHOWN. REMOVE ALL EXISTING TREES, STUMPS AND BRUSH FROM THE SITE AS NECESSARY TO CONSTRUCT THE IMPROVEMENTS.
23. THE CONTRACTOR SHALL DEMOLISH AND REMOVE ANY ITEMS REMAINING FROM THE EXISTING BUILDING, IN ITS ENTIRETY, INCLUDING WALLS, FOUNDATIONS AND FOOTINGS. ALL BUILDING DRAINS AND UTILITY LEADS SHALL BE LOCATED AND PROPERLY PLUGGED. UTILITY LEAD WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.
24. BACKFILL EXCAVATED AREAS WITH CLEAN GRANULAR FILL COMPACTED TO 95% OF THE MATERIAL UNIT WEIGHT BY MODIFIED PROCTOR.
25. CONTROL SHALL BE MAINTAINED OVER THE SITE AND OPERATION TO ELIMINATE HAZARDS TO THE PUBLIC. NAILS OR OTHER TIRE PUNCTURING ITEMS SHALL NOT BE DROPPED ON STREETS, ALLEYS AND ADJACENT PROPERTY. PUBLIC STREETS, CURBS AND SIDEWALKS SHALL BE PROTECTED FROM DAMAGE. THE PERSON ENGAGED IN THE DEMOLITION WORK SHALL BE LIABLE FOR ANY AND ALL DAMAGE TO CURBS, STREETS, SIDEWALKS AND OTHER PUBLIC OR PRIVATE PROPERTY AND FOR ANY BODILY INJURY OCCURRING AS A RESULT OF THE DEMOLITION WORK.

LEGEND

- SAWCUT
- (R) REMOVE
- (P) PROTECT
- LIMITS OF CONSTRUCTION
- CURB & GUTTER REMOVAL



BENCHMARKS

BM-1: ELEV: 1019.66
SET 'X' IN WEST SIDE OF POWER POLE LOCATED ±104' SOUTH OF CENTERLINE OF GRAND OAKS DRIVE AND 20' WEST OF BACK OF CURB.

BM-2: ELEV: 1021.86
SET 'X' ON NORTHEAST FLANGE OF HYDRANT BOLT LOCATED ±41' NORTHWEST OF CENTERLINE OF GRAND OAKS DRIVE AND ±292' NORTHEAST OF CENTERLINE OF DRIVE TO BUILDING #3811.

LEGEND

- FOUND CORNER
- SET CAPPED IRON
- SQUARE STORM CATCH BASIN
- ROUND STORM CATCH BASIN
- CONTROL POINT
- DECIDUOUS TREE
- SANITARY MANHOLE
- BOLLARD
- CONIFEROUS TREE
- COMMUNICATION RISER
- FIRE HYDRANT
- MAILBOX
- LIGHT POLE
- POST
- FLAG POLE
- M = MEASURED
- D = DESCRIBED
- WATER VALVE
- SET MAG NAIL
- (1001) HANDHOLE
- BENCHMARK
- SECTION CORNER
- ASPHALT
- CONCRETE
- STORM PIPING
- WATER LINES
- SANITARY SEWER
- G GAS LINES
- E ELECTRIC LINES
- FENCE
- T TELEPHONE LINE
- PROPERTY LINE

SOIL BORINGS - REFER TO GEOTECHNICAL REPORT BY DAVID V. LEWIN CORP. DATED [JUNE 16, 2026]

SOIL BORING [SB #1]
WATER ENCOUNTERED: NOT ENCOUNTERED

0.0' - .8'	TOPSOIL	TOPSOIL
0.8' - 6.0'	CLAY	CLAY, BROWN, SANDY, LITTLE SILT
6.0' - 7.5'	CLAY	CLAY, BROWN, SOME SAND, LITTLE SILT
7.5' - 13.5'	CLAY	SAND, BROWN, LITTLE SAND AND SILT
13.5' - 18.5'	SAND	SAND, BROWN, TRACE CLAY
18.5' - 20.0'	SAND	SAND, BROWN

END OF BORING

SOIL BORING [SB #2]
WATER ENCOUNTERED: NOT ENCOUNTERED

0.0' - .8'	TOPSOIL	TOPSOIL
0.8' - 3.5'	SAND	SAND, BROWN, SOME CLAY SEAMS, TRACE ORGANICS
3.5' - 6.0'	CLAY	CLAY AND SAND, BROWN TRACE SILT
6.0' - 8.5'	CLAY	CLAY, BROWN, SOME SAND, TRACE SILT, BLACK SAND SEAM
8.5' - 13.5'	CLAY	CLAY, BROWN, LITTLE SAND, TRACE SILT
13.5' - 18.5'	SAND	SAND, BROWN, CLAY SEAMS
18.5' - 20.0'	SAND	SAND, LIGHT BROWN

END OF BORING

SOIL BORING [SB #3]
WATER ENCOUNTERED: NOT ENCOUNTERED

0.0' - .5'	TOPSOIL	TOPSOIL
0.5' - 6.0'	SAND	SAND, BROWN, SOME CLAY, TRACE GRAVEL
6.0' - 8.5'	CLAY	CLAY, BROWN, LITTLE SAND
8.5' - 13.5'	CLAY	CLAY, BROWN SOME SAND
13.5' - 18.5'	SAND	SAND, BROWN, TRACE CLAY
18.5' - 20.0'	SAND	SAND, LIGHT BROWN

END OF BORING

SOIL BORING [SB #4]
WATER ENCOUNTERED: NOT ENCOUNTERED

0.0' - .5'	TOPSOIL	TOPSOIL
0.5' - 3.5'	CLAY	CLAY, BROWN, SANDY, TRACE ORGANICS
3.5' - 6.0'	CLAY	CLAY, BROWN, SANDY, TRACE SILT
6.0' - 13.5'	CLAY	CLAY, BROWN, SOME SAND, TRACE SILT
13.5' - 20.0'	SAND	SAND, LIGHT BROWN

END OF BORING

SOIL BORING [SB #5]
WATER ENCOUNTERED: NOT ENCOUNTERED

0.0' - .8'	TOPSOIL	TOPSOIL
0.8' - 3.5'	CLAY	CLAY, BROWN, SANDY, TRACE ORGANICS
3.5' - 6.0'	CLAY	CLAY, BROWN, SOME SAND
6.0' - 13.5'	CLAY	CLAY, BROWN, LITTLE SAND
13.5' - 20.0'	SAND	SAND, LIGHT BROWN

END OF BORING

SOIL BORING [SB #6]
WATER ENCOUNTERED: NOT ENCOUNTERED

0.0' - .8'	TOPSOIL	TOPSOIL
0.8' - 6.0'	CLAY	CLAY, BROWN, SANDY
6.0' - 10.0'	SAND	SAND, GRAY/BROWN, CLAYEY, TRACE GRAVEL

END OF BORING

SOIL BORING [SB #7]
WATER ENCOUNTERED: NOT ENCOUNTERED

0.0' - .8'	TOPSOIL	TOPSOIL
0.8' - 3.5'	CLAY	CLAY, BROWN, SANDY
3.5' - 6.0'	CLAY	CLAY, BROWN, SANDY
6.0' - 10.0'	CLAY	CLAY, BROWN, LITTLE SAND

END OF BORING

SOIL BORING [SB #8]
WATER ENCOUNTERED: NOT ENCOUNTERED

0.0' - .8'	TOPSOIL	TOPSOIL
0.8' - 3.5'	CLAY	CLAY, BROWN, LITTLE SAND AND SILT
3.5' - 6.0'	CLAY	CLAY, BROWN, SANDY, LITTLE SILT
6.0' - 10.0'	CLAY	CLAY, BROWN, LITTLE SAND, TRACE SILT

END OF BORING

SOIL BORING [SB #9]
WATER ENCOUNTERED: NOT ENCOUNTERED

0.0' - .8'	TOPSOIL	TOPSOIL
0.8' - 3.5'	CLAY	CLAY AND SAND, TRACE SILT
3.5' - 6.0'	CLAY	CLAY, BROWN, SANDY, TRACE SILT
6.0' - 10.0'	CLAY	CLAY, BROWN, LITTLE SAND, TRACE SILT

END OF BORING

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

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:

AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0934 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONCEALING OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED BY AR ENGINEERING - 2026

SITE DEMOLITION PLAN
HOWELL, MI BRIDGESTONE
ZAREMBA GROUP, LLC
GRAND OAKS DR, HOWELL, MI 48843
SECTION 08, T02N, R05E.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
26012110

DATE
07/20/2026

SHEET NUMBER
C02

GRADING NOTES

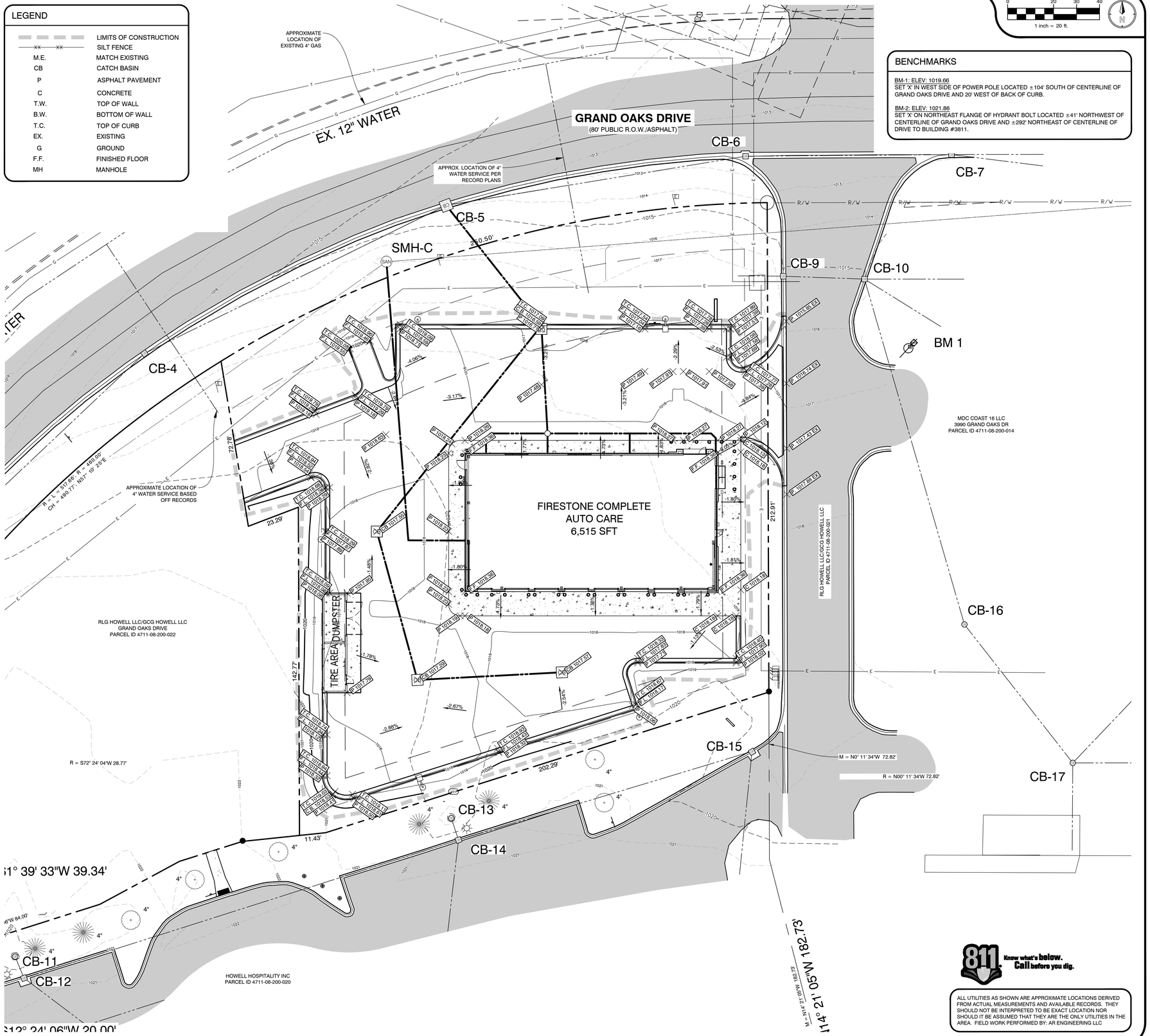
1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
3. CONTACT 811 "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
4. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
5. MATCH EXISTING GRADES AROUND PERIMETER WITH SLOPES AS SHOWN.
6. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT GRADES AT EDGE OF METAL (EOM) UNLESS OTHERWISE NOTED.
7. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO MASS GRADING.
8. ALL EARTHWORK SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT PREPARED BY DAVID V. LEWIN CORP..
9. ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
10. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
11. ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEEDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.

LEGEND

	LIMITS OF CONSTRUCTION
XX XX	SILT FENCE
M.E.	MATCH EXISTING
CB	CATCH BASIN
P	ASPHALT PAVEMENT
C	CONCRETE
T.W.	TOP OF WALL
B.W.	BOTTOM OF WALL
T.C.	TOP OF CURB
EX.	EXISTING
G	GROUND
F.F.	FINISHED FLOOR
MH	MANHOLE

LEGEND

FOUND CORNER	FIRE HYDRANT
SET CAPPED IRON	MAILBOX
SQUARE STORM CATCH BASIN	LIGHT POLE
ROUND STORM CATCH BASIN	POST
CONTROL POINT	
DECIDUOUS TREE	FLAG POLE
SANITARY MANHOLE	M = MEASURED
BOLLARD	D = DESCRIBED
CONIFEROUS TREE	WATER VALVE
COMMUNICATION RISER	SET MAG NAIL
	HANDHOLE
ASPHALT	BENCHMARK
CONCRETE	SECTION CORNER
STORM PIPING	
WATER LINES	
SANITARY SEWER	
G GAS LINES	
E ELECTRIC LINES	
FENCE	
T TELEPHONE LINE	



BENCHMARKS

BM-1: ELEV: 1019.66
SET 'X' IN WEST SIDE OF POWER POLE LOCATED ±104' SOUTH OF CENTERLINE OF GRAND OAKS DRIVE AND 20' WEST OF BACK OF CURB.

BM-2: ELEV: 1021.86
SET 'X' ON NORTHEAST FLANGE OF HYDRANT BOLT LOCATED ±41' NORTHWEST OF CENTERLINE OF GRAND OAKS DRIVE AND ±292' NORTHEAST OF CENTERLINE OF DRIVE TO BUILDING #3811.

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

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

PLANS PREPARED BY:
AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0804 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONCEALING OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED BY AR ENGINEERING - 2026

SITE GRADING PLAN
HOWELL, MI BRIDGESTONE
ZAREMBA GROUP, LLC
GRAND OAKS DR, HOWELL, MI 48843
SECTION 08, T02N, R05E.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
26012110

DATE
07/20/2026

SHEET NUMBER
C03

GRADING NOTES

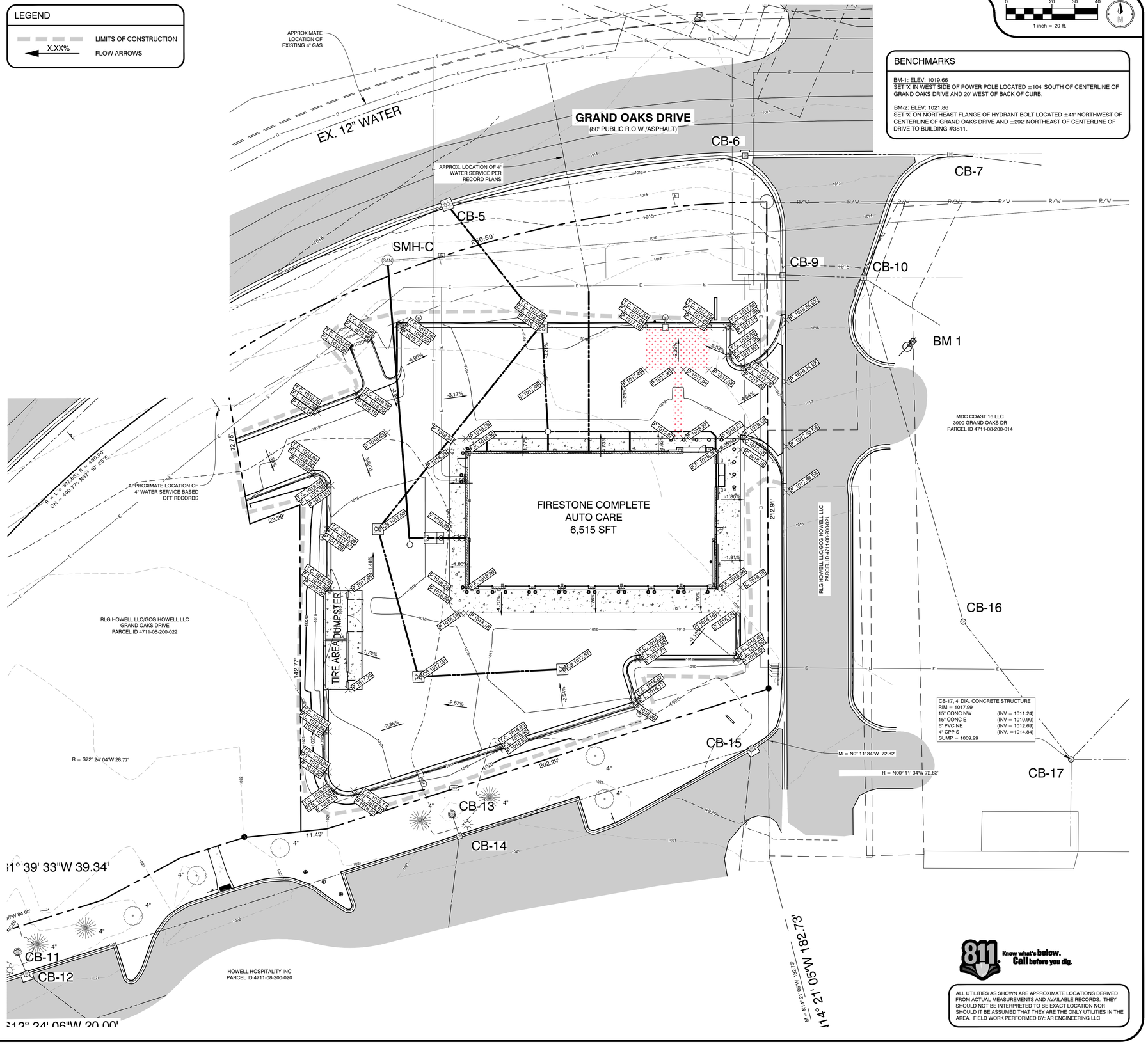
1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
3. CONTACT 811 "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
4. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
5. MATCH EXISTING GRADES AROUND PERIMETER WITH SLOPES AS SHOWN.
6. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT GRADES AT EDGE OF METAL (EOM) UNLESS OTHERWISE NOTED.
7. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO MASS GRADING.
8. ALL EARTHWORK SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT PREPARED BY DAVID V. LEWIN CORP..
9. ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
10. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
11. ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEEDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.

LEGEND

- LIMITS OF CONSTRUCTION
- X.XX% — FLOW ARROWS

LEGEND

- FOUND CORNER
- STREET SIGN
- SQUARE STORM CATCH BASIN
- ROUND STORM CATCH BASIN
- STORM MANHOLE
- DECIDUOUS TREE
- UTILITY POLE
- CONTROL POINT
- SANITARY CLEANOUT
- SANITARY MANHOLE
- BOLLARD
- GAS METER
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- CONIFEROUS TREE
- SET CAPPED IRON
- FIRE HYDRANT
- WATER VALVE
- GUY ANCHOR
- LIGHT POLE
- COMMUNICATION RISER
- M = MEASURED
- D = DESCRIBED
- SECTION CORNER
- BENCHMARK
- SET MAG NAIL
- ASPHALT
- CONCRETE
- GRAVEL
- STORM PIPING
- WATER LINES
- SANITARY SEWER
- G — GAS LINES
- E — ELECTRIC LINES
- C — CABLE LINE
- DHU — OVERHEAD UTILITY
- F — FIBER LINE



BENCHMARKS

BM-1: ELEV: 1019.66
SET 'X' IN WEST SIDE OF POWER POLE LOCATED ±104' SOUTH OF CENTERLINE OF GRAND OAKS DRIVE AND 20' WEST OF BACK OF CURB.

BM-2: ELEV: 1021.86
SET 'X' ON NORTHEAST FLANGE OF HYDRANT BOLT LOCATED ±41' NORTHWEST OF CENTERLINE OF GRAND OAKS DRIVE AND ±292' NORTHEAST OF CENTERLINE OF DRIVE TO BUILDING #3811.

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

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:
AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0934 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONCEALING OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED BY AR ENGINEERING - 2026

SITE DRAINAGE PLAN
HOWELL, MI BRIDGESTONE
ZAREMBA GROUP, LLC
GRAND OAKS DR, HOWELL, MI 48843
SECTION 08, T02N, R05E.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
26012110

DATE
07/20/2026

SHEET NUMBER
C03.1

GRADING NOTES

1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
3. CONTACT 811 "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
4. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
5. MATCH EXISTING GRADES AROUND PERIMETER WITH SLOPES AS SHOWN.
6. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT GRADES AT EDGE OF METAL (EOM) UNLESS OTHERWISE NOTED.
7. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO MASS GRADING.
8. ALL EARTHWORK SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT PREPARED BY DAVID V. LEWIN CORP..
9. ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
10. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
11. ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEEDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.

SOIL EROSION & SEDIMENT CONTROL NOTES

1 ALL CONSTRUCTION METHODS SHALL BE DONE IN COMPLIANCE WITH MDOT-EGLE. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING A "SOIL EROSION PERMIT" FROM THE GOVERNING AUTHORITY AND A "PERMIT BY RULE/NOTICE OF COVERAGE" FROM THE GOVERNING AUTHORITY, IF APPLICABLE, PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE "SOIL EROSION PERMIT" AND FOR ALL CERTIFIED STORM WATER INSPECTION SERVICE REQUIRED BY THE "PERMIT BY RULE." EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS AND SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR PROVIDING ALL REQUIRED EROSION CONTROL MEASURES.

2. AVOID UNNECESSARY DISTURBING OR REMOVING OF EXISTING VEGETATED TOPSOIL OR EARTH COVER, THESE COVER AREAS ACT AS SEDIMENT FILTERS.

3. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEAN UP AND APPROVAL.

4. GEOTEXTILE SILT FENCE SHALL BE INSTALLED AS REQUIRED WHEN CROSSING CREEKS OR WHEN ADJACENT TO WETLANDS OR SURFACE WATER BODIES TO PREVENT SILTATION AND ELSEWHERE AS DIRECTED BY THE ENGINEER. SEEDING AND/OR SODDING SHALL BE INSTALLED ON CREEK BANKS IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.

5. MAINTENANCE, CLEANING, AND REMOVAL OF THE VARIOUS SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE VARIOUS EROSION CONTROL ITEMS.

ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PER MDOT STANDARD DETAILS. "P" DENOTES PERMANENT MEASURE AND "T" DENOTES TEMPORARY MEASURE. SOIL EROSION CONTROL PLANS DENOTE MINIMUM EROSION MEASURES REQUIRED AS DESCRIBED BELOW.

(##) DENOTES PERMANENT SEEDING. ALL DISTURBED AREAS NOT PAVED OR GRAVELED SHALL BE RESTORED. PLACE TOPSOIL SURFACE, SALV, 3 INCH, MDOT SEEDING, MIXTURE TUF APPLIED AT A RATE OF 220 LB/ACRE, FERTILIZER, CHEMICAL NUTRIENT, CL A APPLIED AT A RATE OF 228 LB/ACRE; MULCH AT A RATE OF 2 TON/ACRE AND MULCH ANCHORING. (APPLIES TO ENTIRE PROJECT)

(3P) DENOTES TEMPORARY SEEDING. TEMPORARY SEEDING SHALL BE PLACED AT LOCATIONS DETERMINED BY THE ENGINEER IN THE FIELD AND SHALL INCLUDE CEREAL RYE SEED APPLIED AT A RATE OF 70 LB/ACRE AND MULCH.

(3T) DENOTES DUST CONTROL. DUST CONTROL MAY BE REQUIRED ON THE SUBGRADE CONSTRUCTION AND WILL INCLUDE APPLYING FRESH WATER TO BE INCLUDED IN THE ITEM OF EMBANKMENT. DUST CONTROL ON THE AGGREGATE BASE COURSE WILL BE ACCOMPLISHED BY APPLYING FRESH WATER (INCLUDED IN THE ITEM OF AGGREGATE BASE, 6 INCH) AND APPLYING DUST PALLIATIVE, APPLIED, $CACL_2$ (TON) AS DIRECTED BY THE PROJECT ENGINEER.

(4T) DENOTES AGGREGATE COVER/PERMANENT PAVEMENT RESTORATION

(8P) DENOTES GRAVEL ACCESS APPROACH. APPROACH SHALL BE INSTALLED TO PROVIDE STABLE ACCESS TO ROADWAYS AND MINIMIZE DUST AND TRACKING OF MATERIALS ONTO PUBLIC STREETS AND HIGHWAYS. THE APPROACH SHALL BE A MINIMUM OF 12' WIDE, 6" DEEP, AND CONSIST OF 2"-4" AGGREGATE.

(14T) DENOTES TEMPORARY SILT FENCE. SILT FENCE SHALL BE INSTALLED AT CREEK CROSSINGS, ADJACENT TO ALL WETLANDS AND SURFACE WATERS, AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. EACH SILT FENCE SHALL BE INSTALLED GENERALLY ALONG THE SAME CONTOUR ELEVATION.

(26T) DENOTES INLET PROTECTION FABRIC DROP. SHALL BE INSTALLED AT EXISTING AND PROPOSED STORM SEWER INLETS TO PROVIDE SETTLING AND FILTERING OF SILT LADEN WATER PRIOR TO ENTRY INTO THE DRAINAGE SYSTEM.

(29T) DENOTES MULCH BLANKET OR MATTING. SHALL BE NORTH AMERICAN GREEN DS150, OR APPROVED EQUAL. MULCH BLANKETS SHALL BE PLACED ON ALL 1:3 SLOPES OR GREATER, IN AND AROUND DITCH BOTTOMS WHERE THERE IS NO BIOSWALE BY CONTRACTOR RESPONSIBLE FOR RESTORING THAT AREA.

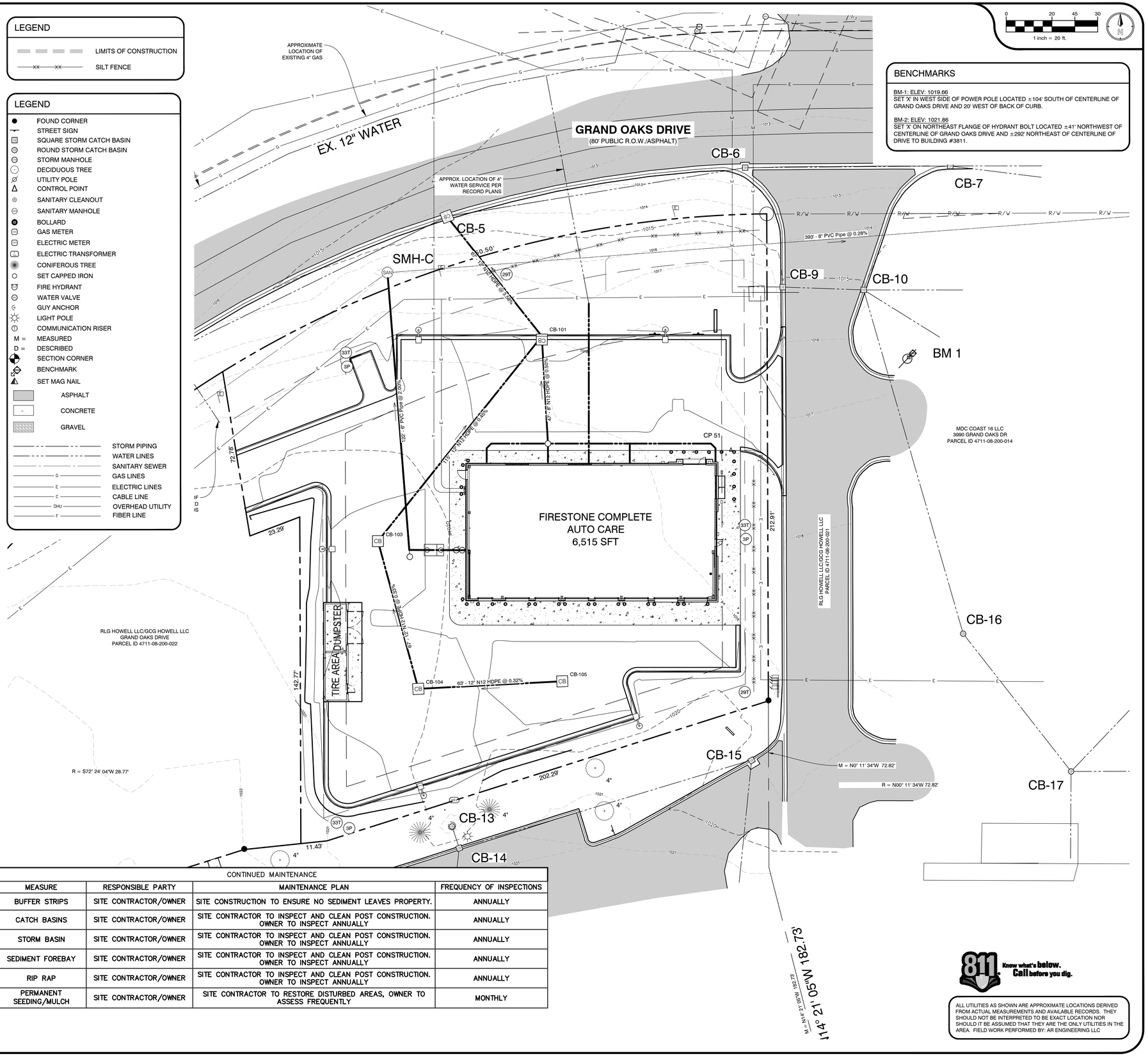
(33T)

LEGEND

- LIMITS OF CONSTRUCTION
- SILT FENCE

LEGEND

- FOUND CORNER
- STREET SIGN
- SQUARE STORM CATCH BASIN
- ROUND STORM CATCH BASIN
- STORM MANHOLE
- DECIDUOUS TREE
- UTILITY POLE
- CONTROL POINT
- SANITARY CLEANOUT
- SANITARY MANHOLE
- BOLLARD
- GAS METER
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- CONIFEROUS TREE
- SET CAPPED IRON
- FIRE HYDRANT
- WATER VALVE
- GUY ANCHOR
- LIGHT POLE
- COMMUNICATION RISER
- M = MEASURED
- D = DESCRIBED
- SECTION CORNER
- BENCHMARK
- SET MAG NAIL
- ASPHALT
- CONCRETE
- GRAVEL
- STORM PIPING
- WATER LINES
- SANITARY SEWER
- GAS LINES
- ELECTRIC LINES
- CABLE LINE
- OVERHEAD UTILITY
- FIBER LINE



BENCHMARKS

BM-1: ELEV: 1019.66
SET 'X' IN WEST SIDE OF POWER POLE LOCATED ±104' SOUTH OF CENTERLINE OF GRAND OAKS DRIVE AND 20' WEST OF BACK OF CURB.

BM-2: ELEV: 1021.86
SET 'X' ON NORTHEAST FLANGE OF HYDRANT BOLT LOCATED ±41' NORTHWEST OF CENTERLINE OF GRAND OAKS DRIVE AND ±292' NORTHEAST OF CENTERLINE OF DRIVE TO BUILDING #3811.

SCHEDULED ACTIVITY

CONSTRUCTION SCHEDULE	OCT '26	NOV	DEC	JAN '27	FEB	MAR	APR	MAY
TEMPERARY SESC MEASURES	X	X						
STRIP AND STOCKPILE	X							
ROUGH GRADING	X	X						
UNDERGROUND UTILITIES		X	X					
BUILDING CONSTRUCTION		X	X	X	X			
PERMANENT SESC MEASURES					X	X	X	
REMOVAL OF TEMP SESC CONTROLS (AFTER SITE IS FULLY VEGETATED)								X
FINAL GRADE					X	X		
FINAL PAVING						X	X	
LANDSCAPING								X

CONTINUED MAINTENANCE

MEASURE	RESPONSIBLE PARTY	MAINTENANCE PLAN	FREQUENCY OF INSPECTIONS
BUFFER STRIPS	SITE CONTRACTOR/OWNER	SITE CONSTRUCTION TO ENSURE NO SEDIMENT LEAVES PROPERTY.	ANNUALLY
CATCH BASINS	SITE CONTRACTOR/OWNER	SITE CONTRACTOR TO INSPECT AND CLEAN POST CONSTRUCTION. OWNER TO INSPECT ANNUALLY	ANNUALLY
STORM BASIN	SITE CONTRACTOR/OWNER	SITE CONTRACTOR TO INSPECT AND CLEAN POST CONSTRUCTION. OWNER TO INSPECT ANNUALLY	ANNUALLY
SEDIMENT FOREBAY	SITE CONTRACTOR/OWNER	SITE CONTRACTOR TO INSPECT AND CLEAN POST CONSTRUCTION. OWNER TO INSPECT ANNUALLY	ANNUALLY
RIP RAP	SITE CONTRACTOR/OWNER	SITE CONTRACTOR TO INSPECT AND CLEAN POST CONSTRUCTION. OWNER TO INSPECT ANNUALLY	ANNUALLY
PERMANENT SEEDING/MULCH	SITE CONTRACTOR/OWNER	SITE CONTRACTOR TO RESTORE DISTURBED AREAS, OWNER TO ASSESS FREQUENTLY	MONTHLY

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

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:
AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0804 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

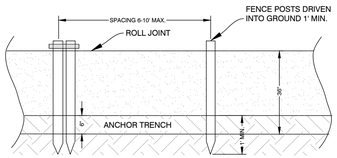
No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

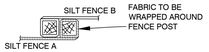
REPRODUCTION, COPYING OR CONCEALING OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED © A.R ENGINEERING - 2026

EROSION CONTROL PLAN
HOWELL, MI BRIDGESTONE

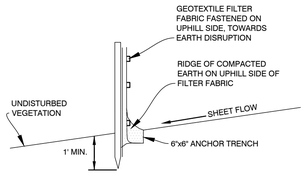
PROJECT: ZAREMBA GROUP, LLC
CLIENT:
SITE ADDRESS: GRAND OAKS DR, HOWELL, MI 48843
SITE SECTION: SECTION 08, T02N, R05E.

JOB NUMBER 26012110
DATE 07/20/2026
SHEET NUMBER C04

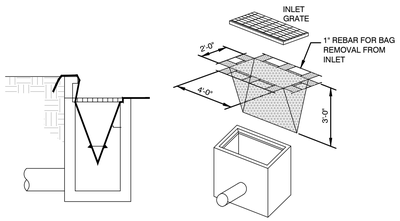




ROLL JOINTS



36" SILT FENCE
10005 NOT TO SCALE



INSTALLATION DETAIL **ISOMETRIC VIEW**

WHEN:
WHEN SEDIMENT LADEN STORMWATER REQUIRES TREATMENT BEFORE ENTERING A STORM WATER DRAINAGE SYSTEM.

WHY:
TO PREVENT SEDIMENT FROM ENTERING STORM WATER SYSTEMS.

WHERE:
USE IN OR AT STORM WATER INLETS, ESPECIALLY AT CONSTRUCTION SITES OR IN STREETS.

HOW:
1. A FILTER FABRIC BAG IS HUNG INSIDE THE INLET, BENEATH THE GRATE.

2. REPLACE GRATE, WHICH WILL HOLD BAG IN PLACE.

3. ANCHOR FILTER BAG WITH 1" REBAR FOR REMOVAL FROM INLET.

4. FLAPS OF BAG THAT EXTEND BEYOND THE BAG CAN BE BURIED IN SOIL IN EARTH AREAS.

MAINTENANCE:
DROP INLET FILTERS SHOULD BE INSPECTED ROUTINELY AND AFTER EACH MAJOR RAIN EVENT.

DAMAGED FILTER BAGS SHOULD BE REPLACED.

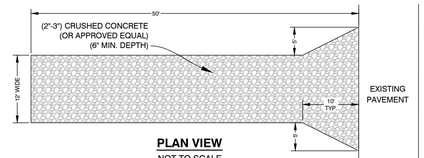
CLEAN AND/OR REPLACE FILTER BAG WHEN 1/2 FULL.

REPLACE CLOGGED FABRIC IMMEDIATELY.

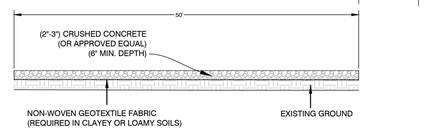
IF NEEDED, INITIATE REPAIRS IMMEDIATELY UPON INSPECTION.

REMOVE ENTIRE PROTECTIVE MECHANISM WHEN UPGRADIENT AREAS ARE STABILIZED AND STREETS HAVE BEEN SWEPT.

INLET PROTECTION - SILT SACK
10004 NOT TO SCALE



PLAN VIEW
NOT TO SCALE



PROFILE VIEW
NOT TO SCALE

STABILIZED CONSTRUCTION TRACKING MAT
10007 NOT TO SCALE

PLANS PREPARED BY:
AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0604 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONCEIVED OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED © A.R ENGINEERING - 2026

EROSION CONTROL PLAN NOTES & DETAILS
HOWELL, MI BRIDGESTONE
PROJECT:
ZAREMBA GROUP, LLC
CLIENT:
GRAND OAKS DR, HOWELL, MI 48843
SITE ADDRESS:
SECTION 08, T02N, R05E.
SITE SECTION:

JOB NUMBER
26012110

DATE
07/20/2026

SHEET NUMBER
C04.1

SITE MATERIALS & CONSTRUCTION NOTES

1. SOILS EXPOSED IN THE BASE OF ALL SATISFACTORY FOUNDATION EXCAVATIONS SHOULD BE PROTECTED AGAINST ANY DETRIMENTAL CHANGES IN CONDITION SUCH AS FROM DISTURBANCE, RAIN AND FREEZING. SURFACE RUN-OFF WATER SHOULD BE DRAINED AWAY FROM THE EXCAVATION AND NOT ALLOWED TO POND. IF POSSIBLE, ALL FOOTING CONCRETE SHOULD BE POURED THE SAME DAY THE EXCAVATION IS MADE. IF THIS IS NOT PRACTICAL, THE FOOTING EXCAVATIONS SHOULD BE ADEQUATELY PROTECTED.
2. REMOVE ALL SUBGRADE GRADE MATERIAL THAT MAY BE SOFTENED BY RAINS, FREEZING, OR CONSTRUCTION TRAFFIC, ETC. AND REPLACE WITH COMPACTED GRANULAR FILL.
3. STORM SEWER SHALL BE CORRUGATED HDPE PIPE WITH SMOOTH INTERIOR WALL, BY ADS OR EQUAL. LEACHING BASINS AND MANHOLES ARE TO BE REINFORCED CONCRETE WITH RIM AND SLOTTED GRATING (AS SHOWN). STORM SEWER & LEACHING BASINS ARE TO BE WRAPPED WITH FILTER FABRIC.
4. ALL WATER SERVICE LINES SHALL BE 1" PE PIPE WITHIN 5' OF BUILDING, WITH COMPRESSION FITTINGS OR MECHANICAL FITTINGS OTHER THAN FLARED ENDS. PROVIDE 5' COVER FROM FINISHED GRADE.
5. PROVIDE MINIMUM 5' COVER FROM FINISHED GRADE FOR ALL WATER SERVICE LINES, IF COVER CANNOT BE MAINTAINED DUE TO SITE CONDITIONS OR INVERT ELEVATIONS THE ENTIRE LENGTH OF THE EXTERIOR PIPE MUST BE PROTECTED WITH 2" RIGID INSULATION BOARD ON THE TOP AND SIDES.
6. PROVIDE MINIMUM 5' COVER FROM FINISHED GRADE FOR ALL SANITARY SEWER LINES, IF COVER CANNOT BE MAINTAINED DUE TO SITE CONDITIONS OR INVERT ELEVATIONS THE ENTIRE LENGTH OF THE EXTERIOR PIPE MUST BE PROTECTED WITH 2" RIGID INSULATION BOARD ON THE TOP AND SIDES.
7. MAINTAIN 10 FOOT MINIMUM HORIZONTAL SEPARATION BETWEEN THE SEWER AND WATER MAIN UTILITIES. PROVIDE 18" MINIMUM VERTICAL SEPARATION WHERE UTILITIES CROSS.
8. THE CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED.
9. EXTERIOR CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI AND SHALL HAVE LIMESTONE AGGREGATE AND SHALL HAVE 4 - 6 % AIR ENTRAINMENT WITH A BROOM FINISH.
10. EXPANSION JOINTS IN CONCRETE PAVEMENT AND WALLS SHALL BE 1/2" ASPHALT IMPREGNATED FULL DEPTH 40' O.C. MAXIMUM & AT SIDEWALK INTERSECTIONS. CRACK CONTROL SCORING AT SIDEWALK WIDTH DIMENSION AND @ 10'-0" O.C. IN DRIVES.

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
2. ELECTRICAL WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED ELECTRICIAN ACCORDING TO THE N.F.P.A. NATIONAL ELECTRICAL CODE AS MODIFIED BY THE STATE OF MICHIGAN. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A COMPLETE WORKING SYSTEM.
3. ALL PLUMBING WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED PLUMBER ACCORDING TO THE INTERNATIONAL PLUMBING CODE AS MODIFIED BY THE STATE OF MICHIGAN AND LOCAL HEALTH DEPARTMENT. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A FULL WORKING SYSTEM.
4. ALL MECHANICAL WORK SHALL BE PERFORMED ACCORDING TO THE INTERNATIONAL MECHANICAL CODE AS MODIFIED BY THE STATE OF MICHIGAN AND THE MICHIGAN ENERGY CODE. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A FULL WORKING SYSTEM.
5. ALL WORK SHALL CONFORM TO THE MICHIGAN HANDICAPPED ACCESSIBILITY CODE AND THE AMERICANS WITH DISABILITIES ACT.
6. WATER SERVICE PRESSURE TESTING AND CHLORINATION SHALL BE PER EGLE AND THE GENOA CHARTER TOWNSHIP REQUIREMENTS.
7. SANITARY SEWER INSTALLATION AND TESTING MUST MEET THE REQUIREMENTS OF THE GENOA CHARTER TOWNSHIP AND THE EGLE.
8. ALL REGULATORY SIGNAGE (IF SPECIFIED) SHALL BE PER THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
9. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK.
10. CONTACT 811 "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
11. ANY SANITARY SEWER, SANITARY SEWER SERVICE LEADS, WATER MAIN, WATER SERVICES, OR STORM SEWER WHICH IS DAMAGED BY THE CONTRACTOR DURING HIS OPERATIONS SHALL BE REPAIRED TO THE OWNERS SATISFACTION, AND AT THE CONTRACTORS EXPENSE. IF ANY ELEMENTS OF THE SANITARY SEWER SYSTEM ARE DAMAGED AND NEED REPAIRED, IT MUST MEET THE GENOA CHARTER TOWNSHIP SPECIFICATIONS.
12. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE ELECTRICAL TRANSFORMER PAD PER THE UTILITY COMPANY SPECIFICATIONS.
13. THE TELEPHONE UTILITY COMPANY SHALL PROVIDE UNDERGROUND TELEPHONE TO THE BUILDING AT THE OWNERS EXPENSE.
14. REFER TO ELECTRICAL DRAWINGS FOR UNDERGROUND ELECTRICAL REQUIREMENTS FOR SITE LIGHTING & SITE DETAILS SHEETS FOR THE FIXTURE AND & POLE SPECIFICATIONS.
15. DESIGN, INSTALLATION AND SPECIFICATION FOR IMPROVEMENTS RELATED TO GAS, TELEPHONE, ELECTRIC AND CABLE TELEVISION SERVICES SHALL BE COORDINATED BY THE CONTRACTOR.
16. CONTRACTOR SHALL COORDINATE TELEPHONE, ELECTRIC, AND CABLE TELEVISION CONDUITS WITH THE APPROPRIATE UTILITY PRIOR TO PAVEMENT INSTALLATION.
17. CONTRACTOR IS TO UNCOVER AND CONFIRM ALL TAP LOCATIONS. LOCATION DISCREPANCIES ARE TO BE BROUGHT TO THE ENGINEERS ATTENTION FOR RESOLUTION.
18. THE CONTRACTOR IS TO PROVIDE THE WATER SERVICE PIPING FROM THE BUILDING TO THE SERVICE. THE CONTRACTOR SHALL MAKE THE CONNECTION TO THE SHUT OFF VALVE, THE CONTRACTOR SHALL COORDINATE SERVICES WITH THE MHOG UTILITY DEPARTMENT.
19. CONTRACTOR/OWNER SHALL OBTAIN UTILITY CONNECTION PERMITS AND SETTLE APPLICABLE UTILITY ASSESSMENTS PRIOR TO EXTENSION OF PUBLIC UTILITIES ONSITE.
20. MANHOLE AND CATCH BASIN STRUCTURES SHALL BE PRECAST AND HAVE A MAXIMUM OF 2 ADJUSTING RINGS FOR FINISH GRADE ADJUSTMENT. STORM STRUCTURES MUST ALL HAVE A SUMP OF TWO FEET.
21. ALL WATER MAIN TO HAVE A BURIAL DEPTH AS REQUIRED BY THE EGLE FOR THE SPECIFIC REGION OF WORK IN GENOA CHARTER TOWNSHIP.
22. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
23. THE CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT PREPARED BY DAVID V. LEWIN CORP..
24. DRIVEWAY LAYOUT AND CONNECTION TO PRIVATE DRIVE SHALL COMPLY WITH ALL ASPECTS OF THE COUNTY DRIVE PERMIT.

UTILITY PLAN NOTES

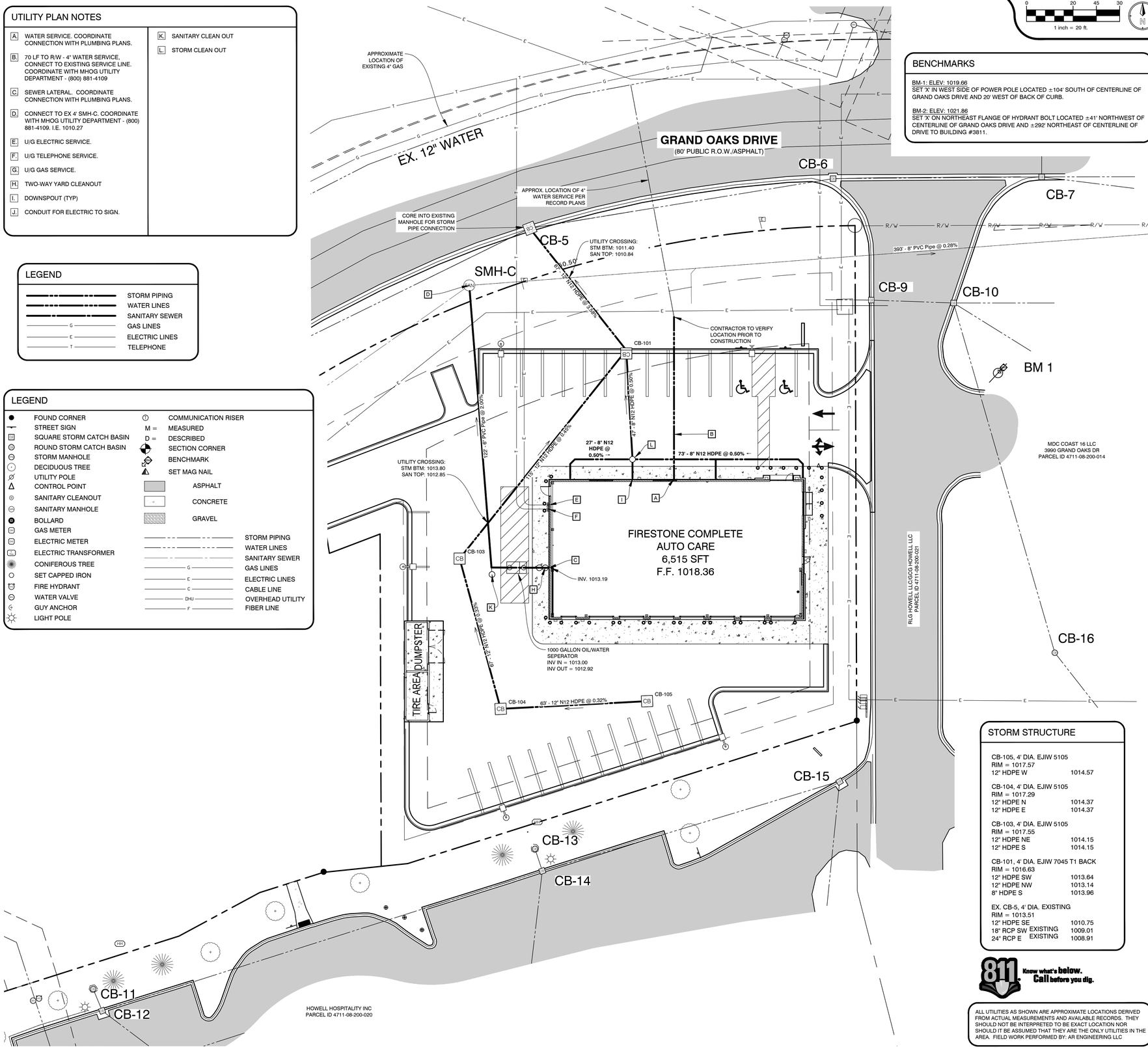
- A. WATER SERVICE. COORDINATE CONNECTION WITH PLUMBING PLANS.
- B. 70 LF TO R/W - 4" WATER SERVICE. CONNECT TO EXISTING SERVICE LINE. COORDINATE WITH MHOG UTILITY DEPARTMENT - (800) 881-4109
- C. SEWER LATERAL. COORDINATE CONNECTION WITH PLUMBING PLANS.
- D. CONNECT TO EX 4' SMH-C. COORDINATE WITH MHOG UTILITY DEPARTMENT - (800) 881-4109. I.E. 1010.27
- E. U/G ELECTRIC SERVICE.
- F. U/G TELEPHONE SERVICE.
- G. U/G GAS SERVICE.
- H. TWO-WAY YARD CLEANOUT
- I. DOWNSPOUT (TYP)
- J. CONDUIT FOR ELECTRIC TO SIGN.
- K. SANITARY CLEAN OUT
- L. STORM CLEAN OUT

LEGEND

- STORM PIPING
- WATER LINES
- SANITARY SEWER
- GAS LINES
- ELECTRIC LINES
- TELEPHONE

LEGEND

- FOUND CORNER
- STREET SIGN
- SQUARE STORM CATCH BASIN
- ROUND STORM CATCH BASIN
- STORM MANHOLE
- DECIDUOUS TREE
- UTILITY POLE
- CONTROL POINT
- SANITARY CLEANOUT
- SANITARY MANHOLE
- BOLLARD
- GAS METER
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- CONIFEROUS TREE
- SET CAPPED IRON
- FIRE HYDRANT
- WATER VALVE
- GUY ANCHOR
- LIGHT POLE
- COMMUNICATION RISER
- M = MEASURED
- D = DESCRIBED
- SECTION CORNER
- BENCHMARK
- SET MAG NAIL
- ASPHALT
- CONCRETE
- GRAVEL
- STORM PIPING
- WATER LINES
- SANITARY SEWER
- GAS LINES
- ELECTRIC LINES
- CABLE LINE
- OVERHEAD UTILITY
- FIBER LINE



BENCHMARKS

BM-1: ELEV: 1019.66
SET 'X' IN WEST SIDE OF POWER POLE LOCATED ±104' SOUTH OF CENTERLINE OF GRAND OAKS DRIVE AND 20' WEST OF BACK OF CURB.

BM-2: ELEV: 1021.86
SET 'X' ON NORTHEAST FLANGE OF HYDRANT BOLT LOCATED ±41' NORTHWEST OF CENTERLINE OF GRAND OAKS DRIVE AND ±292' NORTHEAST OF CENTERLINE OF DRIVE TO BUILDING #3811.

STORM STRUCTURE

CB-105, 4' DIA. EJIW 5105
RIM = 1017.57
12" HDPE W 1014.57

CB-104, 4' DIA. EJIW 5105
RIM = 1017.29
12" HDPE N 1014.37
12" HDPE E 1014.37

CB-103, 4' DIA. EJIW 5105
RIM = 1017.55
12" HDPE NE 1014.15
12" HDPE S 1014.15

CB-101, 4' DIA. EJIW 7045 T1 BACK
RIM = 1016.63
12" HDPE SW 1013.64
12" HDPE NW 1013.14
8" HDPE S 1013.96

EX. CB-5, 4' DIA. EXISTING
RIM = 1013.51
12" HDPE SE 1010.75
18" RCP SW EXISTING 1009.01
24" RCP E EXISTING 1008.91

Know what's below. Call before you dig.

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:
AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0804 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONDUCTING OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED © A.R ENGINEERING - 2026

SITE UTILITY PLAN

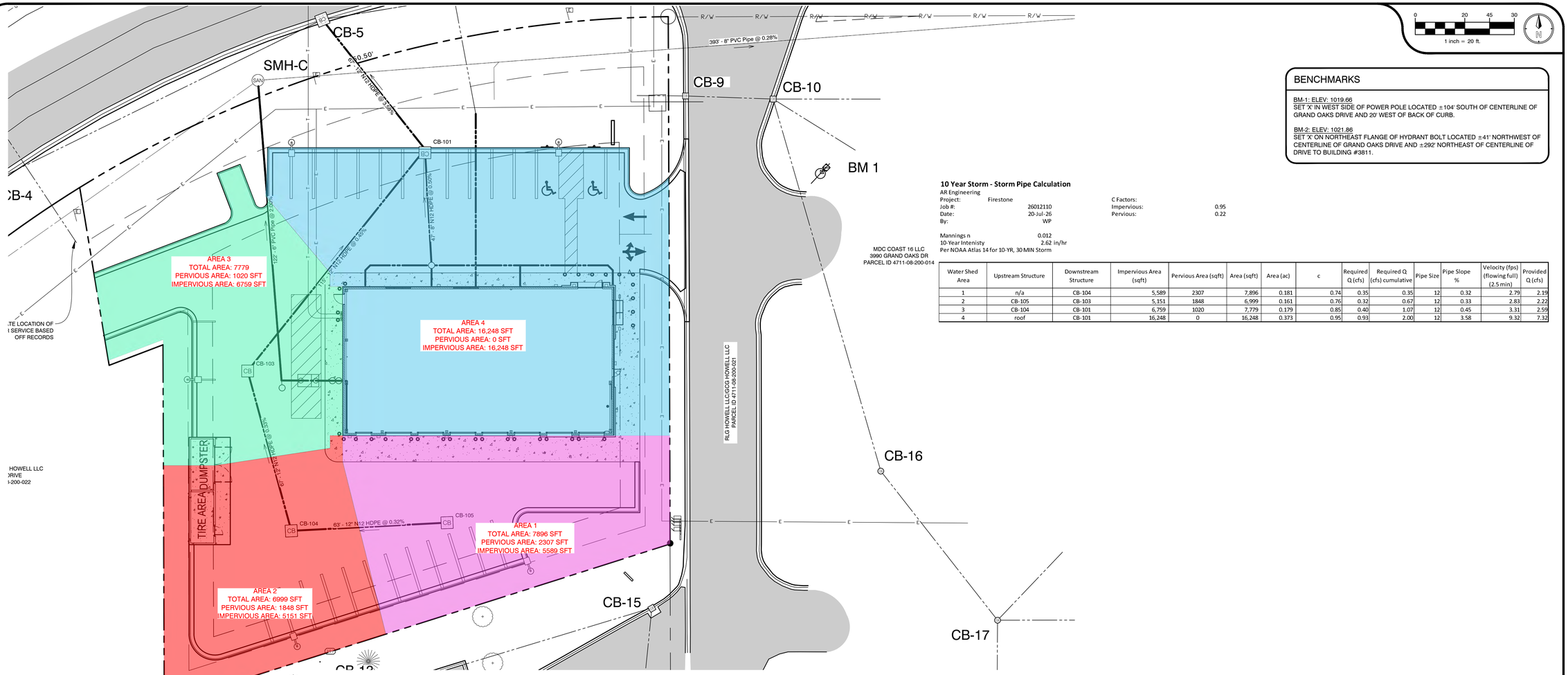
HOWELL, MI BRIDGESTONE
ZAREMBA GROUP, LLC
GRAND OAKS DR, HOWELL, MI 48843
SECTION 08, T02N, R05E.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
26012110

DATE
07/20/2026

SHEET NUMBER
C05



BENCHMARKS

BM-1: ELEV: 1019.66
SET 'X' IN WEST SIDE OF POWER POLE LOCATED ±104' SOUTH OF CENTERLINE OF GRAND OAKS DRIVE AND 20' WEST OF BACK OF CURB.

BM-2: ELEV: 1021.86
SET 'X' ON NORTHEAST FLANGE OF HYDRANT BOLT LOCATED ±41' NORTHWEST OF CENTERLINE OF GRAND OAKS DRIVE AND ±292' NORTHEAST OF CENTERLINE OF DRIVE TO BUILDING #3811.

10 Year Storm - Storm Pipe Calculation

AR Engineering
Project: Firestone
Job #: 26012110
Date: 20-Jul-26
By: WP

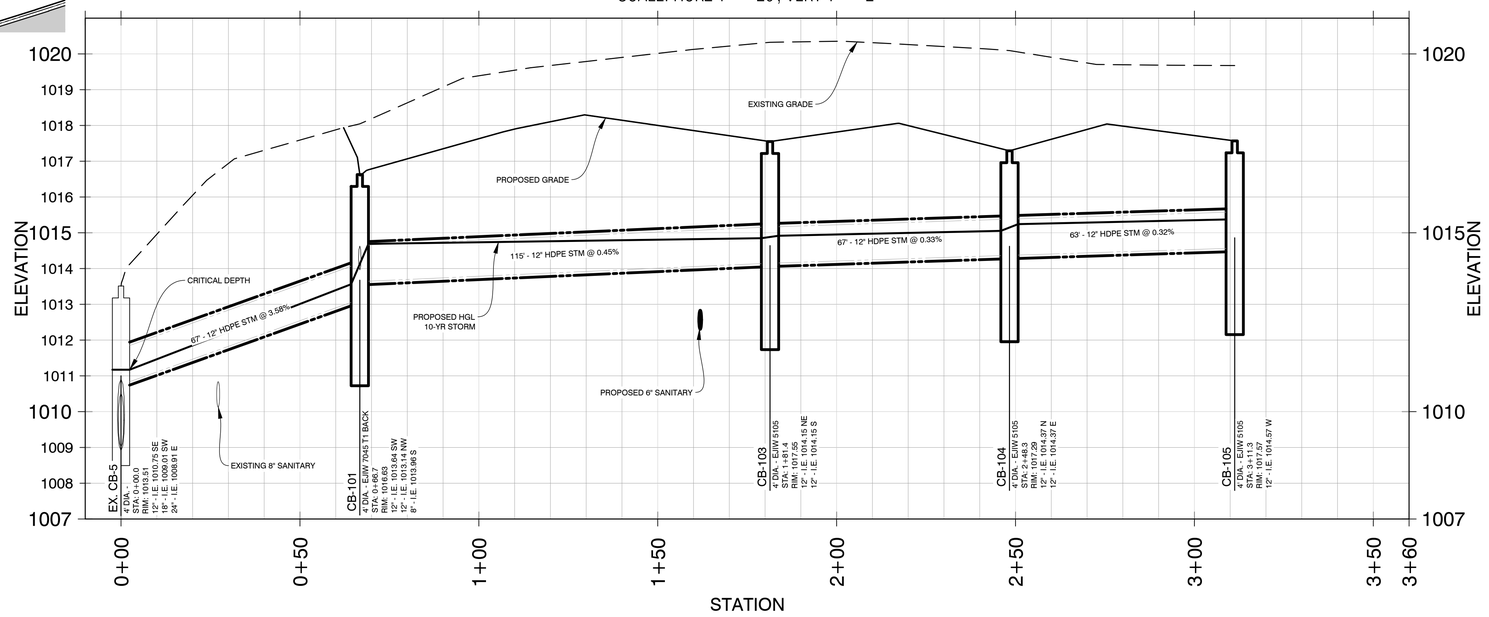
C Factors:
Impervious: 0.95
Pervious: 0.22

Mannings n 0.012
10-Year Intenisty 2.62 in/hr
Per NOAA Atlas 14 for 10-YR, 30 MIN Storm

Water Shed Area	Upstream Structure	Downstream Structure	Impervious Area (sqft)	Pervious Area (sqft)	Area (sqft)	Area (ac)	c	Required Q (cfs)	Required Q (cfs) cumulative	Pipe Size	Pipe Slope %	Velocity (fps) (flowing full) (2.5 min)	Provided Q (cfs)
1	n/a	CB-104	5,589	2307	7,896	0.181	0.74	0.35	0.35	12	0.32	2.79	2.19
2	CB-105	CB-103	5,151	1848	6,999	0.161	0.76	0.32	0.67	12	0.33	2.83	2.22
3	CB-104	CB-101	6,759	1020	7,779	0.179	0.85	0.40	1.07	12	0.45	3.31	2.59
4	roof	CB-101	16,248	0	16,248	0.373	0.95	0.93	2.00	12	3.58	9.32	7.32

STORM PROFILE

SCALE: HORZ 1" = 20', VERT 1" = 2'



STORM STRUCTURE

CB-105, 4' DIA. EJIW 5105
RIM = 1017.57
12" HDPE W 1014.57

CB-104, 4' DIA. EJIW 5105
RIM = 1017.29
12" HDPE N 1014.37
12" HDPE E 1014.37

CB-103, 4' DIA. EJIW 5105
RIM = 1017.55
12" HDPE NE 1014.15
12" HDPE S 1014.15

CB-101, 4' DIA. EJIW 7045 T1 BACK
RIM = 1016.63
12" HDPE SW 1013.64
12" HDPE NW 1013.14
8" HDPE S 1013.96

EX. CB-5, 4' DIA. EXISTING
RIM = 1013.51
12" HDPE SE 1010.75
18" RCP SW EXISTING 1009.01
24" RCP E EXISTING 1008.91

Know what's below. Call before you dig.

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:
AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0804 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONCEIVING OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED © AR ENGINEERING - 2026

PROJECT: STORM PROFILE
HOWELL, MI BRIDGESTONE
CLIENT: ZAREMBA GROUP, LLC
SITE ADDRESS: GRAND OAKS DR, HOWELL, MI 48843
SITE SECTION: SECTION 08, T02N, R05E.

JOB NUMBER
26012110

DATE
07/20/2026

SHEET NUMBER
C05.1

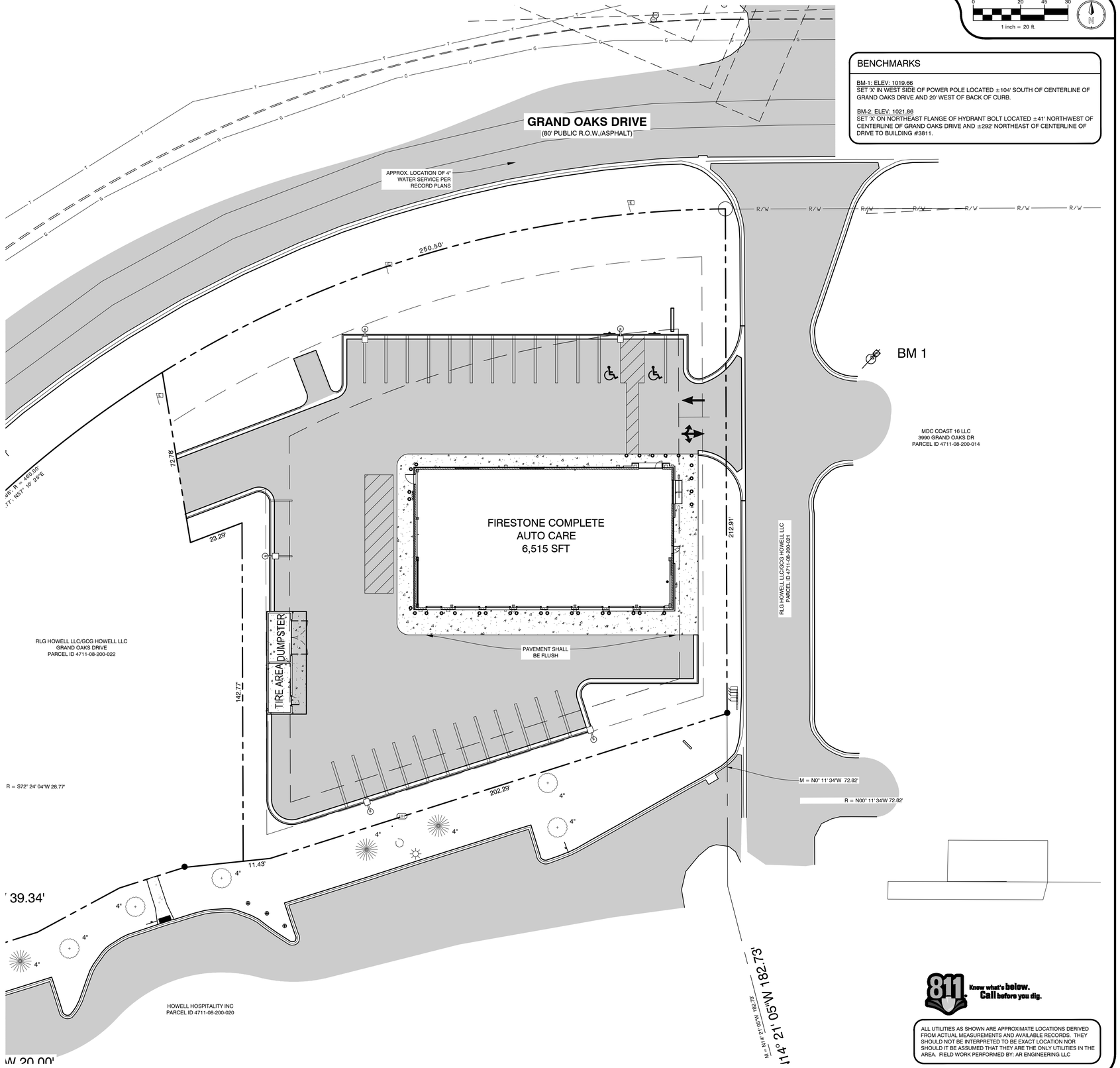
GENERAL NOTES

1. DIMENSIONS TAKE PRECEDENCE OVER SCALE. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD.
2. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
3. ALL CURB RADII AND DIMENSIONS ARE TO FACE OF CURB. CURB TO BE PROVIDED WHERE SHOWN AND INTEGRAL WITH SIDEWALK AT PAVING EDGE.
4. SLOPE GRADES UNIFORMLY BETWEEN ELEVATIONS SHOWN. NOMINAL GRADING, SLOPE SIDEWALKS AWAY FROM BUILDING AT 1/4" PER FOOT ON ENTRY WALK.

LEGEND

CONCRETE PAVEMENT
(SEE DETAIL ON C9.0)

CONCRETE PAVEMENT AND SIDEWALK
(SEE DETAIL ON C9.0)



BENCHMARKS

BM-1: ELEV: 1019.66
SET 'X' IN WEST SIDE OF POWER POLE LOCATED ±104' SOUTH OF CENTERLINE OF GRAND OAKS DRIVE AND 20' WEST OF BACK OF CURB.

BM-2: ELEV: 1021.86
SET 'X' ON NORTHEAST FLANGE OF HYDRANT BOLT LOCATED ±41' NORTHWEST OF CENTERLINE OF GRAND OAKS DRIVE AND ±292' NORTHEAST OF CENTERLINE OF DRIVE TO BUILDING #3811.

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

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:

AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0804 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONVEYANCE OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED BY AR ENGINEERING - 2026

PAVING PLAN
HOWELL, MI BRIDGESTONE
ZAREMBA GROUP, LLC
GRAND OAKS DR, HOWELL, MI 48843
SECTION 08, T02N, R05E.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
26012110

DATE
07/20/2026

SHEET NUMBER
C06

PLANTING SCHEDULE

PLANT LIST:

SYM.	BOTANICAL NAME:	COMMON NAME:	Size:	ROOT:
Ag	Acer grisseum	Paperbark Maple	2.5"Cal.	B&B
Cc	Cercis canadensis	Eastern Redbud	2.5" Cal.	B&B
Ar	Acer rubrum 'Armstrong'	Armstrong Red Maple	2.5" Cal.	B&B
Lt	Liliodendron tulipifera	Tulip Tree	2.5" Cal.	B&B
Iv	Ilex verticillata	Winterberry Holly	24"	Cont.
Sm	Spiraea japonica 'Magic Carpet'	Magic Carpet Spirea	24"	Cont.
Hs	Hydrangea macrophylla 'Summer Crush'	Endless Summer Hydrangea	24"	Cont.
Jv	Juniperus virginiana 'Blue Haven'	Blue Haven Juniper	6'	Cont.
Jg	Juniperus virginiana 'Grey Owl'	Grey Owl Juniper	18-24"	Cont.
Wj	Weigela 'Java Red'	Red Java Weigela	24"	Cont.
Ea	Eunonymus alatus 'Compacta'	Dwarf Burning Bush	18-24"	Cont.
Rk	Rosa 'knockout'	Pink Knockout Roses	24"	Cont.
Cp	Chamaecyparis pisifera 'Golden Mop'	Gold Mop Cypress	18-24"	Cont.
Nw	Nepata faassenii 'Walkers Low'	Walkers Low Catmint	1 gal.	Cont.
Ls	Liatris spicata 'Kobald'	Kobold Spike Gayfeather	1 gal.	Cont.
Pv	Panicum virgatum 'Rotstrahlbush'	Red Switchgrass	2 gal.	Cont.
Hpp	Hemerocalis 'Sammy Russell'	Sammy Russell Daylily	1 gal.	Cont.
Ep	Echinacea purpurea 'Pixie Meadowbrite'	Pixie Meadowbrite Coneflower	1 gal.	Cont.
Ms	Miscanthus 'Morning Light'	Morning Light Maiden Grass	2 Gal.	Cont.

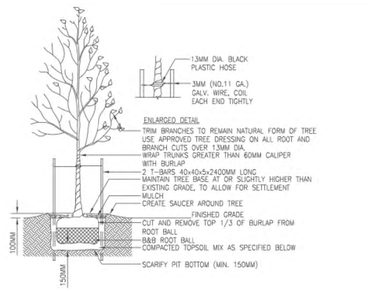
LANDSCAPE SITE NOTES:

-ALL PLANTING BEDS TO RECEIVE 3/4" NATURAL CRUSHED STONE 4"DEPTH ON LANDSCAPE FABRIC
-ALL AREAS MEETING LAWN TO RECIEVE 1/8 X 4" ALUMINUM MILL FINISH EDGING
-ALL PLANTING BEDS TO RECEIVE MIN. 6" 1/3 TOPSOIL/1/3 SAND/1/3 COMPOST PLANT MIX FOR BACKFILL
-ALL DISTURBED AREAS SHALL BE HYDROSEEDED WITH SPARTAN GRADE A LAWN MIX
-ALL TREE PLANTING PITS SHALL BE DUG TWO TIMES THE SIZE OF THE ROOTBALL AND BACKFILLED WITH 1/3TOPSOIL 1/3 SAND 1/3 COMPOSTED PLANTING MIX
-ALL TREE PLANTINGS ARE RECOMMENDED TO BE STAKED WITH 3 HARDWOOD STAKES AND ARBOR TIES TO ENSURE HEALTHY GROWTH

INDICATES 3'x3' MINIMUM SIZE MICHIGAN FIELDSTONE ASSORTED NATURAL COLORS

IRRIGATED CLASS A HYDROSEEDED TURF AREA

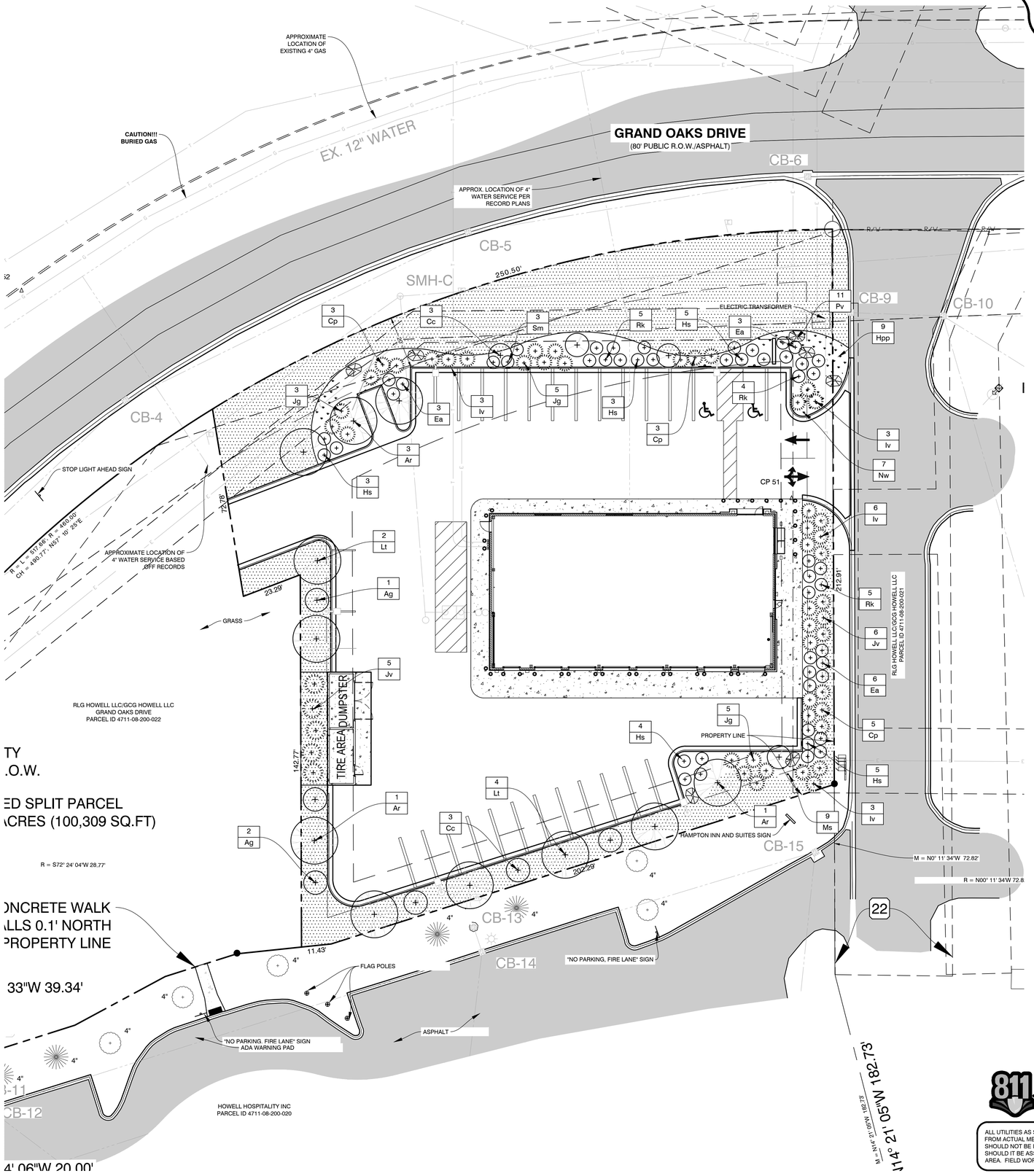
PERENNIAL PLANTING BED AREAS TO RECEIVE 6' PLANT MIX



SPECIFICATIONS:
1. TOPSOIL MIX, SEE SPEC.
2. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKE..
3. WATER THOROUGHLY AFTER INSTALLATION.
4. REMOVE TREE RINGS AND STAKES TWO YEARS AFTER INSTALLATION.
5. PROVIDE DRAINAGE FOR PLANTING PIT IN IMPERMEABLE SOIL.
6. ALL TREES MUST BE TAGGED AND APPROVED BY CONSULTANT WITHIN 14 DAYS AFTER TENDER CLOSING.

1/3 DECIDUOUS TREE DETAIL

TMB Landscape Consulting



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

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING LLC

PLANS PREPARED BY:

AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0804 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONCEPTS OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED © A.R ENGINEERING - 2026

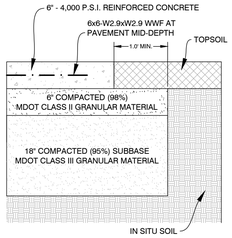
LANDSCAPE PLAN
HOWELL, MI BRIDGESTONE
ZAREMBA GROUP, LLC
GRAND OAKS DR, HOWELL, MI 48843
SECTION 08, T02N, R05E.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
26012110

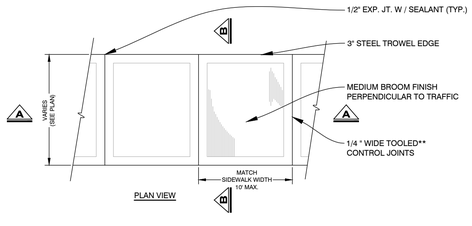
DATE
07/20/2026

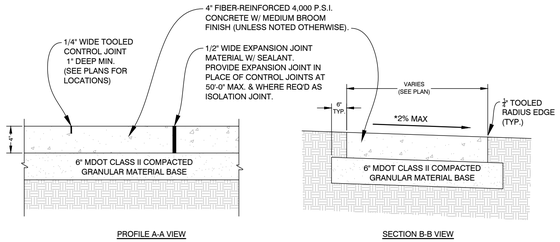
SHEET NUMBER
C07



NOTES:
EXISTING SUBGRADE - PROOF ROLL AND REPLACE ALL DEFICIENT/SUSPECT AREAS.
CONCRETE MIX SHALL USE CRUSHED LIMESTONE - NO GRAVEL OR SLAG.
BROOM FINISH SURFACE AND APPLY CURING COMPOUND (ASTM C3098 TYPE 2) AT 1 GAL/25 SFT
FOLLOW GEOTECHNICAL ENGINEER'S RECOMMENDATIONS

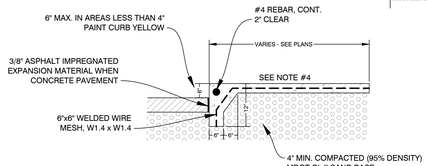
CONCRETE SECTION
04002 NOT TO SCALE





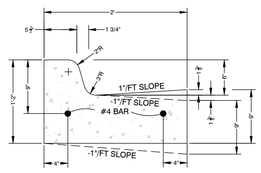
NOTES
1. *TRANSVERSE SIDEWALK SLOPES ARE 2% MAXIMUM.
2. IN ORDER TO MEET SITE CONDITIONS, IF THE TRANSVERSE SLOPE IS REQUIRED TO BE LESS THAN 1.5%, LONGITUDINAL DRAINAGE MUST BE PROVIDED.
3. **SAWN CONTROL JOINTS WILL NOT BE ACCEPTED UNLESS APPROVED BY OWNER
4. USE MINIMUM 6" CONCRETE AND 6" BASE THROUGH DRIVEWAYS

CONCRETE SIDEWALK
03003 NOT TO SCALE

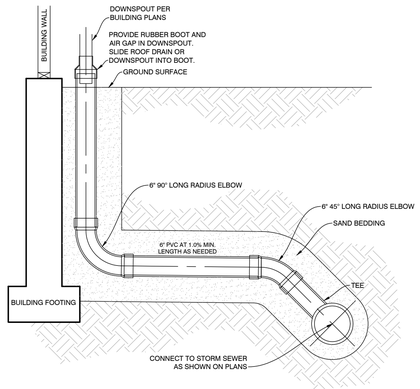


1. PROVIDE CONTROL JOINTS AT SAME DISTANCE AS WIDTH OF SIDEWALK, 10' MAX.
2. PROVIDE EXPANSION JOINTS AT 50' O.C.
3. PROVIDE ¾" EXPANSION JOINT AT BUILDING OR WALL.
4. TRANSVERSE SIDEWALK SLOPES ARE TYPICALLY 1.5% OR 2% MAXIMUM. IN ORDER TO MEET SITE CONDITIONS, IF THE TRANSVERSE SLOPE IS REQUIRED TO BE LESS THAN 1.5%, LONGITUDINAL DRAINAGE MUST BE PROVIDED.

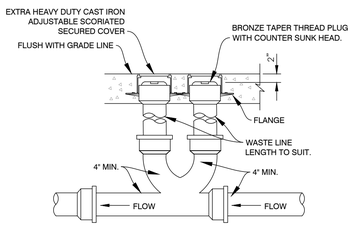
INTEGRAL SIDEWALK SECTION
03004 NOT TO SCALE



MDOT F4 CONC. CURB & GUTTER
02012 NOT TO SCALE

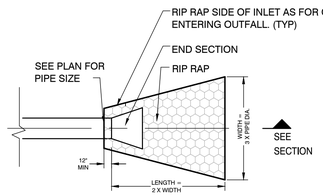


ROOF LEAD/DOWNSPOUT
06009 NOT TO SCALE

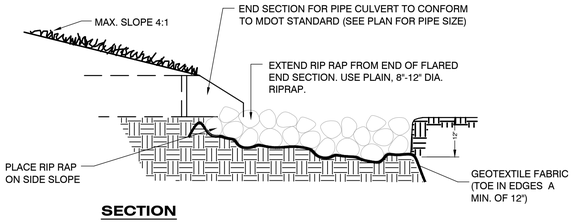


NOTE:
CLEANOUT SHALL BE INSTALLED WITHIN 5'-0" OF THE BUILDING EXTERIOR.

2-WAY YARD CLEANOUT
07001 NOT TO SCALE

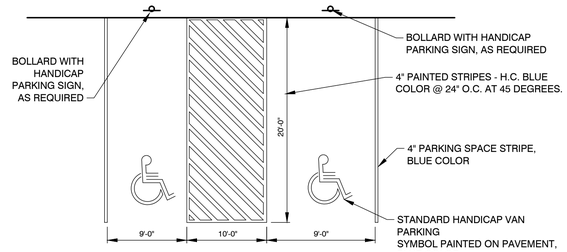


PLAN

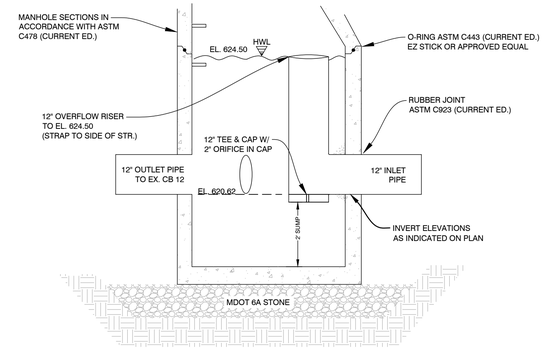


SECTION

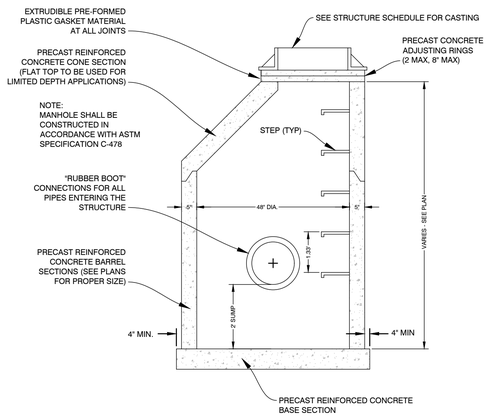
PIPE CULVERT WITH FLARED END SECTION DETAIL
C09 - 050002 NOT TO SCALE



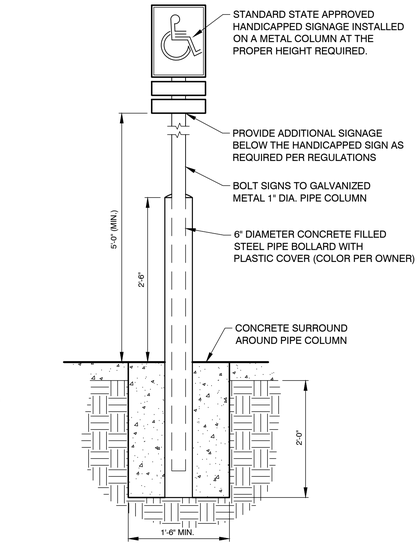
HANDICAP PARKING
08001 NOT TO SCALE



OUTLET STRUCTURE
06014 NOT TO SCALE

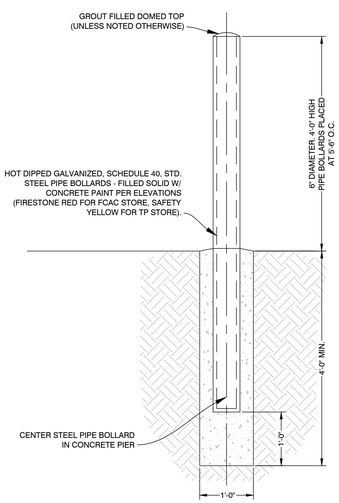


STORM CATCH BASIN DETAIL
C09 - 050003 NOT TO SCALE



HANDICAP PARKING SIGN
08002 NOT TO SCALE

GENERAL NOTES:
1. MAINTAIN 3'-9" MIN. CLEARANCE BETWEEN FACE OF BUILDING AND FACE OF PIPE BOLLARD - CRITICAL DIMENSION
2. MIN. CONCRETE COMPRESSIVE STRENGTH: 3,500 PSI AT 28-DAYS.
3. MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO: 0.58.
   SLUMP LIMIT: 5 INCHES PLUS OR MINUS 1 INCH, MEASURED AT THE POINT OF PLACEMENT
   MAXIMUM COARSE AGGREGATE SIZE: 1 INCH
   MINIMUM CEMENTITIOUS MATERIALS CONTENT: 470 LB/CYD.
   AIR CONTENT: 5.5%



6" DIA. BOLLARD
09022 NOT TO SCALE

PLANS PREPARED BY:
AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0834 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONCEPTUAL USE OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED © A.R ENGINEERING - 2026

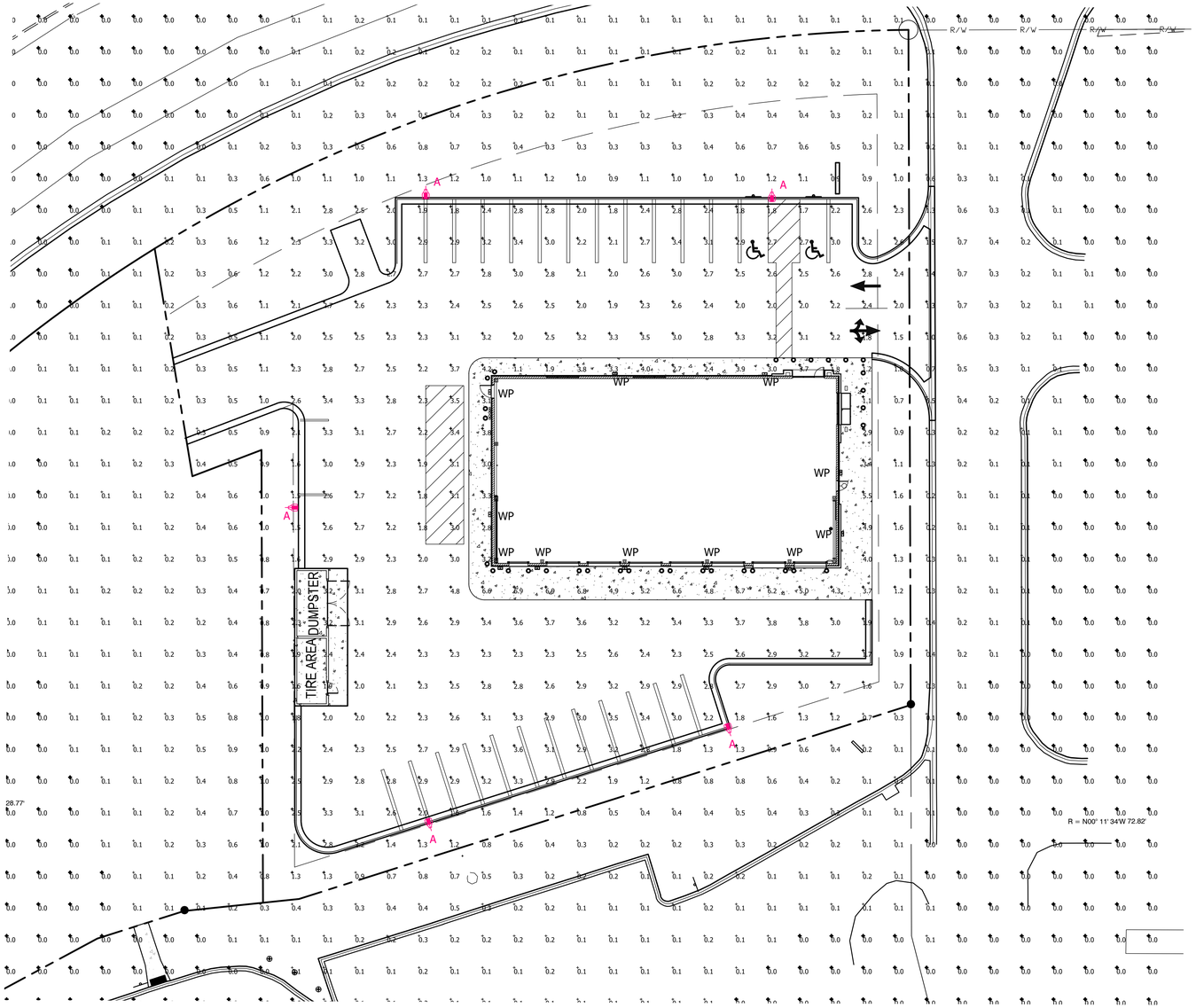
DETAIL SHEET I
HOWELL, MI BRIDGESTONE
ZAREMBA GROUP, LLC
GRAND OAKS DR, HOWELL, MI 48843
SECTION 08, T02N, R05E.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
26012110

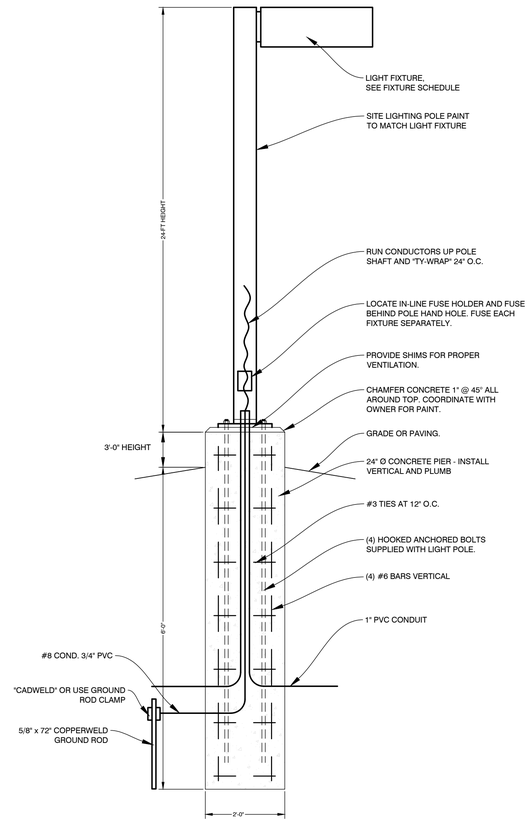
DATE
07/20/2026

SHEET NUMBER
C09



0 20 30 40

1 inch = 20 ft.



LIGHT POLE FOUNDATION
09026 NOT TO SCALE

Luminaire Schedule							
Symbol	Qty	Label	Mounting Height	LLF	Lum. Lumens	Lum. Watts	Description
	5	A	27	1.000	17653	135	ASL1-160L-135-5K7-4W-UNV-A-BLT
	11	WP	10	1.000	1821	15	LNC2-48L-15-5K7-3-UNV-BLT

Note: #SES-25-40-01-D2-BLT w/ anchor bolts & base cover.
(25', 4" sq, 11 ga, black) - 27' Overall Mounting Height.
Please confirm EPA and Windload rating prior to ordering.
Engineer of Record responsible for base
design per local conditions.

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Overall Area	Illuminance	Fc	0.71	6.9	0.0	N.A.	N.A.
Paved Area	Illuminance	Fc	2.93	6.5	1.1	2.66	5.91

NOTES:
1: Luminaire data is tested to industry standards under laboratory conditions. Operating voltage and normal manufacturing tolerances of LED and drivers may effect field results.
2: Conformance to facility code and other local requirements is the responsibility of the owner and/or the owner's representative.
3: This design may not meet Title 24 or local energy code requirements. If this design needs to be alter to meet compliance, please contact the design team with specific requirments.

NOTE: For national account pricing/quotations and order placement, please contact Steve Friedman at Hermitage Lighting.
(847)830-1444
sfriedman@gohermitage.com

PLANS PREPARED BY:
AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.589.0834 FAX
www.arengineeringllc.com

DRAWN:	JS
CHECKED:	WP

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	6/19/2026	JS
1	SITE PLAN REVISIONS	7/20/2026	WP
2	.	.	.
3	.	.	.
4	.	.	.

REPRODUCTION, COPYING OR CONCEALING OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED BY AR ENGINEERING - 2026

PHOTOMETRIC PLAN

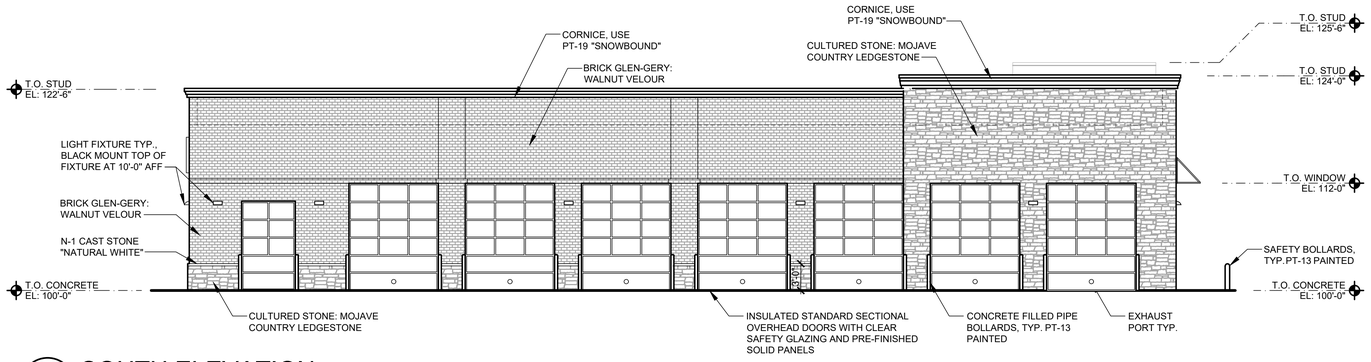
HOWELL, MI BRIDGESTONE
ZAREMBA GROUP, LLC
GRAND OAKS DR, HOWELL, MI 48843
SECTION 08, T02N, R05E.

PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
26012110

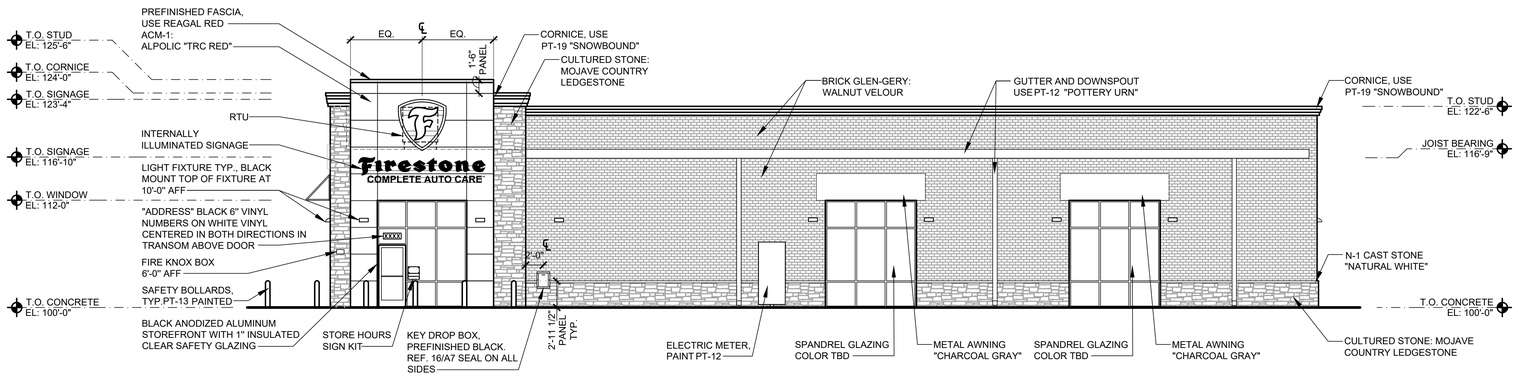
DATE
07/20/2026

SHEET NUMBER
L01



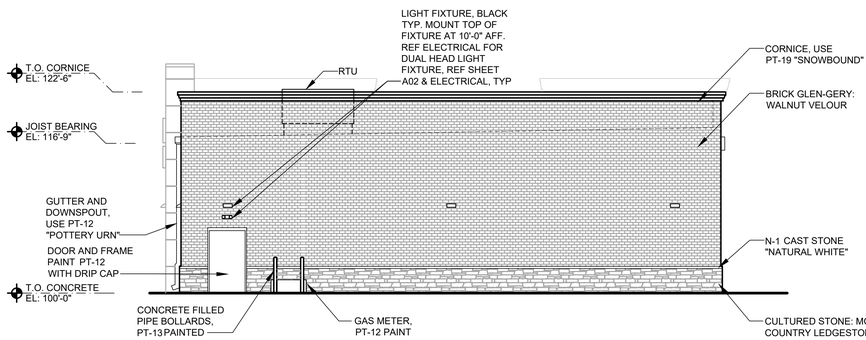
1 / A4 SOUTH ELEVATION

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



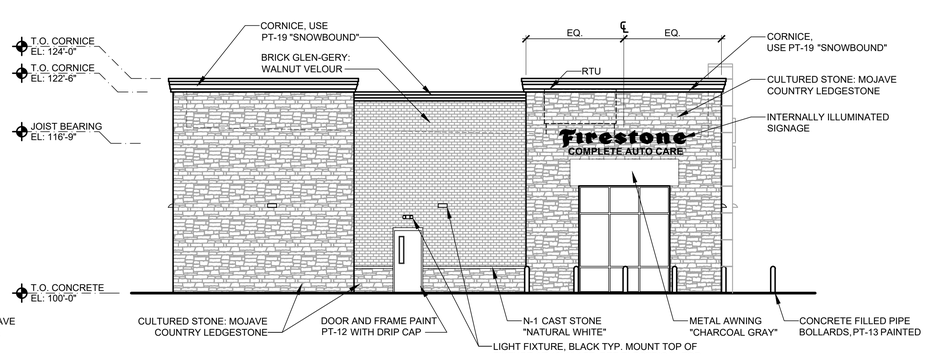
2 / A4 NORTH ELEVATION

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



3 / A4 WEST ELEVATION

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



4 / A4 EAST ELEVATION

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

GENERAL NOTES:

1. PROVIDE DRIP CAP OVER ALL MAN DOORS SEE DETAIL 1C/A8
2. PAINT ALL EXPOSED LINTELS & JAMBS TO MATCH ADJACENT BUILDING COLOR.
3. SEE ELECTRICAL FOR SIGNAGE OPERATING TIME SETUP
4. INSTALLATION OF BUILDING SIGNS AND STREET SIGN BY SIGN VENDOR, G.C. TO PROVIDE WIRING. REFER ELECTRICAL.
5. REFER SHEET A9 FOR PAINT COLOR KEY.
6. ANY EXTERIOR CONSTRUCTION JOINT, EXPANSION JOINT, AND CRACK OF ABUTTING DISSIMILAR OR SAME MATERIALS MUST HAVE APPROPRIATE PRODUCT APPLIED TO PROVIDE AN AIR, MOISTURE, AND WATER TIGHT EXTERIOR. REFER TO SPECIFICATION SECTION 079200 FOR PRODUCTS.
7. SIGNAGE INDICATED ON ELEVATIONS IS INTENDED TO DEMONSTRATE APPROXIMATE SIZE AND QUANTITY OF PROPOSED BUILDING SIGNAGE. REFER TO SIGNAGE PERMIT DRAWINGS FOR ACCURATE SIGNAGE INFORMATION.
8. FOR ALL INSTANCES OF NICHIHA ON EXTERIOR WALLS, GC TO PROVIDE NICHIHA FACTORY STANDARD COLOR MATCHED TRIMS AND ACCESSORIES TO MATCH ADJACENT NICHIHA PANEL. REFER TO SPECIFICATION SECTION 074243 FOR FURTHER INFORMATION
9. ALL SIDEWALK AND APRON CURBS ADJACENT TO THE BUILDING SHALL BE PAINTED YELLOW, REFERENCE SPEC SECTION 099000. PAINT ENTIRE VERTICAL FACE AND A HORIZONTAL BAND 6" WIDE FROM THE EDGE OF THE CURB.
10. ALL JOINTS IN EIFS TO BE INSTALLED AS SHOWN.

MATERIAL KEY:

- BRICK GLEN-GERY "WALNUT VELOUR"
- CULTURED STONE "MOHAVE COUNTRY LEDGESTONE"
- N-1: CAST STONE,NATURAL WHITE
- ACM-1: ALPOLIC TRC RED
- PT-12 "POTTERY URN" SW7715
- PT-18 "CITY SCAPE" SW7067
- PT-19 "OATMEAL" 427
- CHARCOAL GRAY (METAL AWNINGS)

Firestone
COMPLETE AUTO CARE
INTERNALLY ILLUMINATED SIGNAGE ON RACEWAY, TYP.

Firestone
COMPLETE AUTO CARE
INTERNALLY ILLUMINATED SIGNAGE ON RACEWAY, TYP.

BUILDING SIGNAGE

20 / A4 SIGNAGE DETAIL

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

CONSTRUCTION DOCUMENTS WILL BE BASED ON THE LATEST RELEASE OF THE PROTOTYPICAL DOCUMENTS ON LUCERNEX AT THE TIME OF CONSTRUCTION DOCUMENT AUTHORIZATION.

NOTE: THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. SITE INFORMATION WAS OBTAINED FROM THE CLIENTS DOCUMENTS; DESIGN MAY VARY.

PROJECT CONTACTS:	PHONE #:	PROJECT CONTACTS:	PHONE #:
NS DEV MGR: KEVIN BOYER	(405) 795-7636	**ARCHITECT:** MELANIE LEWIS	(216) 491-9300
DESIGN MGR: ALEX PASLEY	(615) 260-4858	BOWEN & ARCHITECTS	
CONST MGR: JASON AVERETT	(843) 730-4519	**ENGINEER:** BRADY DARRAH	(989) 372-3945
MGR CONST SUPPORT: XXXXXXXX	(XXX) XXX-XXXX	AR ENGINEERING LLC.	
ATTORNEY: CHARLES TRAUGHBER	(615) 937-4923	PROTOTYPE: 2026 RS	

ZONE APPROVAL	(BY/DATE):
VP.	
CONT.	
RM.	
CM.	

ENTITY ID: XXXXXXX
SITE ID: XX-XX-XX-XXX
LEGACY ID: XXXXXXX

Firestone since 1928 COMPLETE AUTO CARE

THIS DRAWING IS THE PROPERTY OF BRIDGESTONE RETAIL OPERATIONS, LLC AND IS LOANED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED IN ANY WAY DELETERIOUS TO THE INTERESTS OF BRIDGESTONE RETAIL OPERATIONS, LLC. THE ACCEPTANCE OF THIS DRAWING WILL BE CONSTRUED AS AN ACCEPTANCE OF THE FOREGOING CONDITION AND AS ADMISSION TO THE EXCLUSIVE OWNERSHIP IN AND TO THE DRAWING BY BRIDGESTONE RETAIL OPERATIONS, LLC.

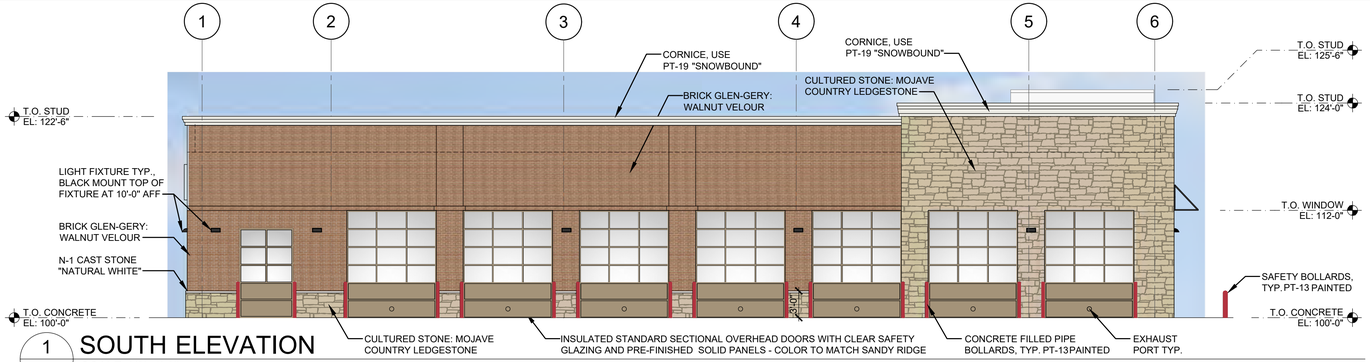
GRAND OAK RD
HOWELL, MI

Bowen+
2019 Center St, Suite 500 / Cleveland, Ohio 44113
Phone: (216) 491-9300 Fax: (216) 491-8053
www.rlba.com - mlewis@rlba.com

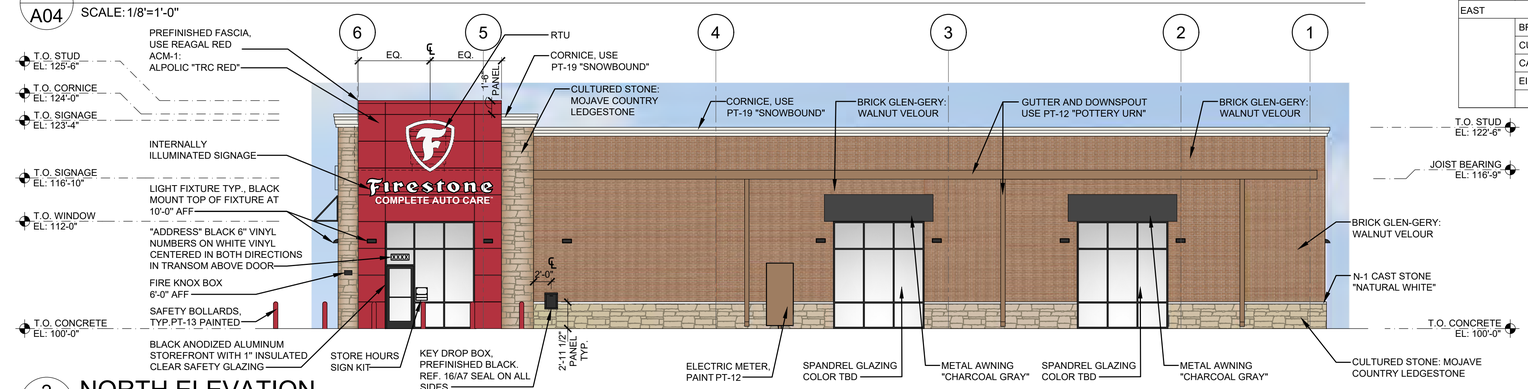
SHEET TITLE: EXTERIOR ELEVATIONS & DETAILS

SHEET NUMBER: A04

Jul 20, 2026 - 11:30am - USER elecierc
\\rba-fs01\3501-15000\13985\13985.02 Howell MI\Arch\NSP Preliminary Package\V2 FOAC RS- A04.dwg



1 A04 **SOUTH ELEVATION**
SCALE: 1/8"=1'-0"



2 A04 **NORTH ELEVATION**
SCALE: 1/8"=1'-0"

ELEVATION	MATERIALS	SQ FT	PERCENTAGE
SOUTH			
	BRICK GLEN-GERY: WALNUT VELOUR	986.5 SQ FT	61.05 %
	CULTURED STONE: MOJAVE COUNTRY LEDGESTONE	495.50 SQ FT	30.66 %
	CAST STONE - NATURAL WHITE	7.00 SQ FT	0.43 %
	EIFS	127.00 SQ FT	7.86 %
	TOTAL	1,616.00 SQ FT	100.00%
NORTH			
	BRICK GLEN-GERY: WALNUT VELOUR	1,294.35 SQ FT	63.35 %
	CULTURED STONE: MOJAVE COUNTRY LEDGESTONE	237.20 SQ FT	11.61 %
	CAST STONE - NATURAL WHITE	16.50 SQ FT	0.81 %
	ACM-1 - ALPOLIC "TRC-RED"	288.00 SQ FT	14.10 %
	EIFS	186.00 SQ FT	9.10 %
	TOTAL	2,043.05 SQ FT	100.00%
WEST			
	BRICK GLEN-GERY: WALNUT VELOUR	1,117.00 SQ FT	82.13 %
	CULTURED STONE: MOJAVE COUNTRY LEDGESTONE	166.00 SQ FT	12.21 %
	CAST STONE - NATURAL WHITE	16.00 SQ FT	1.18 %
	EIFS	61.00 SQ FT	4.49 %
	TOTAL	1,360.00 SQ FT	100.00%
EAST			
	BRICK GLEN-GERY: WALNUT VELOUR	341.42 SQ FT	26.29 %
	CULTURED STONE: MOJAVE COUNTRY LEDGESTONE	868.80 SQ FT	66.89 %
	CAST STONE - NATURAL WHITE	4.00 SQ FT	0.31 %
	EIFS	84.60 SQ FT	6.51 %
	TOTAL	1,298.82 SQ FT	100.00%

GENERAL NOTES:

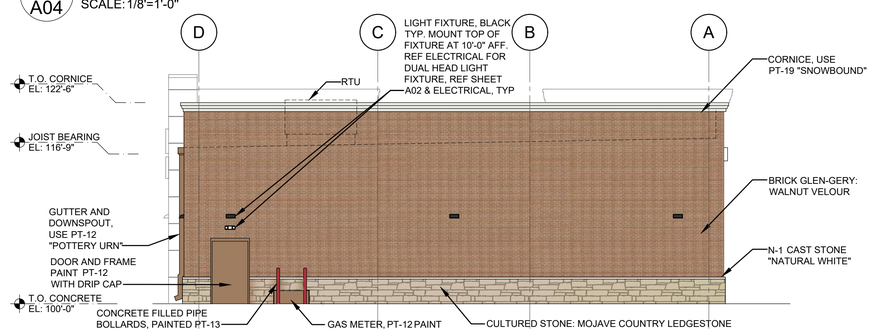
1. PROVIDE DRIP CAP OVER ALL MAN DOORS SEE DETAIL 1C/A8
2. PAINT ALL EXPOSED LINTELS & JAMBS TO MATCH ADJACENT BUILDING COLOR.
3. SEE ELECTRICAL FOR SIGNAGE OPERATING TIME SETUP
4. INSTALLATION OF BUILDING SIGNS AND STREET SIGN BY SIGN VENDOR, G.C. TO PROVIDE WIRING. REFER ELECTRICAL.
5. REFER SHEET A9 FOR PAINT COLOR KEY.
6. ANY EXTERIOR CONSTRUCTION JOINT, EXPANSION JOINT, AND CRACK OF ABUTTING DISSIMILAR OR SAME MATERIALS MUST HAVE APPROPRIATE PRODUCT APPLIED TO PROVIDE AN AIR, MOISTURE, AND WATER TIGHT EXTERIOR. REFER TO SPECIFICATION SECTION 079200 FOR PRODUCTS.
7. SIGNAGE INDICATED ON ELEVATIONS IS INTENDED TO DEMONSTRATE APPROXIMATE SIZE AND QUANTITY OF PROPOSED BUILDING SIGNAGE. REFER TO SIGNAGE PERMIT DRAWINGS FOR ACCURATE SIGNAGE INFORMATION.
8. FOR ALL INSTANCES OF NICHIHA ON EXTERIOR WALLS, GC TO PROVIDE NICHIHA FACTORY STANDARD COLOR MATCHED TRIMS AND ACCESSORIES TO MATCH ADJACENT NICHIHA PANEL. REFER TO SPECIFICATION SECTION 074243 FOR FURTHER INFORMATION
9. ALL SIDEWALK AND APRON CURBS ADJACENT TO THE BUILDING SHALL BE PAINTED YELLOW, REFERENCE SPEC SECTION 099000. PAINT ENTIRE VERTICAL FACE AND A HORIZONTAL BAND 6" WIDE FROM THE EDGE OF THE CURB.
10. ALL JOINTS IN EIFS TO BE INSTALLED AS SHOWN.

MATERIAL KEY:

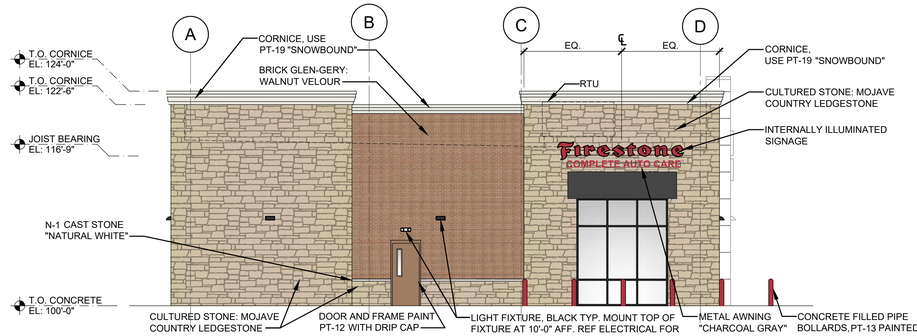
- BRICK GLEN-GERY "WALNUT VELOUR"
- CULTURED STONE "MOHAVE COUNTRY LEDGESTONE"
- N-1: CAST STONE,NATURAL WHITE
- ACM-1: ALPOLIC TRC RED
- PT-12 "POTTERY URN" SW7715
- PT-18 "CITY SCAPE" SW7067
- PT-19 "SNOWBOUND" SW7004
- CHARCOAL GRAY (METAL AWNINGS)

PT-12: "POTTERY URN" SW7715 | PT-18: "CITY SCAPE" SW7067 | PT-19: "SNOWBOUND" SW7004 | CHARCOAL GRAY

BRICK GLEN-GERY: WALNUT VELOUR | CULTURED STONE: MOJAVE COUNTRY LEDGESTONE | N-1: CAST STONE NATURAL WHITE | ACM-1: ALPOLIC "TRC RED"



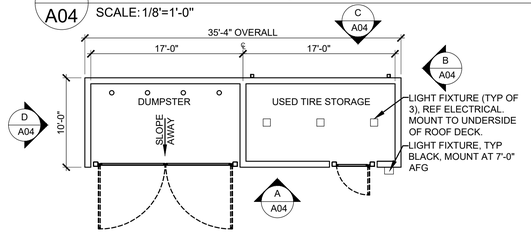
3 A04 **WEST ELEVATION**
SCALE: 1/8"=1'-0"



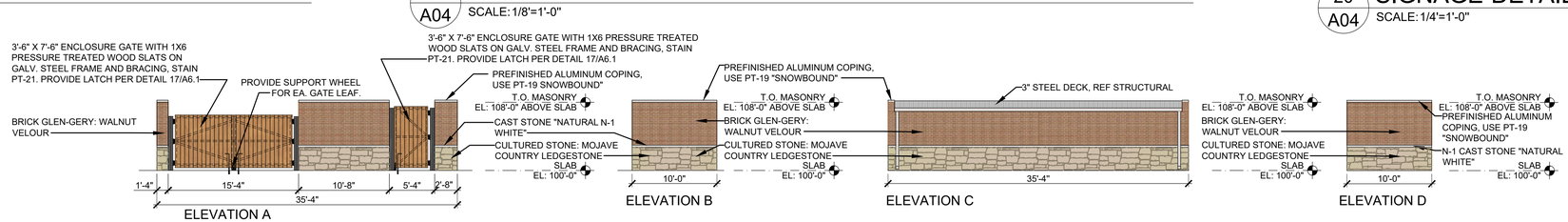
4 A04 **EAST ELEVATION**
SCALE: 1/8"=1'-0"

BUILDING SIGNAGE

20 A04 **SIGNAGE DETAIL**
SCALE: 1/4"=1'-0"



5 A4 **TRASH/ TIRE ENCLOSURE PLAN**
SCALE: 1/8"=1'-0"



6 A4 **TRASH/ TIRE ENCLOSURE ELEV.**
SCALE: 1/8"=1'-0"

CONSTRUCTION DOCUMENTS WILL BE BASED ON THE LATEST RELEASE OF THE PROTOTYPICAL DOCUMENTS ON LUCERNEX AT THE TIME OF CONSTRUCTION DOCUMENT AUTHORIZATION.

NOTE: THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. SITE INFORMATION WAS OBTAINED FROM THE CLIENTS DOCUMENTS; DESIGN MAY VARY.

PROJECT CONTACTS:	PHONE #:	PROJECT CONTACTS:	PHONE #:
NS DEV MGR: KEVIN BOYER	(405) 795-7636	**ARCHITECT:** MELANIE LEWIS	(216) 491-9300
DESIGN MGR: ALEX PASLEY	(615) 260-4858	BOWEN & ARCHITECTS	
CONST MGR: JASON AVERETT	(843) 730-4519	**ENGINEER:** BRADY DARRAH	(989) 372-3945
MGR CONST SUPPORT: XXXXXXXX	(XXX) XXX-XXXX	AR ENGINEERING LLC.	
ATTORNEY: CHARLES TRAUGHBER	(615) 937-4923	PROTOTYPE: 2026 RS	

ZONE APPROVAL	(BY/DATE):
VP.	
CONT.	
RM.	
CM.	
ENTITY ID: XXXXXXX	
SITE ID: XX-XX-XX-XXX	
LEGACY ID: XXXXXXX	

Firestone since 1900 COMPLETE AUTO CARE™

THIS DRAWING IS THE PROPERTY OF BRIDGESTONE RETAIL OPERATIONS, LLC AND IS LOANED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED IN ANY WAY DELETERIOUS TO THE INTERESTS OF BRIDGESTONE RETAIL OPERATIONS, LLC. THE ACCEPTANCE OF THIS DRAWING WILL BE CONSTRUED AS AN ACCEPTANCE OF THE FOREGOING CONDITION AND AS ADMISSION TO THE EXCLUSIVE OWNERSHIP IN AND TO THE DRAWING BY BRIDGESTONE RETAIL OPERATIONS, LLC.

GRAND OAK RD
HOWELL, MI

Bowen+®
2019 Center St, Suite 500 / Cleveland, Ohio 44113
Phone: (216) 491-9300 Fax: (216) 491-8053
www.rlba.com - mlewis@rlba.com

SHEET TITLE: COLORED EXTERIOR ELEVATIONS & DETAILS

SHEET NUMBER: A04

Jul 20, 2026 – 11:32am – USER slecierc
\\rba-fs01\Jobs\15000\15965.02 Howell MI\Arch\VSP Preliminary Package\12_FCAC_RS_A04 - Rendered Elevations.dwg

GENERAL NOTES

1. WALL DIMENSIONS ARE TO FINISH CLEAR DIMENSION. ALL MATERIALS MUST BE FIGURED INTO THE LAYOUT OF THE FRAMING.
2. MASONRY OPENING SHALL BE COORDINATED WITH WINDOW OR DOOR MANUFACTURERS REQUIREMENTS.
3. PLUMBING ROUGH INS ARE CRITICAL FOR ADA CLEARANCES, VERIFY ALL PLUMBING ROUGH INS PRIOR TO INSTALLING ROOM FINISHES.
4. ALL MASONRY DIMENSIONS ARE NOMINAL DIMENSIONS, MASONRY CONTRACTOR TO ADJUST COURSING AS NEEDED.
5. ALL GYP. BRD. WALLS SHALL HAVE LATERAL BRACING AND CONTROL JOINTS AS REQUIRED IN SPECIFICATION SECTION 092900.
6. ALL CONCRETE AND SIDEWALK JOINTS TO BE SEALED, INTERIOR AND EXTERIOR. REFERENCE SPEC SECTIONS 033000 AND 079200.
7. REFER TO DETAIL 1/LS1 FOR DOOR CLEARANCES.
8. ALL METAL STUD WALLS THAT EXTEND TO DECK SHALL HAVE A DEFLECTION TRACK AS REQUIRED IN SPECIFICATION SECTION 054000.
9. ALL SIDEWALK AND APRON CURBS ADJACENT TO THE BUILDING SHALL BE PAINTED YELLOW, REFERENCE SPEC SECTION 099000. PAINT ENTIRE VERTICAL FACE AND A HORIZONTAL BAND 6" WIDE FROM THE EDGE OF THE CURB.
10. ALL INTERIOR PARTITIONS TO DECK SHALL UTILIZE THE APPROPRIATE SLIP JOINT DETAIL AT 15/A6.

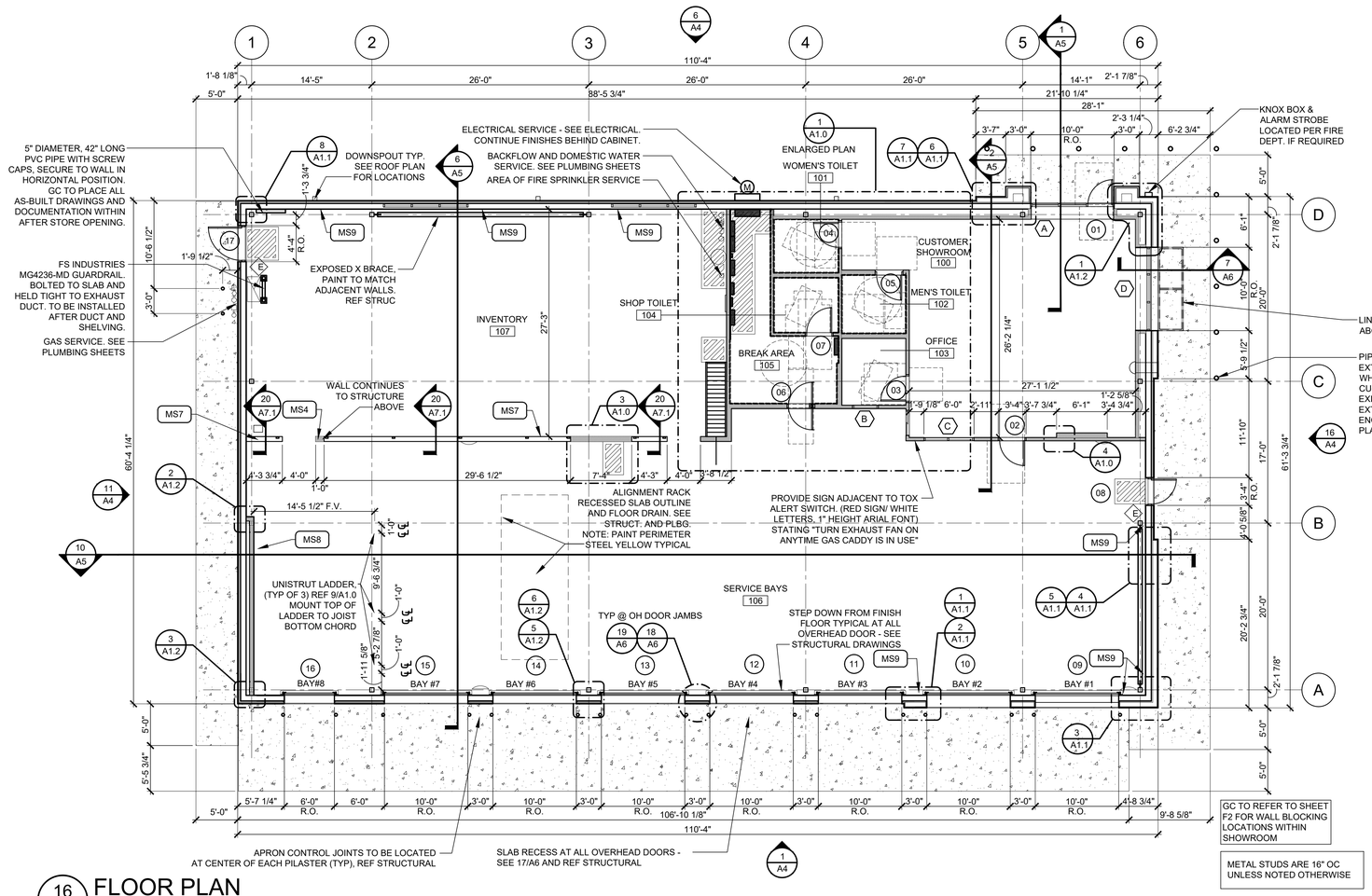
ACCESSIBLE DOOR NOTES

FLOOR SLOPE TO BE 2% MAX IN ALL DIRECTIONS AT ALL DOOR MANEUVERING CLEARANCES AT ACCESSIBLE DOORS

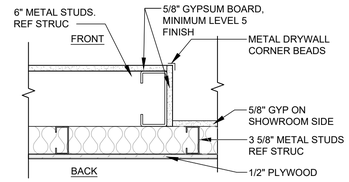
NOTES:
1. SOME WALL TYPES MAY NOT BE USED. REFER TO PLANS
2. REFER TO STRUCTURAL DRAWINGS FOR STUD GAUGES AND ADDITIONAL FRAMING INFORMATION.

STANDARD WALL TYPES

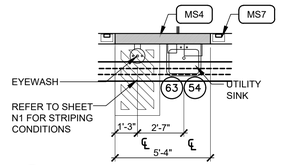
MS1	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.). USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS2	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.) USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS AND BEHIND DRINKING FOUNTAINS.
MS3	8" OR 6" METAL STUDS, REF PLAN DETAILS, WITH BATT INSULATION AND 5/8" GYPSUM BOARD TO B.O. DECK
MS4	6" METAL STUDS AT 16" O.C. WITH 1/2" PLYWOOD BOTH SIDES TO B.O. DECK, PAINTED (TYPICAL UNLESS NOTED OTHERWISE).
MS5	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION TO B.O. DECK. USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS6	6" METAL STUDS AT 16" O.C. TO B.O. DECK, WITH 1/2" PLYWOOD BOTH SIDES TO 8' A.F.F., PAINTED.
MS7	6" METAL STUDS TO 4' A.F.F AT 16" O.C., STEEL COLUMNS WITHIN WALL FOR SUPPORT WITH 1/2" PLYWOOD BOTH SIDES, PAINTED. REFER STRUCTURAL DRAWINGS FOR STEEL COLUMNS.
MS8	6" METAL STUDS AT 16" O.C., ALIGN WITH INT FACE OF COLUMN, WITH 1/2" PLYWOOD. 3/4" PLYWOOD ATTACHED TO WALL ON SHOP SIDE ONLY FOR ELECTRICAL PANEL MOUNTING.
MS9	8" METAL STUDS AT 16" O.C. WITH BATT INSULATION AND 1/2" PLYWOOD TO DECK ON INTERIOR SIDE.
MS10	2 1/2" METAL STUDS FURRING WITH 5/8" GYPSUM BOARD. EXTEND PARTITION 4" MIN. ABOVE CEILING (12'-0" A.F.F. IN CUSTOMER SHOWROOM). USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AREA.
MS11	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ON BREAK AREA SIDE AND 1/2" PLYWOOD ON UTILITY AREA OR SERVICE SIDE WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION AND FINISHES TO B.O. DECK (TYPICAL U.N.O.) USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS12	2 1/2" METAL STUDS WITH 1/4" PLYWOOD ON OUTSIDE FACE.
MS13	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION 4" MIN. ABOVE CEILING. USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS14	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ON SHOWROOM SIDE AND 1/2" PLYWOOD ON SERVICE SIDE WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.)
MS15	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ALL SIDES. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.)
MS16	6" METAL STUDS AT 16" O.C., ALIGN WITH INT FACE OF COLUMN, WITH 5/8" GYPSUM BOARD TO B.O. DECK
MS17	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ON ONE SIDE. ALIGN FACE OF STUD WITH BASE PLATE. HOLD TIGHT. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.). USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
RWP	RWP BOARD GLUE EDGE TO EDGE OF SUBSTRATE. REFER TO INTERIOR ELEVATIONS ON SHEET A7 FOR HEIGHTS A.F.F.



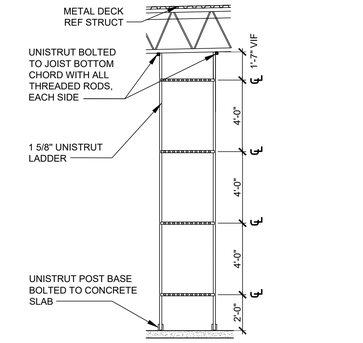
16 A1.0 FLOOR PLAN
SCALE: 1/8"=1'-0"



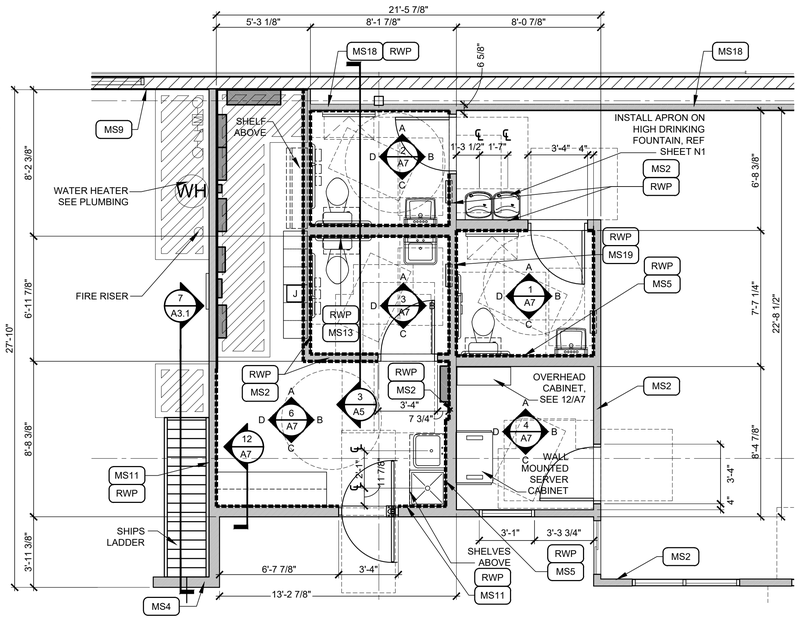
4 A1.0 ENLARGED PLAN
SCALE: 1-1/2"=1'-0"



3 A1.0 ENLARGED PLAN
SCALE: 1/4"=1'-0"



9 A1.0 ENLARGED ELEVATION
SCALE: 1/4"=1'-0"



1 A1.0 ENLARGED PLAN
SCALE: 1/4"=1'-0"

CONSTRUCTION DOCUMENTS WILL BE BASED ON THE LATEST RELEASE OF THE PROTOTYPICAL DOCUMENTS ON LUCERNEX AT THE TIME OF CONSTRUCTION DOCUMENT AUTHORIZATION.

NOTE: THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. SITE INFORMATION WAS OBTAINED FROM THE CLIENTS DOCUMENTS; DESIGN MAY VARY.

PROJECT CONTACTS:	PHONE #:	PROJECT CONTACTS:	PHONE #:
NS DEV MGR: KEVIN BOYER	(405) 795-7636	**ARCHITECT:** MELANIE LEWIS	(216) 491-9300
DESIGN MGR: ALEX PASLEY	(615) 260-4858	BOWEN & ARCHITECTS	
CONST MGR: JASON AVERETT	(843) 730-4519	**ENGINEER:** BRADY DARRAH	(989) 372-3945
MGR CONST SUPPORT: XXXXXXXX	(XXX) XXX-XXXX	AR ENGINEERING LLC.	
ATTORNEY: CHARLES TRAUGHBER	(615) 937-4923	PROTOTYPE: 2026 RS	

ZONE APPROVAL (BY/DATE):

VP. _____ _____
CONT. _____ _____
RM. _____ _____
CM. _____ _____

ENTITY ID: XXXXXXX
SITE ID: XX-XX-XX-XXX
LEGACY ID: XXXXXXX

Firestone since 1928 COMPLETE AUTO CARE

THIS DRAWING IS THE PROPERTY OF BRIDGESTONE RETAIL OPERATIONS, LLC AND IS LOANED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED IN ANY WAY DELETERIOUS TO THE INTERESTS OF BRIDGESTONE RETAIL OPERATIONS, LLC. THE ACCEPTANCE OF THIS DRAWING WILL BE CONSTRUED AS AN ACCEPTANCE OF THE FOREGOING CONDITION AND AS ADMISSION TO THE EXCLUSIVE OWNERSHIP IN AND TO THE DRAWING BY BRIDGESTONE RETAIL OPERATIONS, LLC.

GRAND OAK RD
HOWELL, MI

Bowen+®
2019 Center St, Suite 500 / Cleveland, Ohio 44113
Phone: (216) 491-9300 Fax: (216) 491-8053
www.rlba.com - mlewis@rlba.com

SHEET TITLE: FLOOR PLANS & NOTES
SHEET NUMBER: PA01

\\RLBA-FS01\1350\-15000\1965\1965.01 HOWELL MI\Arch\NSP Preliminary Package\07_FCAC_RS--A01.DWG | PLOTTED 06.05.2026 11:46AM BY STEPHANIE LECLERC
Jun 05, 2026 - 11:46am - USER stleclerc
\\dfbs-fs01\1350\-15000\1965\1965.01 Howell MI\Arch\NSP Preliminary Package\07_FCAC_RS--A01.dwg

GENERAL NOTES

1. WALL DIMENSIONS ARE TO FINISH CLEAR DIMENSION. ALL MATERIALS MUST BE FIGURED INTO THE LAYOUT OF THE FRAMING.
2. MASONRY OPENING SHALL BE COORDINATED WITH WINDOW OR DOOR MANUFACTURERS REQUIREMENTS.
3. PLUMBING ROUGH INS ARE CRITICAL FOR ADA CLEARANCES, VERIFY ALL PLUMBING ROUGH INS PRIOR TO INSTALLING ROOM FINISHES.
4. ALL MASONRY DIMENSIONS ARE NOMINAL DIMENSIONS, MASONRY CONTRACTOR TO ADJUST COURSING AS NEEDED.
5. ALL GYP. BRD. WALLS SHALL HAVE LATERAL BRACING AND CONTROL JOINTS AS REQUIRED IN SPECIFICATION SECTION 092900.
6. ALL CONCRETE AND SIDEWALK JOINTS TO BE SEALED, INTERIOR AND EXTERIOR. REFERENCE SPEC SECTIONS 033000 AND 079200.
7. REFER TO DETAIL 1/LS1 FOR DOOR CLEARANCES.
8. ALL METAL STUD WALLS THAT EXTEND TO DECK SHALL HAVE A DEFLECTION TRACK AS REQUIRED IN SPECIFICATION SECTION 054000.
9. ALL SIDEWALK AND APRON CURBS ADJACENT TO THE BUILDING SHALL BE PAINTED YELLOW, REFERENCE SPEC SECTION 099000. PAINT ENTIRE VERTICAL FACE AND A HORIZONTAL BAND 6" WIDE FROM THE EDGE OF THE CURB.
10. ALL INTERIOR PARTITIONS TO DECK SHALL UTILIZE THE APPROPRIATE SLIP JOINT DETAIL AT 15/A6.

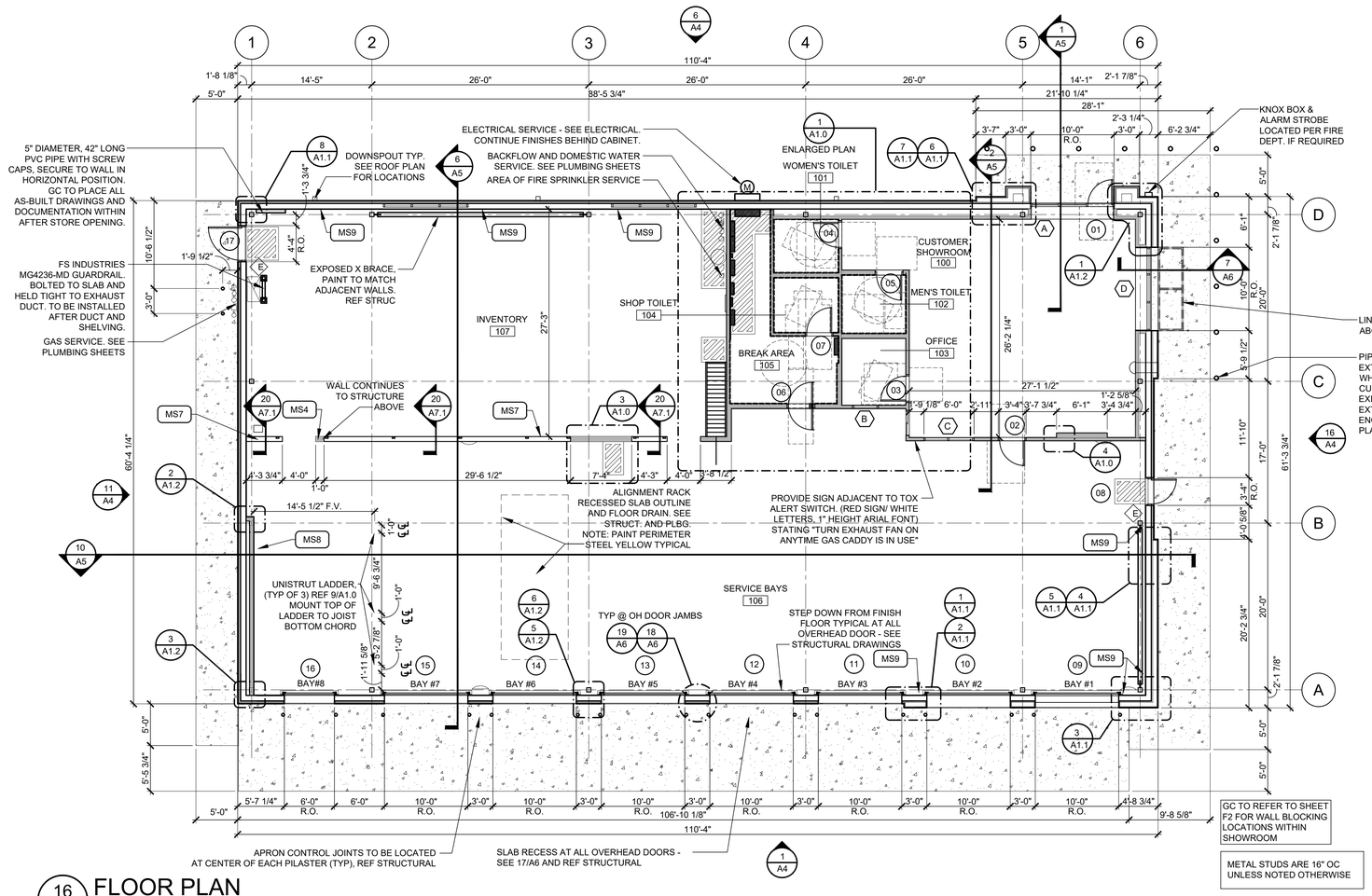
ACCESSIBLE DOOR NOTES

FLOOR SLOPE TO BE 2% MAX IN ALL DIRECTIONS AT ALL DOOR MANEUVERING CLEARANCES AT ACCESSIBLE DOORS

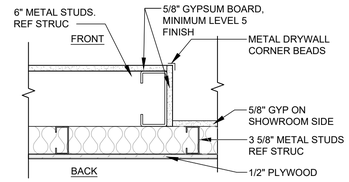
NOTES:
1. SOME WALL TYPES MAY NOT BE USED. REFER TO PLANS
2. REFER TO STRUCTURAL DRAWINGS FOR STUD GAUGES AND ADDITIONAL FRAMING INFORMATION.

STANDARD WALL TYPES

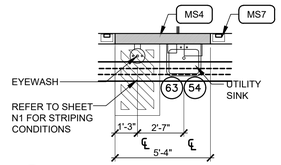
MS1	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.). USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS2	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.) USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS AND BEHIND DRINKING FOUNTAINS.
MS3	8" OR 6" METAL STUDS, REF PLAN DETAILS, WITH BATT INSULATION AND 5/8" GYPSUM BOARD TO B.O. DECK
MS4	6" METAL STUDS AT 16" O.C. WITH 1/2" PLYWOOD BOTH SIDES TO B.O. DECK, PAINTED (TYPICAL UNLESS NOTED OTHERWISE).
MS5	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION TO B.O. DECK. USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS6	6" METAL STUDS AT 16" O.C. TO B.O. DECK, WITH 1/2" PLYWOOD BOTH SIDES TO 8' A.F.F., PAINTED.
MS7	6" METAL STUDS TO 4' A.F.F AT 16" O.C., STEEL COLUMNS WITHIN WALL FOR SUPPORT WITH 1/2" PLYWOOD BOTH SIDES, PAINTED. REFER STRUCTURAL DRAWINGS FOR STEEL COLUMNS.
MS8	6" METAL STUDS AT 16" O.C., ALIGN WITH INT FACE OF COLUMN, WITH 1/2" PLYWOOD. 3/4" PLYWOOD ATTACHED TO WALL ON SHOP SIDE ONLY FOR ELECTRICAL PANEL MOUNTING.
MS9	8" METAL STUDS AT 16" O.C. WITH BATT INSULATION AND 1/2" PLYWOOD TO DECK ON INTERIOR SIDE.
MS10	2 1/2" METAL STUDS FURRING WITH 5/8" GYPSUM BOARD. EXTEND PARTITION 4" MIN. ABOVE CEILING (12'-0" A.F.F. IN CUSTOMER SHOWROOM). USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AREA.
MS11	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ON BREAK AREA SIDE AND 1/2" PLYWOOD ON UTILITY AREA OR SERVICE SIDE WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION AND FINISHES TO B.O. DECK (TYPICAL U.N.O.) USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS12	2 1/2" METAL STUDS WITH 1/4" PLYWOOD ON OUTSIDE FACE.
MS13	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION 4" MIN. ABOVE CEILING. USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
MS14	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ON SHOWROOM SIDE AND 1/2" PLYWOOD ON SERVICE SIDE WITH SOUND ATTENUATION BLANKETS BETWEEN. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.)
MS15	6" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ALL SIDES. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.)
MS16	6" METAL STUDS AT 16" O.C., ALIGN WITH INT FACE OF COLUMN, WITH 5/8" GYPSUM BOARD TO B.O. DECK
MS17	3 5/8" METAL STUDS AT 16" O.C. WITH 5/8" GYPSUM BOARD ON ONE SIDE. ALIGN FACE OF STUD WITH BASE PLATE. HOLD TIGHT. EXTEND PARTITION TO B.O. DECK (TYPICAL U.N.O.). USE MOISTURE RESISTANT GYPSUM BOARD ON INTERIOR SIDE OF TOILET AND MOP BASIN AREAS.
RWP	RWP BOARD GLUE EDGE TO EDGE OF SUBSTRATE. REFER TO INTERIOR ELEVATIONS ON SHEET A7 FOR HEIGHTS A.F.F.



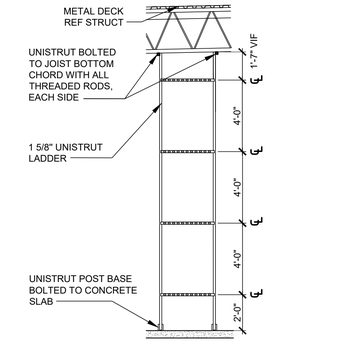
16 A1.0 FLOOR PLAN
SCALE: 1/8"=1'-0"



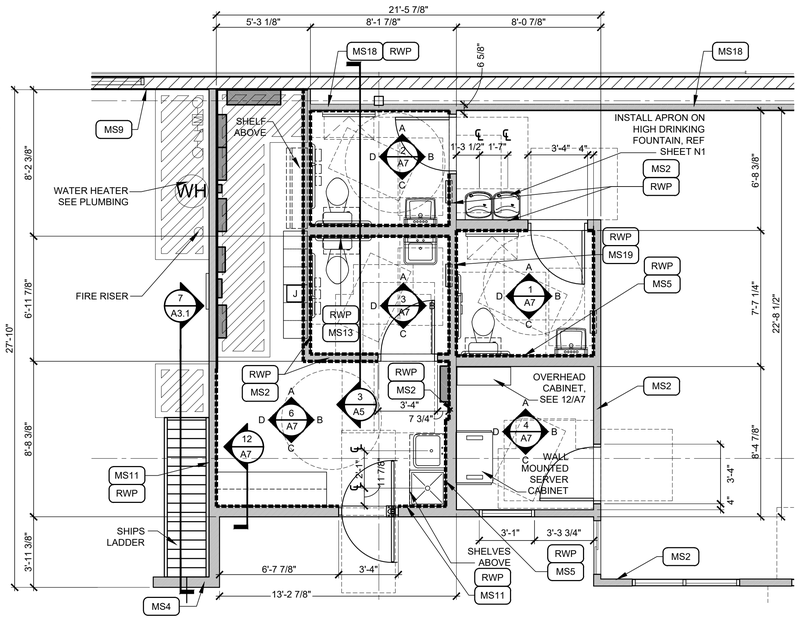
4 A1.0 ENLARGED PLAN
SCALE: 1-1/2"=1'-0"



3 A1.0 ENLARGED PLAN
SCALE: 1/4"=1'-0"



9 A1.0 ENLARGED ELEVATION
SCALE: 1/4"=1'-0"



1 A1.0 ENLARGED PLAN
SCALE: 1/4"=1'-0"

CONSTRUCTION DOCUMENTS WILL BE BASED ON THE LATEST RELEASE OF THE PROTOTYPICAL DOCUMENTS ON LUCERNEX AT THE TIME OF CONSTRUCTION DOCUMENT AUTHORIZATION.

NOTE: THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. SITE INFORMATION WAS OBTAINED FROM THE CLIENTS DOCUMENTS; DESIGN MAY VARY.

PROJECT CONTACTS:	PHONE #:	PROJECT CONTACTS:	PHONE #:
NS DEV MGR: KEVIN BOYER	(405) 795-7636	**ARCHITECT:** MELANIE LEWIS	(216) 491-9300
DESIGN MGR: ALEX PASLEY	(615) 260-4858	BOWEN & ARCHITECTS	
CONST MGR: JASON AVERETT	(843) 730-4519	**ENGINEER:** BRADY DARRAH	(989) 372-3945
MGR CONST SUPPORT: XXXXXXXX	(XXX) XXX-XXXX	AR ENGINEERING LLC.	
ATTORNEY: CHARLES TRAUGHBER	(615) 937-4923	PROTOTYPE: 2026 RS	

ZONE APPROVAL (BY/DATE):

VP. _____ _____
CONT. _____ _____
RM. _____ _____
CM. _____ _____

ENTITY ID: XXXXXXX
SITE ID: XX-XX-XX-XXX
LEGACY ID: XXXXXXX

Firestone since 1928 COMPLETE AUTO CARE

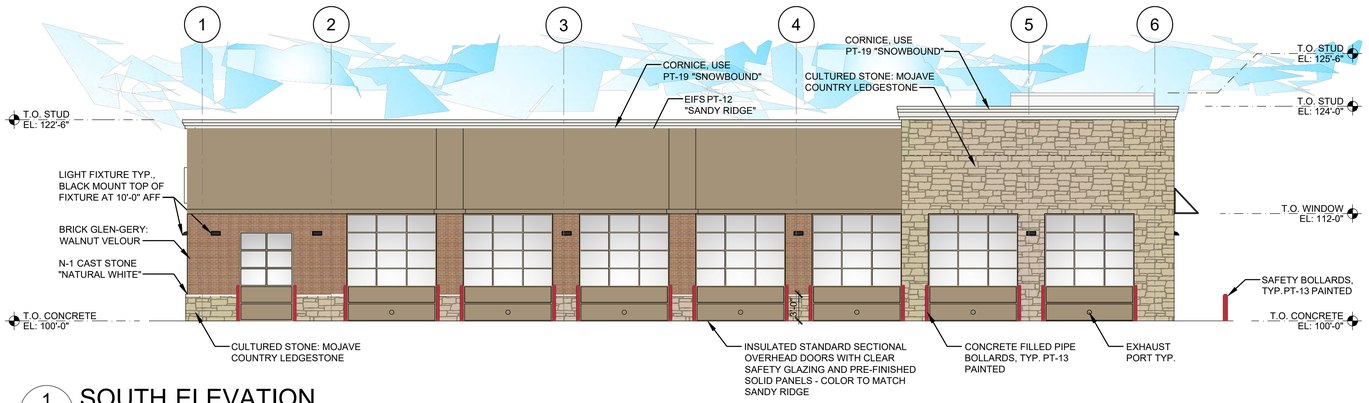
THIS DRAWING IS THE PROPERTY OF BRIDGESTONE RETAIL OPERATIONS, LLC AND IS LOANED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED IN ANY WAY DELETERIOUS TO THE INTERESTS OF BRIDGESTONE RETAIL OPERATIONS, LLC. THE ACCEPTANCE OF THIS DRAWING WILL BE CONSTRUED AS AN ACCEPTANCE OF THE FOREGOING CONDITION AND AS ADMISSION TO THE EXCLUSIVE OWNERSHIP IN AND TO THE DRAWING BY BRIDGESTONE RETAIL OPERATIONS, LLC.

GRAND OAK RD
HOWELL, MI

Bowen+®
2019 Center St, Suite 500 / Cleveland, Ohio 44113
Phone: (216) 491-9300 Fax: (216) 491-8053
www.rlba.com - mlewis@rlba.com

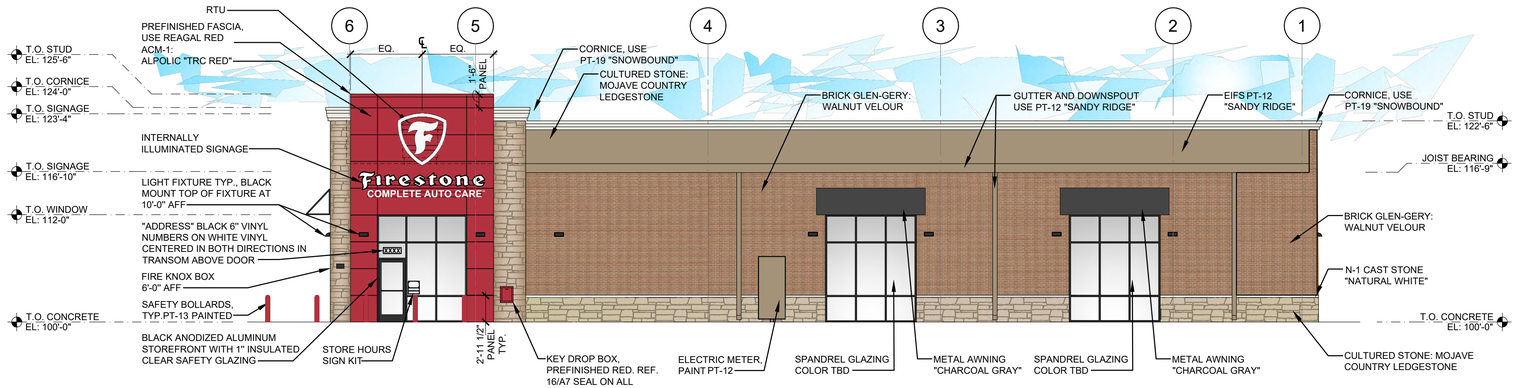
SHEET TITLE: FLOOR PLANS & NOTES
SHEET NUMBER: PA01

\\RLBA-FS01\1350\-15000\1965\1965.01 HOWELL MI\Arch\NSP Preliminary Package\07_FCAC_RS--A01.DWG | PLOTTED 06.05.2026 11:46AM BY STEPHANIE LECLERC
Jun 05, 2026 - 11:46am - USER stleclerc
\\dfbs-fs01\1350\-15000\1965\1965.01 Howell MI\Arch\NSP Preliminary Package\07_FCAC_RS--A01.dwg



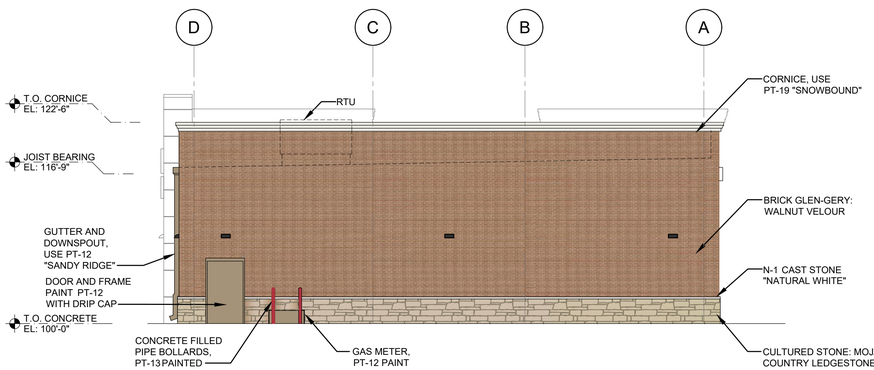
1 A04 **SOUTH ELEVATION**

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



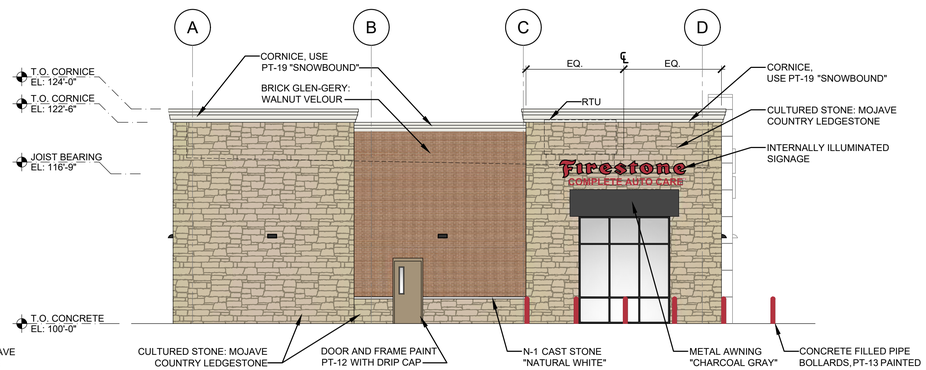
2 A04 **NORTH ELEVATION**

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



3 A04 **WEST ELEVATION**

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



4 A04 **EAST ELEVATION**

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

GENERAL NOTES:

1. PROVIDE DRIP CAP OVER ALL MAN DOORS SEE DETAIL 1C/A8
2. PAINT ALL EXPOSED LINTELS & JAMBS TO MATCH ADJACENT BUILDING COLOR.
3. SEE ELECTRICAL FOR SIGNAGE OPERATING TIME SETUP
4. INSTALLATION OF BUILDING SIGNS AND STREET SIGN BY SIGN VENDOR, G.C. TO PROVIDE WIRING. REFER ELECTRICAL.
5. REFER SHEET A9 FOR PAINT COLOR KEY.
6. ANY EXTERIOR CONSTRUCTION JOINT, EXPANSION JOINT, AND CRACK OF ABUTTING DISSIMILAR OR SAME MATERIALS MUST HAVE APPROPRIATE PRODUCT APPLIED TO PROVIDE AN AIR, MOISTURE, AND WATER TIGHT EXTERIOR. REFER TO SPECIFICATION SECTION 079200 FOR PRODUCTS.
7. SIGNAGE INDICATED ON ELEVATIONS IS INTENDED TO DEMONSTRATE APPROXIMATE SIZE AND QUANTITY OF PROPOSED BUILDING SIGNAGE. REFER TO SIGNAGE PERMIT DRAWINGS FOR ACCURATE SIGNAGE INFORMATION.
8. FOR ALL INSTANCES OF NICHIHA ON EXTERIOR WALLS, GC TO PROVIDE NICHIHA FACTORY STANDARD COLOR MATCHED TRIMS AND ACCESSORIES TO MATCH ADJACENT NICHIHA PANEL. REFER TO SPECIFICATION SECTION 074243 FOR FURTHER INFORMATION
9. ALL SIDEWALK AND APRON CURBS ADJACENT TO THE BUILDING SHALL BE PAINTED YELLOW, REFERENCE SPEC SECTION 099000. PAINT ENTIRE VERTICAL FACE AND A HORIZONTAL BAND 6" WIDE FROM THE EDGE OF THE CURB.
10. ALL JOINTS IN EIFS TO BE INSTALLED AS SHOWN.

MATERIAL KEY:

- BRICK GLEN-GERY "WALNUT VELOUR"
- CULTURED STONE "MOHAVE COUNTRY LEDGESTONE"
- N-1: CAST STONE,NATURAL WHITE
- ACM-1: ALPOLIC TRC RED
- PT-12 "SANDY RIDGE" SW7535
- PT-18 "CITY SCAPE" SW7067
- PT-19 "OATMEAL" 427
- CHARCOAL GRAY (METAL AWNINGS)

BUILDING SIGNAGE

20 A04 **SIGNAGE DETAIL**

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

CONSTRUCTION DOCUMENTS WILL BE BASED ON THE LATEST RELEASE OF THE PROTOTYPICAL DOCUMENTS ON LUCERNEX AT THE TIME OF CONSTRUCTION DOCUMENT AUTHORIZATION.

NOTE: THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. SITE INFORMATION WAS OBTAINED FROM THE CLIENTS DOCUMENTS; DESIGN MAY VARY.

PROJECT CONTACTS:	PHONE #:	PROJECT CONTACTS:	PHONE #:
NS DEV MGR: KEVIN BOYER	(405) 795-7636	**ARCHITECT:** MELANIE LEWIS	(216) 491-9300
DESIGN MGR: ALEX PASLEY	(615) 260-4858	BOWEN & ARCHITECTS	
CONST MGR: JASON AVERETT	(843) 730-4519	**ENGINEER:** BRADY DARRAH	(989) 372-3945
MGR CONST SUPPORT: XXXXXXXX	(XXX) XXX-XXXX	AR ENGINEERING LLC.	
ATTORNEY: CHARLES TRAUGHBER	(615) 937-4923	PROTOTYPE: 2026 RS	

ZONE APPROVAL	(BY/DATE):
VP.	
CONT.	
RM.	
CM.	

ENTITY ID: XXXXXXX
SITE ID: XX-XX-XX-XXX
LEGACY ID: XXXXXXX

Firestone since 1928 COMPLETE AUTO CARE™

THIS DRAWING IS THE PROPERTY OF BRIDGESTONE RETAIL OPERATIONS, LLC AND IS LOANED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED IN ANY WAY DELETERIOUS TO THE INTERESTS OF BRIDGESTONE RETAIL OPERATIONS, LLC. THE ACCEPTANCE OF THIS DRAWING WILL BE CONSTRUED AS AN ACCEPTANCE OF THE FOREGOING CONDITION AND AS ADMISSION TO THE EXCLUSIVE OWNERSHIP IN AND TO THE DRAWING BY BRIDGESTONE RETAIL OPERATIONS, LLC.

GRAND OAK RD
HOWELL, MI

Bowen+®
2019 Center St, Suite 500 / Cleveland, Ohio 44113
Phone: (216) 491-9300 Fax: (216) 491-8053
www.rlba.com - mlewis@rlba.com

SHEET TITLE: COLORED EXTERIOR ELEVATIONS & DETAILS

SHEET NUMBER: **PA04**

Jun 05, 2026 - 9:24am - USER: dtetzlaff
V:\Projects\601\1350\1450\01\1396\1396501\2_Howell MI\Arch\NSP Preliminary Package\12_FCAC_RS-A04 - Rendered Elevations.dwg

EXO OUTDOOR LIGHTING

DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

LNC2
SMALL LED LITEPAK

FEATURES

- 60% more lumens and increased performance than smaller LNC models
- 3000K, 4000K and 5000K as well as Phosphor Converted Amber
- Type II, III and IV distributions available for a variety of application needs
- Quick-mount adapter allows easy installation/maintance
- 347V and 480V versions for industrial applications and Canada
- Full cut-off, neighbor friendly
- Optional photocontrol for additional energy savings

C SP US IP65 DLC LISTED DLC LISTED PREMIUM

SERVICE PROGRAMS
QS10

CONTROL TECHNOLOGY

NX LIGHTING CONTROLS

SPECIFICATIONS

CONSTRUCTION
- Rugged die-cast aluminum housing protects components and provides an architectural appearance
- Casting thermally conducts LED heat to optimize performance and long life
- Powder paint finish provides durability in outdoor environments. Tested to meet 1000 hour salt spray rating.
- Construction tested to ASTM B117 for 1,000 hours of salt spray.

OPTICS
- Zero uplight distributions using individual acrylic Micro Strike Optics
- LED optics provide IES type III and IV distributions. Optional (CS) acrylic diffuser available for reduced glare
- L96 at 60,000hrs (Projected per IESNA TM-21-11), see table on page 3 for all values

INSTALLATION
- Quick-mount adapter provides easy installation to wall or to recessed junction boxes (4" square junction box)
- Designed for direct j-box mount.
- Optional 1/2" conduit hubs available (standard for control options and battery versions)

ELECTRICAL
- 120V-277V universal voltage 50/60Hz 0-10V dimming drivers
- 347V and 480V dimmable driver option available in 25W and 35W configurations
- Minimum operating temperature is -40°C/-40°F
- Drivers have greater than .90 power factor and less than 20% Total Harmonic Distortion
- Driver RoHS and IP66
- 10kA surge protector available as an option
- 3000K CCT nominal, 4000K CCT nominal, 5000K CCT nominal (70 CRI)

CONTROLS
- Universal button photocontrol for use with 120-277V configurations
- Occupancy sensor options available for complete on/off and dimming control
- NX Lighting Controls™ available that feature dimming and occupancy sensor
- Integral Battery Backup provides emergency lighting for the required 90 minute path of egress. Uses 15 watts of power for about 2000 lumens
- Dual Driver option provides 2 drivers within luminaire but only one set of leads exiting the luminaire, where Dual Power Feed provides two drivers which can be wired independently as two sets of leads are extended from the luminaire. Both options can not be included in one fixture.

CERTIFICATIONS
- Listed to UL1598 and CSAC22.2#250.0-24 for wet locations
- DLC® (DesignLights Consortium Qualified), with some Premium Qualified configurations. Not all product variations on this page are DLC Qualified. Refer to http://www.designlights.org/ for the most up-to-date list.
- Fixture is IP65 rated

WARRANTY
- 5 year warranty

KEY DATA	
Lumen Range	1000-5600
Wattage Range	10-45
Efficacy Range (LPW)	108-124
Weights lbs. (kg)	9.6 (24.5)

© 2024-2025 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

EXO OUTDOOR LIGHTING

LNC2
SMALL LED LITEPAK

DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

ORDERING GUIDE

= Service Program Limit of 15 luminaires QS10

Example: LNC2-48L-25-3K7-3-UNV-DBT-PC

CATALOG #

ORDERING INFORMATION

Series	
LNC2	Small LitePak LNC2

Light Engine	
48L-10	1000 lumens
48L-15	2000 lumens
48L-20	2500 lumens
48L-25	3500 lumens
48L-35	4500 lumens
48L-45	5600 lumens

CCT/CRI	
3K7	3000K, 70 CRI
4K7	4000K, 70 CRI
5K7	5000K, 70 CRI
AP	Amber Phosphor Converted [11]

Distribution	
2	Type 2
3	Type 3
4F	Type 4 Forward
4W	Type 4 Wide

Voltage	
UNV	120-277V
120	120V
208	208V
240	240V
277	277V
347	347V [7]
480	480V [7]

Mounting	
Leave blank for down	
NV	Inverted [3]

Finish	
BLT	Black Matte Textured
BLS	Black Gloss Smooth
DBT	Dark Bronze Matte Textured
DBS	Dark Brone Gloss Smooth
GTT	Graphite Matte Textured
LGS	Light Grey Gloss Smooth
PSS	Platinum Silver Smooth
WHT	White Matte Textured
WHS	White Gloss Smooth
VGT	Verde Green Textured

Color Option	
CC	Custom Color

Control Options	
PC	Photocontrol [4]
BTSO12F	"Bluetooth Programmable, PIR Occupancy/Daylight Sensor, up to 12' mounting height [5,8]
SCP_F	Programmable Occupancy Sensor to Control Options Section [9,10,12]

Additional Options	
F	Fusing (specify voltage)
EH	Battery Backup Unit with Heater (-30˚C) [6,9]
E	Battery Backup Unit (0˚C) [6,9]
CS	Comfort Shield (N/A with Prismatic Refractor)
2DR	Dual Driver [1,2]
2PF	Dual Power Feed [1,2]
CH	Surface Conduit Hubs [5]
SP	10kA Surge Protector

NOTES
1. Available in 25, 35 & 45W
2. Options cannot be combined with controls or PC option
3. Not available with occupancy sensor, battery backup
4. PC comes in standard housing
5. BTS and CH options come in medium back box
6. E and EH come in large back box
7. 347V & 480V only available in 25 and 35W
8. Only available in 45 Watt
9. Not available in 347/480 Volt
10. Select 8 ft or 20 ft mounting height
11. Can be ordered as ETO
12. Not available with E or EH

REPLACEMENT PARTS (MADE TO ORDER) /ACCESSORIES

	Catalog Number	Description
☐	WP-BB-XXX*	Accessory for conduit entry
☐	LNC2-CS	Frosted acrylic comfort shield/lens reduces glare and improves uniformity with only 15% lumen reduction

Notes:
* Replace XXX with paint color

© 2024-2025 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

EXO OUTDOOR LIGHTING

LNC2
SMALL LED LITEPAK

DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

ORDERING GUIDE – STOCK

STOCK ORDERING INFORMATION

Catalog Number	Lumens	Wattage	LED Count	CCT/CRI	Voltage	Distribution	Photocell	Finish
LNC2-35-4K7-3-PC	3910	35	48L	4000K/70	120-277V	3	Yes	Dark Bronze Matte Textured

PERFORMANCE DATA

Nominal Wattage	System Watts	Dist. Type	5K (5000K NOMINAL 70 CRI)			4K (4000K NOMINAL 70 CRI)			3K (3000K NOMINAL 80 CRI)		
			Lumens	LPW	B-U-G	Lumens	LPW	B-U-G	Lumens	LPW	B-U-G
10W	10.6W	Type 3	1213	121	B0-U0-G0	1117	112	B0-U0-G0	1081	108	B0-U0-G0
		Type 4	1244	124	B0-U0-G0	1144	114	B0-U0-G0	1109	111	B0-U0-G0
15W	14.5W	Type 3	1820	121	B0-U0-G0	1676	112	B0-U0-G1	1622	108	B0-U0-G1
		Type 4	1868	125	B0-U0-G1	1718	115	B0-U0-G1	1663	111	B0-U0-G1
20W	20W	Type 3	2427	121	B0-U0-G1	2234	112	B0-U0-G1	2163	108	B0-U0-G1
		Type 4	2487	124	B0-U0-G1	2292	115	B0-U0-G1	2218	111	B0-U0-G1
25W	28W	Type 3	3033	121	B1-U0-G1	2793	112	B0-U0-G1	2703	108	B0-U0-G1
		Type 4	3112	124	B0-U0-G1	2862	114	B0-U0-G1	2772	111	B0-U0-G1
35W	36.4W	Type 3	4247	121	B1-U0-G1	3910	112	B1-U0-G1	3785	108	B0-U0-G1
		Type 4	4355	124	B1-U0-G2	4011	115	B1-U0-G1	3881	111	B1-U0-G1
45W	45.1W	Type 3	5466	118	B1-U0-G1	5031	112	B1-U0-G1	4871	106	B1-U0-G2
		Type 4	5604	117	B1-U0-G2	5159	108	B1-U0-G2	4995	104	B1-U0-G2

PROJECTED LUMEN MAINTENANCE

STANDARD 9, 12 AND 18L VERSIONS

Ambient Temperature	OPERATING HOURS					
	0	25,000	50,000	TM-21-11* L96 60,000	100,000	L70 (Hours)
25°C / 77°F	1	0.97	0.95	0.94	0.91	408,000
40°C / 104°F	0.99	0.96	0.94	0.93	0.89	356,000

LUMINAIRE AMBIENT TEMP FACTOR

AMB TEMP		LUMEN MULTIPLIER
0C	32F	1.03
10C	50F	1.01
20C	68F	1
25C	77F	1
30C	86F	0.99
40C	104F	0.98

Micro Strike Lumen Multiplier			
CCT	70 CRI	80 CRI	90 CRI
2700K	–	0.841	–
3000K	0.977	0.861	0.647
3500K	–	0.900	–
4000K	1	0.926	0.699
5000K	1	0.937	0.791
Monochromatic Amber Multiplier			
Amber	0.710		

© 2024-2025 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

EXO OUTDOOR LIGHTING

LNC2

SMALL LED LITEPAK

DATE: | LOCATION:

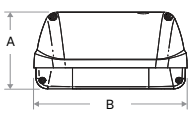
TYPE: | PROJECT:

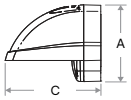
CATALOG #:

ELECTRICAL DATA

System Watts	Input Voltage	Current (AMPS)	System Power (W)
10W	120	0.09	10.6
	277	0.038	
	347	0.031	
	480	0.022	
15W	120	0.12	14.5
	277	0.07	
	347	0.04	
	480	0.03	
20W	120	0.169	20
	277	0.072	
	347	0.058	
	480	0.042	
25W	120	0.235	28
	277	0.101	
	347	0.081	
	480	0.058	
35W	120	0.305	36.4
	277	0.131	
	347	0.105	
	480	0.076	
45W	120	0.378	45.1
	277	0.163	
	347	0.13	
	480	0.094	

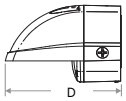
DIMENSIONS

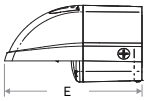




SCP HOUSING

EH - BATTERY BACKUP HOUSING

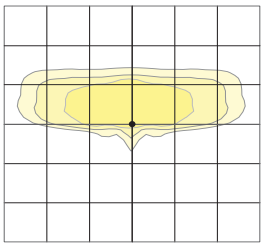




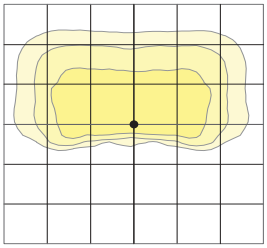
A	B	C	D	E
5.54" (141 mm)	10.16" (258 mm)	6.33" (161 mm)	7.64" (194 mm)	9.10" (231 mm)

DISTRIBUTIONS

Type 3



Type 4 Wide



© 2024-2025 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

EXO OUTDOOR LIGHTING

LNC2
SMALL LED LITEPAK

DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

OUTDOOR LIGHTING CONTROLS OPTIONS

CONTROLS FUNCTIONALITY

	Control Option Ordering Logic & Description		Control Option Functionality									Control Option Components	
			Networkable	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height		
Independent	BTSO-12F	Bluetooth® Programmable, BTSMP-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	12ft		BTSMP-OMNI-O

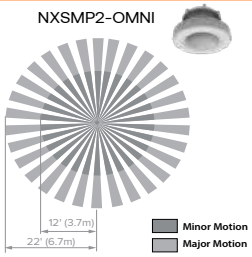
DEFAULT SETTINGS

NX Wireless	**Occupancy Sensor**	Enabled
	Occupancy Sensor Sensitivity	7
	Occupancy Sensor Timeout	15 Minutes
	Occupied Dim Level	100%
	Unoccupied Dim Level	0%
	Daylight Sensor	Disabled
	Bluetooth	Enabled
	2.4GHz Wireless Mesh	On
	"Passcode Factory Passcode: HubbN3T!"	Enabled

Stand Alone	**Occupancy Sensor**	Enabled
	Occupancy Sensor Sensitivity	7
	Occupancy Sensor Timeout	8 Minutes
	Occupied Dim Level	100%
	Unoccupied Dim Level	50%
	Daylight Sensor	Disabled

NX WIRELESS COVERAGE PATTERNS

NXSMP2-OMNI



NX LIGHTING CONTROLS FREE APP

CONTROLS TECH SUPPORT 800-888-8006 (7:00 AM - 7:00 PM)

The NX Lighting Controls App is free to use mobile application for programming both NX Lighting Controls System or Standalone Bluetooth Sensors. The mobile app allows you to configure devices, discover and setup wireless enable luminiares and program NX system settings.

Apple App: https://apps.apple.com/us/app/nx-lighting-controls/id962112904

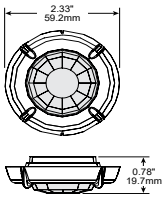
Google Play: https://play.google.com/store/apps/details?id=io.cordova.NXBTR&hl=en_US&gl=US

Apple App Google Play

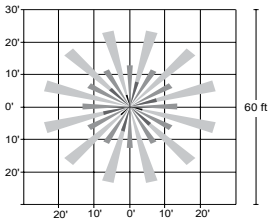
OUTDOOR LIGHTING CONTROLS OPTIONS CONTROLS FUNCTIONALITY

	Control Option Ordering Logic & Description		Control Option Functionality									Control Option Components
			Networkable	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height	
Independent	SCP_F	Sensor Control Programmable, 8F or 40F	–	–	–	✓	✓	✓	✓	–	8ft or 40ft	SCP_F

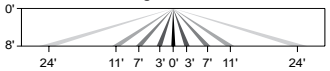
COVERAGE PATTERNS FOR SCP



Coverage Top View @ 12ft.



Coverage Side View



© 2024-2025 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

EXO OUTDOOR LIGHTING

LNC2

SMALL LED LITEPAK

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

ADDITIONAL INFORMATION

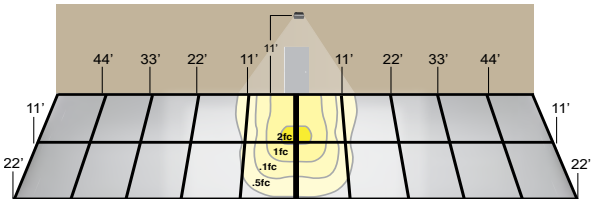
SHIPPING INFORMATION

Catalog Number	G.W(kg)/ CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
LNC2	14.3 (6.5)	14.5 (37)	11.4 (29)	8.4 (21.5)

CONTROL TABLE

Control Option	Sensor	Network-able	Scheduling	Occupancy	Daylight Harvesting	On/Off Control	Programming	Pair with Sensor	Sensor Mounting Height
PC	–	–	–	–	–	✔	–	–	–
BTSO12F	BTSMP-OMNI	–	–	✔	✔	with auxilary driver	–	–	12 ft
SCP_F	–	–	–	✔	–	✔	✔	–	–

LNC2 - BATTERY BACK UP



11' Mounting Height

Provides Life Safety Code average illuminance of 1.0 fc. Assumes open space with no obstructions and mounting height of 11'.

Diagrams for illustration purposes only, please consult factory for application layout.

Battery backup units consume 6 watts when charging a dead battery and 2 watts during maintenance charging. EH (units with a heater) consume up to an additional 8 watts when charging if the battery temp is lower than 10°C

© 2024-2025 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

SES POLES

SQUARE STEEL STRAIGHT POLES (SSP)

Specifications

The Square Steel Straight Pole has been successfully installed in projects of all types for over 30 years and has become the most popular and economical pole option for all site lighting applications including retail, commercial, industrial and residential projects.

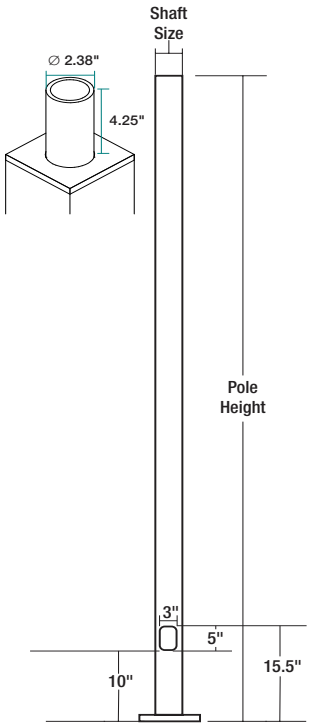
The popularity of this series is due to its full offering of sizes, heights and standard colors with complete offering of mounting options, accessories and select styles/colors stocked for immediate shipping.

- Square Steel Straight Shaft
- One piece construction
- 2 3/8" OD tenon, Open Top or Factory drilled Side Mount Options available
- Steel Base Plate
- 3 size options for anchor bolts. All anchor bolts fully galvanized with 2 nuts and washer (bolts ordered as separate line item and paper template included as component of pole)
- Square base cover available (ordered as separate line item)
- Pole finished in weather proof powder coast paint in 4 standard colors
- 3" x 5" Gasketed hand hole standard

Tenon Top Pole

Open Top Pole

Dimensions



Ordering Information Ordering Example: SES-XX-XX-X-XX-X-XX-XX

SES

Series	
SES	Square Steel Straight Pole

Height	
18	18 Feet
20	20 Feet
22	22 Feet
25	25 Feet
28	26.6 Feet

Note: Custom Pole heights available, just note required height (pole will be cut down to required height from next tallest pole heights offered)

Size	
40	4"x4" Shaft
50	5"x5" Shaft

Gauge	
1	11 Gauge .119" thick
7	7 Guage .179" thick

Mounting	
TA	2 3/8" OD Tenon[4]
OT	Open Top Pole[2]
TB	2 7/8" OD Tenon[4]
A	Side-Single
B	Side-Double at 90°
C	Side-Double at 180°
D	Side-Triple at 90°
F	Side-Quad at 90°

Drilling	
2	Drill Pattern 2
6	Drill Pattern 6
26	Drill Pattern 26
C	Custom Drill Pattern[3]
B4	Drill Pattern Viper Small
B3	Drill Pattern Viper Large
S2	

Color	
DB	Dark Bronze
WH	White
BL	Black
PS	Platinum Silver

1.
2. Open Top Poles include a pole cap
3. A detailed drawing of custom drill pattern required must be submitted at time of ordering
4. Tenon 4.25" tall

Current

Job Name : Bridgestone-firestone RFP
Manufacturer : CURRENT
Model Number : SES-25-40-01-A(B3 OR S2)-BLT

Type : PL

SES POLES

SQUARE STEEL STRAIGHT POLES (SSP)

Ordering Information

Catalog Number	Pole Ht.		Nominal Shaft Dim.	Wind Load Rating- ASCE 7-05 wind map EPA Load Rating-(3 second gust wind speeds)										Wall Thick.	Bolt Circle (Sug.)	Bolt Circle	Bolt Sq.	Base Plate (sq.)	Anchor Bolt Size	Bolt Proj.	Pole Wt. (lbs.)
	ft	m		85 MPH	90 MPH	100 MPH	105 MPH	110 MPH	120 MPH	130 MPH	140 MPH	145 MPH	150 MPH								
SES-10-40-01-XX-XX	10	3.0	4"	25.0	25.0	25.0	22.8	20.6	17.0	14.2	11.9	11.0	10.1	0.125"	11"	8-11"	5.6-7.8"	10.25 x 0.75"	3/4 x 30 x 3"	4"	77
SES-10-50-01-XX-XX	10	3.0	5"	25.0	25.0	25.0	25.0	25.0	23.0	19.1	16.0	14.7	13.5	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	
SES-12-40-01-XX-XX	12	3.7	4"	25.0	25.0	20.0	18.0	16.1	13.2	10.8	8.9	8.1	7.4	0.125"	11"	8-11"	5.6-7.8"	10.25 x 0.75"	3/4 x 30 x 3"	4"	90
SES-12-50-01-XX-XX	12	3.7	5"	25.0	25.0	25.0	24.0	21.8	17.8	14.5	12.1	11.0	10.0	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	
SES-14-40-01-XX-XX	14	4.3	4"	23.1	20.4	16.1	14.3	12.8	10.2	8.2	6.6	5.9	5.3	0.125"	11"	8-11"	5.6-7.8"	10.25 x 0.75"	3/4 x 30 x 3"	4"	103
SES-14-50-01-XX-XX	14	4.3	5"	25.0	25.0	21.9	19.5	17.4	13.9	11.2	9.0	8.1	7.2	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	
SES-16-40-01-XX-XX	16	4.9	4"	19.0	16.7	13.0	11.5	10.1	7.9	6.2	4.7	4.1	3.6	0.125"	11"	8-11"	5.6-7.8"	10.25 x 0.75"	3/4 x 30 x 3"	4"	116
SES-16-50-01-XX-XX	16	4.9	5"	25.0	23.0	17.8	15.6	13.9	10.8	8.5	6.5	5.7	5.0	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	
SES-16-50-07-XX-XX	16	4.9	5"	25.0	25.0	26.0	25.0	24.8	20.1	16.5	13.6	12.3	11.2	0.188"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	219
SES-18-40-01-XX-XX	18	5.5	4"	15.6	13.6	10.0	9.0	7.8	5.9	4.4	3.1	2.6	2.1	0.125"	11"	8-11"	5.6-7.8"	10.25 x 0.75"	3/4 x 30 x 3"	4"	129
SES-18-50-01-XX-XX	18	5.5	5"	21.6	18.7	14.2	12.4	10.8	8.2	6.1	4.4	3.7	3.0	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	
SES-18-50-07-XX-XX	18	5.5	5"	25.0	25.0	25.0	22.9	20.4	16.4	13.2	10.7	9.6	8.6	0.188"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	243
SES-20-40-01-XX-XX	20	6.1	4"	12.7	10.9	7.9	6.9	5.9	4.2	2.8	1.7	1.3	0.9	0.125"	11"	8-11"	5.6-7.8"	10.25 x 0.75"	3/4 x 30 x 3"	4"	142
SES-20-40-7-XX-XX	20	6.1	4"	13.6	11.6	8.5	7.2	6.1	4.4	3	1.9	1.4	1	0.188"	11"	8-11"	5.6-7.8"	11" x 1"	3/4 x 30 x 3"	4"	201
SES-20-50-01-XX-XX	20	6.1	5"	17.6	15.2	11.2	9.6	8.2	5.9	4.0	2.5	1.9	1.3	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	
SES-20-50-07-XX-XX	20	6.1	5"	25.0	25.0	21.3	18.9	16.7	13.2	10.4	8.1	7.2	6.3	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	267
SES-22-50-07-XX-XX	22	6.7	5"	25.0	23.0	17.7	15.5	13.5	10.5	8.0	6.0	5.2	4.4	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	292
SES-25-40-01-XX-XX	25	7.6	4"	7.3	5.9	3.8	2.9	2.1	0.8	NR	NR	NR	NR	0.125"	11"	8-11"	5.6-7.8"	10.25 x 0.75"	3/4 x 30 x 3"	4"	175
SES-25-40-7-XX-XX	25	7.6	4"	12.8	11.0	7.9	6.7	5.5	3.7	2.3	1.2	0.7	NR	0.188"	11"	8-11"	5.6-7.8"	11" x 1"	3/4 x 30 x 3"	4"	257
SES-25-50-01-XX-XX	25	7.6	5"	10.3	8.5	5.4	4.2	3.2	1.4	NR	NR	NR	NR	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	
SES-25-50-07-XX-XX	25	7.6	5"	20.7	17.8	13.3	11.5	9.8	7.2	5.0	3.3	2.6	1.9	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	327
SES-28-50-07-XX-XX	27	8.1	5"	16.1	13.7	9.7	8.1	6.7	4.4	2.6	1.1	NR	NR	0.188"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	335
SES-30-50-07-XX-XX	30	9.1	5"	13.5	11.3	7.7	6.2	4.9	2.8	1.1	NR	NR	NR	0.125"	11"	10-13.5"	7.1-9.5"	12" x 1"	1 x 36 x 4"	4"	367

Catalog Number	Florida Building Code 2010 EPA Load Rating (3 second gust wind speeds)									
	85 MPH	90 MPH	100 MPH	105 MPH	110 MPH	120 MPH	130 MPH	140 MPH	145 MPH	150 MPH
SES-10-40-01-XX-XX	25.0	25.0	25.0	25.0	23.5	20.5	17.8	15.5	11.0	10.1
SES-10-50-01-XX-XX	25.0	25.0	25.0	25.0	25.0	24.5	21.3	18.5	14.7	13.5
SES-12-40-01-XX-XX	25.0	25.0	25.0	21.9	18.6	15.8	13.6	11.7	8.1	7.4
SES-12-50-01-XX-XX	25.0	25.0	25.0	25.0	22.7	19.4	16.6	14.3	11.0	10.0
SES-14-40-01-XX-XX	25.0	25.0	21.1	17.5	14.7	12.3	10.4	8.8	5.9	5.3
SES-14-50-01-XX-XX	25.0	25.0	25.0	21.4	17.9	15.1	12.7	10.7	8.1	7.2
SES-16-40-01-XX-XX	23.2	20.9	17.0	13.9	11.4	9.4	7.7	6.3	4.1	3.6
SES-16-50-01-XX-XX	25.0	25.0	20.7	17.0	14.0	11.5	9.5	7.7	5.7	5.0
SES-16-50-07-XX-XX	25.0	25.0	25.0	25.0	24.9	21.0	17.9	15.2	12.3	11.2
SES-18-40-01-XX-XX	18.9	16.8	13.5	10.8	8.7	6.9	5.5	4.2	2.6	2.1
SES-18-50-01-XX-XX	23.0	20.5	16.5	13.2	10.6	8.4	6.7	5.2	3.7	3.0
SES-18-50-07-XX-XX	25.0	25.0	25.0	24.1	20.0	16.7	13.9	11.6	9.6	8.6
SES-20-40-01-XX-XX	15.3	13.6	10.6	8.3	6.4	4.8	3.5	2.5	1.3	0.9
SES-20-40-07-XX-XX	25.0	24.0	19.6	16.1	13.2	10.8	8.9	7.2	4.3	3.7
SES-20-50-01-XX-XX	18.7	16.5	13.0	10.1	7.8	5.9	4.3	3.0	1.9	1.3
SES-20-50-07-XX-XX	25.0	25.0	24.0	19.6	16.0	13.1	10.7	8.7	7.2	6.3
SES-22-50-07-XX-XX	25.0	24.8	19.8	15.9	12.7	10.1	8.0	6.2	5.2	4.4
SES-25-40-01-XX-XX	8.8	7.4	5.2	3.4	1.9	0.7	NR	NR	NR	NR
SES-25-40-7-XX-XX	7.7	6.4	4.3	2.8	1.3	NR	NR	NR		
SES-25-50-01-XX-XX	10.7	9.0	6.3	4.1	2.3	0.8	NR	NR	NR	NR
SES-25-50-07-XX-XX	21.4	18.9	14.6	11.3	8.6	6.3	4.5	2.9	2.6	1.9
SES-28-50-07-XX-XX	18.7	16.4	12.4	9.3	6.8	4.7	3.0	1.5	NR	NR
SES-30-50-07-XX-XX	13.4	11.4	8.0	5.3	3.1	1.3	NR	NR	NR	NR

Center of EPA is located at the pole top. If bullhorns or other methods are used that locate the EPA center above the poletop, EPA limits are reduced.
Calculations are based on each square foot of EPA being equal to 30 pounds.
The EPA limits are not applicable for poles attached to structures, such as parking garage decks.

EXO OUTDOOR LIGHTING

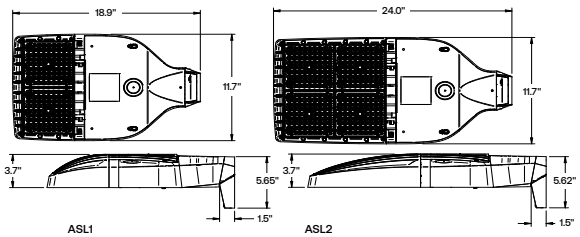
SLING Micro Strike

AREA/SITE/ROAD LIGHTER

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:



	Weight lbs. (kg)	EPA
ASL1	14.47 (6.56)	.46ft² 0.43m²
ASL2	17.47 (7.92)	.56ft² 0.52m²

FEATURES

- Compact sleek design with multiple LED configurations and simple installation
- The SLING includes a square mounting block for easy pole installation or mast arm option for 2-3/8 ft OD roadway brackets
- Capable of replacing up to 1000w HID luminaires
- Micro Strike optical distributions of Type 2, 3, 4F, 4W or 5QW
- Tool-less entry option for easy installation and maintenance
- 3G rated for high vibration applications including bridges and overpasses

C US BAA TAA DLC LISTED PREMIUM

CONTROL TECHNOLOGY

NX CONNECT NX WIRED NX WIRELESS LIGHTGRID

SERVICE PROGRAMS

QS10

SPECIFICATIONS

CONSTRUCTION

- Die-cast housing with hidden vertical heat fins that are optimal for heat dissipation while keeping a clean smooth outer surface
- Corrosion resistant, die-cast aluminum housing with powder coat paint finish
- Separate optical and electrical compartment for improved thermal management and optimum component operation
- TGIC thermoset polyester powder paint finish applied at nominal 2.5 mil thickness

OPTICS

- Entire optical aperture illuminates to create a larger luminous surface area resulting in a low glare appearance without sacrificing optical performance
- Premium engineered individual acrylic lenses deliver IES Type 2, 3, 4F, 4W and 5QW distributions
- Lens distributions are field rotatable (in 90° increments) or exchangeable for job site fine-tuning
- 3000K, 4000K or 5000K (70 CRI) CCT
- 80, 160 or 320 midpower LEDs
- 3000K, 4000K or 5000K (70 CRI) CCT
- Zero uplight at 0 degrees of tilt
- Field rotatable optics

INSTALLATION

- Tool-less entry to wiring/driver compartment optional
- Arm mounting works with S2 drill pattern
- Fixture ships with square mounting block for ease of installation
- Mast arm fitter accessory or option available for 2-3/8" OD brackets with vertical tilt of +3°, 0° or -3°

ELECTRICAL

- Universal 120-277 VAC or 347-480 VAC input voltage, 50/60 Hz
- Ambient operating temperature -40° C to 40° C
- Drivers have greater than 90% power factor and less than 20% THD
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- Standard 6kV surge protection with optional field replaceable surge protection device provides 20KA and 10KV protection meeting ANSI/IEEE C62.41.2 Category C High and Surge Location Category C3; Automatically takes fixture off-line for protection when device is consumed

CONTROLS

- Photo control, occupancy sensor and Zigbee wireless available for complete on/off and dimming control
- 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)
- Dimming Drivers are standard and dimming leads are extended out of the luminaire unless control options require connection to the dimming leads. Must specify if wiring leads are to be greater than the 6
- Please consult brand or sales representative when combining control and electrical options as some combinations may not operate as anticipated depending on your application

CERTIFICATIONS

- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures
- DLC® (DesignLights Consortium Qualified), with some Premium Qualified configurations. Not all product variations on this page are DLC Qualified. Refer to http://www.designlights.org/ for the most up-to-date list.
- 3G rated for ANSI C136.31 high vibration applications
- IP65 optical assembly
- Meets IDA recommendations using 3K CCT configuration at 0 degrees of tilt
- This product meets federal procurement law requirements under the Buy American Act (FAR 52.225-9) and Trade Agreements Act (FAR 52.225-11). See Buy America(n) Solutions (link to https://www.currentlighting.com/resources/america-solutions)

WARRANTY

- 5 Year warranty

Current

currentlighting.com/exo

© 2024 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

EXO OUTDOOR LIGHTING

SLING Micro Strike

AREA/SITE/ROAD LIGHTER

DATE: | LOCATION:

TYPE: | PROJECT:

CATALOG #:

Gray Shading = Service Program Limit of 15 luminaires QS10

ORDERING GUIDE

Example: ASL1-80L-50-3K7-2-UNV-A-BLT-7PRMD-40F

CATALOG # _____

ORDERING INFORMATION

Series	
ASL1	ASL Microstrike Series
ASL2	ASL Microstrike Series

# LEDs	
80L-25	3,000 lm
80L-39	4,500 lm
80L-50	6,000 lm
160L-70	9,000 lm
160L-100	12,000 lm
160L-115	15,000 lm
160L-135	18,000 lm
320L-145	21,000 lm
320L-170	24,000 lm
320L-185	27,000 lm
320L-210	30,000 lm
320L-235	33,000 lm
320L-255	35,000 lm

CCT/CRI	
3K7	3000K, 70 CRI
4K7	4000K, 70 CRI
5K7	5000K, 70 CRI

Distribution	
2	Type II
3	Type III
4F	Type 4F
4W	Type 4W
5QW	Type 5QW

Voltage	
UNV	Universal 120-277V
120	120V
208	208V
240	240V
277	277V
347	347V
480	480V

Mounting	
A	Arm for Square poles with S2 drill pattern
A3	Square Arm with 3.25"-3.75" OD RPA3 Adapter
A4	Square Arm with 3.875"-4.5" OD RPA4 Adapter
A5	Square Arm with 5" OD RPA5 Adapter
MAF	Mast Arm Fitter for 2-3/8" OD

Network Control Options	
NXWS16F	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [1,3,4]
NXWS40F	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [1,3,4]
NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor [3,4]
Stand Alone Sensors	
7PR	7 Pin Receptacle
7PR-SC	7 Pin Receptacle with shorting cap
7PR-MD8F	7 pin receptacle with low voltage sensor at 8' mounting for external control accessory
7PR-MD40F	7 pin receptacle with low voltage sensor at 40' mounting for external control accessory
7PR-TL	7 Pin Receptacle with Photocontrol
Sensors	
BTS_F	Bluetooth Programmable, PIR Occupancy/Daylight Sensor, 360° lens [2,4]
BTSO_F	Bluetooth Programmable, PIR Occupancy/Daylight Sensor, 360° lens, up to 12' mounting height [3,4]

Options	
F[1]	Fusing
BC	Backlight Control
SP	20kA & 10kV Surge Protector

Color	
BLT	Black Matte Textured
BLS	Black Gloss Smooth
DBT	Dark Bronze Matte Textured
DBS	Dark Bronze Gloss Smooth
GTT	Graphite Matte Textured
LGS	Light Grey Gloss Smooth
LGT	Light Grey Matte Textured
PSS	Platinum Silver Smooth
WHT	White Matte Textured
WHS	White Gloss Smooth
VGT	Verde Green Textured
Color Option	
CC	Custom Color

Notes:
1. Must specify Voltage
2. Replace "_" with "14" for up to 14' mounting height, "40F" for 15-40' mounting height
3. Replace "_" with "12" for up to 12' mounting height
4. Available at 50W or higher only

© 2024 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

EXO OUTDOOR LIGHTING

SLING Micro Strike

AREA/SITE/ROAD LIGHTER

OUTDOOR LIGHTING CONTROLS OPTIONS

LIGHTGRID+ NX LIGHTING CONTROLS MOBILE APP

CONTROLS FUNCTIONALITY

	Control Option Ordering Logic & Description		Control Option Functionality									Control Option Components	
			Networkable	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height		
NX Wireless	NXW	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor	✓	✓	✓	–	–	✓	✓	✓	–		NXRM2-H
	NXWS12F	NX Networked Wireless Enabled Integral NXSMP2-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming	✓	✓	✓	✓	✓	✓	✓	✓	12ft		NXSMP2-OMNI-O
	NXWS16F	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming	✓	✓	✓	✓	✓	✓	✓	✓	16ft		NXSMP2-LMO
	NXWS40F	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming	✓	✓	✓	✓	✓	✓	✓	✓	40ft		NXSMP2-HMO
Independent	BTSO-12F	Bluetooth® Programmable, BTSMP-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	12ft		BTSMP-OMNI-O
	BTS-14F	Bluetooth® Programmable, BTSMP-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	14ft		BTSMP-LMO
	BTS-40F	Bluetooth® Programmable, BTSMP-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens	–	–	–	✓	✓	✓	✓	✓	40ft		BTSMP-HMO

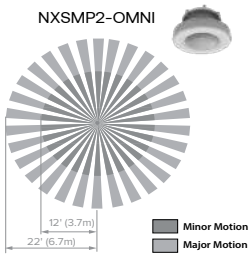
DEFAULT SETTINGS

NX Wireless	
Occupancy Sensor	Enabled
Occupancy Sensor Sensitivity	7
Occupancy Sensor Timeout	15 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	0%
Daylight Sensor	Disabled
Bluetooth	Enabled
2.4GHz Wireless Mesh	On
"Passcode Factory Passcode: HubbN3T!"	Enabled

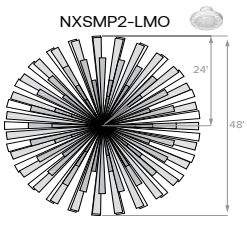
Stand Alone	
Occupancy Sensor	Enabled
Occupancy Sensor Sensitivity	7
Occupancy Sensor Timeout	8 Minutes
Occupied Dim Level	100%
Unoccupied Dim Level	50%
Daylight Sensor	Disabled

NX WIRELESS COVERAGE PATTERNS

NXSMP2-OMNI

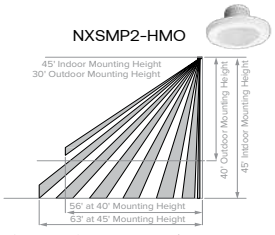


NXSMP2-LMO



Sensor Lens Coverage and Detection Patterns When Mounted at 8ft with Low Mount Lens

NXSMP2-HMO



Sensor Lens Coverage and Detection Patterns When Mounted at 40ft and 45ft with Standard Lens

NX LIGHTING CONTROLS FREE APP

The NX Lighting Controls App is free to use mobile application for programming both NX Lighting Controls System or Standalone Bluetooth Sensors. The mobile app allows you to configure devices, discover and setup wireless enable luminiares and program NX system settings.

Apple App: https://apps.apple.com/us/app/nx-lighting-controls/id962112904

Google Play: https://play.google.com/store/apps/details?id=io.cordova.NXBTR&hl=en_US&gl=US

CONTROLS TECH SUPPORT 800-888-8006 (7:00 AM - 7:00 PM)

Apple App

Google Play

Current

currentlighting.com/exo

© 2024 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

EXO OUTDOOR LIGHTING

SLING Micro Strike

AREA/SITE/ROAD LIGHTER

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

PERFORMANCE DATA

Description	Nominal Wattage	System Watts	Dist. Type	5K (5000K NOMINAL 70 CRI)					4K (4000K NOMINAL 70 CRI)					3K (3000K NOMINAL 70 CRI)				
				Lumens	LPW[1]	B	U	G	Lumens	LPW[1]	B	U	G	Lumens	LPW[1]	B	U	G
ASL1	25	25.4	2	3430	135	2	0	2	3413	134	2	0	2	3225	127	2	0	2
			3	3465	136	2	0	2	3448	136	2	0	2	3259	128	2	0	2
			4F	3204	126	1	0	1	3201	126	1	0	1	3127	123	1	0	1
			4W	3401	134	2	0	3	3384	133	2	0	3	3198	126	2	0	3
			5QW	3483	137	4	0	2	3466	136	4	0	2	3274	129	4	0	2
	39	38.0	4F	5005	132	1	0	1	5000	132	1	0	1	4885	129	1	0	1
			2	5232	138	3	0	3	5206	137	3	0	3	4919	129	3	0	3
			3	5287	139	2	0	2	5260	138	2	0	2	4971	131	2	0	2
			4W	5188	137	2	0	3	5163	136	2	0	3	4879	128	2	0	3
			5QW	5319	140	4	0	2	5292	139	4	0	2	4975	131	4	0	2
	50	49.7	2	6295	127	2	0	2	6263	126	2	0	2	5918	119	2	0	2
			3	6361	128	2	0	2	6329	127	2	0	2	5981	120	2	0	2
			4F	6407	129	1	0	2	6401	129	1	0	2	6254	126	1	0	2
			4W	6243	126	2	0	3	6212	125	2	0	3	5870	118	2	0	3
			5QW	6392	129	4	0	2	6360	128	4	0	2	6009	121	4	0	2
	70	68.4	2	9460	138	3	0	3	9413	138	3	0	3	8895	130	3	0	3
			3	9559	140	2	0	2	9512	139	2	0	2	8989	131	2	0	2
			4F	8988	131	2	0	2	8979	131	2	0	2	8772	128	2	0	2
			4W	9382	137	2	0	3	9335	136	2	0	3	8822	129	2	0	3
			5QW	9610	140	4	0	2	9562	140	4	0	2	9034	132	4	0	2
	100	88.0	2	11939	136	2	0	2	11885	135	2	0	2	11232	128	2	0	2
			3	12064	138	2	0	2	12010	136	2	0	2	11349	129	2	0	2
			4F	12832	146	2	0	2	12819	146	2	0	2	12524	142	2	0	2
			4W	11840	135	2	0	3	11787	135	2	0	3	11138	127	2	0	3
			5QW	12132	138	4	0	2	12071	138	4	0	2	11404	130	4	0	2
	115	109.7	2	15651	143	2	0	2	15577	142	2	0	2	14977	137	2	0	2
			3	15487	141	2	0	2	15413	140	2	0	2	14820	135	2	0	2
			4F	14754	134	2	0	2	14740	134	2	0	2	14401	131	2	0	2
			4W	15305	140	2	0	3	15232	139	2	0	3	14646	134	2	0	3
			5QW	15731	143	4	0	2	15632	143	4	0	2	15031	137	4	0	2
	135	133.3	2	18089	136	3	0	3	17999	135	3	0	3	17275	130	3	0	3
			3	17863	134	2	0	2	17777	133	2	0	2	17094	128	2	0	2
			4F	17317	130	3	0	3	17300	130	3	0	3	16902	127	2	0	3
			4W	17653	133	2	0	3	17568	132	2	0	3	16893	127	2	0	3
			5QW	18155	136	4	0	2	18030	135	4	0	2	17338	130	4	0	2

ASL2 Performance Data on next page

1 VAC input Lumen values are from photometric test performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations. Actual performance may differ as a result of end-user environment and application.

© 2024 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
June 8, 2026

MINUTES

CALL TO ORDER: Chairman Grajek called the meeting of the Genoa Charter Township Planning Commission to order at 6:30 p.m. Present were Chris Grajek, Tim Chouinard, Glynis McBain, Marianne McCreary, Eric Rauch, and Bill Reiber. Absent was Greg Rassel. Also present were Planning Director Amy Ruthig and Planning Coordinator Bobby Foster.

PLEDGE OF ALLEGIANCE: The pledge of allegiance was recited.

APPROVAL OF AGENDA:

Moved by Commissioner McCreary, supported by Commissioner Reiber, to approve the agenda as presented. **The motion carried unanimously**.

DECLARATION OF CONFLICT OF INTEREST: Commissioner Rauch stated Pinnacle Wealth currently resides in an office space of which he is part owner.

Moved by Reiber, supported by Chouinard, to excuse Commissioner Rauch from Open Public Hearing #1. **The motion carried unanimously.**

Commissioner Rauch left the meeting at 6:33 pm.

CALL TO THE PUBLIC:

The call to the public was opened at 6:33 pm with no response.

The call to the public was closed at 6:32 pm.

OPEN PUBLIC HEARING # 1… Consideration of a special use, site plan and environmental impact assessment for a proposed public and private event space with outdoor music. The property is located at 5311 Brighton Road, north side of Brighton Road, between Chilson and Bauer Roads. The request is petitioned by Michael Kennedy, Lindhout Associates.

A. Recommendation of Special Use Application
B. Recommendation of Environmental Impact Assessment
C. Recommendation of Site Plan

Mr. Mike Kennedy of Lindhout Architects and Mr. Andrew Perri, the property owner, were present.

Mr. Perri provided details of his and his wife's history in Genoa Township. Their proposal is going to be a benefit to the community. They will stay within the regulations and the ordinances

of the township. They want to have live outdoor music and will make changes to the property and building. He has received 114 letters of support and he wants to hear any concerns from the residents.

Mr. Kennedy provided a review of the proposed site improvements, including parking lot, landscaping, lighting, sidewalks, outdoor restroom facilities and bar, and a potential future expansion of the building. The only lighting on the patio would be the current lights on the building and string lights.

Mr. Borden reviewed his letter dated June 2, 2026. He stated the major concerns with the proposal are noise and lighting. The applicant has provided self-imposed regulations that address those concerns as well as occupancy, uses, times, etc.

1. Special Land Uses (Section 19.03):
   a. In order to make favorable findings related to compatibility and impacts, mitigation of off-site impacts, primarily noise and light, and the use conditions of Section 7.02.02(q) need to be met to the Commission's satisfaction.
   b. Ther revised submittal notes that the sound study area cannot be expanded south of Brighton Road.
   c. Lighting details should be added for the patio area.
   d. The applicant must address any comments provided by the Township Engineer or Brighton Area Fire Authority regarding public facilities and services.

2. Use Conditions (Section 7.02.02(q)):
   a. The Commission must determine that the Procedures Manual adequately mitigates potential offsite impacts.
   b. The applicant must address any comments provided by the Commission on the Procedures Manual.
   c. Variances are necessary for seating/buildings/structures within 100 feet of a property line.

3. Site Plan Review:
   a. The notes on Sheet 6, Site Plan, do not match the provisions of the Procedures Manual and must be corrected for consistency.
   b. We request the applicant identify the type of siding proposed for the outdoor bar and restroom building. We suggest colors match or be compatible with the principal building.
   c. The applicant proposes use of a performance guarantee for future construction of the required pathway in the public right-of-way.
   d. The applicant may wish to provide additional barrier-free parking spaces closer to the building entrance.
   e. The lighting plan must be updated to include details for the patio area and building mounted fixtures.
   f. We suggest additional landscape screening around the waste receptacle/enclosure.

Ms. Streveler of Tetra Tech stated the petitioner has satisfactorily addressed their previous comments and there are no other engineering related concerns.

The Brighton Area Fire Authority's letter dated May 19 stated.
1. All previous site plan review comments that have been acknowledged or complied with

remain a requirement for the site.

2. BAFA is unable to locate the previously requested code analysis from the architect, or whether it was ever provided for the alteration to the existing building. This is necessary to determine whether fire suppression is needed within the building.

The following items are unclear and need to be addressed:
a. What is the level of alteration for the renovation? It appears to be a change of use with more than 50% of the work area.
b. Will the mixed occupancies be fire separated?
c. What is the occupant capacity for the building? Will it have capacity for outdoor events in inclement weather?
d. What is the intended use of the basement and second floor?

3. During the construction process, the building will be evaluated for emergency responder radio signal strength. If coverage is found to be questionable or inadequate; the contractor or the building owner shall hire an approved contractor to conduct a grid test of the facility. If the signal strength coverage is found to be non-compliant, an approved emergency responder radio coverage system shall be provided in the building.

The call to the public was opened at 6:57 pm.

Mr. Jim Koleszar of 4095 Pinehurst Drive has lived here for over 50 years. This is the only nearby restaurant for them. He believes that what Andrew and his family are proposing is about community and it is a wonderful plan.

Ms. Theresa Rimbold-Coloske who lives on Glenway, has a home on Crooked Lake, has a business in Brighton and has lived here for 40 years. If the entire building is going to be renovated, then she is in support of the project. She asked if there will be food in the bar area. Her one recommendation is to limit the parking on Brighton Road

Mr. Jim Lyman of 5112 Ashton Court lives directly south of the building and is not against improving the site and opening a restaurant. He used to go to the previous restaurant. This is a residential area that's tranquil and quiet and there shouldn't be outdoor music.

Mr. Dennis Howie of 5189 Ashton Court stated two documents that were submitted by the applicant have contradicting information. He would like to know which is correct.

Mr. Jerry Weyand of 5184 Ashton Court provided photographs of the building, which has been vacant for seven years. This is an outdoor musical festival business. He stated the plan does not address overflow traffic management, security, liability insurance, staffing details, and code enforcement. This will not enhance the residents' investments.

Ms. Mary Willy-Lozano of 5241 Ashton Court has lived here for 26 years. She has been directly impacted by the traffic. She was waiting to turn out of her street and was hit by a vehicle. The applicant has not demonstrated the impacts this will have on the surrounding neighborhoods. She wants to ensure that the impacts have been evaluated and any conditions of approval are enforceable.

Ms. Laurie Stosik-Lyman of 5112 Ashton Court would love to see this building. It would be a positive for the neighborhood. The biggest concern is the sound study has not been extended to the south. She questioned how the decimal level will be able to be maintained. The overflow parking will affect their street.

Mr. Vincent Chmielewski of 5295 Pinewood Drive would be looking forward to having this. The plan he saw would be beautiful and agrees with the others that some of the items should be addressed before approval.

Ms. Catherine Dhulster of 5236 Ashton Court purchased her home and it was quiet and serene. Then the Thursday night patio music started. She lives at the end of her road can she could hear all of the music and the crowds. This could be potentially six nights a week. It does not fit into the community. The music could be held inside. She would like the community to be protected.

Mr. Michael Hill of 5139 Milroy Lane agrees with what has been said this evening. The applicant has not listened to the neighbors. It is difficult to enforce the rules if they are violated. They live in a peaceful area. This will increase traffic, He asked to have this denied.

Ms. Jessica Pierce of 5259 Pinewood Drive lives across the street from the building. She is the project manager for this proposal. All of the criteria is met. She drafted the Procedures Manual and it is a draft document so that it can be changed as the requirements change based on feedback. The music will not be blaring.

Mr. Mike Jergens has lived on Oak Tree Court for 29 years. Mr. and Mrs. Perri are honorable people. He supports the idea. He used to enjoy the restaurant and the outdoor music. Genoa Township should have a process to address any types of ordinance violations. This should not be a nuisance to the people in the area.

Ms. Beth Smith of 1460 Stillman provided a detail history of the property and the building. She spent all of her summers for 21 years at Burroughs Farm. This should be a historical building.

Mr. Brian Heintz of 689 Chicago Drive, Howell is one of the original employees at Burroughs Tavern. He met many of his friends there. He understands the concerns about the music, but this is the summertime and the patio should be used. He is in support of Mr. Perri.

Mr. Shawn Chapper of 5043 Ashton Court is the property directly across the street. The loud music goes from 6-10 pm and then after that, there would be noise from the vehicles leaving. This is a nightmare for his family. This will hurt the value of their homes; no one is going to want to buy his home. He does not agree with this.

Mr. Peyton Clark of 4111 Homestead stated this is the most popular patio in Livingston County and it should be there. If it stops at 10:00 pm there is no problem.

Ms. Kristi Hill of 5139 Milroy Lane stated the applicant must show that it is meeting the standards. It is more intensive than what was submitted two years ago. She asked the Planning Commission to focus on the standards of the ordinance, such as compatibility with the

surrounding properties. This has not been provided by the applicant. There are key questions that have not been answered. She requested the application be denied.

Mr. Tom Martin of 4748 Pine Eagles Drive stated Burroughs Roadhouse was the culture of the area. He would like to have it restored. It will be wonderful for the community.

Mr. Pat Ellerholz of 4083 Homestead Drive stated he grew up at Burroughs and would like to see the building put back to its historic spot in the community. He has known Andrew for 40 years and he believes he can do that for the community. This sounds like it would be acoustic music and respecting the neighbors.

Ms. Theresa Kolasky is in support of this project but not if the building is not restored. If it is just opening up the outside to patio, then she does not agree.

Ms. Danielle Smarch of 5101 Milroy stated there are a lot of children who live in the area and she is concerned about the drinking and partying and the loud music. The residents don't have a problem with restoring the building, but need recourse for noise, parking on their streets, etc. She asked the Planning Commission to take time to read the emails from the residents before deciding.

Ms. Jessica Pierce stated she lives across the street from this property and has small children. Road noise is 70 decibels and they are proposing to have music no more than 65 decibels. The music will not be the way it was before. She asked the residents to read what is being proposed.

Mr. Michael Hill stated that if this is passed, the establishment will do what they want.

The call to the public was closed at 7:52 pm.

Commissioner McCreary stated the proposed use is shown on the application to allow outside music on the existing patio and will be an accessory to the primary use of the establishment . What is the primary use of the building? Mr. Perri stated they are renovating the entire property but they have not determined what the use will be. They will improve the inside and outside of the building and the property. She stated the primary use has not been addressed. Mr. Kennedy stated that the patio will be an accessory use to the current restaurant use that is there. Having this approved will help to determine what use will be in the building. Commissioner McCreary read the zoning ordinance. The ordinance says there can only be one use in the building. Mr. Kennedy stated they want to have the ability to have a restaurant and an office. They want the special use approved before they continue with the renovations and determine the use of the building. Commissioner McCreary stated the bar, dancing, and live music is not permitted in this district per the ordinance. Ms. Ruthig stated the property is master planned for neighborhood service.

Chairman Grajek stated there were numerous emails that were received. Ordinance compliance was the largest concern. There were also concerns regarding Mr. Perri's house on S. Hughes Road. Mr. Perri said he owns that and the tenant has excessive vehicles on the property. The tenant has rights so he is not allowed to have these vehicles towed. The letter from the township was sent to the house address and not the mailing address, which is his home. The tenant is not complying so he has to wait 21 days until he can tow those vehicles without his permission.

Ms. Ruthig stated a ticket was issued today because they did not address the compliance. If it is not done by the due date, they will continue to issue tickets. Chairman Grajek asked how the township can be assured that the ordinances will be complied with at this site. Mr. Perri stated he and his wife are going to be owner occupants of the business that opens in the building, and he will not be reliant on a tenant to comply with the ordinance.

Commissioner McCreary asked about the vehicles that are on the site. Mr. Perri stated all of them are removed, except for one trailer.

Commissioner Reiber noted the BAFA letter asks four questions so they do not appear to have all of the necessary information. In reading the ordinance, he agrees that it is a great idea to have a restaurant there without the outdoor music. He does not believe this is a compatible use. Mr. Kennedy stated they are unable to give BAFA the answers to their questions. He stated they do not know what the inside use will be if they do not receive approval for the outdoor venue.

Mr. Perri stated they will have walls and trees to screen the noise from Brighton Road because of the concerns that were raised by the residents.

Commissioner Chouinard stated the only information that the residents and the township have is what has happened in the past.

Mr. Perri is proposing a community advisory board with five volunteers, three who are opposed to the project, and after 18 months, if the board decides that there should not be outdoor music, he will stop.

Mr. Josh Holowicki explained the results of the new sound study and the decibels that would be generated based on different types of sound, such as people talking, live music, or pre-recorded music. They will be adding a berm, trees, bushes, etc. and a sound absorbing wall that would be positioned to stop the sound from leaving to the south toward Brighton Road. The outdoor sound system has been decreased. He recommends not allowing any of the artists bring in their own sound equipment so the sound levels will be set.

Commissioner McBain would like to see what the overall project will be before voting to approve this, including what the building use will be. The outdoor music will be heard by the residents and the golfers. She has been in the homes of people in Oak Pointe and the music was obnoxious. Outdoor music does not fit in this area, but indoor music does. Mr. Perri lives on the golf course and sees that 25-40 percent of the golf carts have music playing. He reiterated he has 114 letters of support and most of them live within a half mile of the site.

Chairman Grajek recommended that the building use be determined as it is difficult to approve this use without knowing what will be inside. He cannot support this without that.

Mr. Kennedy reiterated that the inside use is dependent upon the outcome of the outdoor music and bar request. What the inside will be used for does not affect the residents and the issue of the outdoor music. They met with staff and it was decided to address the sound issues outside first and then come back with the plan for the inside.

The Planning Commission took a break from 8:48 to 9:00 pm.

Ms. Pierce stated they had a meeting with staff in February and their feedback was to pursue this approval first before because the main concern was the live outdoor music. They spent time and money to develop the plan presented. Ms. Ruthig does not recall the use for the building being left open ended at the end of that meeting.

The applicant requested that the Planning Commission vote on this tonight.

Moved by Commissioner Reiber, supported by Commissioner McCreary, to recommend to the Township Board denial the Special Use Application. based on the following facts:

- It does not meet the requirements of Section 7.02.02(q) to the commission's satisfaction.
- It does not follow the Master Plan Future Use.

The motion carried unanimously.

Moved by Commissioner McCreary, supported by Commissioner Reiber, to recommend to the Township Board denial the Environmental Impact Assessment, based on the following facts:

- The impact will serve as a disservice to the residents of the surrounding neighborhoods and cause a negative impact regarding the surrounding homes, values, and environment of the residents of the township.

The motion carried unanimously.

Moved by Commissioner McCreary, supported by Commissioner Reiber, to recommend to the Township Board denial the Site Plan a for a proposed public and private event space with outdoor music, based on the following facts:

- The dimensional requirements are not met per Section 7.02.02(q).
- The concern for pedestrian safety with outside additional entertainment.
- The concern for the parking.

The motion carried unanimously.

Commissioner Rauch returned at 9:15 pm.

OPEN PUBLIC HEARING #2… REQUEST TO POSTPONE BY STAFF Consideration of an ordinance amendment to Article 7 entitled "Commercial and Service Districts", Article 8 entitled "Industrial District" and Article 11 entitled "General Provisions" related to Data Centers.

Ms. Ruthig stated that a resident, who is an acoustical engineer, reviewed the ordinance and believes it will be very difficult and some of it was not clear. The biggest concern is the low decibel sound, so something should be put in the ordinance that can be enforced. The township attorney also has concerns on the limitations; they may be too stringent. She recommends extending the moratorium on Data Centers.

Commissioner Rauch would like to have the ordinance be more stringent than not and this technology may become obsolete in the future and then these would turn into vacant buildings. He agrees with extending the moratorium.

Ms. Ruthig stated that regarding the Master Plan, focus groups were done with representatives from each quadrant of the township. Half did not have knowledge of a Master Plan. After a discussion, it was decided to develop a second survey to ask specific questions to gather information that was not obtained with the first one.

The call to the public was opened at 9:29 pm.

Ms. Deb Beattie of 3109 Pineview Trail stated the results of the first survey are very clear on what people want.

The call to the public was closed at 9:31 pm.

Moved by Commissioner Rauch, supported by Commissioner Chouinard, to postpone public hearing #2. **The motion carried unanimously**.

ADMINISTRATIVE BUSINESS:

Staff Report

Ms. Ruthig stated she will not be at the July meeting. Ms. VanMarter will be here.

Approval of the May 11, 2026 Planning Commission meeting minutes

Moved by Commissioner McCreary, supported by Commissioner Reiber, to approve the May 11, 2026 Planning Commission meeting minutes as presented. **The motion carried unanimously.**

Member Discussion
There were no items to discuss this evening.

Adjournment

Moved by Commissioner McCreary, seconded by Commissioner Chouinard, to adjourn the meeting at 9:34 pm. **The motion carried unanimously.**

Respectfully Submitted,

Patty Thomas, Recording Secretary

DRAFT