Planning Commission
97 N Broad St
Hillsdale, MI 49242
planning@cityofhillsdale.org

AGENDA
City Planning Commission
September 23, 2026, 5:30 PM
Council Chambers – Hillsdale City Hall

I. Call to Order
- a. Pledge of Allegiance
- b. Roll Call

II. Public Comment – Agenda Items Only

III. Consent Agenda
- a. Approval of Agenda
- b. Review and Approval of Draft Minutes
  - i. August 19, 2026

IV. Communications
- a. Michigan State University Extension's *Land Use Certificate Courses* pamphlet

V. Public Hearings
- a. None

VI. Consideration of Applications
- a. Commercial Site Plan Review – 8 E Bacon
- b. Commercial Site Plan Review – Hillsdale College Turf Building

VII. Old Business
- a. None

VIII. New Business
- a. None

IX. Staff Report

X. General Public Comment

XI. Commissioner Comments

XII. Adjournment
- a. Next Meeting: October 21, 2026

Hillsdale City Planning Commission

August 19, 2026, 5:30 PM

Minutes

Attendance:

Absent: Commissioner Kniffin (Unexcused)

Present: All others

Members of the Public: Drew Larsen, Jack Mosley, Harold Walker, Jack McLain

Consent Agenda

Motion to Approve: Commissioner Winter

Seconded: Commissioner Coykendall

All in Favor

Q2 Code Enforcement Report

Commissioner Coykendall requested an update on the timeline for 58 N West and 60 N West; no updates were able to be given.

Commissioner Winter requested an update on the timeline for demolition of 104 S Broad St; Zoning Administrator Smith reported that numbers had been sought out for the cost of demolition.

Commercial Site Plan Review – 42 Union St.

Commissioner Winter asked the representative of the project whether the City Engineer's concerns regarding drainage had been addressed – they had.

Commissioner Coykendall asked about the plan for lighting; the representative indicated there would be lighting all around the outdoor greenhouse as well as inside.

Commissioner Winter motioned to approve.

Commissioner Shelley seconded.

All in favor.

Commercial Site Plan Review – 3380 Beck Rd.

MDOT had given approval for the use of the existing access.

Chairman Laycock asked if anything had been to address the City Engineer's concern regarding drainage and the addition of a small retention pond. The representatives of

DRAFT

the project indicated that nothing was planned and that no changes would need to be made to have adequate drainage. Chairman Laycock indicated concern that the City Engineer's recommendations had been thus far unheeded.

Commissioner Coykendall asked what the plan was for the increased number of cars that would be present given the construction of a space for an auto mechanic shop. The representatives of the project indicated that this was not an auto mechanic shop *per se* but a training spot for those working through the Life Challenge program. No increase in vehicles on the property is expected.

Commissioner Winter motioned to approve the project contingent upon the coordination of Life Challenge with the City Engineer to resolve the drainage issue, either via an official assessment or the creation of the recommended retention basin.

Seconded by Commissioner Coykendall.

All in favor.

September Meeting Changed from 9/16 to 9/23. Motion by Winter; Seconded by Coykendall; All in favor.

Master Plan Review – Goals and Objectives

An extensive discussion took place regarding changes to the Master Plan.

Commissioner Coykendall expressed concern about the language encouraging data storage in Hillsdale; said language was struck.

Chairman Laycock wondered whether it was within Planning Commission's purview to "Improve Utilities." Said language was struck.

Chairman Laycock suggested modifying the language about maintaining "historic architecture" to "historic character," arguing that the historic character of Hillsdale pertains to more than just buildings.

Chairman Laycock also considered the addition of a new goal to promote cooperation between Economic Development and Planning Commission.

Other minor tweaks were suggested, and Zoning Administrator Smith agreed to compile what was discussed and forward to Chairman Laycock for further minor edits before a draft might be sent to Council.

Ordinance Review

Conflicting and confusing language about signage in Hillsdale was clarified and condensed, giving more discretion to Code Enforcement regarding the timeline of action. Commissioner Winter motioned to approve the proposed amendments;

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Commissioner Coykendall seconded; All in favor. Proposed changes will be passed along to Council.

Public Comment

Jack McLain spoke about various concerns.

Adjournment: 6:38pm

DRAFT

Received 08/28/2026

MICHIGAN STATE UNIVERSITY | Extension

Zoning Administrator Certificate Program

Hybrid

This comprehensive program is designed to reduce legal risk for zoning administrators and communities. It is essential training for new and experienced zoning administrators, planners, consultants, code enforcement officials, and related administrative staff.

Participants must complete the Citizen Planner Program, or be recognized by the American Institute of Certified Planners (AICP), before starting this course.

The program covers the following topics:

» Job descriptions, responsibilities, and ethics
» Preparing files, reports, and record keeping
» Interactions with other professionals and agencies and performing departmental duties
» Legal issues
» Application forms and review processes
» Customer service and counter behavior
» Inspections and violations
» Reviewing site plans

The program includes a webinar; self-paced online learning modules; and in-person lectures, learning activities, and networking opportunities. Total instruction time is about 18 hours. To earn the Zoning Administrator Certificate, participants must complete the entire program and pass an open-book exam.

Find Out More

Ongoing training is essential for planning and zoning officials to help minimize legal risk and plan for a community's future! To learn more about or register for the courses described here, or to discuss hosting an in-person course in your community, contact:

Program Coordinator
Phone: 517-353-6472
Email: cplanner@msu.edu
Web: https://extension.msu.edu/planning

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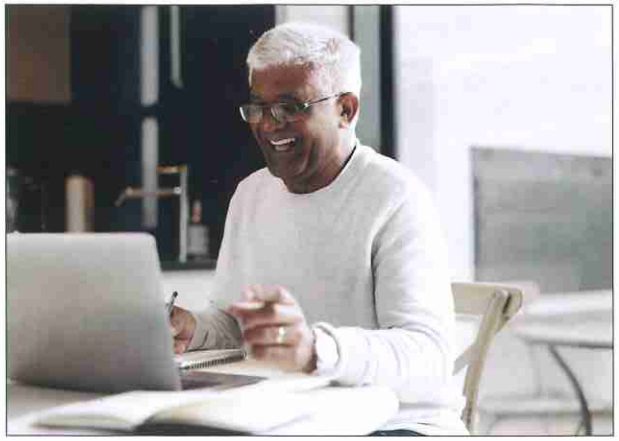
MICHIGAN STATE UNIVERSITY | Extension

Land Use Planning & Zoning Certificate Courses

MSU Extension offers a variety of land use certificate courses for appointed and elected planning and zoning officials, government staff, and interested community members.

In-person, self-paced online, and hybrid courses are available.



Citizen Planner Program

In Person

This course on zoning and planning roles, responsibilities, and best practices is suitable for new and experienced planning officials and interested community members. It is hosted several times a year across the state. Sessions meet once a week for six weeks. The three-hour sessions include lectures and hands-on learning exercises that cover:

» **Understanding the planning and zoning context:** Learn the legal sources and limitations of local planning and zoning authority and explore your understanding of ethical decision-making.

» **Planning for the future of your community:** Recognize the function and importance of a master plan, know the process for developing one, and its relationship to zoning.

» **Implementing the plan with zoning:** Discover the importance of zoning, learn how zoning is administered, and gain confidence in your zoning reviews, including site plans.

» **Making zoning decisions:** Learn how to adopt and amend a zoning ordinance, understand the role of the zoning board of appeals, and learn about basic property development methods.

» **Using innovative planning and zoning:** Strategize about placemaking and design-based solutions to address new challenges our communities face.

» **Successfully fulfilling your role:** Strengthen your ethical decision-making skills, develop your public engagement toolkit, and gain insights on when to ask for help.

Participants who complete Citizen Planner have the option to earn the Master Citizen Planner credential.

Citizen Planner Online Course

Self-Paced

This online, self-paced version of CItizen Planner is designed for people who cannot attend an in-person program or who prefer to learn at their own pace.

The course is highly interactive, with engaging stories, videos, and activities. Most participants complete the course in about 15 hours.

Zoning Board of Appeals Online Certificate Course

Self-Paced

This course covers the roles and responsibilities of the zoning board of appeals (ZBA), effective decision-making, and due process. The curriculum features ZBA-specific content, engaging activities, case studies, and the latest Michigan case law.

The self-paced course is designed for local government ZBA members, local government staff, managers, municipal attorneys, and interested community members. The course includes six modules that can be accessed in any order:

» Understanding basic ZBA roles and responsibilities

» Effective decisions and ordinance interpretations

» Hearing appeals of administrative decisions

» Issuing variances from ordinance standards

» Nonconformities and other responsibilities

» Circuit court review and standards

Most participants complete the coursework in about seven hours.

Equipment Needs

Participants in courses with online components will need an internet connection and a computer or internet-enabled mobile device. Larger screens will provide a better viewing experience.

Certificates of Completion

To earn a course certificate, participants must attend and complete all modules.

To: **Planning Commission**

From: **Zoning Administrator**

Date: **September 23, 2026**

Re: **Commercial Site Plan Review – 8 E Bacon St, Accessory Structure**

Background

LaRue's Pest Control LLC submitted a *Commercial Site Plan Review Application* on August 20, 2026 for a proposed accessory structure located in the western, rear portion of the lot.

Preliminary site plan review was conducted by City Staff. The report of their findings was sent to the Applicant on September 9, 2026 (enclosed).

The property was recently rezoned from RM-1 (Multiple-Family Residential) to Downtown Business.

Olivia Smith
Zoning Administrator
97 N Broad St, Hillsdale, MI 49242
(517) 437-6449
zoning@cityofhillsdale.org

September 9, 2026

Re: **Preliminary Site Plan Review**

Project: **PZ2026-0033**
8 E Bacon St
Hillsdale, MI 49242

Below are items cited following review of the plans submitted for the proposed 40' x 8' shipping container located in the rear yard:

Board of Public Utilities (BPU)

- Electric Department – Not connected to utilities. No comment needed.
- Water Department – Not connected to utilities. No comment needed.
- Sewer Department – Not connected to utilities. No comment needed.

City Assessor

- No comment needed. Combination request has been received and completed. Effective with the 2027 assessment and tax cycle.

City Engineer

- Proposed building location is historically lawn/wooded area. Increase in impervious area. Approximately a 5% increase.
- Property is not located within a floodplain.
- USGS-Web Soil Survey – The property's soils are Leoni Gravelly Sandy Loam meeting Hydrological Soil Group B
    - Ksat 0.57 to 1.98 in/hr (per acre)
    - Decent for water permeating in the soil, but may mean standing water during a rain event.

Planning & Zoning

- Minimum lot setbacks are met.
- No required parking will be lost from project.
- Gravel base (impervious area increase) is existing. Unsure how long. Currently used as equipment parking.
    - Ordinance amendment suggested for clearer wastewater standards.

Public Safety

- Fire Department – No comment needed based on project scope.

- Police Department – No comment needed based on project scope.

Public Services (DPS)

- No upgrade of drive approaches is required as the storage container will be used for private storage only.
- Right-of-Way Permit required

The Hillsdale City Planning Commission will consider the site plan for final review at their September regular meeting. The meeting will be held on **Wednesday, September 23, 2026 at 5:30 PM**. The meeting will be held in **Council Chambers, Hillsdale City Hall, 97 N Broad St, Hillsdale, MI 49242**.

Sec. 36-431. - Accessory buildings.

(a) *Definitions.*

Building-integrated solar energy system means a solar energy system that is an integral part of a primary or accessory building or structure (rather than separate mechanical device), replacing or substituting for an architectural or structural component of the building or structure. Building-integrated systems include, but are not limited to, photovoltaic or hot water solar energy systems that are contained within roofing materials, windows, skylights, and awnings.

Ground-mounted solar energy system means a solar energy system mounted on support posts, like a rack or pole that are attached to or rest on the ground.

Maximum tilt menas the maximum angle of a solar array (i.e., most vertical position) for capturing solar radiation as compared to the horizon line.

Minimum tilt means the minimal angle of a solar array (i.e., most horizontal position) for capturing solar radiation as compared to the horizon line.

Principal-use solar energy system means a commercial, ground-mounted solar energy system that converts sunlight into electricity for the primary purpose of off-site use through the electrical grid or export to the wholesale market.

Roof-mounted solar energy system means a solar energy system mounted on racking that is attached to or ballasted on the roof of a building or structure.

Solar array means a photovoltaic panel, solar thermal collector, or collection of panels or collectors in a solar energy system that collects solar radiation.

Solar carport means a solar energy system of any size that is installed on a structure that is accessory to a parking area, and which may include electric vehicle supply equipment or energy storage facilities. Solar panels affixed on the roof of an existing carport structure are considered a roof-mounted SES.

Solar energy system (SES) means a photovoltaic system or solar thermal system for generating and/or storing electricity or heat, including all above and below ground equipment or components required for the system to operate properly and to be secured to a roof surface or the ground. This includes any necessary operations and maintenance building(s), but does not include any temporary construction offices, substation(s) or other transmission facilities between the SES and the point of interconnection to the electric grid.

Decibel means the unit of measure used to express the magnitude of sound pressure and sound intensity.

On-site wind energy system means a land use for generating electric power from wind and is an accessory use that is intended to primarily serve the needs of the consumer at that site.

Rotor means an element of a wind energy system that acts as a multi-bladed airfoil assembly, thereby extracting through rotation, kinetic energy directly from the wind.

Shadow flicker means alternating changes in light intensity caused by the moving blade of a wind energy system casting shadows on the ground and stationary objects, such as but not limited to a window at a dwelling.

Sound pressure means an average rate at which sound energy is transmitted through a unit area in a specified direction. The pressure of the sound measured at a receiver.

Sound pressure level means the sound pressure mapped to a logarithmic scale and reported in decibels (dB).

(b) Accessory buildings and accessory structures shall be subject to the following regulations, which shall apply in all zone districts:

(1) All accessory buildings and accessory structures are permitted in all zone districts subject to compliance with all of the following:

a. The accessory building and/or accessory structure is customarily and clearly incidental to a use that is permitted under this chapter and/or is a permitted use in the zone district in which it is or they are located or to be located;

b. The accessory building and/or accessory structure does not create a nuisance or hazard; and

c. The accessory building and/or accessory structure meets and is in accordance with all applicable limitations, requirements and provisions of this article and the applicable zone district.

(2) No accessory buildings or accessory structures shall be established until the principal use to which it is an accessory has been established or a building, placement or construction permit for the principal use has been obtained.

(3) Where the accessory building is structurally attached to a main building, it shall be subject to and must conform to all yard regulations of this chapter, applicable to the main buildings.

(4) Accessory buildings or other accessory structures shall not be erected, placed or established in any required yard, unless otherwise permitted by this chapter.

(5) No detached accessory building or other accessory structure shall be located closer than ten feet to any main building or structure, unless it can conform to all other yard regulations as required for the main building or structure. It shall not be located any closer than three feet to any side or rear lot line, unless otherwise permitted by this chapter. In those instances where the rear lot line is coterminous with an alley right-of-way, the accessory building or

accessory structure shall be no closer than one foot to such rear lot line. In no instance shall an accessory building or accessory structure be located within a dedicated easement right-of-way.

(6) When an accessory building or accessory structure is located on a corner lot, the side lot line of which is substantially a continuation of the front lot line of the lot to its rear, the accessory building or accessory structure shall not project beyond the front line of the existing main structure on the lot in rear of such corner lot. An accessory building or accessory structure shall not be located within ten feet of a street right-of-way line.

(c) An on-site ground-mounted solar energy system is an accessory use which shall meet the following standards:

(1) Ground-mounted SES shall not exceed 15 feet measured from the ground to the top of the system when oriented at maximum tilt. Ground mounted SES that exceeds six feet in height may not be placed on any lot less than one acre. Ground mounted SES may not be placed in the front yard. Ground mounted SES shall be subject to and must conform to all yard regulations of this chapter, applicable to the main buildings as measured when oriented at minimum design tilt.

(2) A small principal-use SES is a permitted use in all zoning districts subject to site plan review and shall meet all of the following requirements:

a. Total height shall not exceed 15 feet measured from the ground to the top of the system when oriented at maximum tilt. Ground mounted SES that exceeds six feet in height may not be placed on any lot with than one acre.

b. Setback distance shall be measured from the property line or road right-of-way to the closest point of the solar array at minimum tilt or any SES components and as follows:

c. A ground-mounted SES shall follow the setback distance for primary buildings or structures for the district in which it is sited.

d. A small principal-use SES shall be secured with perimeter fencing to restrict unauthorized access. If installed, perimeter fencing shall be a maximum of six feet in height. Additional screening may be required upon review.

(3) Roof-mounted SES shall not exceed the combined height of the building and the roof mounted SES, when oriented at maximum tilt, for principal structures in any zoning district. A roof-mounted SES or building-integrated SES installed on a nonconforming building, structure, or use shall not be considered an expansion of the nonconformity.

(d) All ground-mounted SES applications must include a site plan and drawings that show the height and dimensions of the SES. Applications for roof-mounted SES must include horizontal and vertical elevation drawings that show the location and height of the SES on the building and dimensions of the SES. All SES drawings shall include dimensions of the minimum and maximum

tilt. Reflection angles for solar collectors shall be oriented such that they do not project glare onto adjacent properties. Any connection to the public utility grid shall be inspected and approved by the appropriate public utility.

(e) All solar energy equipment shall be maintained and kept in good working order. If it is determined by the zoning administrator that a solar energy system is not being maintained, kept in good working order, or is no longer being utilized to perform its intended function for six consecutive months, the property owner shall be given 30 day notice for removal of unit and all equipment. If the solar energy system is not removed within 30 days, any person, or anyone acting in behalf of the person, violating any of the provisions of this section shall be guilty of a municipal civil infraction. The imposition of any sentence shall not exempt the offender from compliance with the requirements of this chapter.

(f) An on-site wind energy system (WES) is an accessory use which shall meet the following standards:

(1) Designed to primarily serve the needs of a home or small business;

(2) Shall have a tower height of 40 feet or less;

(3) Property set-back. The distance between an on-site use wind energy system and the owner's property lines shall be equal to the height of the wind energy system tower including the top of the blade in its vertical position. The distance between an anemometer tower and the owner's property lines shall be equal to the height of the tower. No part of the wind energy system structure, including guy wire anchors, may extend closer than ten feet to the owner's property lines, or the distance of the required setback in the respective zoning district, whichever results in the greater setback.

(4) Sound pressure level. On-site use wind energy systems shall not exceed 50 dB(A) at the property line closest to the wind energy system. This sound pressure level may be exceeded during short-term events such as utility outages and/or severe wind storms. If the ambient sound pressure level exceeds 50 dB(A), the standard shall be ambient dB(A) plus five dB(A).

(5) Construction codes, towers, and interconnection standards. On-site use wind energy systems including towers shall comply with all applicable state construction and electrical codes and;

a. Local building permit requirements. On-site use wind energy systems including towers shall;

b. Comply with Federal Aviation Administration requirements, the Michigan Airport Zoning Act (Public Act 23 of 1950, MCL 259.431 et seq.), the Michigan Tall Structures Act (Public Act 259 of 1959, MCL 259.481 et seq.), and local jurisdiction airport overlay zone regulations.

c. An interconnected on-site use wind energy system shall comply with Michigan public service commission and federal energy regulatory commission standards.

d. Off-grid systems are exempt from this requirement.

(6) Safety. An on-site use wind energy system shall have automatic braking, governing, or a feathering system to prevent uncontrolled rotation or over speeding. All wind towers shall have lightning protection. If a tower is supported by guy wires, the wires shall be clearly visible to a height of at least six feet above the guy wire anchors. The minimum vertical blade tip clearance from grade shall be 20 feet for a wind energy system employing a horizontal axis rotor.

(g) All on-site wind energy system applications must include a site plan and drawings that show the height and dimensions of the WES. Any connection to the public utility grid shall be inspected and approved by the appropriate public utility.

(h) All wind energy equipment shall be maintained and kept in good working order. If it is determined by the zoning administrator that a wind energy system is not being maintained, kept in good working order, or is no longer being utilized to perform its intended function for six consecutive months, the property owner shall be given 30 day notice for removal of unit and all equipment. If the wind energy system is not removed within 30 days, any person, or anyone acting in behalf of the person, violating any of the provisions of this section shall be guilty of a municipal civil infraction. The imposition of any sentence shall not exempt the offender from compliance with the requirements of this chapter.

(Code 1979, § 17.46.010; Ord. No. 2005-2, § 17.46.010, 2-21-2005; Ord. No. 2024-05, 4-1-2024)

COMMERCIAL SITE PLAN REVIEW APPLICATION

Applicant Name: Earl La Rue

Address: 8 E. Bacon St
Hillsdale MI 49242

Daytime Phone: (517) 320-4407
Evening Phone: ( )

Property Address if other than above:

Agent Name: Ryan Bucklin

Address: 24 Division St
Coldwater Mi 49036

Daytime Phone: (517) 278-7345
Evening Phone: ( )

Zoning: Downtown Business (Edge)

Project Estimate: $5,500

Applicant Signature:

Date: 8/13/26

Meeting Date: Tentatively 09/23/2026

For projects requiring Planning Commission approval, all Site Plan Materials must be submitted along with a completed application and appropriate fees a minimum of 10 days prior to the next scheduled Planning Commission meeting.

Please submit to:

City of Hillsdale
Planning and Zoning Department
97 North Broad Street
Hillsdale, Michigan 49242
p. – 517.437.6449

P32026-033

RECEIVED
AUG 20 2026
Planning/Zoning Dept

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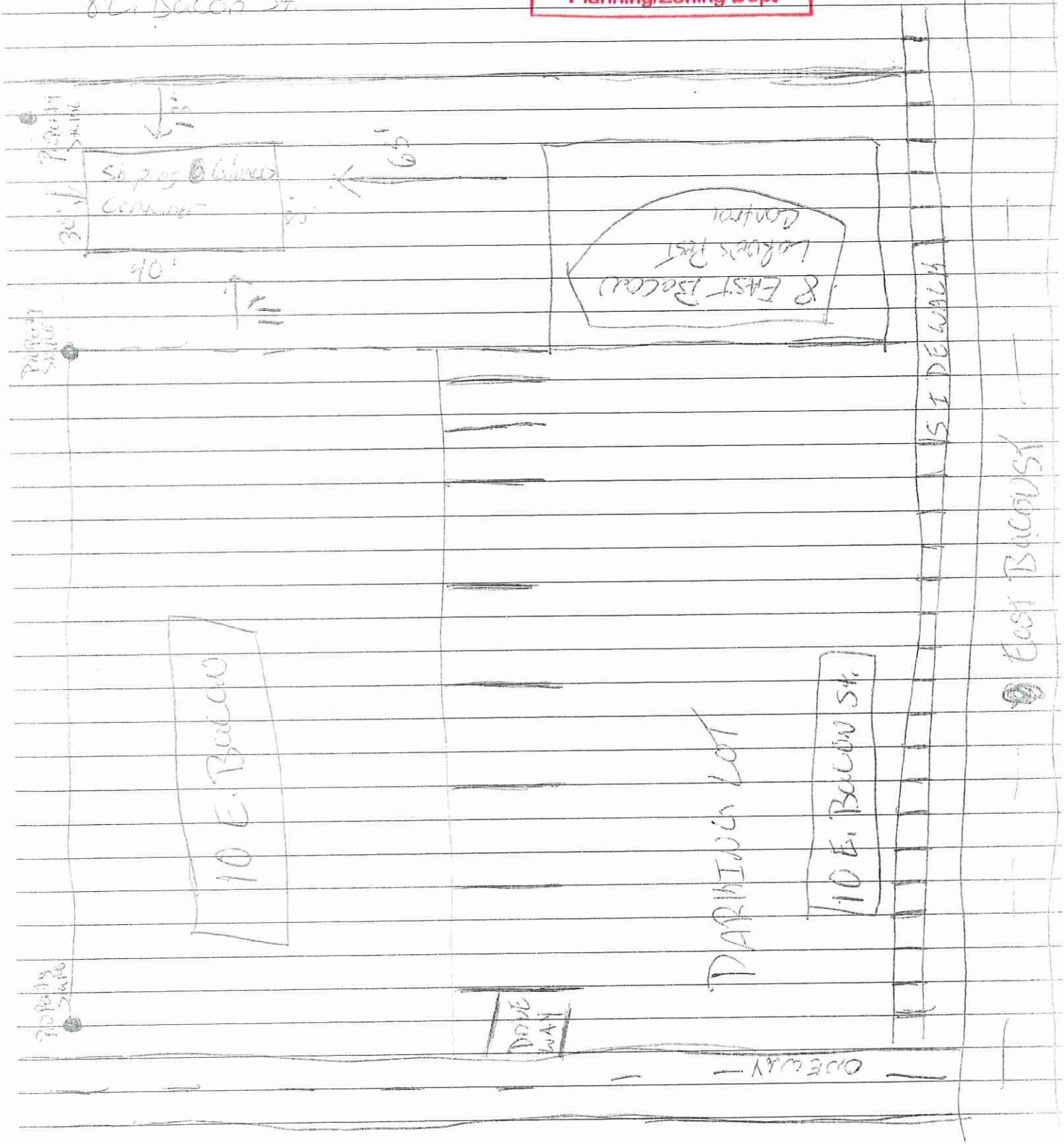
Planning/Zoning Dept

Shipping Container

8 E. Bacon St.



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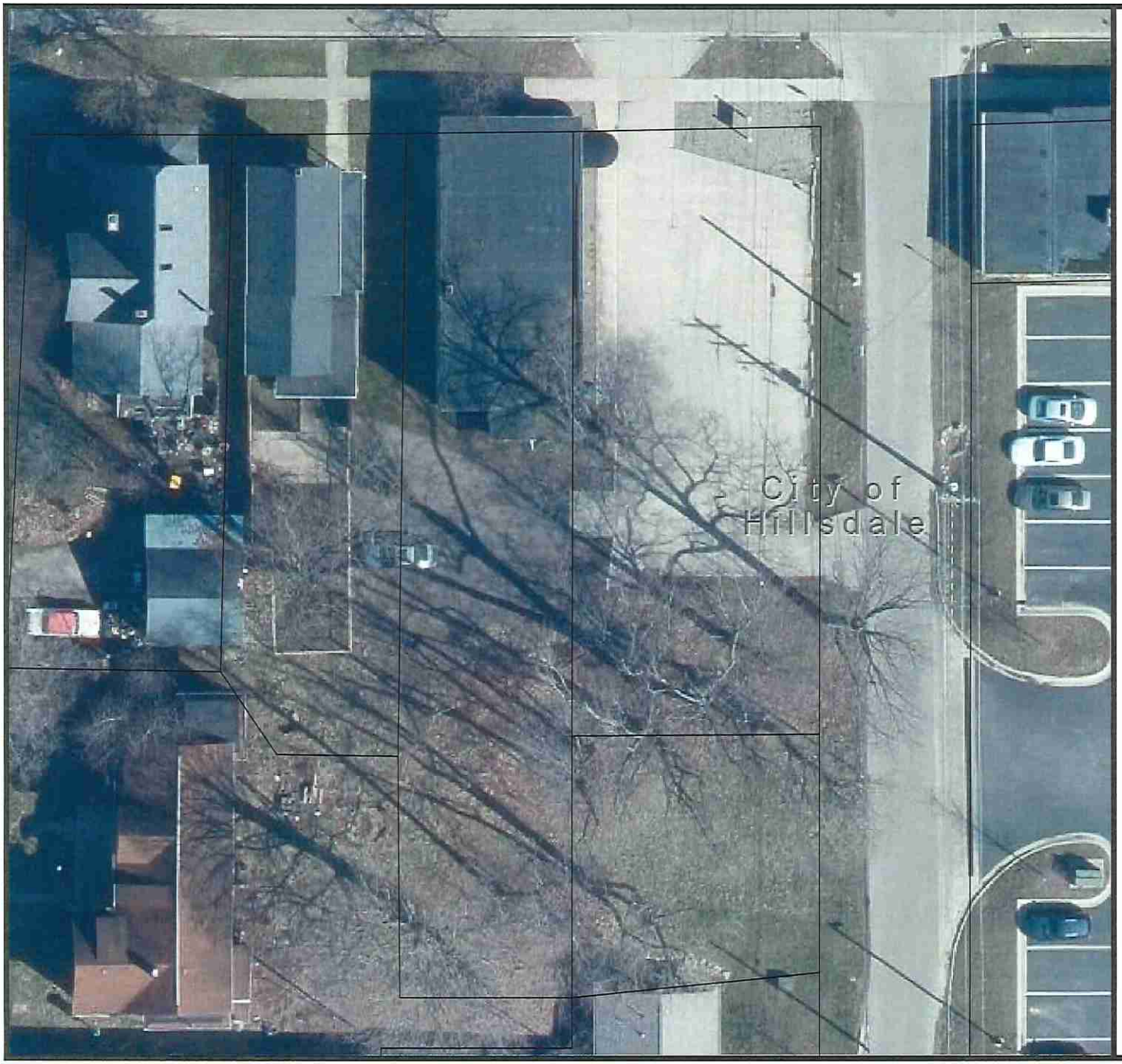
City of Hillsdale

NOT A SURVEY
This map is for informational use only.
Created by: Hillsdale County GIS
Printed: August 2026
Imagery: March 2024



Hillsdale County GIS

Map Publication:
08/20/2026 10:25 AM

10m
40ft

powered by FetchGIS

Disclaimer: This map does not represent a survey or legal document and is provided on an "as is" basis. Hillsdale County expresses no warranty for the information displayed on this map document.

Olivia Smith

From: testel@laruepestcontrol.com
Sent: Thursday, August 20, 2026 12:06 PM
To: Olivia Smith
Subject: Re:
Attachments: IMG_9228.jpeg

No there will be no utilities run to it. Yes those are the correct dimensions. It will be placed on gravel

On 2026-08-20 15:20, Olivia Smith wrote:

Tala,

I received the application and the check today. I just have a couple of questions:

- Will the storage container have any utilities run to it? (Example: electric)
- Does the office have a rendering (picture) of what container in particular will be placed on site?
- Is the container 8' x 40'? The sketch from the Assessor was a bit faded.
- Will the storage container be placed on a foundation (concrete, sand, gravel) or just the grass currently on the yard?

Thank you,

Olivia Smith, MCAO
Zoning Administrator
97 N Broad Street
Hillsdale, Michigan 49242
517-437-6449
zoning@cityofhillsdale.org

From: Olivia Smith
Sent: Monday, August 10, 2026 9:02 AM
To: 'testel@laruepestcontrol.com' <testel@laruepestcontrol.com>
Subject: RE: Re:

That's okay! I do not like that form and I am currently working on a new one.

I would only put an agent name if the owner is not applying for the permit. Sometimes an attorney will file the paperwork. They would be considered an agent.

The estimate can be the price of the container. It is not super important. That is something else I am removing from the new form.

The meeting date will be what date the site plan will be brought before the Planning Commission. At this point, it will be their September meeting.

SKYU 8134987
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EMPTY LIFT ONLY

To: **Planning Commission**

From: **Zoning Administrator**

Date: **September 23, 2026**

Re: **Commercial Site Plan Review – Hillsdale College Turf Building**

Background

On July 29, 2026, CORE Design & Management Inc., on behalf of Hillsdale College, requested and paid for a Pre-Application Review by City Staff of the proposed Hillsdale College Turf Building project plans. The findings of the review were sent to the Applicant on August 14, 2026 (enclosed).

The Applicant submitted amended plans (those attached in this packet) and a response letter to our review report (enclosed) on September 4, 2026.

Olivia Smith
Zoning Administrator
97 N Broad St, Hillsdale, MI 49242
(517) 437-6449
zoning@cityofhillsdale.org

August 14, 2026

Re: Pre-Application Site Plan Review

Project: Hillsdale College Turf Building

Below are items cited following review of the civil plans submitted for the proposed Hillsdale College Turf Building.

Board of Public Utilities (BPU)

- Electric Department – No concerns with the plan presented.
- Water Department – No comment provided.
- Sewer Department – No comment provided.

City Assessor

- A new address for the proposed building will need to be created/assigned by Hillsdale County Equalization.
    - Required form: New Address Application

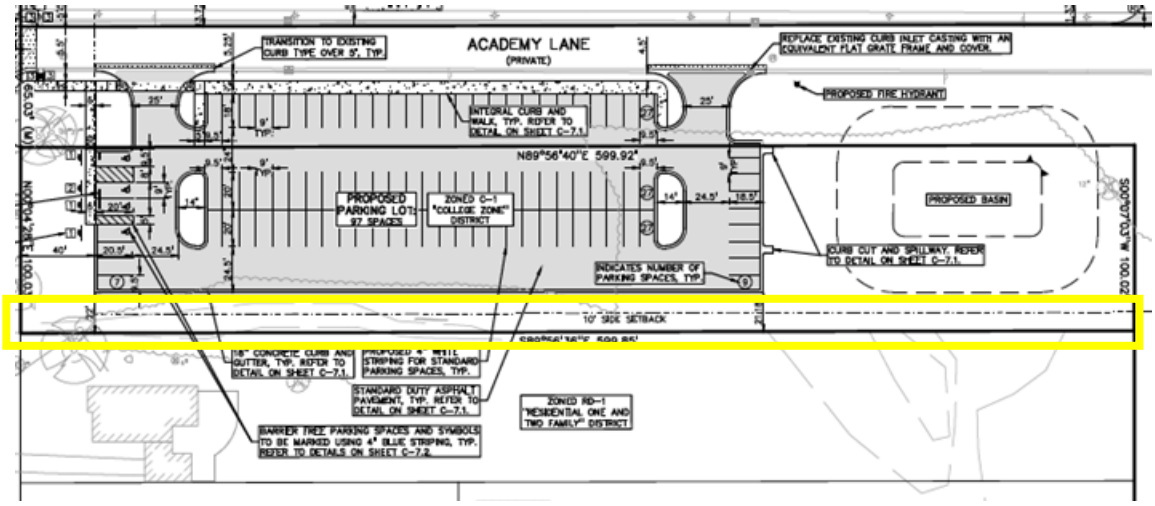
City Engineer

- C2. 0 – Are the 4 existing courts being torn out or is the new building being built around them?
- C2.0 – If the end turns on the track being torn out? If so, is a new track being constructed somewhere else?
- C.3 – The proposed parking lot crosses property lines. Parcel combination is recommended.
- C4.3/C4.4 – New 12' drive on the North and East side of the proposed Turf Building, is graded as a swale to the middle of the drive with a CB in the drive. This may be hard to snow plow and leave snow and ice in the middle of the drive. Recommend setting the CB to the South and West Side of the drive with the drainage swale in the grass area between the drive and building, and do a straight cross slope on the driveway.
- C5.0 – No reason to install silt fence at the top of hill, unless they are using it to define a work area.
- C6.0 – The proposed gas service is shown conflicting with the CB in the proposed Drive on the East side of the proposed Turf Building, and I don't see the existing gas line that it is supposed to connect to. *See note above about my recommendation to move the CB to a lawn area, but this comment is more for reference and should not be used to hold up approvals.*
- C6.0 – Sanitary service is shown with a direct connection to the lift station. Recommend a connection to a sanitary sewer outside of the lift station as opposed to a direct connection. What is the size of the Sanitary Service?

- C6.0 – Would recommend that the water service not be installed under the sidewalk on the North Side, is there room to keep in the grass area between the HC Ramp and building? What is the size of the Water Service?
- C6.0 – Storm Sewer
    - There is summary of the Detention Volumes, but no calculations provide to show how the Volumes were determined.
    - The detention basin is sized for the change for the site, but all the storm sewer on the north and east side of the proposed Turf Building, by-passes the detention basin.
    - No Pipe sizes or pipe materials are shown for the storm sewer.
    - No pipe sizing calculations were provided.
    - Would recommend a plan view with the tributary areas for the basins to be provided to correspond to the pipe sizing calculations.
    - No outlet control structure, or metering line calculations were provided for the proposed detention basin
    - No calculations were provide for the existing detention basins is impacted by the proposed work or calculations for the revisions to the outlet control into Winona Lake.
    - No dimensions are provided for the detention basin.
    - Side Slopes for the detention basin should be provided.
    - If the existing Detention Basin can accept with flow and provided the necessary volume without increasing the outflow, and maintain 1ft of freeboard, I don't see the need for a second basin. Eliminating the second basin, may change how the new Parking lot drains to the detention area.
- Hillsdale Academy has an existing detention basin, with an existing outlet into Winona Lake. I agree with how they are bringing everything into the existing detention basin and avoiding Winona Lake.
- Would not recommend approval for the project at this time.

Planning & Zoning

- Per Sec. 36-411(m), "A minimum four-foot-six-inch obscuring wall or fence shall be provided on those sides of the property abutting land zoned for residential use."
    - 171 Oak St, parcel adjacent to the south, (Parcel No. 30-006-123-376-05) is zoned RD-1 (One-Family and Two-Family Residential), as indicated on the site plan. Therefore, a 4'6" minimum fence or obscuring wall is required within the area highlighted on the site plan:



- Per Sec. 36-681(9)(b)(1), The fence/wall must be set back a minimum of 10' from the public ROW line to allow proper site clearance for the driveway of the residential structure to the south
- The maximum fence/wall height is 6'
- No ordinance required setbacks from property lines, but we recommend enough room for landscape maintenance (3-4' of the property line).

- Per Sec. 36-411, the maximum height of the structure is limited to 4 stories or 50'. The proposed building height is 55' due to one split-level story.
  - Without seeing elevations or building renderings to better understand the split-level story, a dimensional variance would need to be requested by the Zoning Board of Appeals.

Public Safety

- Fire Department – No comment provided.
- Police Department – No comment provided.

Public Services

- With the Oak St Reconstruction project, the Director asks for all construction traffic to utilize the following path: M-99 to Fayette St, Fayette St to Hillsdale St, north on Hillsdale St to west on College St to project area at Academy Ln.
- A Right-Of-Way (ROW) permit will be required in addition to a performance bond for installation of utilities and street cuts.
  - A traffic control plan (vehicle and pedestrian) will be required as part of the ROW permit.
- All specs for drive approach on Academy Ln and sidewalk ramp upgrades are acceptable.

PEA GROUP

58105 Van Dyke Avenue
Washington, MI 48094

586.272.2276
peagroup.com

September 4, 2026
PEA Project No: 2026-0130

Olivia Smith
Zoning Administrator
97 N Broad St., Hillsdale, MI 49242
zoning@cityofhillsdale.org

RE: Pre-Application Site Plan Review for Hillsdale College Turf Building

This office has received the Pre-Application Site Plan Review letter for the subject development from the City of Hillsdale Zoning Administrator. We have revised the plans accordingly and included, along with our updated plans, our response to the letter comments below.

Board of Public Utilities (BPU):

- Electric Department – No concerns with the plan presented.
- Water Department – No comment provided.
- Sewer Department – No comment provided.

City Assessor

- A new address for the proposed building will need to be created/assigned by Hillsdale County Equalization.
    - **Response: Acknowledged**

City Engineer

- C2.0 – Are the 4 existing courts being torn out or is the new building being built around them?
    - **Response: The existing courts will be removed. Refer to sheet C-2.0.**
- C2.0 – If the end turns on the track being torn out? If so, is a new track being constructed somewhere else?
    - **Response: Refer to sheet C-2.0 for track removal areas.**
- C.3 – The proposed parking lot crosses property lines. Parcel combination is recommended.
    - **Response: Acknowledged**

- C4.3/C4.4 – New 12' drive on the North and East side of the proposed Turf Building, is graded as a swale to the middle of the drive with a CB in the drive. This may be hard to snow plow and leave snow and ice in the middle of the drive. Recommend setting the CB to the South and West Side of the drive with the drainage swale in the grass area between the drive and building, and do a straight cross slope on the driveway.
    - **Response: Curb has been added to the drive and the grading has been revised. Refer to sheets C-3.0, C-4.3, and C-4.4 for revised design.**
- C5.0 – No reason to install silt fence at the top of hill, unless they are using it to define a work area.
    - **Response: Refer to updated SESC Plan on sheet C-5.0.**
- C6.0 – The proposed gas service is shown conflicting with the CB in the proposed Drive on the East side of the proposed Turf Building, and I don't see the existing gas line that it is supposed to connect to. See note above about my recommendation to move the CB to a lawn area, but this comment is more for reference and should not be used to hold up approvals.
    - **Response: Acknowledged. Refer to architectural plans for gas line locations.**
- C6.0 – Sanitary service is shown with a direct connection to the lift station. Recommend a connection to a sanitary sewer outside of the lift station as opposed to a direct connection. What is the size of the Sanitary Service?
    - **Response: Proposed 6" dia. sanitary lead is proposed to gravity drain from the proposed manhole to the existing lift station to avoid additional impacts to Oak Street and crossing the existing sanitary forcemain, which would be required to connect to the proposed lead to the existing manhole in Oak Street. Refer to Utility Plan on sheet C-6.0.**
- C6.0 – Would recommend that the water service not be installed under the sidewalk on the North Side, is there room to keep in the grass area between the HC Ramp and building? What is the size of the Water Service?
    - **Response: The layout of the proposed water service lead has been revised, refer to sheet C-6.0 Utility Plan.**
- C6.0 – Storm Sewer
    - There is summary of the Detention Volumes, but no calculations provide to show how the Volumes were determined.
        - **Response: Refer to sheet C-8.1 for detention calculations.**
    - The detention basin is sized for the change for the site, but all the storm sewer on the north and east side of the proposed Turf Building, by-passes the detention basin.
        - **Response: Refer to sheet C-8.1 for detention calculations.**
    - No Pipe sizes or pipe materials are shown for the storm sewer.
        - **Response: Refer to sheet C-6.0 for pipe sizes and materials.**
    - No pipe sizing calculations were provided.
        - **Response: Refer to sheet C-8.2 for storm sewer calculations.**
    - Would recommend a plan view with the tributary areas for the basins to be provided to correspond to the pipe sizing calculations.
        - **Response: Refer to sheets C-8.1 and C-8.2 for drainage areas.**
    - No outlet control structure, or metering line calculations were provided for the proposed detention basin.
        - **Response: Refer to sheet C-8.1 for outlet control calculations.**
    - No calculations were provided for the existing detention basins is impacted by the proposed work or calculations for the revisions to the outlet control into Winona Lake.
        - **Response: Refer to sheet C-8.1 for detention calculations.**
    - No dimensions are provided for the detention basin.
        - **Response: Previously proposed detention basin has been removed from the plans.**

- Side Slopes for the detention basin should be provided.
  - **Response: Previously proposed detention basin has been removed from the plans.**
- If the existing Detention Basin can accept with flow and provide the necessary volume without increasing the outflow, and maintain 1ft of freeboard, I don't see the need for a second basin. Eliminating the second basin, may change how the new Parking lot drains to the detention area.
  - **Response: The previously proposed detention basin has been removed from the plans. Refer to sheet C-8.1 for detention calculations. Refer to sheets C-4.2 and C-4.3 for updated parking lot drainage to the existing detention basin.**

- Hillsdale Academy has an existing detention basin, with an existing outlet into Winona Lake. I agree with how they are bringing everything into the existing detention basin and avoiding Winona Lake.

Planning & Zoning

- Per Sec. 36-411(m), "A minimum four-foot-six-inch obscuring wall or fence shall be provided on those sides of the property abutting land zoned for residential use."
  - 171 Oak St, parcel adjacent to the south, (Parcel No. 30-006-123-376-05) is zoned RD-1 (One-Family and Two-Family Residential), as indicated on the site plan. Therefore, a 4'6" minimum fence or obscuring wall is required within the area highlighted on the site plan:
    - **Response: The adjacent residential property is already naturally screened by existing trees, vegetation, and woods. We have proposed to maintain an existing tree line to provide screening. Refer to sheets C-2.0 and C-3.0 for proposed tree line to be removed and remain. Additionally, the parking lot is proposed to be constructed at grades 6 feet and greater below the portion of the property adjacent to the residential home. Refer to grading plans on sheets C-4.2 and C-4.3. The parking lot is proposed to be setback 21.18 – 22 feet from the adjacent residential property line, as shown on sheet C-3.0.**
  - Per Sec. 36-681(9)(b)(1), The fence/wall must be set back a minimum of 10' from the public ROW line to allow proper site clearance for the driveway of the residential structure to the south.
  - The maximum fence/wall height is 6'
  - No ordinance required setbacks from property lines, but we recommend enough room for landscape maintenance (3-4' of the property line).
    - **Response: The parking lot is proposed to be setback 21.18 – 22 feet from the adjacent residential property line, as shown on sheet C-3.0.**
- Per Sec. 36-411, the maximum height of the structure is limited to 4 stories or 50'. The proposed building height is 55' due to one split-level story.
  - Without seeing elevations or building renderings to better understand the split-level story, a dimensional variance would need to be requested by the Zoning Board of Appeals.
    - **Response: Acknowledged. Refer to architectural plans for building elevations and renderings.**

Public Safety

- Fire Department – No comment provided.
- Police Department – No comment provided.

Public Services

- With the Oak St Reconstruction project, the Director asks for all construction traffic to utilize the following path: M-99 to Fayette St, Fayette St to Hillsdale St, north on Hillsdale St to west on College St to project area at Academy Ln.
    - **Response: Acknowledged.**
- A Right-Of-Way (ROW) permit will be required in addition to a performance bond for installation of utilities and street cuts.
    - **Response: Acknowledged.**
    - A traffic control plan (vehicle and pedestrian) will be required as part of the ROW permit.
        - **Response: Acknowledged.**
- All specs for drive approach on Academy Ln and sidewalk ramp upgrades are acceptable.

We trust these submittals meet the requirements. If you should have any questions or require any additional information, please contact this office.

Sincerely,

PEA Group

Michael R. Motte, P.E.
Associate/Washington Engineering Department Manager

Justin Pauken, P.E.
Senior Staff Engineer

COMMERCIAL SITE PLAN REVIEW APPLICATION

Applicant Name HILLSDALE COLLEGE

Address 33 E College St, Hillsdale, MI 49242

Daytime Phone ( )
Evening Phone ( )

Property Address if other than above CORNER OF OAK STREET AND ACADEMY LANE
ADDRESS - TBD

Agent Name CORE DESIGN AND MANAGEMENT INC. - CHRIS MILLER

Address 4293 FIVE OAKS DRIVE
LANSING, MI 48911

Daytime Phone ( )
Evening Phone ( )

Zoning C-1 COLLEGE ZONE Project Estimate $18 MILLION

Applicant Signature Date 8-13-2026

Meeting Date 8-19-2026

For projects requiring Planning Commission approval, all Site Plan Materials must be submitted along with a completed application and appropriate fees a minimum of 10 days prior to the next scheduled Planning Commission meeting.

Please submit to: **City of Hillsdale**
Planning and Zoning Department
97 North Broad Street
Hillsdale, Michigan 49242
p. – 517.437.6449

P32026-029

RECEIVED
AUG 14 2026
Planning/Zoning Dept

OCS

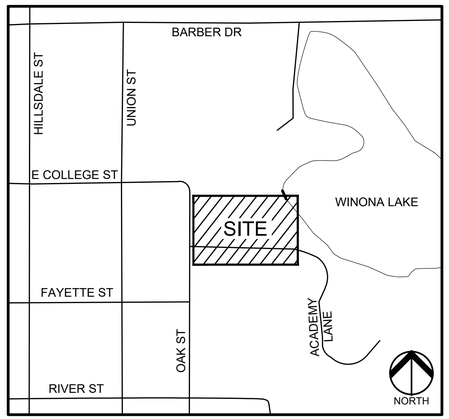
CONSTRUCTION PLANS

HILLSDALE COLLEGE TURF BUILDING

175-201 OAK STREET

CITY OF HILLSDALE, HILLSDALE COUNTY, STATE OF MICHIGAN

PERMIT / APPROVAL SUMMARY		
DATE SUBMITTED	DATE APPROVED	PERMIT / APPROVAL



LOCATION MAP
NO SCALE

INDEX OF DRAWINGS	
NUMBER	TITLE
	COVER SHEET
C-1.0	TOPOGRAPHIC SURVEY
C-2.0	DEMOLITION PLAN
C-3.0	DIMENSION AND PAVING PLAN
C-4.1	GRADING PLAN - NORTHWEST
C-4.2	GRADING PLAN - SOUTHWEST
C-4.3	GRADING PLAN - SOUTHEAST
C-4.4	GRADING PLAN - NORTHEAST
C-5.0	SOIL EROSION AND SEDIMENT CONTROL PLAN
C-6.0	UTILITY PLAN
C-7.1	STORM SEWER PROFILES
C-7.2	STORM SEWER PROFILES
C-8.1	STORM WATER MANAGEMENT PLAN AND CALCULATIONS
C-8.2	STORM SEWER DRAINAGE PLAN AND DESIGN CALCULATIONS
C-9.1	CONSTRUCTION NOTES AND DETAILS - 1
C-9.2	CONSTRUCTION NOTES AND DETAILS - 2
C-9.3	CONSTRUCTION NOTES AND DETAILS - 3
C-9.4	CONSTRUCTION NOTES AND DETAILS - 4
L-1.0	LANDSCAPE PLAN
L-2.0	LANDSCAPE DETAILS
L-2.1	LANDSCAPE SPECIFICATIONS
L-2.2	LANDSCAPE SPECIFICATIONS
	BUILDING & PHOTOMETRIC PLANS BY OTHERS

PEA GROUP

DESIGN TEAM

OWNER/APPLICANT/DEVELOPER

HILLSDALE COLLEGE
33 EAST COLLEGE STREET
HILLSDALE, MICHIGAN 49242
CONTACT: DAVE BILLINGTON
PHONE: 517.607.2451
EMAIL: DBILLINGTON@HILLSDALE.EDU

CIVIL ENGINEER

PEA GROUP
58105 VAN DYKE RD.
WASHINGTON TWP., MI 48094
CONTACT: MICHAEL R. MOTTE, PE
PHONE: 844.813.2949
EMAIL: MMOTTE@PEAGROUP.COM

ARCHITECT

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911
CONTACT: CHRIS MILLER
EMAIL: CMILLER@DRIVENBYCORE.COM

LANDSCAPE ARCHITECT

PEA GROUP
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BRIGHTON, MI 48116
CONTACT: JANET EVANS, PLA
PHONE: 844.813.2949
EMAIL: JEVANS@PEAGROUP.COM

REVISIONS	
DESCRIPTION	DATE
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7/31/2026
CITY OF HILLSDALE PLANNING COMMISSION REVIEW	9/4/2026

NOT FOR CONSTRUCTION

LEGAL DESCRIPTION:

PARCEL ID: 30-006-126-129-30
LOT 146 BLK N AND LOT 167 BLK O AND VAC SALEM ST E OF AND ADJ THERETO EXC S 17.5 FT THEREOF BLACKMAR AND GALLAHERS ADDN ALSO BEG NW COR LOT 59 TH S 49.5 FT ALG E LN SALEM ST TO E 330 FT TH N 49.5 FT TO N LN LOT 69 TH W TO POB BEING PRT LOTS 59 AND 69 BLK I FOWLERS ADDN ALSO E 52A SW¼ SEC 23 BEING ALL THAT PRT SD SW¼ LYING E OF BLACKMAR AND GALLAHERS ADDN EXC THAT PRT N OF LN COM SE COR LOT 168 EXT E TO E LN SD SW¼ SEC 23 UNPLATTED 25A M/L SEC 23 AND 26 T6S R3W FIRST WARD SPLIT ON 08/21/2014 FROM 006-123-302-14; COMBINED ON 08/21/2014 FROM 006-123-302-06, 006-123-302-07, 006-123-302-08, 006-123-302-09, 006-123-302-10, 006-123-302-11, 006-123-302-12 AND 006-123-302-13; 10/2/2018 ADDED VAC STS TO DESC - 9/14/1959 RES #46 VAC OAK ST BETWEEN COLLEGE ST AND MECHANIC ST (NKA BARBER DR) AND SALEM ST BETWEEN RIVER ST AND MECHANIC ST (NKA BARBER DR); 12/30/1985 RES #1016 VAC OAK ST BETWEEN N LN LOT 117 AND MECHANIC ST (NKA BARBER DR); COMBINED ON 12/27/2019 FROM 006-123-302-15, 006-123-302-17, 006-123-376-08; SPLIT/COMBINED ON 11/16/2022 FROM 006-123-302-18, 006-126-129-01 WITH 006-123-302-19;

PARCEL ID: 30-06-123-376-04
LOT 147 & S 17.5 FT LOT 146 BLK N ALSO LOT 166 & S 17.5 FT LOT 167 BLK O ALSO VAC SALEM ST LYING E OF & ADJ THERETO 1.3A+/- BLACKMAR & GALLAHERS ADDN SEC 23 T6S R3W FIRST WARD 10/2/2018 ADDED VACATED SALEM STREET TO DESC (VACATED RESOLUTION #46 9/14/1959);

FLOODPLAIN:

(PER FLOOD INSURANCE RATE MAP NUMBER 26059C0167D & 26059C0186D, BOTH EFFECTIVE DATE: FEBRUARY 19, 2014)

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
THE 1% ANNUAL CHANCE FLOOD (100 YEAR FLOOD), ALSO KNOWN AS THE BASE FLOOD, IS THE FLOOD THAT HAS A 1% CHANCE OF BEING EQUALED OR EXCEEDED IN ANY GIVEN YEAR. THE SPECIAL FLOOD HAZARD AREA IS THE AREA SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD. AREAS OF SPECIAL FLOOD HAZARD INCLUDE ZONES A, AE, AH, AO, AR, A99, V AND VE. THE BASE FLOOD ELEVATION IS THE WATER-SURFACE ELEVATION OF THE 1% ANNUAL CHANCE FLOOD.

ZONE AE - BASE FLOOD ELEVATIONS DETERMINED.

FLOODWAY AREAS IN ZONE AE
THE FLOODWAY IS THE CHANNEL OF STREAM PLUS ANY ADJACENT FLOODPLAIN AREAS THAT MUST BE KEPT FREE OF ENCROACHMENT SO THAT THE 1% ANNUAL CHANCE FLOOD CAN BE CARRIED WITHOUT SUBSTANTIAL INCREASES IN FLOOD HEIGHTS.

OTHER FLOOD AREAS
ZONE X - AREA OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

OTHER AREAS
ZONE X - AREA TO BE DETERMINED OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARKS:

(NAVD 88, INTERNATIONAL FOOT, GPS DERIVED)

BM 300 - SOUTHEASTERLY UPPER FLANGE BOLT ON FIRE HYDRANT BEING 50'± SOUTH OF THE CENTERLINE OF ACADEMY LANE AND 30'± EAST OF THE CENTERLINE OF OAK STREET.
ELEVATION: 1120.73

BM 301 - BENCH TIE IN THE EAST FACE ON POWER POLE BEING 20'± WEST OF THE CENTERLINE OF OAK STREET AND 167'± NORTH OF THE CENTERLINE OF ACADEMY LANE.
ELEVATION: 1117.74

BM 302 - BOX CUT ON THE SOUTH SIDE OF CONCRETE BASE OF LIGHT POLE BEING 20'± NORTHEAST FROM THE CENTERLINE OF ACADEMY LANE AND 121'± SOUTHWESTERLY FROM THE SOUTHERLY OVERHAND CORNER OF THE MAIN ENTRANCE TO HILLSDALE ACADEMY.
ELEVATION: 1098.88

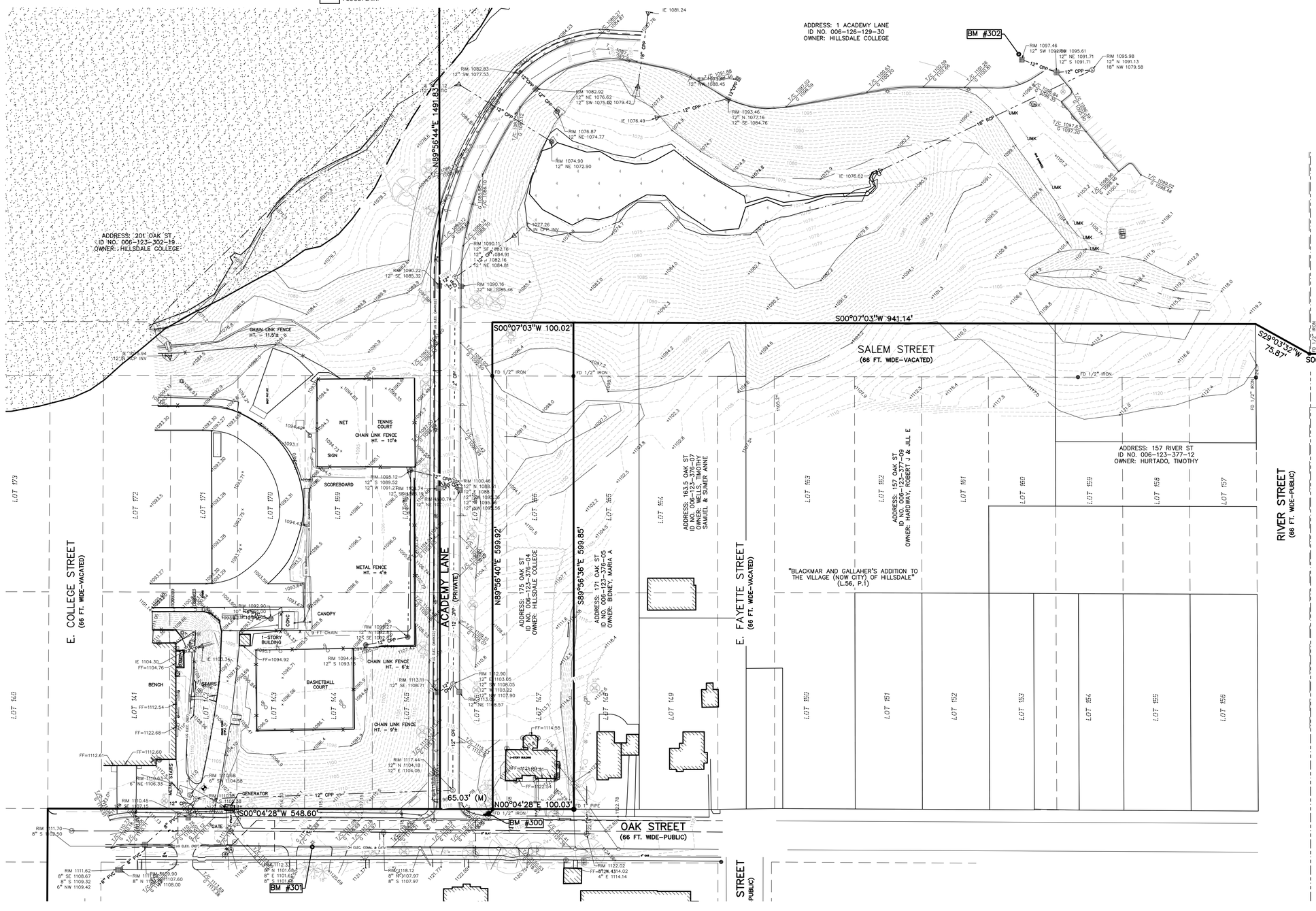
SURVEYOR'S NOTES:

A. BEARINGS WERE ESTABLISHED VIA GNSS OBSERVATIONS AND LINKED TO CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS) WITHIN THE MICHIGAN SPATIAL REFERENCE NETWORK (MSRN).

B. UTILITY IS SHOWN AS REFERENCE UNLESS OTHERWISE NOTED

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



REFERENCE DRAWINGS:

MISS DIG DESIGN TICKET: 20260404805185, DATED: 4/8/2026

CABLE	COMCAST CABLE TV
ELECTRIC	HILLSDALE BOARD OF PUBLIC UTILITIES
FIBER OPTICS	HILLSDALE COLLEGE
GAS	MICHIGAN GAS UTILITIES
SANITARY	HILLSDALE BOARD OF PUBLIC UTILITIES
STORM	HILLSDALE BOARD OF PUBLIC UTILITIES
STORM	HILLSDALE COUNTY DRAIN COMMISSION
TELEPHONE	AT&T TELEPHONE
TELEPHONE	HILLSDALE COLLEGE
WATER	HILLSDALE BOARD OF PUBLIC UTILITIES

PEA GROUP
t: 844.813.2949
www.peagroup.com

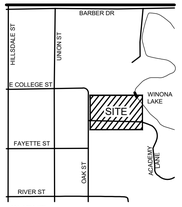
STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER
No. 45998
LICENSED PROFESSIONAL ENGINEER

NORTH

0 30 60 120
SCALE: 1" = 60'

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 COMPUTATION IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR CORRECTNESS THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

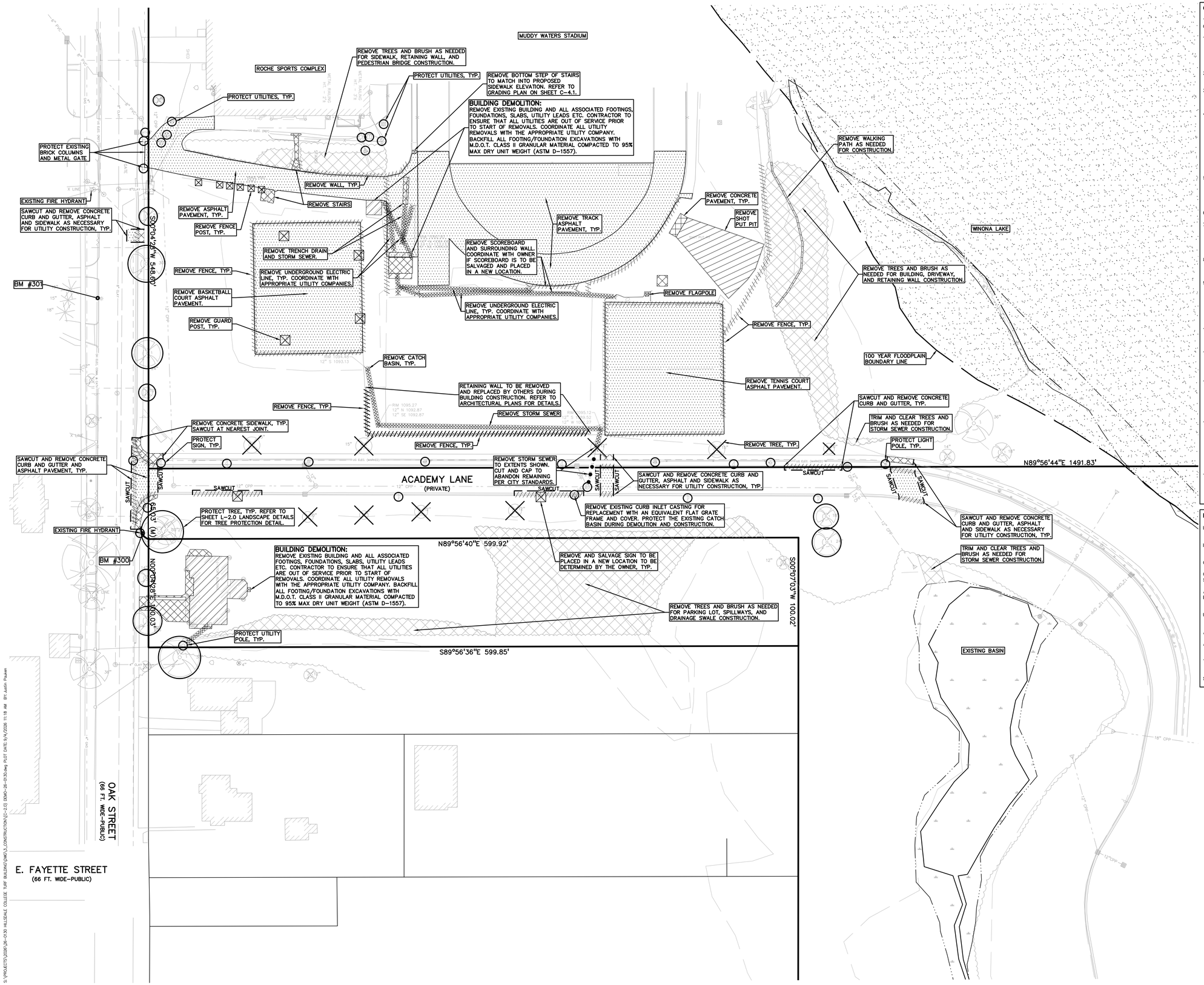
DRAWING TITLE
TOPOGRAPHIC SURVEY

PEA JOB NO.	26-0130
P.M.	WSF
DN.	JML

DRAWING NUMBER:
C-1.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-1.0) TOPO-26-0130.dwg PLOT DATE: 9/4/2026 11:18 AM BY: Justin Paulsen



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. REFER TO SHEET L-2.0 FOR TREE PROTECTION DETAILS.
7. 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.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPING AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
9. 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.
10. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES TO CONFIRM THAT UTILITY LEADS HAVE BEEN TAKEN OUT OF SERVICE PRIOR TO DEMOLITION.
11. 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.
12. 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.)
13. 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.
14. 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

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER
No. 45998
LICENSED PROFESSIONAL ENGINEER

NORTH

0 20 40 80
SCALE: 1" = 40'

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

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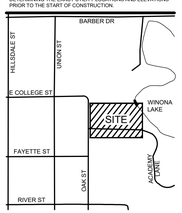


CLIENT

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

DEMOLITION PLAN

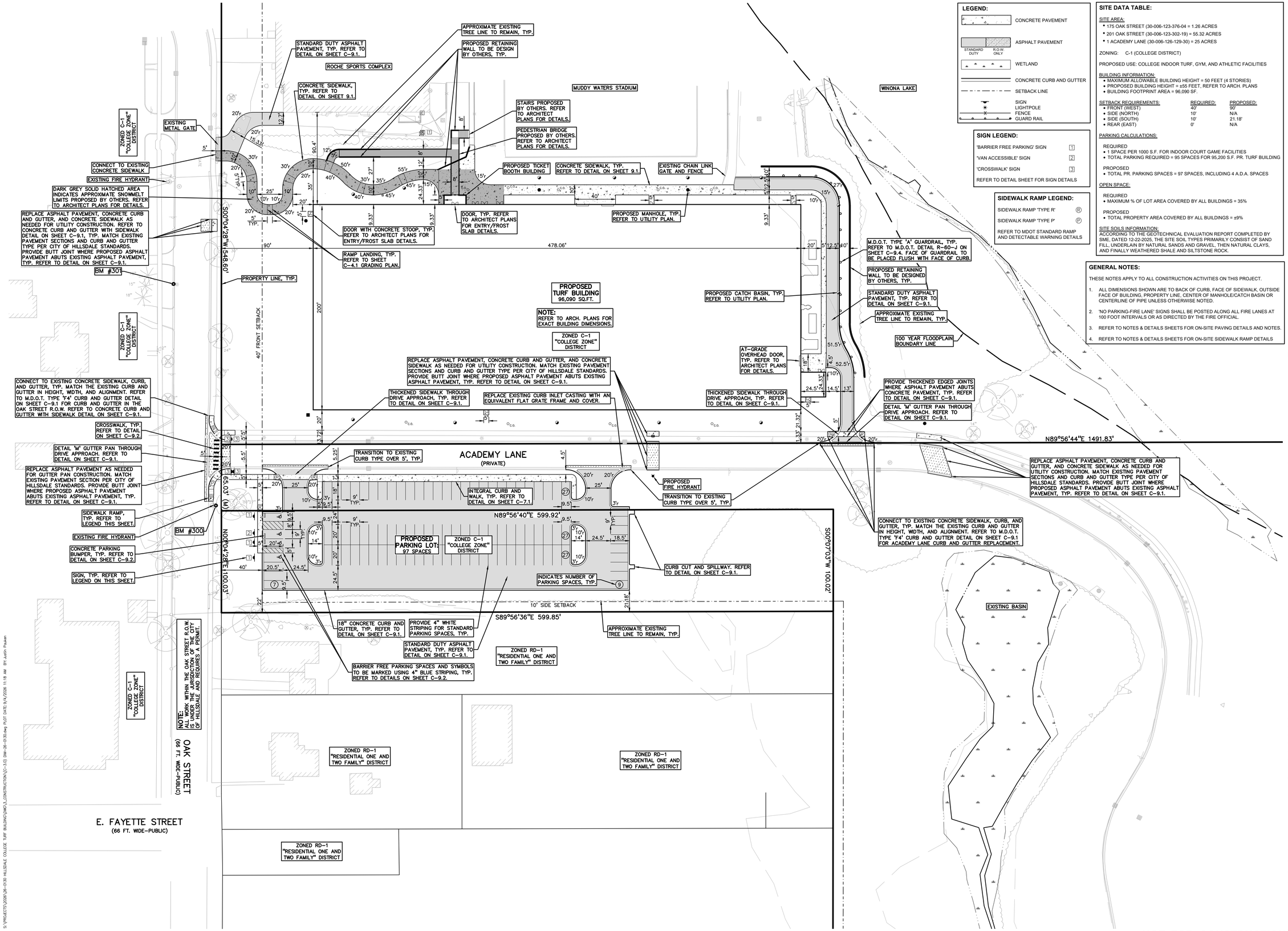
PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:

C-2.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-2.0) DEMO-26-0130.dwg PLOT DATE: 9/4/2026 11:18 AM BY: Justin Pauwen



LEGEND:

- CONCRETE PAVEMENT
- ASPHALT PAVEMENT (STANDARD DUTY / R.O.W. ONLY)
- WETLAND
- CONCRETE CURB AND GUTTER
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL

SIGN LEGEND:

'BARRIER FREE PARKING' SIGN	1
'VAN ACCESSIBLE' SIGN	2
'CROSSWALK' SIGN	3

REFER TO DETAIL SHEET FOR SIGN DETAILS

SIDEWALK RAMP LEGEND:

SIDEWALK RAMP 'TYPE R'	R
SIDEWALK RAMP 'TYPE P'	P

REFER TO MDOT STANDARD RAMP AND DETECTABLE WARNING DETAILS

SITE DATA TABLE:

SITE AREA:
- 175 OAK STREET (30-006-123-376-04 = 1.26 ACRES
- 201 OAK STREET (30-006-123-302-19) = 55.32 ACRES
- 1 ACADEMY LANE (30-006-126-129-30) = 25 ACRES

ZONING: C-1 (COLLEGE DISTRICT)

PROPOSED USE: COLLEGE INDOOR TURF, GYM, AND ATHLETIC FACILITIES

BUILDING INFORMATION:
- MAXIMUM ALLOWABLE BUILDING HEIGHT = 50 FEET (4 STORIES)
- PROPOSED BUILDING HEIGHT = ±55 FEET, REFER TO ARCH. PLANS
- BUILDING FOOTPRINT AREA = 96,090 SF.

SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
• FRONT (WEST)	40'	90'
• SIDE (NORTH)	10'	N/A
• SIDE (SOUTH)	10'	21.18'
• REAR (EAST)	0'	N/A

PARKING CALCULATIONS:

REQUIRED
- 1 SPACE PER 1000 S.F. FOR INDOOR COURT GAME FACILITIES
- TOTAL PARKING REQUIRED = 95 SPACES FOR 95,200 S.F. PR. TURF BUILDING

PROPOSED
- TOTAL PR. PARKING SPACES = 97 SPACES, INCLUDING 4 A.D.A. SPACES

OPEN SPACE:

REQUIRED
- MAXIMUM % OF LOT AREA COVERED BY ALL BUILDINGS = 35%

PROPOSED
- TOTAL PROPERTY AREA COVERED BY ALL BUILDINGS = ±9%

SITE SOILS INFORMATION:
ACCORDING TO THE GEOTECHNICAL EVALUATION REPORT COMPLETED BY SME, DATED 12-22-2025, THE SITE SOIL TYPES PRIMARILY CONSIST OF SAND FILL, UNDERLAIN BY NATURAL SANDS AND GRAVEL, THEN NATURAL CLAYS, AND FINALLY WEATHERED SHALE AND SILTSTONE ROCK.

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 SHEETS FOR ON-SITE PAVING DETAILS AND NOTES.
4. REFER TO NOTES & DETAILS SHEETS FOR ON-SITE SIDEWALK RAMP DETAILS

PEA GROUP
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STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45598 LICENSED PROFESSIONAL ENGINEER

NORTH

0 20 40 80
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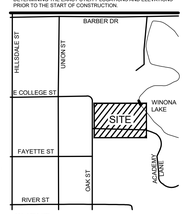

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PROJECT TITLE
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REVISIONS	
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PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
DIMENSION AND PAVING PLAN

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-3.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\C-3.0 DIM-26-0130.dwg PLOT DATE: 9/4/2026 11:18 AM BY: Justin Pulvem

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 THE COUNTY PRIOR TO CONSTRUCTION.
5. ALL EARTHWORK AND GRADING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE SOILS INVESTIGATION AND REPORT.
6. REFER TO SOIL EROSION CONTROL PLAN FOR ADDITIONAL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND NOTES.
7. ALL SLOPES EXCEEDING 1:4 MUST BE STABILIZED BY SODDING OR BY PLACING A MULCH BLANKET PEGGED IN PLACE OVER SEED.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. ANY SUB-GRADE WATERING REQUIRED TO ACHIEVE REQUIRED DENSITY SHALL BE CONSIDERED INCIDENTAL TO THE JOB.

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 RIDGE LINE
	PROPOSED SWALE/DITCH

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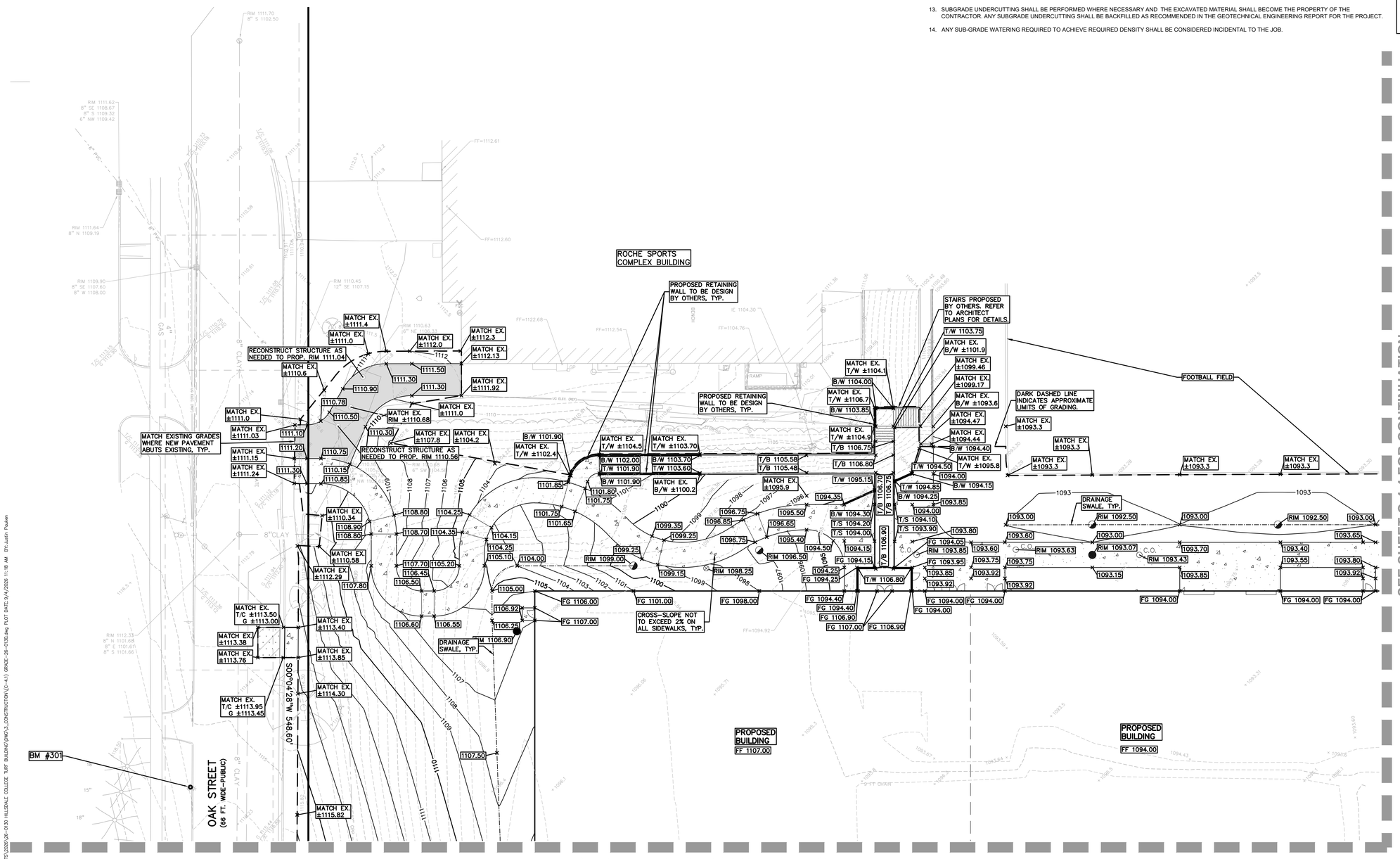
BENCHMARKS:

(NAVD 88, INTERNATIONAL FOOT, GPS DERIVED)

BM 301 - BENCH TIE IN THE EAST FACE ON POWER POLE BEING 20'± WEST OF THE CENTERLINE OF OAK STREET AND 167'± NORTH OF THE CENTERLINE OF ACADEMY LANE. ELEVATION: 1117.74



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STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45998 LICENSED PROFESSIONAL ENGINEER

NORTH

0 10 20 40

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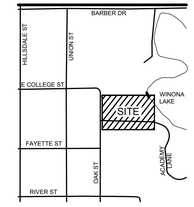


CLIENT

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE: JULY 31, 2026

DRAWING TITLE

GRADING PLAN - NORTHWEST

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

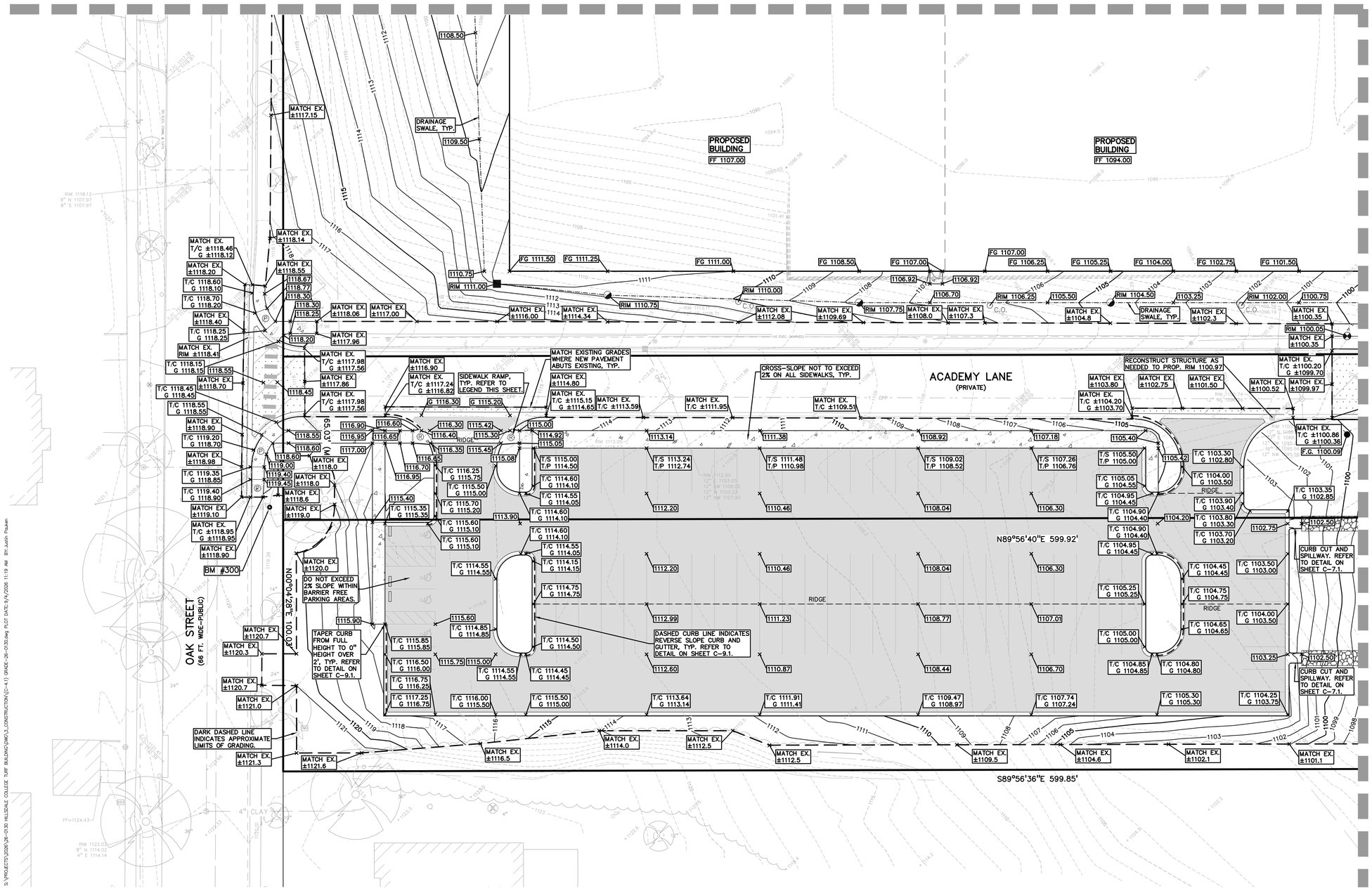
DRAWING NUMBER:

C-4.1

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-4.1) GRADE-26-0130.dwg PLOT DATE:9/4/2026 11:18 AM BY:Justin Pulvem

SEE SHEET C-4.1 FOR CONTINUATION



SEE SHEET C-4.3 FOR CONTINUATION

SIDEWALK RAMP LEGEND:

SIDEWALK RAMP 'TYPE R' Ⓡ

SIDEWALK RAMP 'TYPE P' Ⓟ

REFER TO STANDARD RAMP AND DETECTABLE WARNING DETAILS

GRADING LEGEND:

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- PROPOSED SPOT ELEVATION: TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES.
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BENCHMARKS:
(NAVD 88, INTERNATIONAL FOOT, GPS DERIVED)

BM 300 - SOUTHEASTERLY UPPER FLANGE BOLT ON FIRE HYDRANT BEING 50± SOUTH OF THE CENTERLINE OF ACADEMY LANE AND 30'± EAST OF THE CENTERLINE OF OAK STREET. ELEVATION: 1120.73

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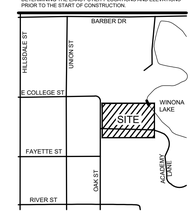

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LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
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DRAWING TITLE
GRADING PLAN - SOUTHWEST

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

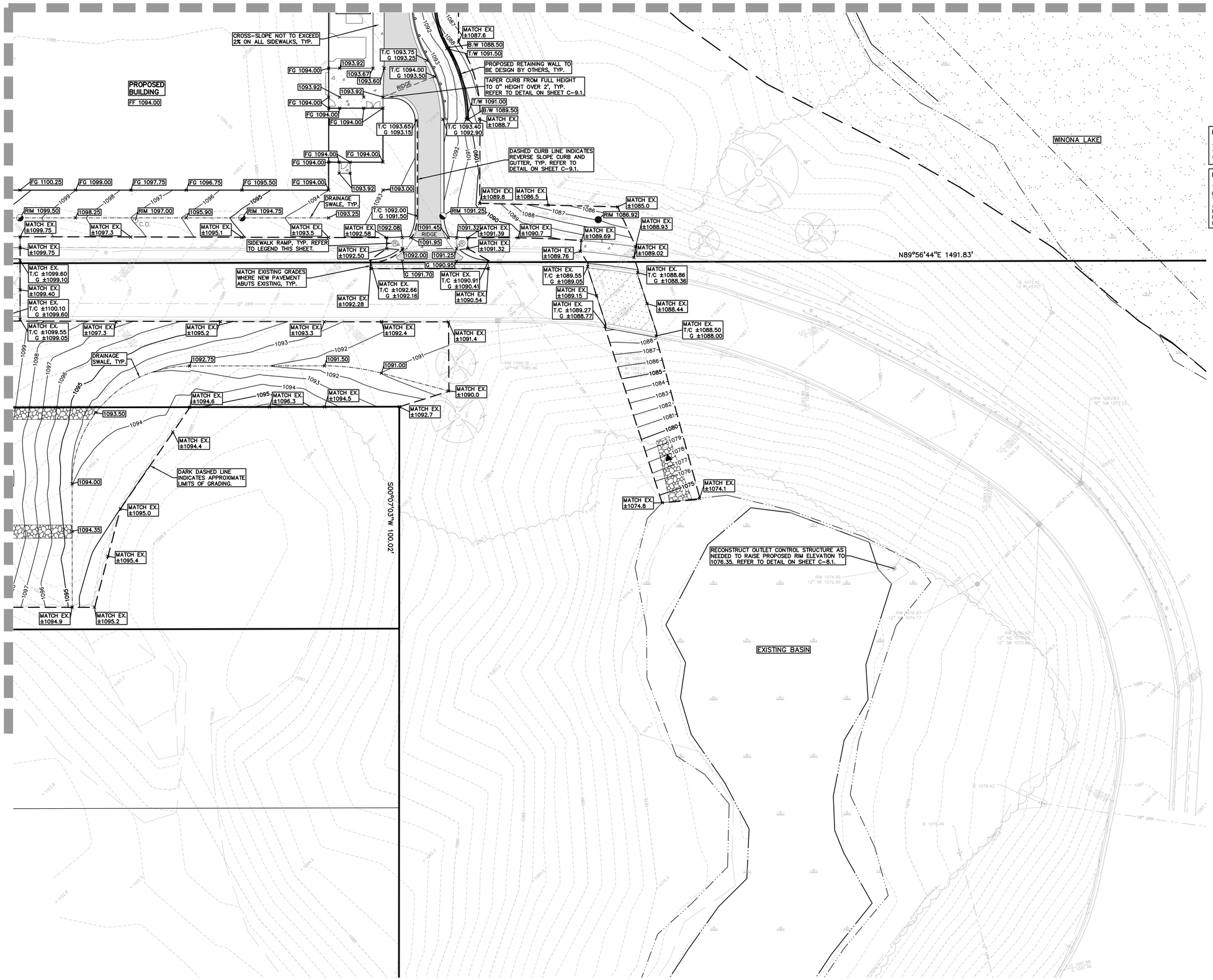
DRAWING NUMBER:
C-4.2

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-4.1) GRADE-26-0130.dwg PLOT DATE: 9/4/2026 11:19 AM BY: Justin Paulsen

SEE SHEET C-4.4 FOR CONTINUATION

SEE SHEET C-4.2 FOR CONTINUATION



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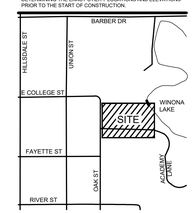

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ORIGINAL ISSUE DATE:
JULY 31, 2026

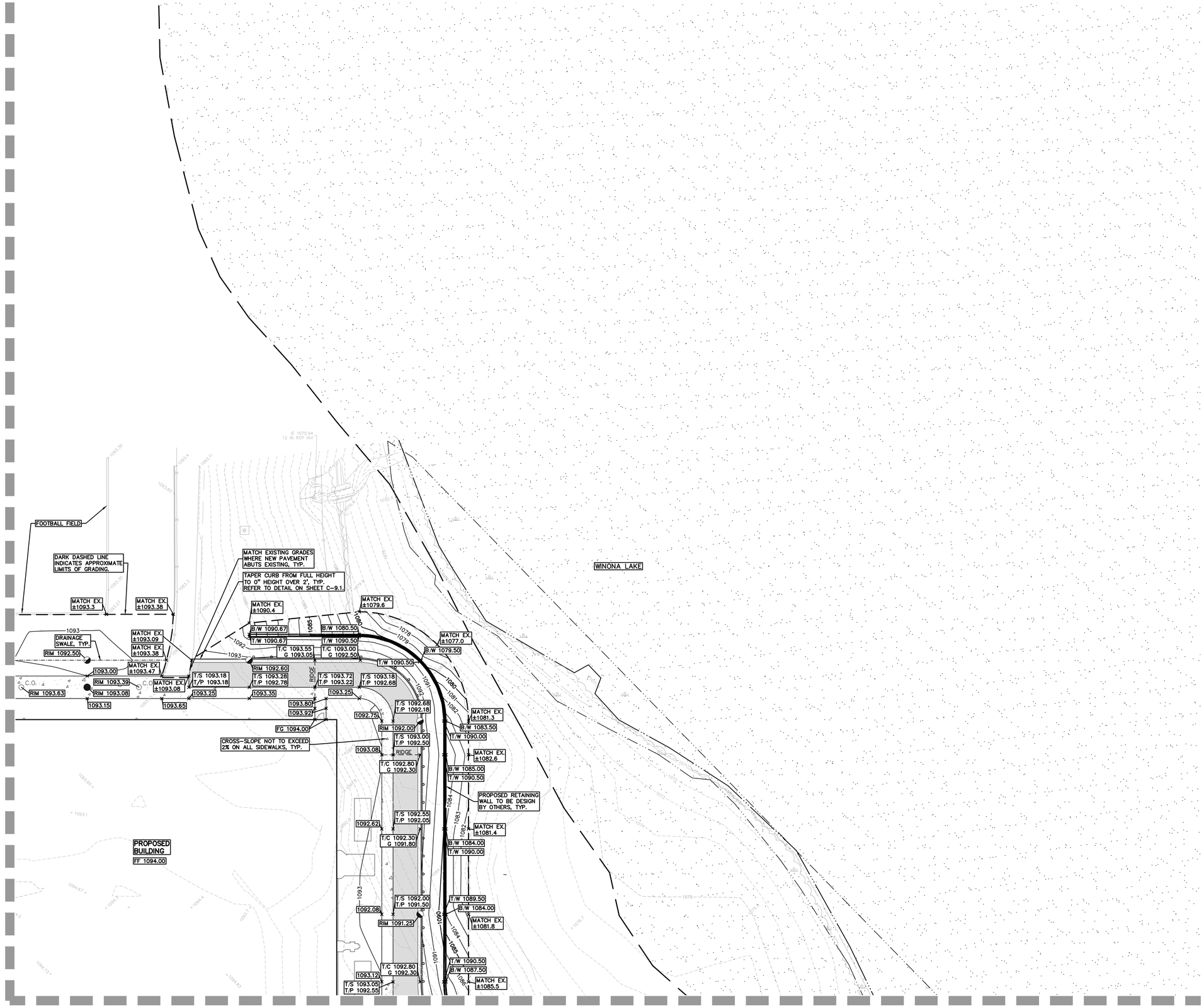
DRAWING TITLE
GRADING PLAN - SOUTHEAST

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-4.3

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-4.1) GRADE-26-0130.dwg PLOT DATE:9/4/2026 11:19 AM BY:Justin Paulsen



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B/W = BOTTOM OF WALL	RIM = RIM ELEVATION

RETAINING WALL NOTE:

TOP OF WALL (T/W) AND BOTTOM OF WALL (B/W) GRADES ARE THE FINISH GRADE AT THE TOP AND BOTTOM OF THE RETAINING WALL, NOT ACTUAL TOP AND BOTTOM OF THE WALL STRUCTURE.

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.

PEA GROUP
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STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER
No. 45998
LICENSED PROFESSIONAL ENGINEER

NORTH

0 10 20 40
SCALE: 1" = 20'

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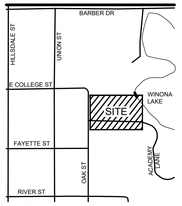


CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

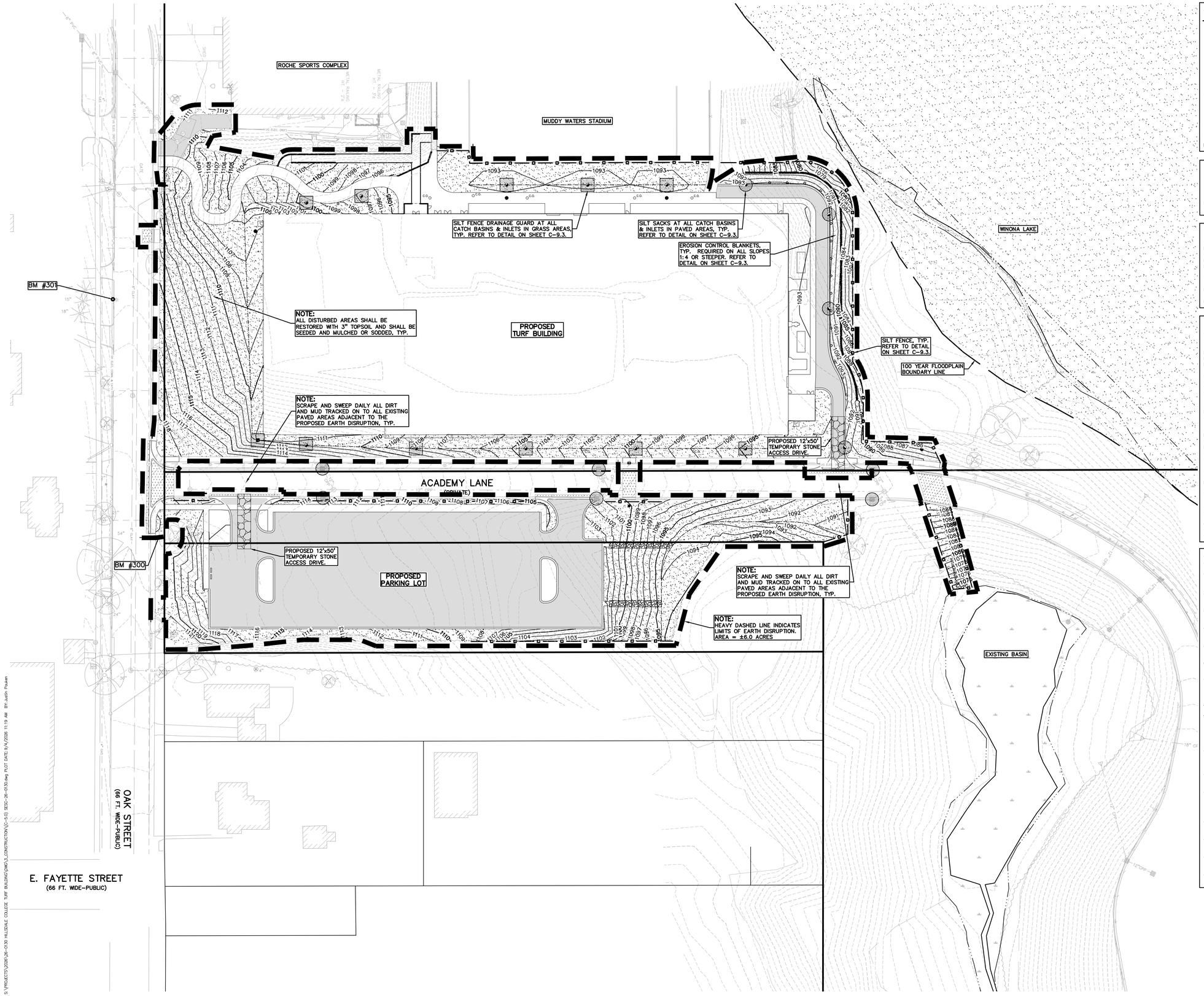
DRAWING TITLE
GRADING PLAN - NORTHEAST

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-4.4

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG_CONSTRUCTION\(C-4.1) GRADE-26-0130.dwg PLOT DATE: 9/4/2026 11:19 AM BY: Justin Paulen



SYMBOLS: EROSION CONTROL:

- SILT FENCE
- SILT SACK INLET FILTER
- RYCB INLET FILTER
- TEMPORARY STONE ACCESS DRIVE
- EROSION CONTROL BLANKET
- RIPRAP
- TEMPORARY SEED AND MULCH

REFER TO NOTES AND DETAILS SHEETS FOR ALL DEVICE DETAILS.

EROSION CONTROL QUANTITIES:

SILT FENCE	1500 LF
R.Y.C.B. INLET FILTER	11 EA.
SILTSACK INLET FILTER	9 EA.
TEMPORARY CONSTRUCTION ACCESS DRIVE	2 EA.
EROSION CONTROL BLANKETS	1300 S.Y.
APPROXIMATE TEMP. SEED & MULCH RESTORATION	7750 S.Y.

GENERAL SITE CONDITIONS:

ACCORDING TO THE GEOTECHNICAL EVALUATION REPORT COMPLETED BY SME, DATED 12-22-2025, THE SITE SOIL TYPES PRIMARILY CONSIST OF SAND FILL, UNDERLAIN BY NATURAL SANDS AND GRAVEL, THEN NATURAL CLAYS, AND FINALLY WEATHERED SHALE AND SILTSTONE ROCK.

TOTAL DISTURBED AREA = ±6.0 ACRES

DISTANCE TO NEAREST WATERWAY = ±30 FEET TO WINONA LAKE

N.P.D.E.S. NOTICE OF COVERAGE IS REQUIRED

SOIL EROSION MAINTENANCE SCHEDULE AND NOTES:

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

IF ANY DAMAGE HAS OCCURRED AS A RESULT OF STORM WATER DISCHARGE FROM THE SITE, THE FOLLOWING STEPS SHALL BE IMPLEMENTED:

1. ANY DEBRIS OR DIRT ON ANY PAVED AREA RESULTING FROM CONSTRUCTION TRAFFIC SHALL BE CLEANED IN A PROMPT MANNER BY THE CONTRACTOR. THE CONSTRUCTION DRIVE SHALL BE CLEANED AT THE END OF EACH DAY.

2. ALL DIRT AND MUD TRACKED ONTO PAVED AREAS SHALL BE REMOVED BY THE CONTRACTOR DAILY BY SCRAPING. STREET SWEEPING IS REQUIRED WEEKLY.

3. SILT FENCE MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY BUILT UP SEDIMENT WHEN THE SEDIMENT HEIGHT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE FENCE. THE CONTRACTOR IS RESPONSIBLE TO REMOVE, REPLACE, RETRENCH OR REBACKFILL THE SILTATION FENCE SHOULD IT FALL OR BE DAMAGED DURING CONSTRUCTION.

4. INLET FILTER MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY ACCUMULATED SILT OR OTHER DEBRIS. THE REMOVAL OF SILT SHOULD BE WITH THE USE OF A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL. IF INLET FILTERS CAN NOT BE CLEANED OR ARE DAMAGED, THEN THE FABRIC MUST BE REPLACED.

5. CONTRACTOR SHALL PROVIDE WATER TRUCK TO WATER DOWN THE SITE ON A DAILY BASIS AS REQUIRED TO MAINTAIN DUST CONTROL.

6. IF HIGH GROUNDWATER IS ANTICIPATED OR ENCOUNTERED DURING CONSTRUCTION A DEWATERING PLAN MUST BE SUBMITTED TO THE CITY ENGINEERING DIVISION FOR REVIEW.

SOIL EROSION AND SEDIMENTATION CONTROL SEQUENCE OF CONSTRUCTION

1. SEE SHEET C-9.3 FOR ALL SOIL EROSION CONTROL RELATED DETAILS.
2. PLACE SILT FENCE & INSTALL INLET FILTERS ON EXISTING STORM SEWER STRUCTURES ACCORDING TO PLANS.
3. INSTALL TEMPORARY CRUSHED CONCRETE ACCESS DRIVE AT ALL CONSTRUCTION ENTRANCES.
4. REMOVE CURB, PAVEMENT, TREES, ETC. AS DIRECTED ON THE DEMOLITION PLAN.
5. STRIP AND STOCKPILE TOPSOIL FOR RESTORATION REQUIREMENTS.
6. DISPOSE OF ALL EXCESS, UNSUITABLE MATERIALS OFF SITE IN A LEGAL MANNER. NO BURN OR BURY PITS ALLOWED.
7. UNSUITABLE MATERIALS CONSIST OF, BUT ARE NOT NECESSARILY LIMITED TO THE FOLLOWING: CONCRETE, ASPHALT, TREES, BRUSH, STUMPS, ROOTS, OR OTHER MISCELLANEOUS DEBRIS OR TRASH.
8. MASS GRADE THE SITE IN ACCORDANCE WITH THE PLANS.
9. INSTALL SEED, MULCH AND EROSION CONTROL BLANKETS AS SHOWN ON THE PLAN WITHIN 5 DAYS OF COMPLETION OF MASS GRADING OR WHENEVER DISTURBED AREAS WILL REMAIN UNCHANGED FOR 30 DAYS OR GREATER. 3-4" TOPSOIL WILL BE USED WHERE VEGETATION IS REQUIRED.
10. COMPLETE ROUGH GRADING OF SITE AND INSTALL UTILITIES. PLACE INLET FILTERS AT ALL INLETS AND CATCH BASINS, AS SHOWN.
11. FINISH GRADE AND PAVE SITE AS PROPOSED TO DRAIN TO STORM SEWER SYSTEM. REPAIR INLET FILTERS AS REQUIRED.
12. APPLY TOPSOIL, SEED AND MULCH/SOD TO ALL DISTURBED AREAS UPON COMPLETION OF GRADING. THE CONTRACTOR SHALL STAGE CONSTRUCTION ACTIVITIES IN ORDER TO MINIMIZE THE EXPOSURE OF UNSTABILIZED AREAS.
13. CLEAN PAVEMENT AND STORM SEWERS. REMOVE SILT FENCE, AND INLET FILTERS ONCE VEGETATION HAS BEEN ESTABLISHED.
14. CLEAN DETENTION BASIN AND OVERFLOW SPILLWAYS AND REPAIR RIPRAP AS NECESSARY.
15. ALL DIRT AND MUD TRACKED ONTO PUBLIC ROADS SHALL BE REMOVED DAILY.
16. STREET CATCH BASINS TO BE PERIODICALLY CLEANED AND FILTER CLOTH CHANGED AND MAINTAINED.

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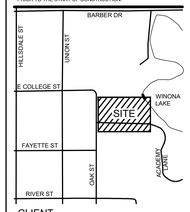

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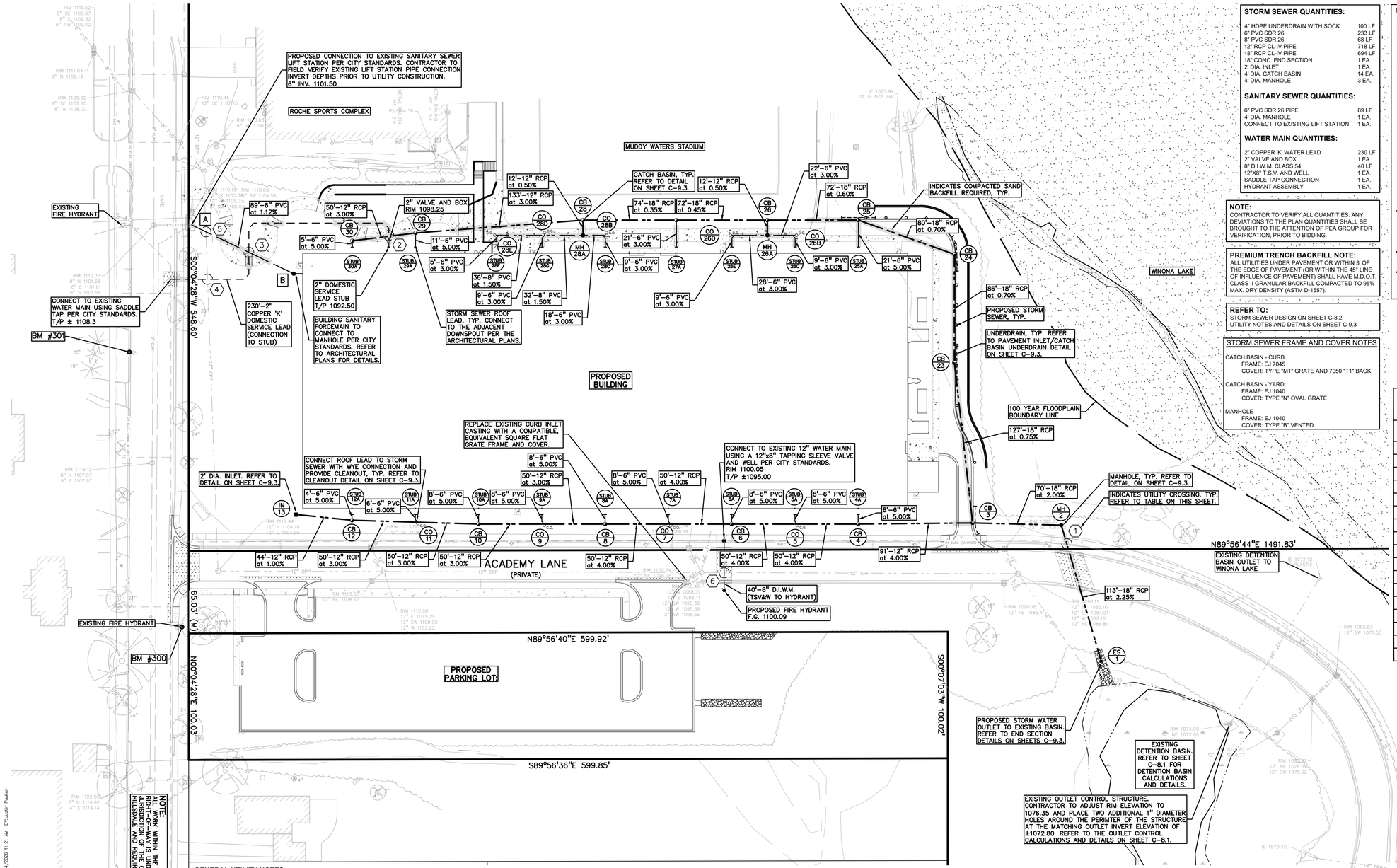

STORM SEWER QUANTITIES:

4" HDPE UNDERDRAIN WITH SOCK	100 LF
6" PVC SDR 26	233 LF
8" PVC SDR 26	68 LF
12" RCP CL-IV PIPE	718 LF
18" RCP CL-IV PIPE	694 LF
18" CONC. END SECTION	1 EA.
2' DIA. INLET	1 EA.
4' DIA. CATCH BASIN	14 EA.
4' DIA. MANHOLE	3 EA.

SANITARY SEWER QUANTITIES:

6" PVC SDR 26 PIPE	89 LF
4' DIA. MANHOLE	1 EA.
CONNECT TO EXISTING LIFT STATION	1 EA.

WATER MAIN QUANTITIES:

2" COPPER 'K' WATER LEAD	230 LF
2" VALVE AND BOX	1 EA.
8" D.I.W.M. CLASS 54	40 LF
12"X8" T.S.V. AND WELL	1 EA.
SADDLE TAP CONNECTION	1 EA.
HYDRANT ASSEMBLY	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).

REFER TO:
STORM SEWER DESIGN ON SHEET C-8.2
UTILITY NOTES AND DETAILS ON SHEET C-9.3

STORM SEWER FRAME AND COVER NOTES

CATCH BASIN - CURB
FRAME: EJ 7045
COVER: TYPE "M1" GRATE AND 7050 "T1" BACK

CATCH BASIN - YARD
FRAME: EJ 1040
COVER: TYPE "N" OVAL GRATE

MANHOLE
FRAME: EJ 1040
COVER: TYPE "B" VENTED

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

END SECTIONS

1	END SECTION 18" 1077.50

ROOF DOWNSPOUT LEAD STUBS

4A	6" S INV. 1089.70
5A	6" S INV. 1092.13
6A	6" S INV. 1095.18
7A	6" S INV. 1097.63
8A	6" S INV. 1099.78
9A	6" S INV. 1102.13
10A	6" S INV. 1103.78
11A	6" S INV. 1105.05
12A	6" S INV. 1106.63
25A	6" N INV. 1088.84
26C	6" N INV. 1088.90
26E	6" N INV. 1089.08
27A	6" N INV. 1088.87
28C	6" N INV. 1089.35
28F	6" N INV. 1089.73
28G	6" N INV. 1089.31
29A	6" N INV. 1093.03
30A	6" N INV. 1094.73

STORM CLEANOUTS

7	C.O. IN BOX RIM. 1102.00 INV. 1097.00
9	C.O. IN BOX RIM. 1106.25 INV. 1101.50
11	C.O. IN BOX RIM. 1110.00 INV. 1104.50
26B	C.O. IN BOX RIM. 1093.39 INV. 1088.62
26D	C.O. IN BOX RIM. 1093.63 INV. 1088.81
28B	C.O. IN BOX RIM. 1093.43 INV. 1089.07
28D	C.O. IN BOX RIM. 1093.63 INV. 1088.90
28E	C.O. IN BOX RIM. 1093.85 INV. 1089.44

SANITARY STRUCTURES

B	MH (4' DIA.) RIM = 1106.90 6" NW 1102.50

EXISTING SANITARY STRUCTURES

A	EXISTING LIFT STATION EX. 8" W ±1101.50 PR. 6" SE 1101.50 EX. S FORCEMAIN OUTLET

STORM STRUCTURES

MH	2	(4' DIA./0' SUMP) RIM = 1086.92 18" W 1081.50 18" S 1080.04
CB	3	(4' DIA./2' SUMP) RIM = 1091.25 18" N 1084.15 12" W 1084.40 18" E 1082.90
CB	4	(4' DIA./2' SUMP) RIM = 1094.75 12" W 1089.50 6" N 1089.32 12" E 1088.02
CB	6	(4' DIA./2' SUMP) RIM = 1099.50 12" W 1095.00 6" N 1094.80 12" E 1093.50
CB	8	(4' DIA./2' SUMP) RIM = 1104.50 12" W 1100.00 6" N 1099.40 12" E 1099.00
CB	10	(4' DIA./2' SUMP) RIM = 1107.75 12" W 1103.00 6" N 1103.40 12" E 1103.00
CB	12	(4' DIA./2' SUMP) RIM = 1110.75 12" W 1106.00 6" N 1106.40 12" E 1106.00
IN	13	(2' DIA./2' SUMP) RIM = 1111.00 12" E 1106.45
CB	23	(4' DIA./2' SUMP) RIM = 1091.25 18" N 1085.11 18" S 1085.11
CB	24	(4' DIA./2' SUMP) RIM = 1092.00 18" W 1085.91 18" S 1085.71
CB	25	(4' DIA./2' SUMP) RIM = 1092.60 18" W 1086.67 6" S 1087.77 18" E 1086.47
MH	26A	(4' DIA./0' SUMP) RIM = 1093.08 6" W 1087.96 6" E 1087.96 12" N 1087.56
CB	26	(4' DIA./2' SUMP) RIM = 1092.50 18" W 1087.10 12" S 1087.50 18" E 1087.10
CB	27	(4' DIA./2' SUMP) RIM = 1092.50 18" W 1087.43 6" S 1088.23 18" E 1087.43
MH	28A	(4' DIA./0' SUMP) RIM = 1093.07 6" E 1088.55 8" W 1088.41 12" N 1088.15
CB	28	(4' DIA./2' SUMP) RIM = 1092.50 12" W 1088.09 12" S 1088.09 18" E 1087.69
CB	29	(4' DIA./2' SUMP) RIM = 1096.50 12" W 1092.07 6" S 1092.47 12" E 1092.07
CB	30	(4' DIA./2' SUMP) RIM = 1099.00 6" S 1094.48 12" E 1093.58

UTILITY CROSSING TABLE

CROSSING	CROSSING PIPE 1				CROSSING PIPE 2				CLEARANCE	NOTES
1	18 "	ST	T/P=	1081.41	12 "	WM	B/P=	1083.40	1.99	
2	12 "	ST	B/P=	1092.54	2 "	WM	T/P=	1091.04	1.50	DIP WATER LEAD
3	6 "	SAN	B/P=	1102.01	2 "	WM	T/P=	1100.40	1.61	
4	6 "	SAN	T/P=	1102.20	12 "	ST	B/P=	1105.03	2.84	
5	12 "	ST	B/P=	1104.89	2 "	WM	T/P=	1103.39	1.50	DIP WATER LEAD
6	12 "	ST	T/P=	1088.85	8 "	WM	B/P=	1092.83	3.98	

GENERAL UTILITY NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY.
2. 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 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.
3. 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.
4. 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.
5. 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.
6. ALL SEWER CLEANOUTS TO BE PROVIDED WITH EJ #1565 BOX OR EQUAL.
7. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE AND TO END OF FLARED END SECTION UNLESS NOTED OTHERWISE.
8. 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.

WATER MAIN NOTES:

1. ALL WATER MAIN SHALL BE INSTALLED WITH A MINIMUM COVER OF 6.0' BELOW FINISH GRADE. WHEN WATER MAINS MUST DIP TO PASS UNDER A STORM SEWER OR SANITARY SEWER, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE KEPT TO A MINIMUM LENGTH BY THE USE OF VERTICAL TWENTY TWO AND A HALF (22.5°) DEGREE BENDS, PROPERLY ANCHORED.
2. ALL TEES, BENDS, CONNECTIONS, ETC. ARE CONSIDERED INCIDENTAL TO THE JOB.
3. MAINTAIN 10' HORIZONTAL CLEARANCE BETWEEN OUTER EDGE OF WATERMAIN AND ANY SANITARY/STORM SEWER OR STRUCTURE.
4. NO PHYSICAL CONNECTION TO THE EXISTING WATER MAIN CAN BE MADE UNTIL ALL NEW WATER MAIN PASSES PRESSURE AND BACTERIOLOGICAL TESTS TO THE SATISFACTION OF THE CITY.
5. ALL WATER MAIN AND FITTINGS (3" DIAMETER AND LARGER) SHALL BE DUCTILE IRON, CLASS 54.
6. WATER MAIN SERVICE LEADS SHALL BE TYPE 'K' ANNEALED SEAMLESS COPPER WITH FLARED FITTINGS, UNLESS OTHERWISE NOTED.
7. ALL FIRE HYDRANTS SHALL BE EJIW #5BR MODEL #250 OR PER CITY STANDARDS.
8. ALL HYDRANTS TO BE A MINIMUM OF 5' FROM BACK OF CURB, TYP.
9. ALL NECESSARY FITTINGS, THRUST BLOCKS, RESTRAINING GLANDS, BLOW OFFS, ETC. FOR WATER MAIN ARE CONSIDERED INCIDENTAL TO THIS PROJECT. THE CONTRACTOR SHALL INSTALL THESE ITEMS AS NECESSARY AND AS REQUIRED BY THE CITY.
10. UNLESS NOTED SPECIFICALLY OTHERWISE ON THE PLANS, THE DESIGN INTENT IS TO HAVE THE WATER MAIN CONSTRUCTED WITH THIS PROJECT BE INSTALLED VIA OPEN CUT TRENCH BY THE CONTRACTOR. IF THE CONTRACTOR CHOOSES A DIFFERENT METHOD OF CONSTRUCTION, OTHER THAN WHAT IS SHOWN ON THE APPROVED PLANS UPON WHICH THE PERMIT WAS GRANTED, THE CONTRACTOR WILL BE RESPONSIBLE TO CONTACT THE REGULATORY AGENCIES TO REVISE THE APPROVED PERMIT.
11. ALL PIPES, PROTECTIVE MATERIALS, JOINING AND SEALING MATERIALS, AND MECHANICAL DEVICES USED IN THE WATERMAIN CONSTRUCTION SHALL COMPLY WITH THE CURRENT NSF/ANSI 61 STANDARDS FOR DRINKING WATER SYSTEM COMPONENTS.
12. THE WATER MAIN CONTRACTOR SHALL NOTIFY THE INSPECTION DEPARTMENT OF THE CITY AT LEAST THREE WORKING DAYS IN ADVANCE OF STARTING CONSTRUCTION.

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. ALL STORM SEWER LEADS SHALL BE CONSTRUCTED AT 1.00% MINIMUM SLOPE.
3. ALL STORM SEWER 10" OR LESS AND/OR LEADS SHALL BE PVC SDR 26.
4. JOINTS FOR P.V.C. PIPE SHALL BE ELASTOMERIC (RUBBER GASKET) AS SPECIFIED IN A.S.T.M. DESIGNATION D-3212.

SANITARY SEWER NOTES:

1. DOWNSPOUTS, WEEP TILE, FOOTING DRAINS OR ANY CONDUIT THAT CARRIES STORM OR GROUND WATER SHALL NOT BE ALLOWED TO DISCHARGE INTO A SANITARY SEWER.
2. ALL SANITARY LEADS SHALL BE CONSTRUCTED AT 1.00% MINIMUM SLOPE.
3. ALL SANITARY SEWER 8" OR LARGER SHALL BE PVC SDR 26 PIPE (ASTM D2680) AND FITTINGS, WITH ELASTOMERIC GASKET JOINTS PER ASTM D3212 UNLESS OTHERWISE NOTED.
4. ALL SANITARY SEWER LEADS SHALL BE POLYVINYL CHLORIDE (PVC) SDR 23.5 PIPE AND FITTINGS. ALL JOINTS TO BE ELASTOMERIC GASKET JOINTS PER ASTM D3212 UNLESS OTHERWISE NOTED.
5. SANITARY LEADS SHALL BE PROVIDED WITH CLEANOUTS EVERY 100 FEET AND AT EVERY BEND AS SHOWN.

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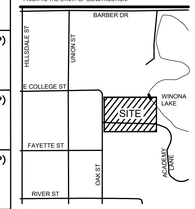


CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

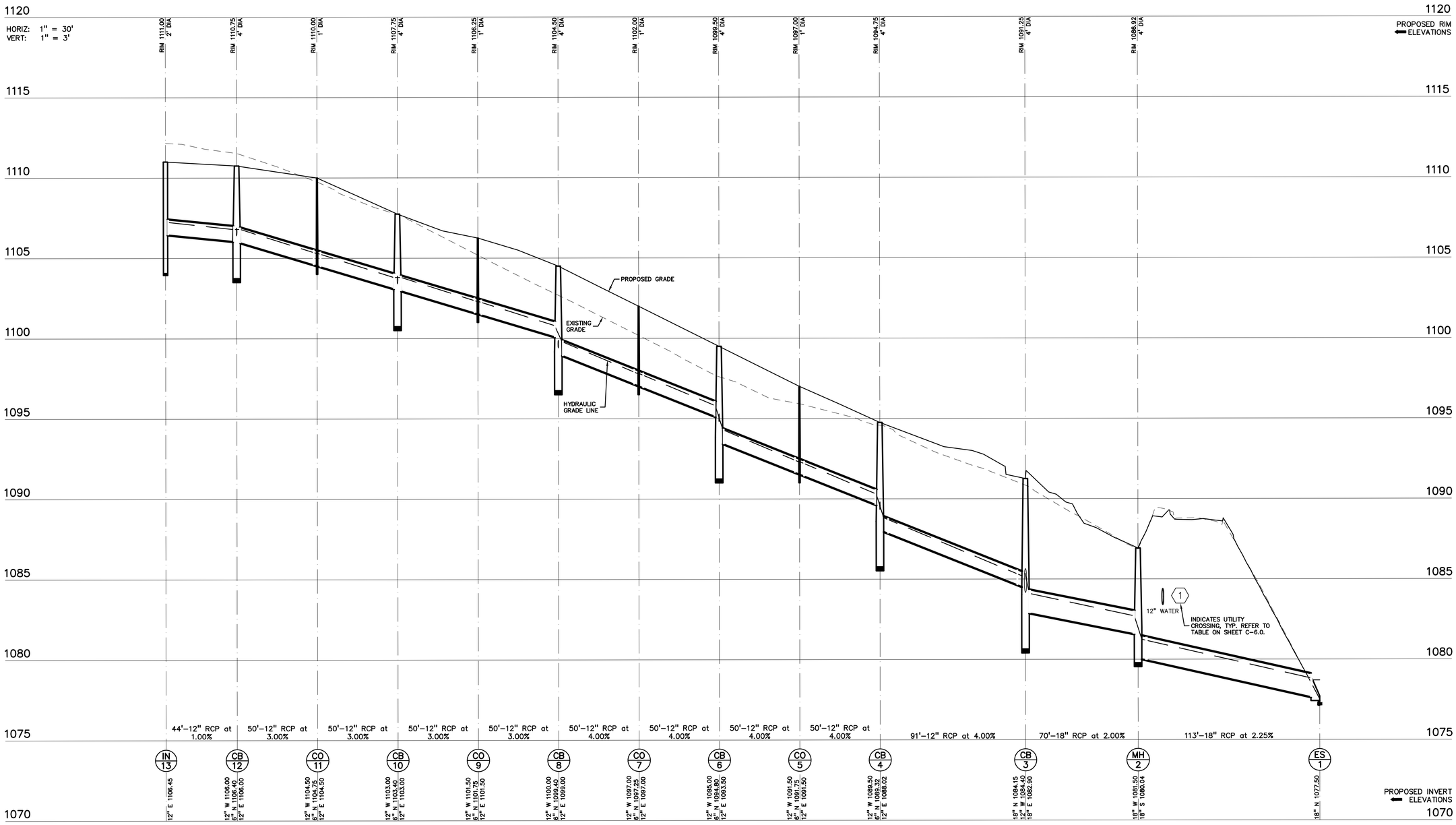
ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
UTILITY PLAN

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-6.0

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\C-6.0_UTIL-26-0130.dwg PLOT DATE:9/4/2026 11:21 AM BY:Justin Paulen



ST 13–1 PROFILE

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-7.1) PROF-26-0130.dwg PLOT DATE:9/4/2026 11:20 AM BY:Justin Pulaski

PEA GROUP

t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER No. 45998
LICENSED PROFESSIONAL ENGINEER

0 15 30 60
SCALE: 1" = 30'

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

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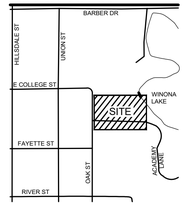


CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

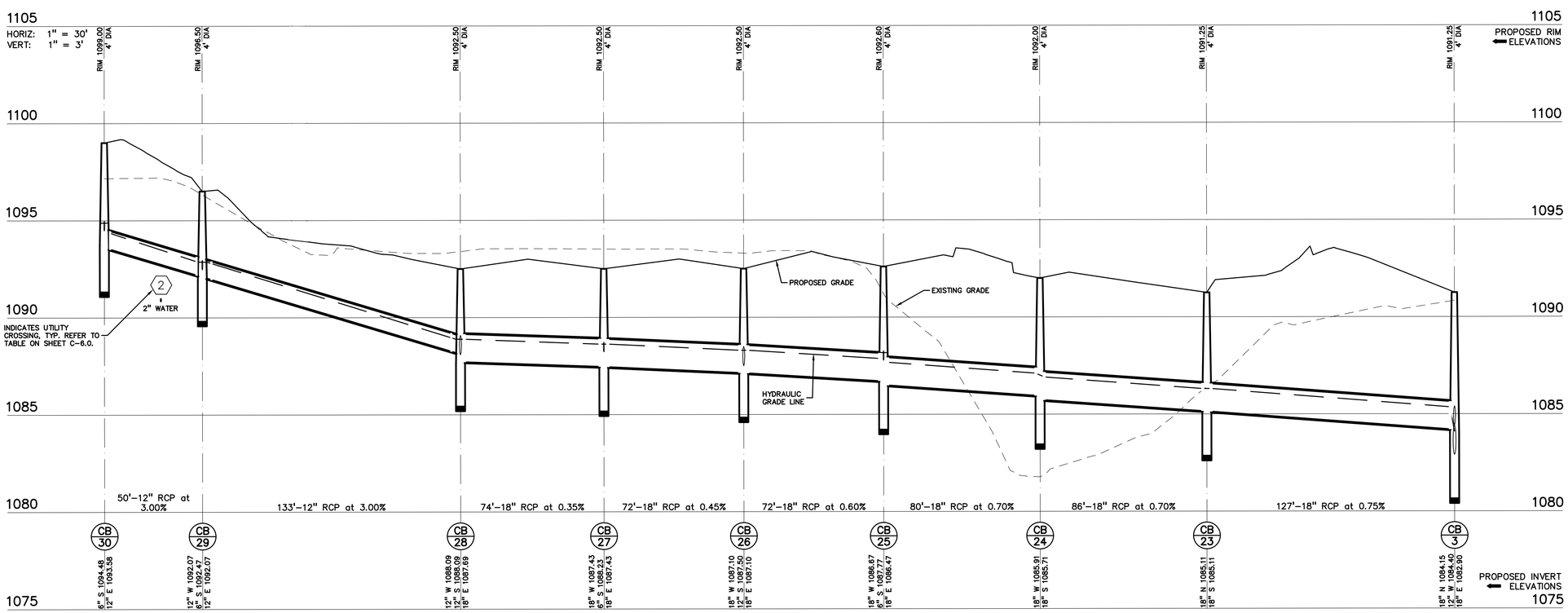
REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
STORM SEWER PROFILES

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-7.1



ST 30-3 PROFILE

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NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER No. 45998
LICENSED PROFESSIONAL ENGINEER

0 15 30 60
SCALE: 1" = 30'

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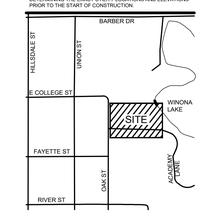


CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

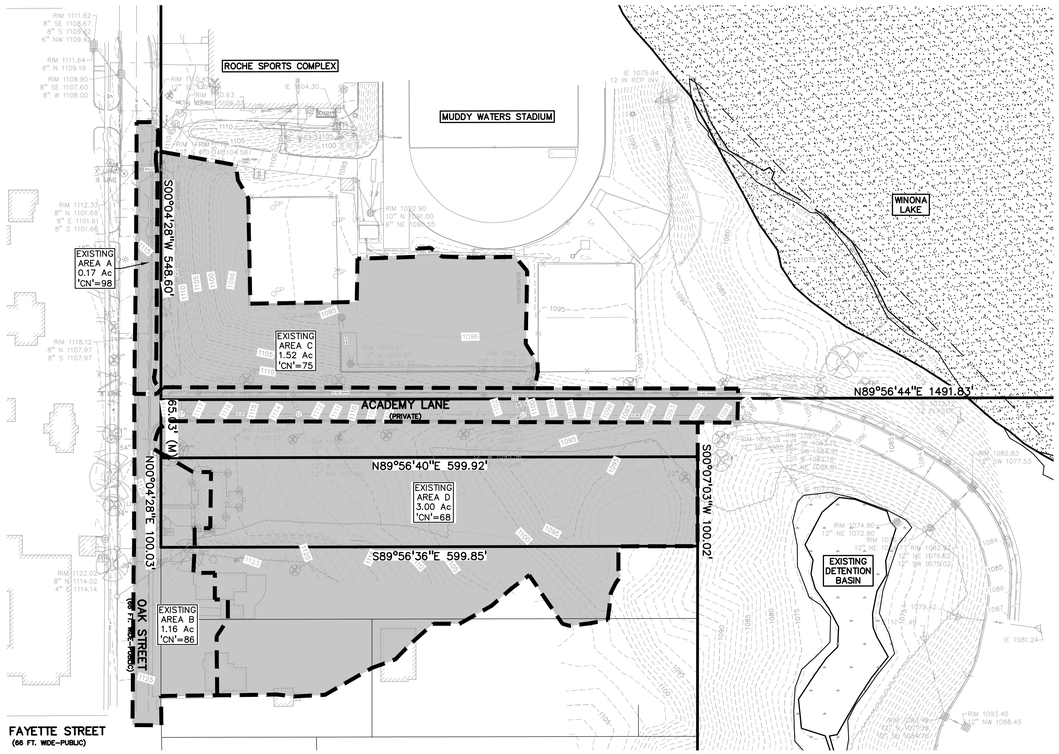
REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

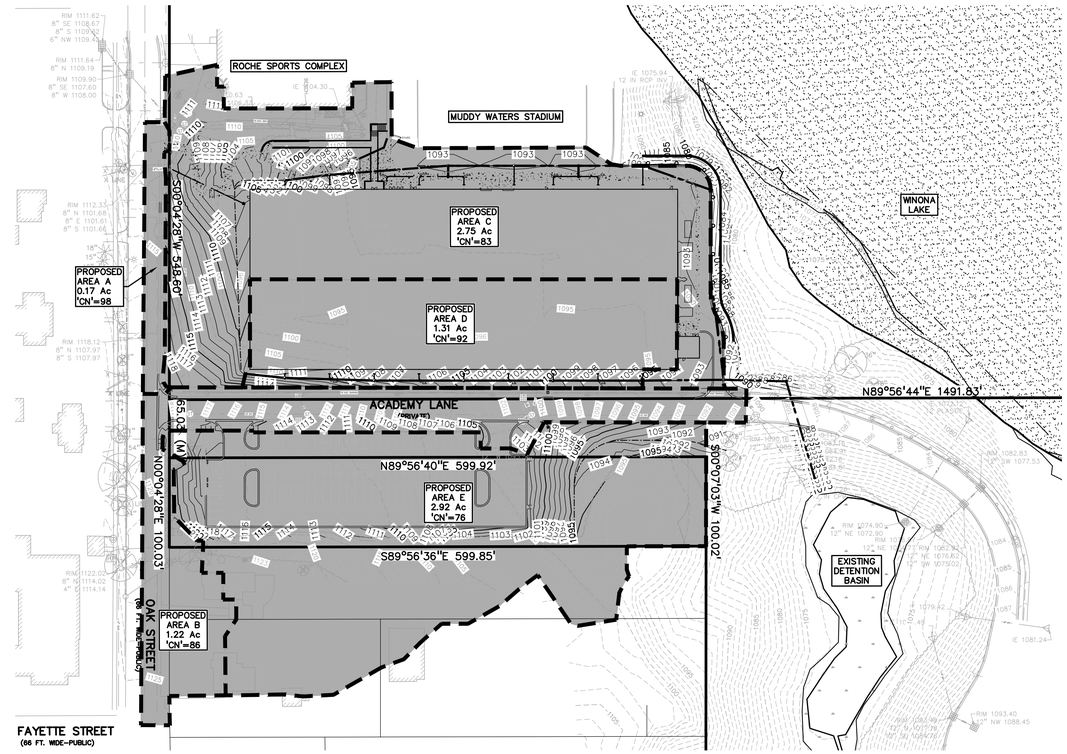
DRAWING TITLE
STORM SEWER PROFILES

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-7.2



PRE-DEVELOPMENT IMPACTED DRAINAGE AREAS TRIBUTARY TO THE EXISTING DETENTION BASIN



POST-DEVELOPMENT IMPACTED DRAINAGE AREAS TRIBUTARY TO THE EXISTING DETENTION BASIN

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45998 LICENSED PROFESSIONAL ENGINEER

NORTH

0 40 80 160
SCALE: 1" = 80'

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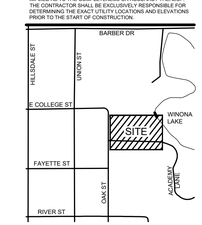


CLIENT

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

STORMWATER MANAGEMENT DESIGN NARRATIVE:

ON-SITE STORMWATER RUNOFF FROM THE PROPOSED TURF BUILDING IS PROPOSED TO BE DIRECTED THROUGH ROOF DOWNSPOUT CONDUCTORS TO THE PROPOSED STORM SEWER AND DISCHARGE TO THE EXISTING DETENTION BASIN. RUNOFF FROM THE PROPOSED SITE IMPROVEMENTS AND AREAS ADJACENT TO THE PROPOSED TURF BUILDING SHOWN ABOVE WILL ALSO BE CAPTURED BY THE PROPOSED STORM SEWER AND DISCHARGE TO THE EXISTING DETENTION BASIN. RUNOFF FROM THE PROPOSED PARKING LOT WILL SHEET DRAIN TO THE EAST AND BE CARRIED THROUGH PROPOSED CURB-CUT SPILLWAYS AND A SWALE DIRECTING THE DISCHARGE TO THE EXISTING DETENTION BASIN.

FOR DRAINAGE AREAS TRIBUTARY TO THE EXISTING DETENTION BASIN THAT WILL BE IMPACTED BY THE PROPOSED TURF BUILDING DEVELOPMENT, PREDEVELOPMENT AND POSTDEVELOPMENT RUNOFF VOLUMES WERE DETERMINED THROUGH AN ANALYSIS AND CALCULATIONS USING A SCS METHOD HYDRAFLOW HYDROGRAPHS PROGRAM, WITH RAINFALL DATA SOURCED FROM THE NOAA NATIONAL WEATHER SERVICE (NWS) - PRECIPITATION FREQUENCY DATA SERVER (PFDS) FOR HILLSDALE, MICHIGAN. THE FOLLOWING PRE AND POST DEVELOPMENT RUNOFF VOLUMES (IN CUBIC FEET) WERE DETERMINED FOR THE 10 YEAR AND 100 YEAR STORM PRECIPITATION DATA FROM NOAA NWS PDFS:

PRE DEVELOPMENT 10 YEAR RUNOFF VOLUME: 28,826 CF

POST DEVELOPMENT 10 YEAR RUNOFF VOLUME: 56,609 CF

INCREASE IN 10 YEAR RUNOFF VOLUME TO BE DETAINED IN THE EXISTING DETENTION BASIN = 56,609 CF - 28,826 CF = 27,783 CF

PRE DEVELOPMENT 100 YEAR RUNOFF VOLUME: 60,594 CF

POST DEVELOPMENT 100 YEAR RUNOFF VOLUME: 107,970 CF

INCREASE IN 100 YEAR RUNOFF VOLUME TO BE DETAINED IN THE EXISTING DETENTION BASIN = 107,970 CF - 60,594 CF = 47,376 CF

ACCORDING TO THE STORMWATER MANAGEMENT REPORT AND EXHIBIT DRAWINGS FOR THE 2023 HILLSDALE ACADEMY ADDITION PROJECT, PREPARED BY MT ENGINEERING AND PROVIDED TO PEA GROUP BY THE CITY OF HILLSDALE, MODIFICATIONS WERE MADE TO THE EXISTING DETENTION BASIN'S OUTLET PIPE TO WINONA LAKE AS A PART OF THE PROJECT. AN OUTLET CONTROL STRUCTURE WAS INSTALLED AT THE OUTLET PIPE OF THE EXISTING DETENTION BASIN TO DETAIN AN INCREASE OF STORMWATER RUNOFF VOLUME RESULTING FROM THE HILLSDALE ACADEMY ADDITION'S CONSTRUCTION. THE RIM ELEVATION OF THE OUTLET CONTROL STRUCTURE WAS DESIGNED TO AN ELEVATION OF 1074.80 TO DETAIN THE CALCULATED ADDITIONAL RUNOFF VOLUME OF 47,500 CF. 1074.80 IS THE WATER ELEVATION OF THE ADDITIONAL RUNOFF VOLUME WITHIN THE EXISTING DETENTION BASIN, ABOVE THE PERMANENT WATER LEVEL AND EXISTING INVERT ELEVATION OF THE BASIN'S OUTLET PIPE OF 1072.73, PER THE PROVIDED STORMWATER MANAGEMENT REPORT. TO DRAIN THIS VOLUME OVER APPROXIMATELY 96 HOURS (4 DAYS), THE OUTLET CONTROL STRUCTURE WAS DESIGNED TO HAVE FOUR 1 INCH DIAMETER HOLES PLACED AROUND THE STRUCTURE AT AN INVERT ELEVATION OF 1072.80, PER THE REPORT.

AS SHOWN IN THE DETENTION AND OUTLET CONTROL STRUCTURE CALCULATIONS ON THIS SHEET, PEA GROUP HAS CALCULATED STORMWATER STORAGE ELEVATIONS OF 1075.84 AND 1076.35 FOR ADDING THE 10 AND 100 YEAR POST DEVELOPMENT INCREASE IN RUNOFF VOLUMES TO THE EXISTING DETENTION BASIN, ABOVE THE 1074.80 HILLSDALE ACADEMY ADDITION RUNOFF DETENTION ELEVATION. THE STORAGE ELEVATIONS ARE CALCULATED FROM THE AREAS AND VOLUMES OF THE BASIN'S ELEVATION CONTOURS REPORTED IN THE 2023 HILLSDALE ACADEMY ADDITION PROJECT STORMWATER MANAGEMENT REPORT. THE RIM OF THE OUTLET CONTROL STRUCTURE IS PROPOSED TO BE RAISED TO THE CALCULATED 100 YEAR DETENTION STORAGE ELEVATION OF 1076.35, A 1.55' INCREASE FROM THE EXISTING RIM ELEVATION OF 1074.80. ALSO, TWO ADDITIONAL 1 INCH DIAMETER HOLES ARE PROPOSED TO BE PLACED AROUND THE PERIMETER OF THE STRUCTURE AT THE INVERT ELEVATION OF 1072.80 TO MAINTAIN A DRAIN TIME CLOSE TO 96 HOURS.

Detention Storage Volumes

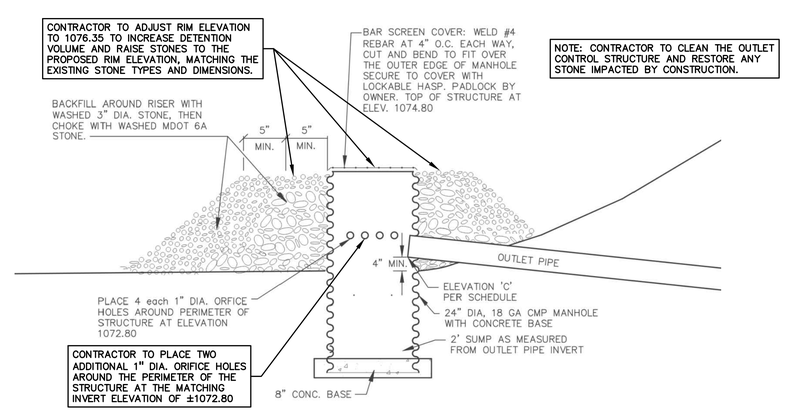
2023 Hillsdale Academy Addition Runoff Volume:	**47,500**	cf
Hillsdale College Turf Building 10 Year Runoff Volume:	**27,783**	cf
Hillsdale College Turf Building 100 Year Runoff Volume:	**47,376**	cf

Existing Detention Basin

10 Year Detention Storage Elevation:	1,075.84	75,283	cf
100 Year Detention Storage Elevation	1,076.35	94,876	cf
Elev. (ft)	**Area (sf)**	**Vol. (cf)**	**Total Vol. (cf)**
1071.80	0	0	0
1072.00	2,911	198	198
1072.70	11,805	4,830	5,028
1074.00	19,576	20,186	25,214
1076.00	35,717	54,490	79,704
1078.00	52,997	87,195	166,899
1080.00	69,765	122,379	289,278
1082.00	84,724	154,247	443,525
Bottom Elevation of Pond:		1,071.80	

Existing Detention Basin Outlet Control Structure Calculations

Basin Outlet Elevation:	1072.80
Existing Rim Elevation:	1074.80
10 Year Runoff Detention Elevation:	1075.84
100 Year Runoff Detention Elevation:	1076.35
Proposed Rim Elevation:	1076.35
10 year 2/3 Head over Orifice (0.67h):	2.03 ft
100 year 2/3 Head over Orifice (0.67h):	2.37 ft
Outlet Restriction Hole Dia.:	1.00 in
Outlet Restriction Hole Area:	0.005 sft
Number of Restriction Holes:	6
Total Restriction Hole Area:	0.033 sft
Discharge Rate (Q)	
Q_{10} = 0.62 * A * (2 * g *0.67h)^0.5=	0.232 cfs
Q_{100} = 0.62 * A * (2 * g * 0.67h)^0.5=	0.250 cfs
2023 Hillsdale Academy Addition Runoff Volume:	47,500 cf
+Hillsdale College Turf Building 10 Year Runoff Volume:	75,283 cf
+Hillsdale College Turf Building 100 Year Runoff Volume:	94,876 cf
10 Year Runoff Volume Head Drain Time:	90.30 hrs
100 Year Runoff Volume Head Drain Time:	105.30 hrs



EXISTING OUTLET CONTROL STRUCTURE DETAIL

(REFERENCED FROM 2023 HILLSDALE ACADEMY ADDITION PLANS AND UPDATED FOR PROPOSED MODIFICATIONS TO STRUCTURE)

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

STORM WATER MANAGEMENT PLAN AND CALCULATIONS

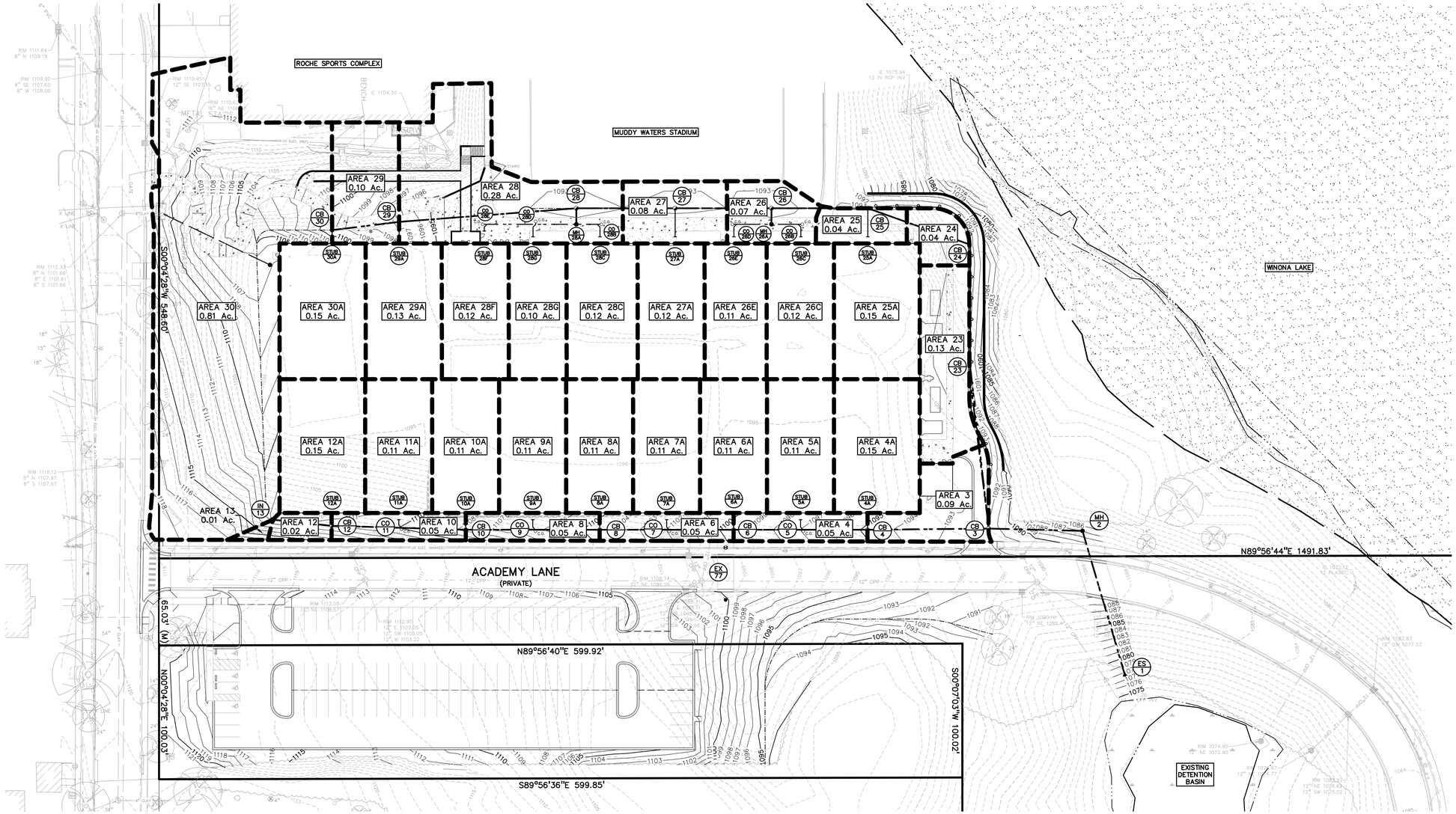
PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:

C-8.1

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-8.1) DRAIN-26-0130.dwg PLOT DATE: 9/4/2026 11:21 AM BY: Justin Poulsen



STORM SEWER SYSTEM DESIGN

Region Michigan
Location: Hillsdale

T = 10 (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	0.01	0.30	0.00	0.00	0.01	10.00	4.70	0.01	3.56	12	44	1.00	0.00%	4.5	0.2	1107.25	1106.80	1111.00	1110.75	1106.45	1106.00	3.39	3.58	3.75	3.95
12	11	0.02	0.30	0.01	0.15	0.17	10.20	4.67	0.69	6.17	12	50	3.00	0.04%	7.9	0.1	1106.80	1105.30	1110.75	1110.00	1106.00	1104.50	3.58	4.33	3.95	4.70
11	10	0.00	0.00	0.00	0.26	0.29	10.30	4.65	1.19	6.17	12	50	3.00	0.11%	7.9	0.1	1105.30	1103.80	1110.00	1107.75	1104.50	1103.00	4.33	3.58	4.70	3.95
10	9	0.05	0.30	0.01	0.38	0.45	10.40	4.64	1.76	6.17	12	50	3.00	0.24%	7.9	0.1	1103.80	1102.30	1107.75	1106.25	1103.00	1101.50	3.58	3.58	3.95	3.95
9	8	0.00	0.00	0.00	0.49	0.56	10.50	4.62	2.26	6.17	12	50	3.00	0.40%	7.9	0.1	1102.30	1100.80	1106.25	1104.50	1101.50	1100.00	3.58	3.33	3.95	3.70
8	7	0.05	0.31	0.01	0.61	0.73	10.60	4.61	2.82	7.13	12	50	4.00	0.63%	9.1	0.1	1099.80	1097.80	1104.50	1102.00	1099.00	1097.00	4.33	3.83	4.70	4.20
7	6	0.00	0.00	0.00	0.72	0.84	10.70	4.59	3.31	7.13	12	50	4.00	0.87%	9.1	0.1	1097.80	1095.80	1102.00	1099.50	1097.00	1095.00	3.83	3.33	4.20	3.70
6	5	0.05	0.30	0.01	0.84	1.00	10.80	4.58	3.87	7.13	12	50	4.00	1.18%	9.1	0.1	1094.30	1092.30	1099.50	1097.00	1093.50	1091.50	4.83	4.33	5.20	4.70
5	4	0.00	0.00	0.00	0.95	1.12	10.90	4.56	4.35	7.13	12	50	4.00	1.49%	9.1	0.1	1092.30	1090.30	1097.00	1094.75	1091.50	1089.50	4.33	4.08	4.70	4.45
4	3	0.05	0.30	0.01	1.11	1.31	11.00	4.55	5.04	7.13	12	91	4.00	2.00%	9.1	0.2	1088.82	1085.20	1094.75	1091.25	1088.02	1084.40	5.56	5.68	5.93	6.05
3	2	0.00	0.00	0.00	2.94	3.98	11.20	4.52	13.27	14.85	18	70	2.00	1.60%	8.4	0.1	1084.10	1082.70	1091.25	1086.92	1082.90	1081.50	6.64	3.71	7.15	4.22
2	1	0.00	0.00	0.00	2.94	3.98	11.30	4.50	13.27	15.76	18	113	2.25	1.60%	8.9	0.2	1081.24	1078.70	1086.92	1082.29	1080.04	1077.50	5.17	3.08	5.68	3.59
4A	4	0.15	0.95	0.14	0.14	0.15	10.00	4.70	0.66	1.25	6	8	5.00	1.37%	6.4	0.0	1090.10	1089.72	1095.20	1094.75	1089.70	1089.32	4.88	4.80	5.10	5.03
5A	5	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1092.53	1092.30	1097.45	1097.00	1092.13	1091.75	4.70	4.62	4.92	4.70
6A	6	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1095.58	1095.20	1099.95	1099.50	1095.18	1094.80	4.15	4.07	4.37	4.30
7A	7	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1098.03	1097.80	1102.45	1102.00	1097.63	1097.25	4.20	4.12	4.42	4.20
8A	8	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1100.18	1099.80	1104.95	1104.50	1099.78	1099.40	4.55	4.47	4.77	4.70
9A	9	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1102.53	1102.30	1106.70	1106.25	1102.13	1101.75	3.95	3.87	4.17	3.95
10A	10	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1104.18	1103.80	1108.20	1107.75	1103.78	1103.40	3.80	3.72	4.02	3.95
11A	11	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	6	5.00	0.84%	6.4	0.0	1105.45	1105.30	1110.55	1110.00	1105.05	1104.75	4.87	4.62	5.09	4.70
12A	12	0.15	0.95	0.14	0.14	0.15	10.00	4.70	0.66	1.25	6	4	5.00	1.37%	6.4	0.0	1107.03	1106.80	1110.99	1110.75	1106.63	1106.40	3.73	3.72	3.96	3.95

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
30	29	0.81	0.38	0.31	0.45	0.96	10.00	4.70	2.13	6.17	12	50	3.00	0.36%	7.9	0.1	1094.38	1092.87	1099.00	1096.50	1093.58	1092.07	4.25	3.27	4.62	3.63
29	28	0.10	0.63	0.07	0.64	1.20	10.10	4.68	3.01	6.17	12	133	3.00	0.72%	7.9	0.3	1092.87	1088.89	1096.50	1092.50	1092.07	1088.09	3.27	3.25	3.63	3.61
28	27	0.28	0.64	0.18	1.15	1.82	10.40	4.64	5.32	6.21	18	74	0.35	0.26%	3.5	0.3	1088.89	1088.63	1092.50	1092.50	1087.69	1087.43	3.11	3.36	3.81	3.87
27	26	0.08	0.53	0.04	1.30	2.02	10.70	4.59	5.97	7.05	18	72	0.45	0.32%	4.0	0.3	1088.63	1088.30	1092.50	1092.50	1087.43	1087.10	3.36	3.69	3.87	4.20
26	25	0.07	0.45	0.03	1.54	2.31	11.00	4.55	7.02	8.14	18	72	0.60	0.45%	4.6	0.3	1088.30	1087.87	1092.50	1092.60	1087.10	1086.67	3.69	4.22	4.20	4.73
25	24	0.04	0.49	0.02	1.71	2.50	11.30	4.50	7.69	8.79	18	80	0.70	0.54%	5.0	0.3	1087.67	1087.11	1092.60	1092.00	1086.47	1085.91	4.42	4.39	4.93	4.89
24	23	0.04	0.75	0.03	1.73	2.54	11.60	4.46	7.74	8.79	18	86	0.70	0.54%	5.0	0.3	1086.91	1086.31	1092.00	1091.25	1085.71	1085.11	4.59	4.43	5.09	4.94
23	3	0.13	0.73	0.09	1.83	2.66	11.90	4.42	8.08	9.10	18	127	0.75	0.59%	5.2	0.4	1086.31	1085.35	1091.25	1091.25	1085.11	1084.15	4.43	5.39	4.94	5.90
25A	25	0.15	0.95	0.14	0.14	0.15	10.00	4.70	0.67	1.25	6	21	5.00	1.41%	6.4	0.1	1089.24	1088.17	1093.65	1092.60	1088.84	1087.77	4.19	4.20	4.41	4.43
26C	26B	0.12	0.95	0.11	0.11	0.12	10.00	4.70	0.52	0.97	6	9	3.00	0.87%	5.0	0.0	1089.30	1089.02	1093.79	1093.39	1088.90	1088.62	4.27	4.15	4.50	4.37
26B	26A	0.00	0.00	0.00	0.11	0.12	10.00	4.70	0.52	0.97	6	22	3.00	0.87%	5.0	0.1	1089.02	1088.36	1093.39	1093.08	1088.62	1087.96	4.15	4.49	4.37	4.71
26A	26	0.00	0.00	0.00	0.21	0.22	10.10	4.68	1.00	2.52	12	12	0.50	0.08%	3.2	0.1	1088.36	1088.30	1093.08	1092.50	1087.56	1087.50	4.35	3.83	4.71	4.20
26E	26D	0.11	0.95	0.10	0.10	0.11	10.00	4.70	0.48	0.97	6	9	3.00	0.74%	5.0	0.0	1089.48	1089.21	1093.82	1093.63	1089.08	1088.81	4.11	4.19	4.33	4.42
26D	26A	0.00	0.00	0.00	0.10	0.11	10.00	4.70	0.48	0.97	6	28	3.00	0.74%	5.0	0.1	1089.21	1088.36	1093.63	1093.08	1088.81	1087.96	4.19	4.49	4.42	4.71
27A	27	0.12	0.95	0.11	0.11	0.12	10.00	4.70	0.52	0.97	6	21	3.00	0.86%	5.0	0.1	1089.27	1088.63	1093.76	1092.50	1088.87	1088.23	4.27	3.65	4.49	3.87
28C	28B	0.12	0.95	0.12	0.12	0.12	10.00	4.70	0.55	0.97	6	9	3.00	0.97%	5.0	0.0	1089.75	1089.47	1093.90	1093.43	1089.35	1089.07	3.92	3.73	4.15	3.96
28B	28A	0.00	0.00	0.00	0.12	0.12	10.00	4.70	0.55	0.97	6	18	3.00	0.97%	5.0	0.1	1089.47	1088.95	1093.43	1093.07	1089.07	1088.55	3.73	3.90	3.96	4.13
28A	28	0.00	0.00	0.00	0.32	0.34	10.10	4.68	1.51	2.52	12	12	0.50	0.18%	3.2	0.1	1088.95	1088.89	1093.07	1092.50	1088.15	1088.09	3.76	3.25	4.13	3.61
28F	28E	0.12	0.95	0.11	0.11	0.12	10.00	4.70	0.52	0.97	6	5	3.00	0.86%	5.0	0.0	1090.13	1089.98	1093.89	1093.85	1089.73	1089.58	3.54	3.65	3.77	3.88
28E	28D	0.00	0.00	0.00	0.11	0.12	10.00	4.70	0.52	1.48	8	36	1.50	0.19%	4.2	0.1	1089.98	1089.43	1093.85	1093.63	1089.44	1088.90	3.60	3.93	3.88	4.20
28D	28A	0.00	0.00	0.00	0.21	0.22	10.10	4.68	0.97	1.48	8	32	1.50	0.64%	4.2	0.1	1089.43	1088.95	1093.63	1093.07	1088.90	1088.41	3.93	3.86	4.20	4.13
28G	28D	0.10	0.95	0.10	0.10	0.10	10.00	4.70	0.45	0.97	6	9	3.00	0.64%	5.0	0.0	1089.71	1089.43	1093.89	1093.63	1089.31	1089.03	3.96	3.98	4.18	4.20
29A	29	0.13	0.95	0.13	0.13	0.13	10.00	4.70	0.59	1.25	6	11	5.00	1.11%	6.4	0.0	1093.43	1092.87	1097.54	1096.50	1093.03	1092.47	3.88	3.41	4.11	3.63
30A	30	0.15	0.95	0.14	0.14	0.15	10.00	4.70	0.67	1.25	6	5	5.00	1.42%	6.4	0.0	1095.13	1094.88	1100.00	1099.00	1094.73	1094.48	4.65	3.90	4.87	4.12

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NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

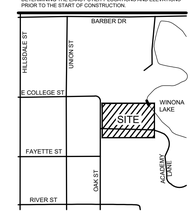
STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER
No. 45998
LICENSED PROFESSIONAL ENGINEER

NORTH

0 20 40 80
SCALE: 1" = 40'

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 COMPUTATION IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OF THE INFORMATION THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS
PRELIMINARY BID SET - SITE AND FOUNDATIONS 7-31-26
PLANNING COMMISSION REVIEW 9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
STORM SEWER DRAINAGE PLAN AND DESIGN CALCULATIONS

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-8.2

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 CITY 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, OWNER, CITY AND STATE 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.

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 AND SANITARY SEWER STRUCTURE FRAME AND COVERS INCLUDING CLEAN OUTS
7. WATER DISTRIBUTION SYSTEM PIPING INCLUDING JOINTS
8. WATER DISTRIBUTION SYSTEM STRUCTURES
9. WATER DISTRIBUTION SYSTEM STRUCTURE FRAME AND COVERS
10. WATER DISTRIBUTION SYSTEM SHUT OFF BOXES
11. WATER DISTRIBUTION SYSTEM FIRE HYDRANTS
12. WATER DISTRIBUTION SYSTEM GATE VALVES
13. STORMWATER MANAGEMENT OUTLET CONTROL STRUCTURES INCLUDING COVERS OR GRATES
14. STORMWATER MANAGEMENT OUTLET SEDIMENTATION BASIN RISERS INCLUDING GRATES
15. 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.
16. STORMWATER MANAGEMENT OIL/GREASE SEPARATORS
17. 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.
18. 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
19. PAVEMENT UNDERDRAIN 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
20. 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)
21. SITE FENCING AND GATES INCLUDING FOOTINGS
22. SITE RAILINGS INCLUDING FOOTING OR EMBEDMENTS
23. 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:

•• RETAINING WALL MATERIAL AND STRUCTURAL CALCULATIONS

•• 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.

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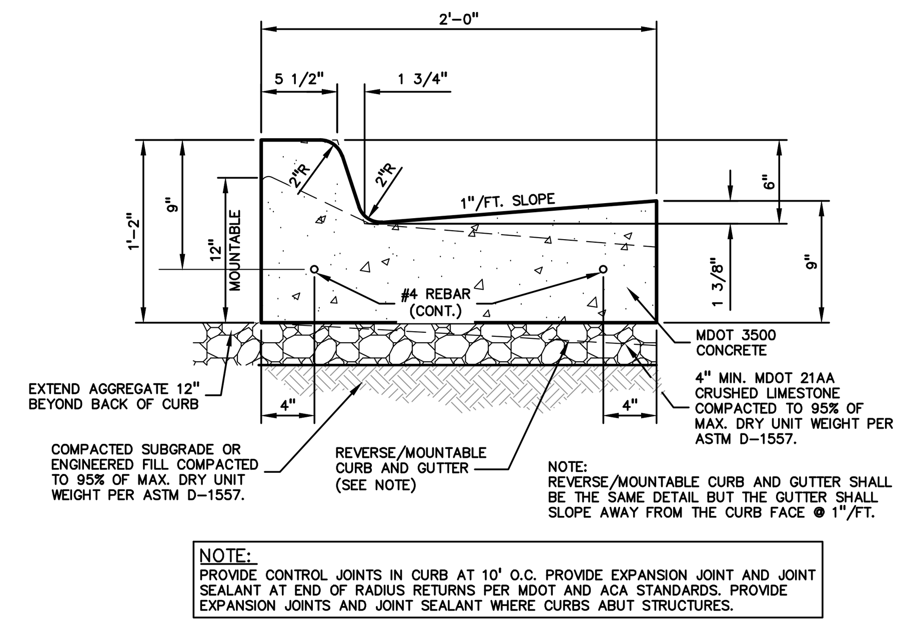
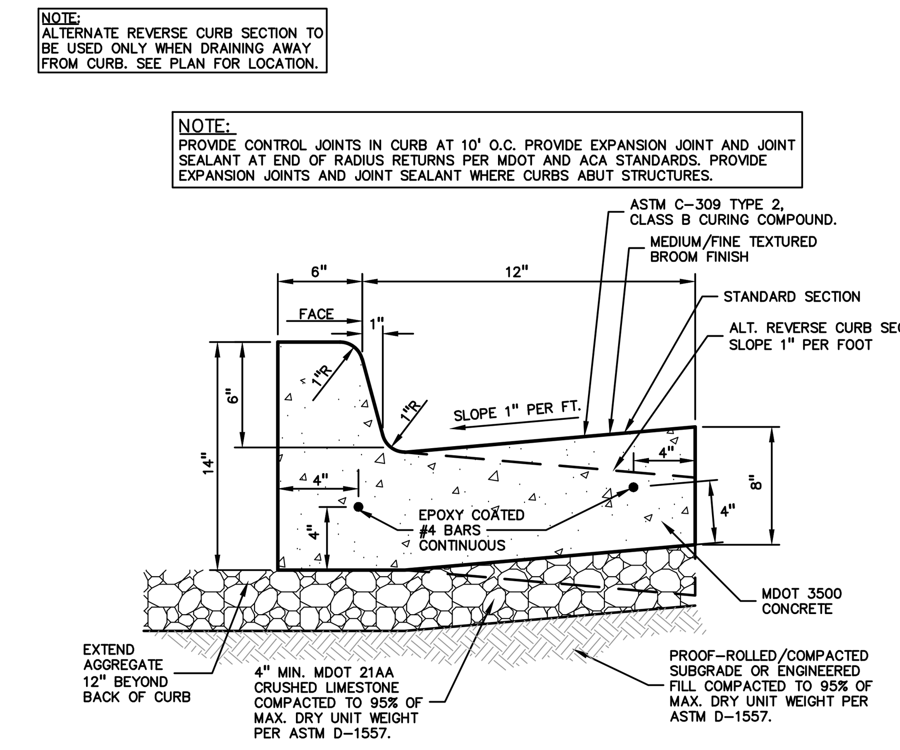
PAVING NOTES:

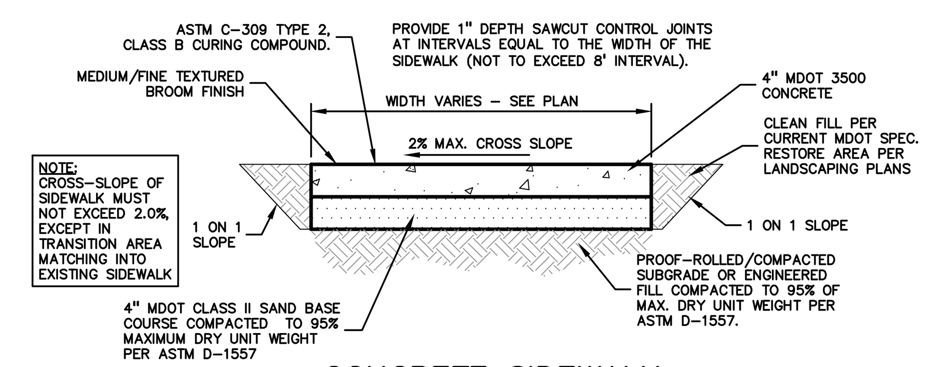
1. IN AREAS WHERE NEW PAVEMENTS ARE BEING CONSTRUCTED, THE TOPSOIL AND SOIL CONTAINING ORGANIC MATTER SHALL BE REMOVED PRIOR TO PAVEMENT CONSTRUCTION.
2. REFER TO ARCHITECTURAL PLANS FOR DETAILS OF FROST SLAB AT EXTERIOR BUILDING DOORS.
3. CONSTRUCTION TRAFFIC SHOULD BE MINIMIZED ON THE NEW PAVEMENT. 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



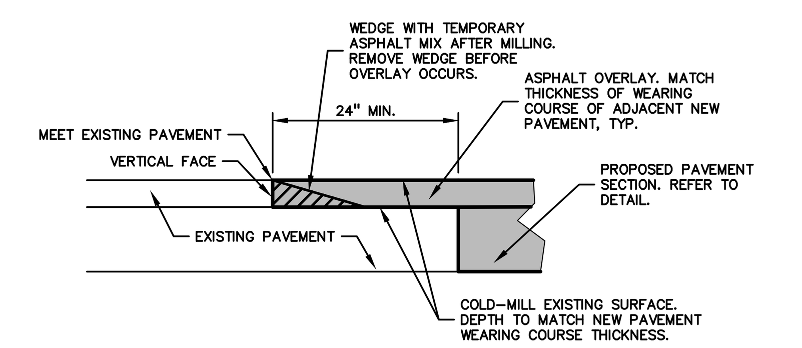
MDOT CURB DETAIL "F-4"
NOT TO SCALE



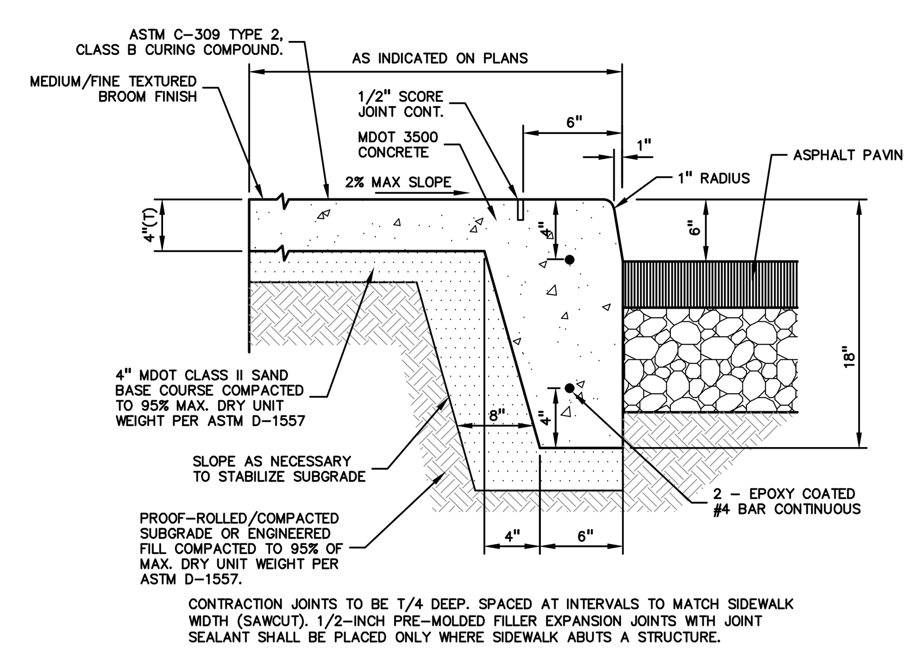
18"x6" STANDARD CONCRETE CURB AND GUTTER
NOT TO SCALE



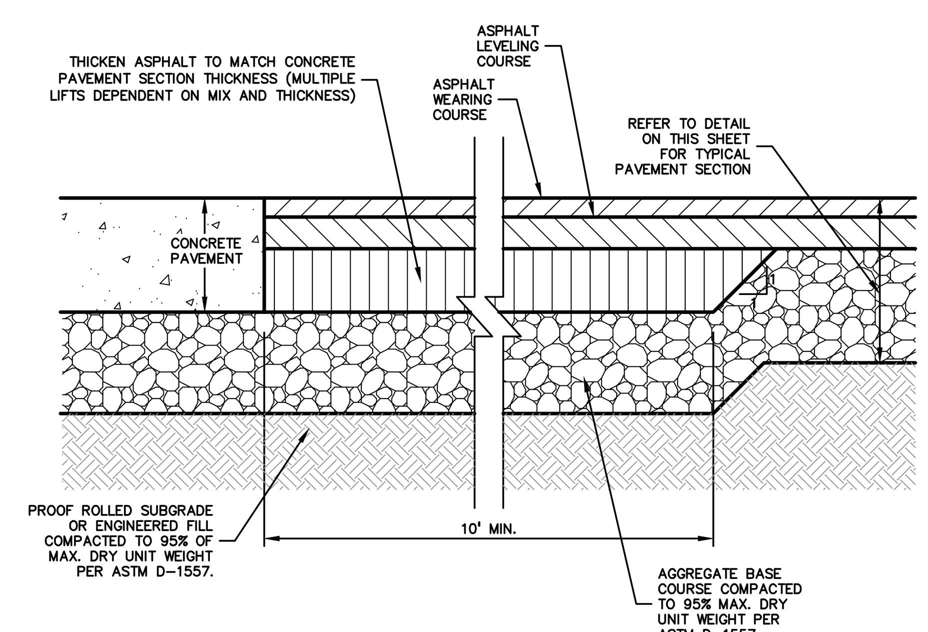
CONCRETE SIDEWALK
NOT TO SCALE



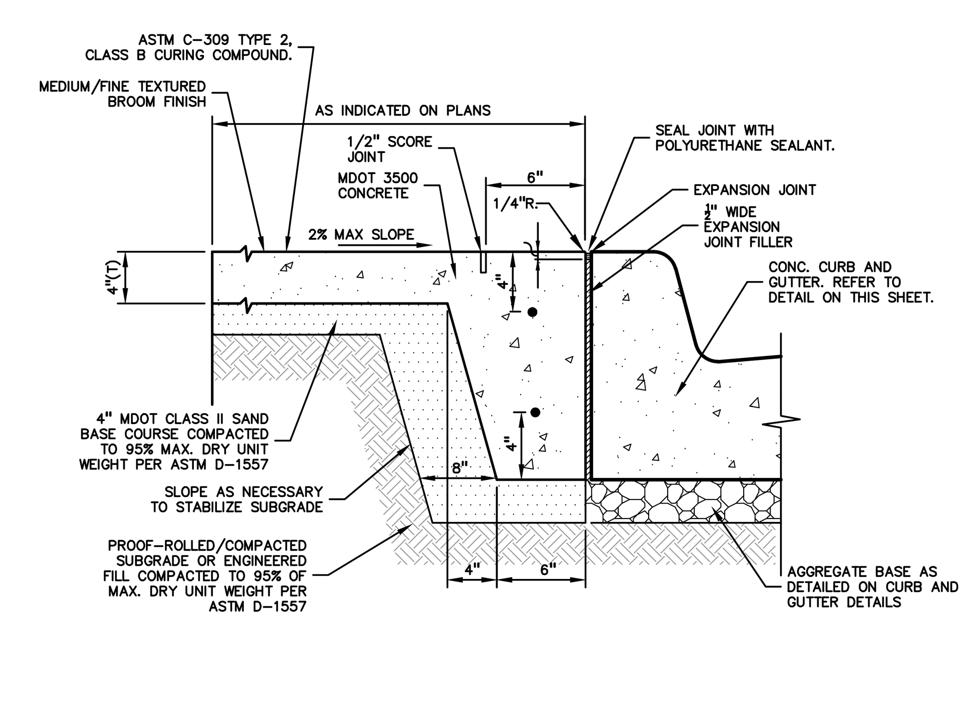
BUTT JOINT DETAIL
NOT TO SCALE



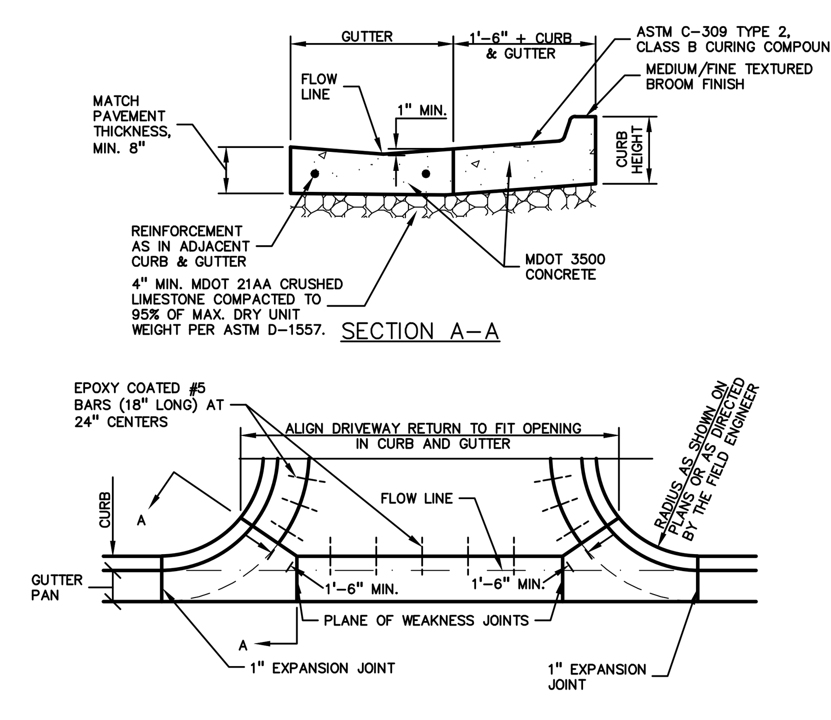
INTEGRAL CURB AND SIDEWALK
NOT TO SCALE



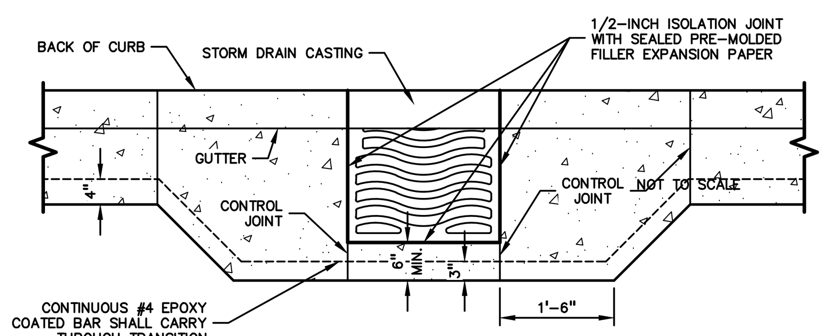
THICKENED EDGE ASPHALT DETAIL
NOT TO SCALE



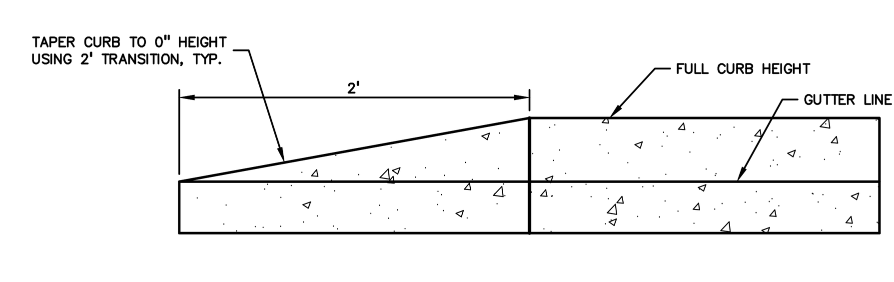
CONCRETE CURB AND GUTTER WITH SIDEWALK
NOT TO SCALE



MDOT DRIVEWAY OPENING-DETAIL 'M'
NOT TO SCALE



GUTTER PAN TRANSITION AT CATCH BASIN



CURB END TRANSITION DETAIL
NOT TO SCALE

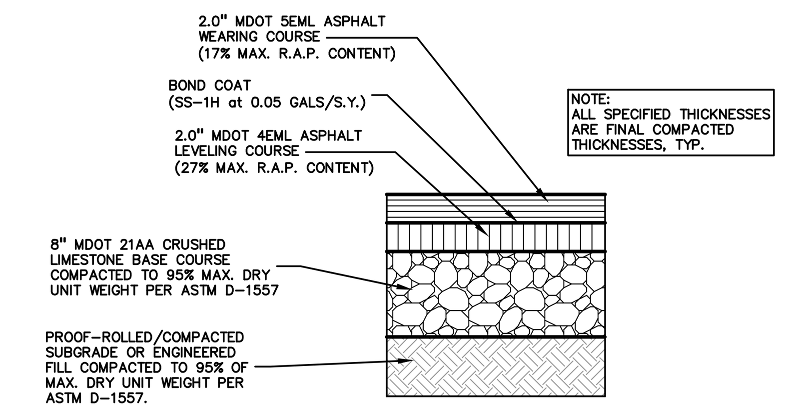
ASPHALT MIX DESIGN CHART					
COMMERCIAL ADT 0-300	COMMERCIAL ADT 301-1000	COMMERCIAL ADT 1001-3400	COMMERCIAL ADT ≥3401	APPLICATION RATE (LB/YD²), MINIMUM - MAXIMUM	COURSE APPLICATION
2EL	2EML	2EMH	2EH	435-550	BASE
3EL	3EML	3EMH	3EH	330-410	BASE AND/OR LEVELING
4EL	4EML	4EMH	4EH	220-275	LEVELING AND/OR 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		

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.

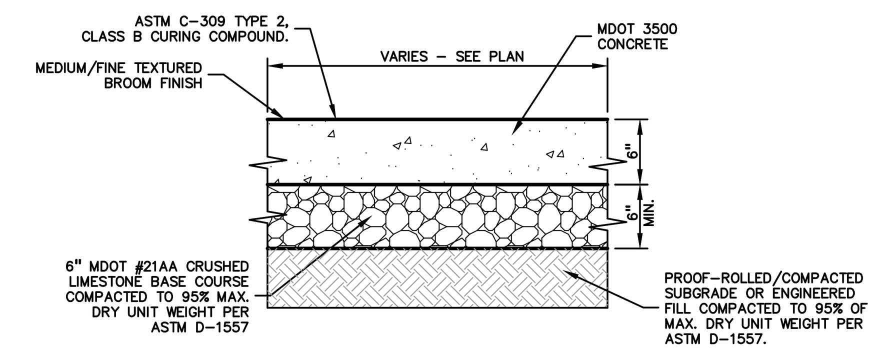
ASPHALT MATERIAL NOTES:
HOT-MIX ASPHALT (HMA) MIXTURES UTILIZING RECYCLED ASPHALT PAVEMENT (RAP) SHALL MEET MDOT SPECIAL PROVISION 12SP501(E). REFER TO ADJACENT CHART FOR BINDER.

IF RAP IS USED IN ANY HMA MIX, THE ASPHALT BINDER GRADE MUST BE ADJUSTED IN ACCORDANCE WITH MDOT TIER 1 OR TIER 2 REQUIREMENTS (RAP BINDER CONTRIBUTION UP TO 27% MAXIMUM). TIER 3 MIXES ARE NOT PERMITTED.

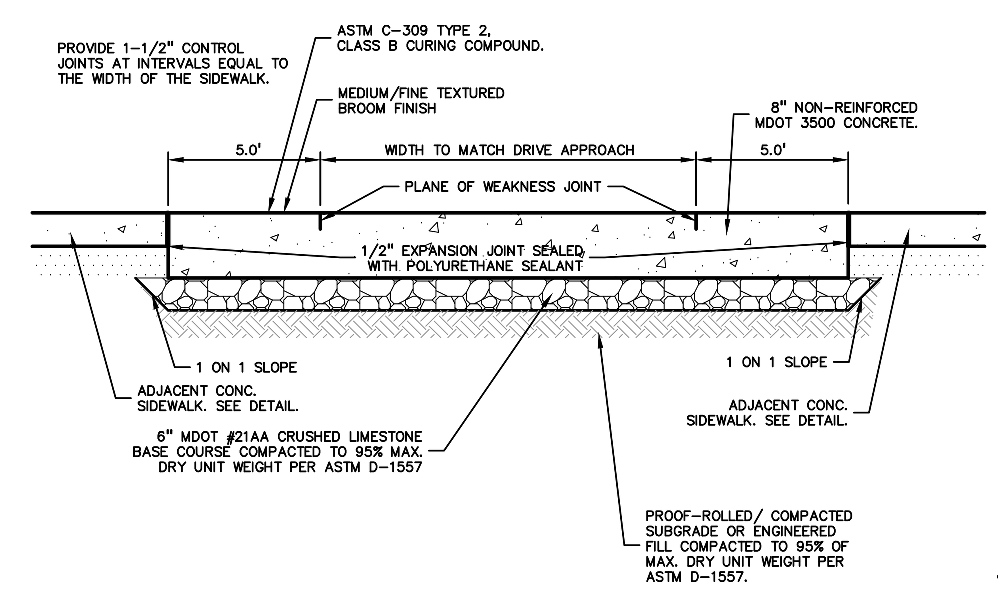
AN APPROVED ASPHALT MIX DESIGN FOR EACH SPECIFIED MIX SHALL BE SUBMITTED TO PEA GROUP FOR REVIEW PRIOR TO CONSTRUCTION.



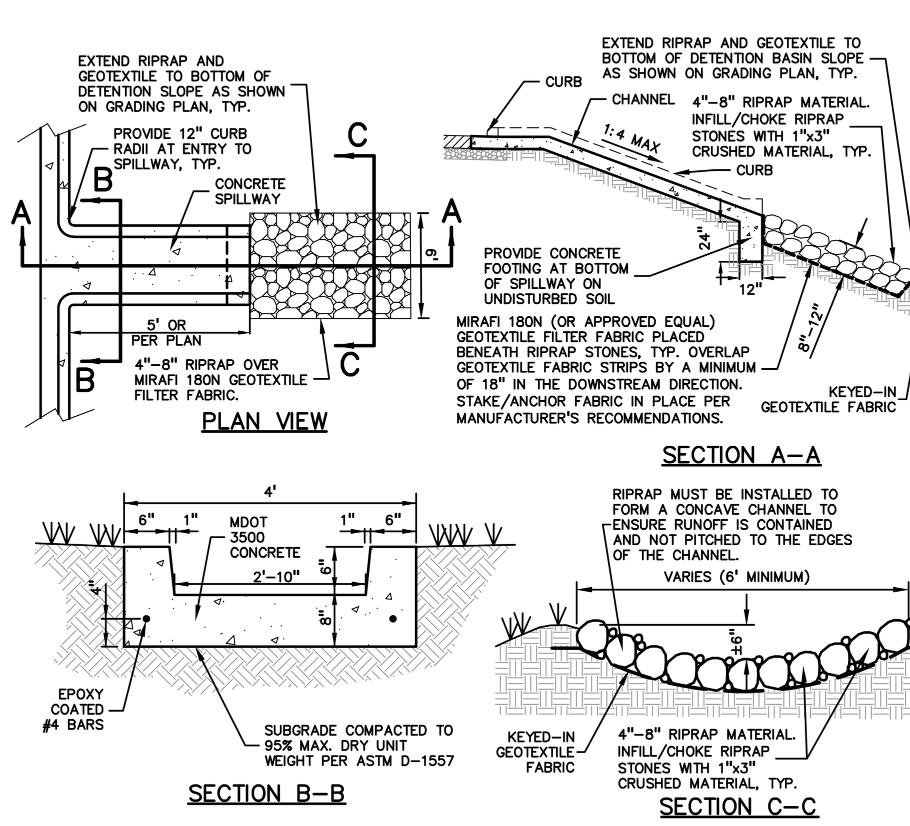
STANDARD DUTY ASPHALT DETAIL
(NOT FOR USE IN THE RIGHT-OF-WAY)
NOT TO SCALE



STANDARD DUTY CONCRETE DETAIL
NOT TO SCALE



THICKENED SIDEWALK AT DRIVE APPROACH DETAIL
NOT TO SCALE



CONCRETE CURB SPILLWAY DETAIL
NOT TO SCALE

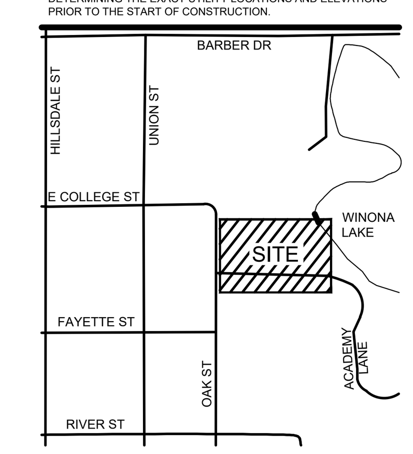
NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER
No. 45598
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 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
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

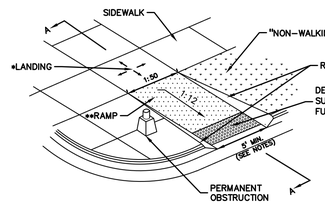
DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS - 1

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-9.1

*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.

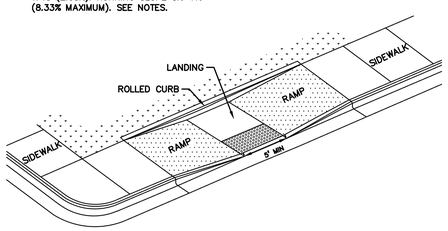


CURB RAMP TYPE R

(ROLLED SIDES)
NOT TO SCALE

*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 P1

(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR
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.

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.

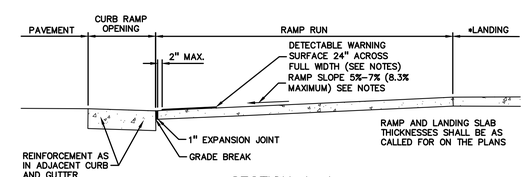
RAMP NOTES

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

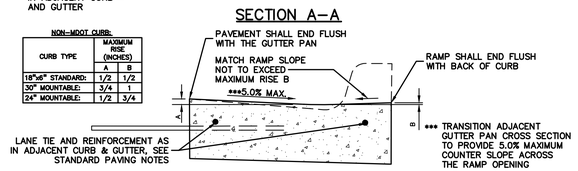
FOR CURB TYPES SEE STANDARD PLAN R–30–SERIES

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

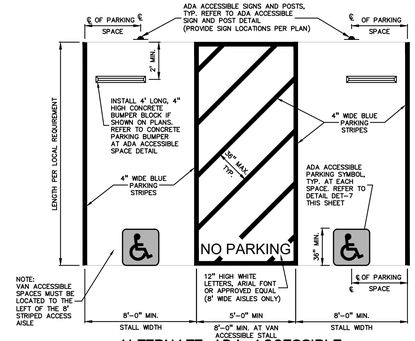


SECTION A–A



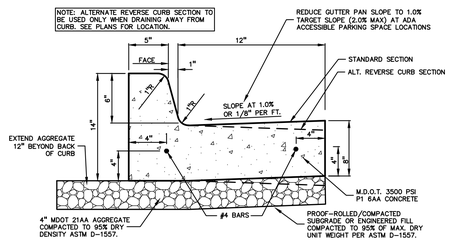
SECTION THROUGH CURB RAMP OPENING

(TYPICAL ALL RAMP TYPES)
NOT TO SCALE

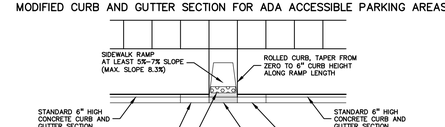


ALTERNATE ADA ACCESSIBLE PARKING STALL DETAIL

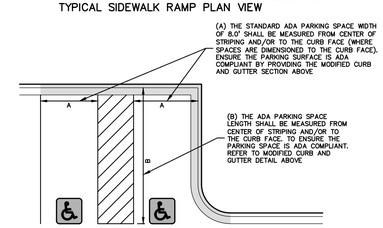
NOT TO SCALE



MODIFIED CURB AND GUTTER SECTION FOR ADA ACCESSIBLE PARKING AREAS



TYPICAL SIDEWALK RAMP PLAN VIEW



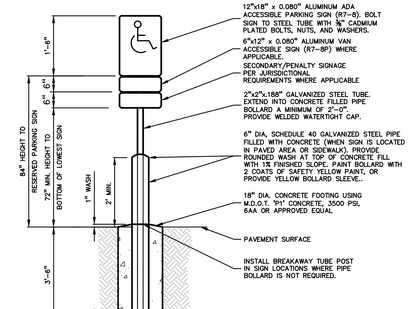
TYPICAL ADA ACCESSIBLE PARKING SPACES

MODIFIED 18"x6" CONCRETE CURB AND GUTTER DETAIL TO BE USED IN ADA ACCESSIBLE AREAS

NOT TO SCALE

ADA ACCESSIBLE SIGN NOTES:

1. ONE SIGN IS REQUIRED AT EACH ADA ACCESSIBLE PARKING SPACE.
2. ALL SIGNS SHALL COMPLY WITH THE LATEST STANDARDS OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD).
3. WHEN TWO ADA ACCESSIBLE PARKING SPACES ARE ADJACENT AND FACING EACH OTHER, TWO SIGNS ARE REQUIRED, BUT CAN BE MOUNTED ON THE SAME POST.
4. SIGN POSTS SHALL BE 2" NOM. SQUARE 14–GAUGE GALVANIZED STEEL TUBE WITH 7/16" HOLES AT 1" CENTERS. POSTS SHALL TELESCOPE INSIDE ANCHOR POSTS A MINIMUM OF 12".
5. ANCHOR POSTS SHALL BE 2.25" NOM. SQUARE 12–GAUGE GALVANIZED STEEL POST, A MINIMUM OF 3 FEET LONG.
6. IF THESE NOTES AND DETAILS CONFLICT WITH LOCAL CODES AND ORDINANCES, THE STRICTER REQUIREMENT SHOULD BE USED.
7. ALTERNATE MATERIALS MAY BE USED IF IN COMPLIANCE WITH ADA GUIDELINES AND LOCAL REQUIREMENTS.



ADA ACCESSIBLE SIGN AND POST DETAIL

NOT TO SCALE

12" x 18" (R7–8) GREEN BORDER AND LEGEND WHITE SYMBOL, BLUE BACKGROUND. REFLECTORIZED

ADA ACCESSIBLE PARKING SIGN DETAIL

NOT TO SCALE

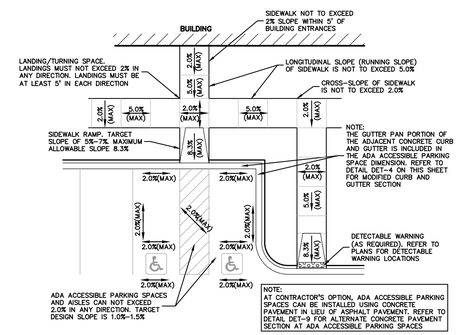
12" x 18" (R7–8) GREEN BORDER AND LEGEND WHITE SYMBOL, BLUE BACKGROUND. REFLECTORIZED

NOTE: MAY ONLY BE USED AT 11' WIDE SPACES LOCATED ON THE LEFT SIDE OF A 5' WIDE AISLE, OR 8' WIDE SPACES LOCATED TO THE LEFT OF 8' WIDE AISLES

6" x 12" (R7–8P) GREEN BORDER AND LEGEND REFLECTORIZED

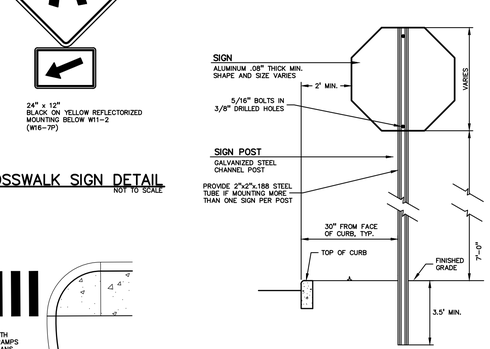
VAN ACCESSIBLE PARKING SIGN DETAIL

NOT TO SCALE



PARKING SPACE GRADING INFORMATION

NOT TO SCALE

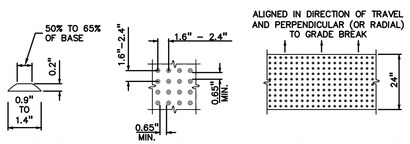


CROSSWALK SIGN DETAIL

NOT TO SCALE

SIGN AND POST INSTALLATION IN LANDSCAPED AREAS

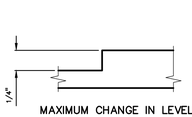
NOT TO SCALE



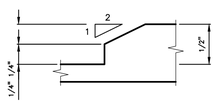
DOME SECTION DOME SPACING DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOT TO SCALE



MAXIMUM CHANGE IN LEVEL

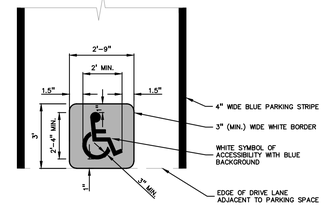


MAXIMUM BEVELED CHANGE IN LEVEL

BARRIER FREE SURFACE CHANGE IN LEVEL TOLERANCE

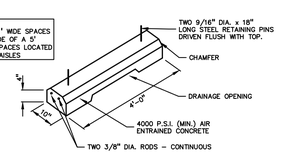
NOT TO SCALE

NOTES:
1. THE ADA ACCESSIBLE PARKING SYMBOL SHALL BE LOCATED IN THE CENTER OF THE PARKING SPACE AND ALONG THE EDGE OF THE ADJACENT DRIVE AISLE, TYP.
2. PARKING SYMBOL STRIPING SHALL HAVE A MINIMUM WIDTH OF 3"
3. CONTRACTOR SHALL ADHERE TO LOCAL/STATE JURISDICTIONAL REQUIREMENTS FOR ALL PAINTING WITHIN ACCESSIBLE SPACES.



ADA ACCESSIBLE PARKING SYMBOL DETAIL (INTERNATIONAL SYMBOL OF ACCESSIBILITY)

NOT TO SCALE



CONCRETE PARKING BUMPER AT ADA ACCESSIBLE SPACES

NOT TO SCALE

NOT FOR CONSTRUCTION

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STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45998 LICENSED PROFESSIONAL ENGINEER

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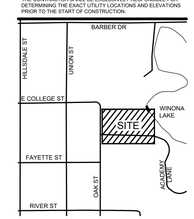


CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE: JULY 31, 2026

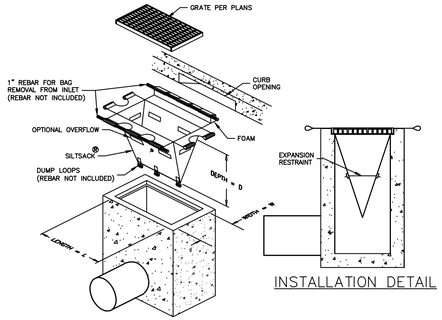
PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS - 2

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

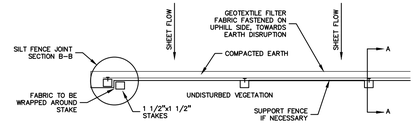
DRAWING NUMBER:
C-9.2

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-9.1) DETAILS-26-0130.dwg PLOT DATE: 9/4/2026 11:21 AM BY: Justin Paulsen

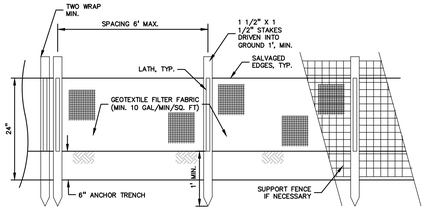


INSTALLATION DETAIL

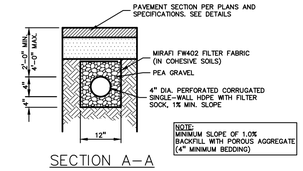
'SILTSACK' DETAIL
NOT TO SCALE



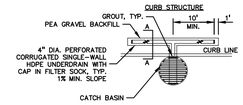
PLAN VIEW



FRONT VIEW

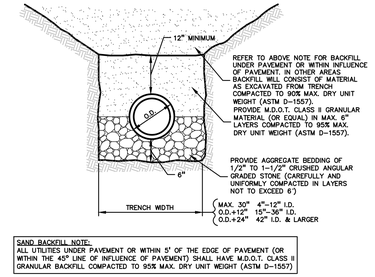


SECTION A-A

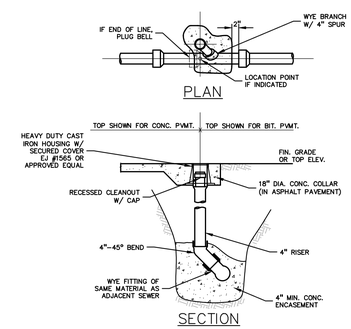


PLAN VIEW – CURB STRUCTURE

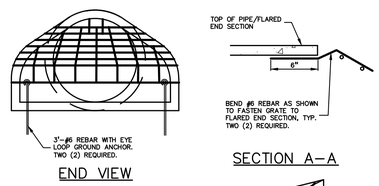
PAVEMENT INLET/CATCH BASIN UNDERDRAIN DETAIL
NOT TO SCALE



STANDARD PIPE BEDDING FOR RIGID PIPE
NOT TO SCALE

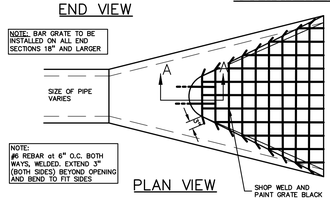


CLEANOUT
NOT TO SCALE



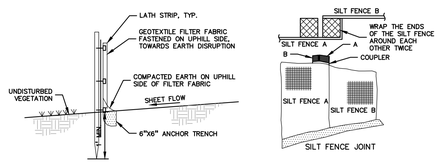
END VIEW

SECTION A-A



PLAN VIEW

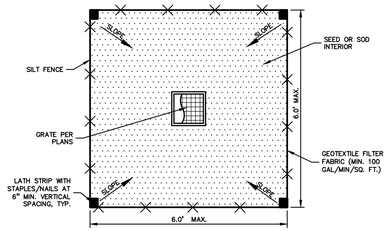
BAR GRATE DETAIL
NOT TO SCALE



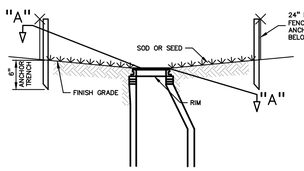
SECTION A-A

SECTION B-B

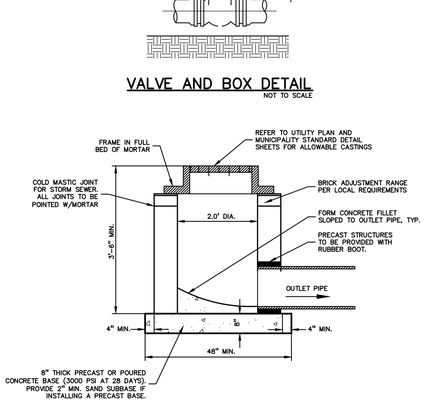
SILT FENCE DETAIL
NOT TO SCALE



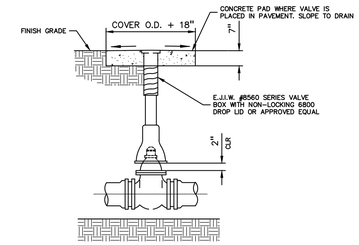
SECTION "A-A"



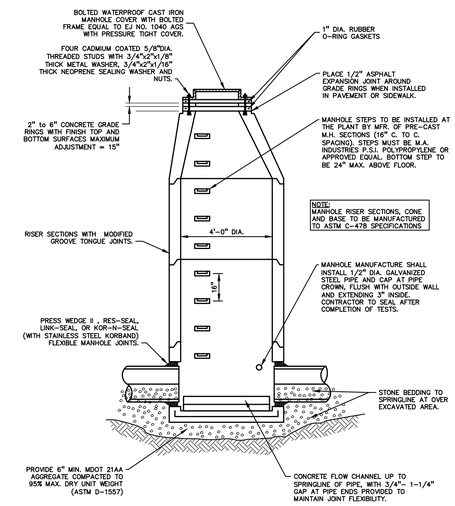
PROFILE VIEW IN UNPAVED AREA SILT FENCE DRAINAGE GUARD DETAIL
NOT TO SCALE



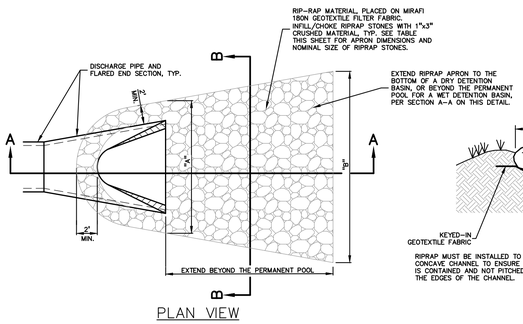
2' DIA. INLET DETAIL
NOT TO SCALE



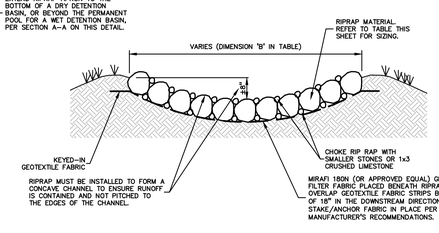
VALVE AND BOX DETAIL
NOT TO SCALE



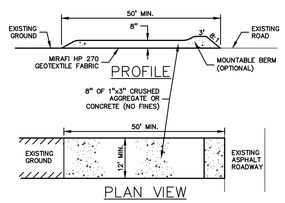
STANDARD SANITARY SEWER MANHOLE DETAIL (ON 8" THROUGH 24" DIAMETER)
NOT TO SCALE



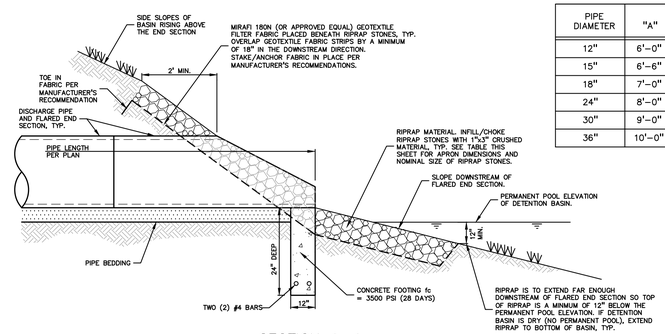
PLAN VIEW



SECTION B-B



TEMPORARY STONE ACCESS DRIVE: TRACKING MAT DETAIL AT CONSTRUCTION ENTRANCE
NOT TO SCALE

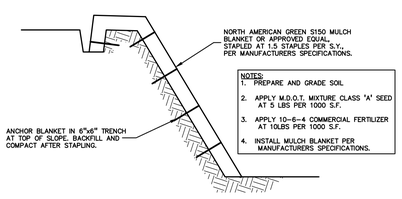


SECTION A-A

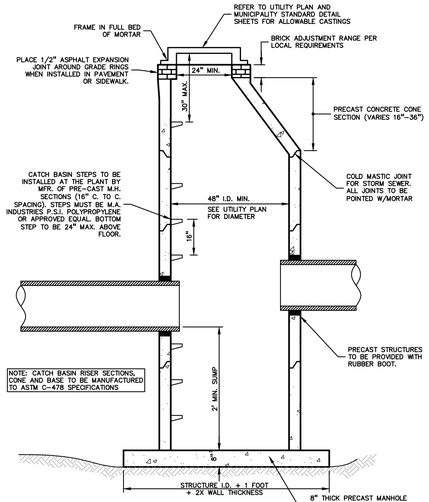
PIPE DIAMETER	"A"	"B"	RIPRAP THICKNESS (MIN).	RIPRAP SIZE
12"	6'-0"	8'-0"	8"	4"-8" APPROX.
15"	6'-6"	9'-0"	8"	4"-8" APPROX.
18"	7'-0"	10'-0"	10"	6"-12" APPROX.
24"	8'-0"	11'-6"	12"	8"-15" APPROX.
30"	9'-0"	13'-0"	12"	8"-15" APPROX.
36"	10'-0"	15'-0"	12"	8"-15" APPROX.

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.

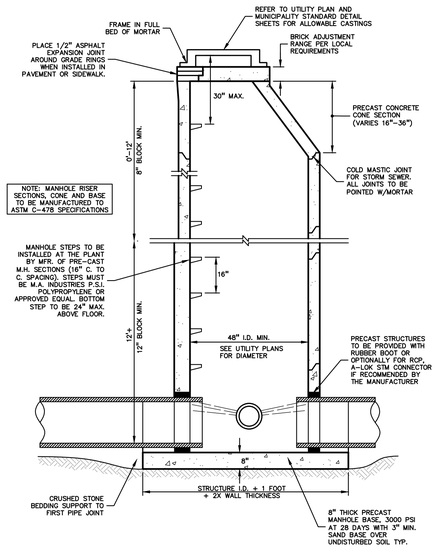
FLARED END SECTION AND RIPRAP DETAIL FOR DETENTION BASIN OUTLET
NOT TO SCALE



TEMPORARY EROSION BLANKET DETAIL
NOT TO SCALE



STANDARD CATCH BASIN DETAIL
NOT TO SCALE



STANDARD STORM MANHOLE DETAIL
NOT TO SCALE

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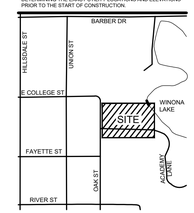

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CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

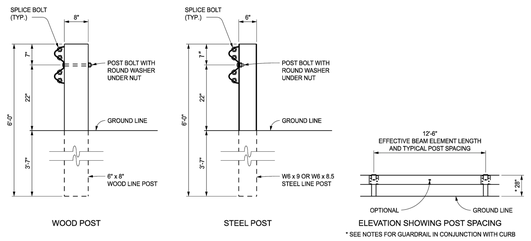
ORIGINAL ISSUE DATE: JULY 31, 2026

DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS - 3

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-9.3

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG_CONSTRUCTION\C-9.1 DETAILS-26-0130.dwg PLOT DATE: 9/4/2026 11:21 AM BY: Justin Paulsen



WOOD POST

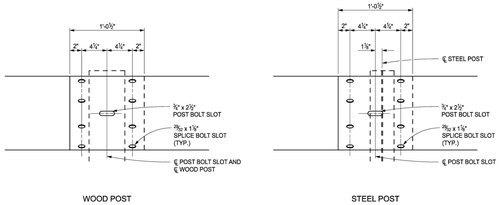
STEEL POST

ELEVATION SHOWING POST SPACING

* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE A

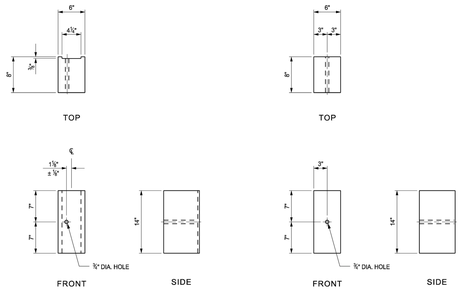
APPROVED BY: ____ DIRECTOR, BUREAU OF FIELD SERVICES	MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D		
APPROVED BY: ____ DIRECTOR, BUREAU OF DEVELOPMENT	DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 1 OF 16



WOOD POST

STEEL POST

BEAM ELEMENT SPLICE DETAILS



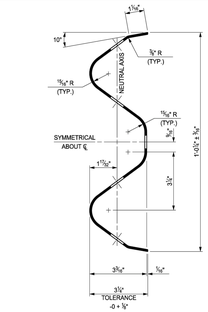
FOR USE ON STEEL POSTS

FOR USE ON WOOD POSTS

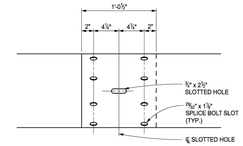
(SEE NOTES ON SHEET 16 OF 16)

WOOD OFFSET BLOCKS FOR GUARDRAIL, TYPE B AND TYPE BD

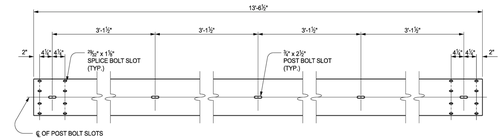
MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D			
DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 3 OF 16	



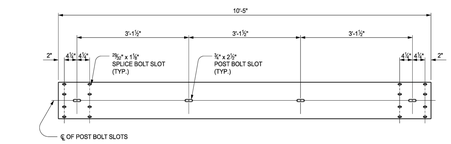
SECTION THROUGH BEAM ELEMENT



BEAM ELEMENT SPLICE DETAILS

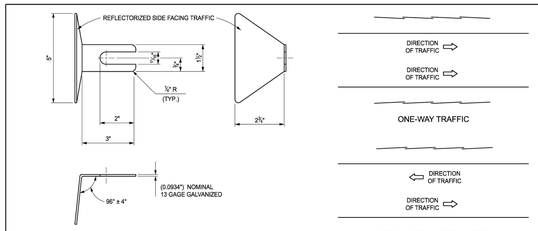


FRONT ELEVATION OF BEAM ELEMENT



FRONT ELEVATION OF MGS (9'-4½") BEAM ELEMENT

MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D			
DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 11 OF 16	

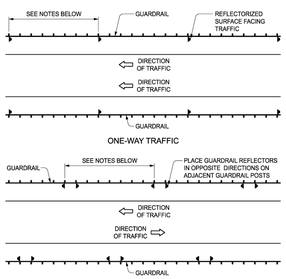


GUARDRAIL REFLECTOR

ONE-WAY TRAFFIC

TWO-WAY TRAFFIC

DIRECTION OF RAIL LAP



ONE-WAY TRAFFIC

TWO-WAY TRAFFIC

PLACEMENT OF GUARDRAIL REFLECTORS

NOTES GOVERNING THE USE OF GUARDRAIL REFLECTORS

1. GUARDRAIL REFLECTORS SHALL BE USED ON ALL STANDARD GUARDRAIL RUNS, REGARDLESS OF ROADWAY LIGHTING.
2. GUARDRAIL REFLECTORS ARE TO BE SPACED AT THE FOLLOWING INTERVALS:
   a) 50'-0" ON TANGENT SECTIONS AND CURVES WITH A RADIUS OF 1150' OR MORE.
   b) 25'-0" ON CURVES WITH A RADIUS LESS THAN 1150'.
3. FOR GUARDRAIL REFLECTOR PLACEMENT ON APPROACH TERMINALS, SEE THE APPROPRIATE GUARDRAIL APPROACH TERMINAL STANDARD PLAN.
4. A GUARDRAIL REFLECTOR IS TO BE PLACED ON THE SECOND POST FROM THE GUARDRAIL DEPARTING TERMINAL.
5. ON GUARDRAIL, TYPE T AND TYPE TD GUARDRAIL REFLECTORS ARE TO BE PLACED ON THE UPPER POST BOLT.
6. GUARDRAIL REFLECTORS SHALL MATCH COLOR OF EDGE LINE.

NOTES:

DETAILS SPECIFIED ON THIS STANDARD ARE ACCORDING TO THE AASHTO-AGC-ARTBA JOINT COMMITTEE, TASK FORCE 13 PUBLICATION TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE."

BEAM ELEMENTS SHALL BE SHOP BENT TO PLAN RADIUS FOR CURVE RADII 150' OR LESS. A TAG IDENTIFYING THE CURVATURE OF THE SHOP BENT SECTION WILL BE REQUIRED FOR EACH CURVED ELEMENT.

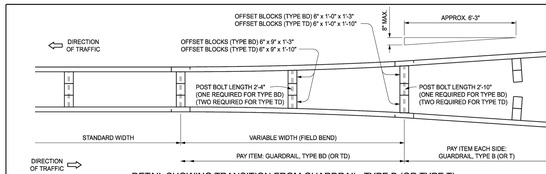
SEE STANDARD PLAN R-62-SERIES OR R-63-SERIES FOR GUARDRAIL APPROACH TERMINALS, STANDARD PLAN R-66-SERIES FOR GUARDRAIL DEPARTING TERMINALS AND STANDARD PLAN R-67-SERIES FOR GUARDRAIL ANCHORAGE, BRIDGE.

WOOD POSTS WITH ¾" BEVELS AT THE TOP MAY BE USED IN LIEU OF WOOD POSTS WITHOUT BEVELS SPECIFIED. THE LENGTH, WIDTH AND DEPTH OF THE POST SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT.

WOOD OFFSET BLOCKS WITH ¾" BEVELS AT THE TOP AND BOTTOM OR A 1" BEVELED TOP MAY BE USED IN LIEU OF WOOD BLOCKS WITHOUT BEVELS SPECIFIED. THE LENGTH (FRONT AND BACK FACE), WIDTH AND DEPTH OF THE BLOCK SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT AND COMPATIBILITY WITH POST HOLES.

WHEN THE FACE OF GUARDRAIL IS PLACED FLUSH WITH FACE OF CURB, THE RAIL HEIGHT SHOULD BE MEASURED FROM THE FRONT EDGE OF THE GUTTER PAN, WHICH IS THE POINT ON THE GUTTER PAN THAT IS CLOSEST TO THE EDGE OF THE TRAVELED LANE. WHEN THE FACE OF THE GUARDRAIL PANEL IS LOCATED BEHIND THE CURB THE RAIL HEIGHT SHOULD BE MEASURED FROM THE GROUND JUST IN FRONT OF THE GUARDRAIL.

MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D			
DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 16 OF 16	



DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD)

POST BOLTS, SPLICE BOLTS AND WASHERS AT BEAM ELEMENT SPLICE POSTS AND AT INTERMEDIATE POSTS

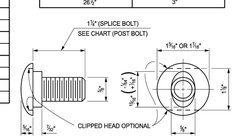
GUARDRAIL TYPE	POST	OFFSET BLOCK	POST BOLTS NO. REQ'D	POST BOLTS LENGTH	SPLICE BOLTS (1¼" LONG) (NO. REQ'D)		WASHERS (ROUND) (NO. REQ'D)
A	WOOD	N/A	1	9½"	8	NOT NEEDED AT INTERMEDIATE POSTS	1
	STEEL	N/A	1	2"			1
B	WOOD	WOOD	1	18"	8		1
	STEEL	WOOD	1	9½"			1
BD	WOOD	WOOD	1	* 26½"	16		——
	STEEL	WOOD	2	9½"			2
T	WOOD	WOOD	2	18"	12		2
	STEEL	WOOD	2	9½"			2
TD	WOOD	WOOD	2	* 26½"	24		——
	STEEL	WOOD	4	9½"			4

THRIE BEAM TRANSITIONS REQUIRE 20 SPLICE BOLTS EACH (12 ON TYPE T END AND 8 ON TYPE B END).

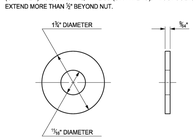
* EXCEPT AS SPECIFIED ON DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD). POST BOLTS SHALL NOT EXTEND MORE THAN ½" BEYOND NUT.

MINIMUM POST BOLT THREAD LENGTH

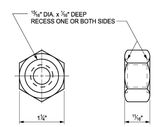
BOLT LENGTH	MINIMUM THREAD LENGTH
9½"	1⅝"
18"	2½"
26½"	3"



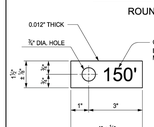
SPLICE BOLT AND POST BOLT



ROUND WASHER



NUT



METAL TAG

FOR CURVED GUARDRAIL WITH RADIUS OF 150' OR LESS

MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D			
DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 14 OF 16	

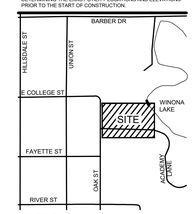
S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-9.1) DETAILS-26-0130.dwg PLOT DATE:9/4/2026 11:21 AM BY: Justin Paulsen

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45998 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 REPRESENTATION 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

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

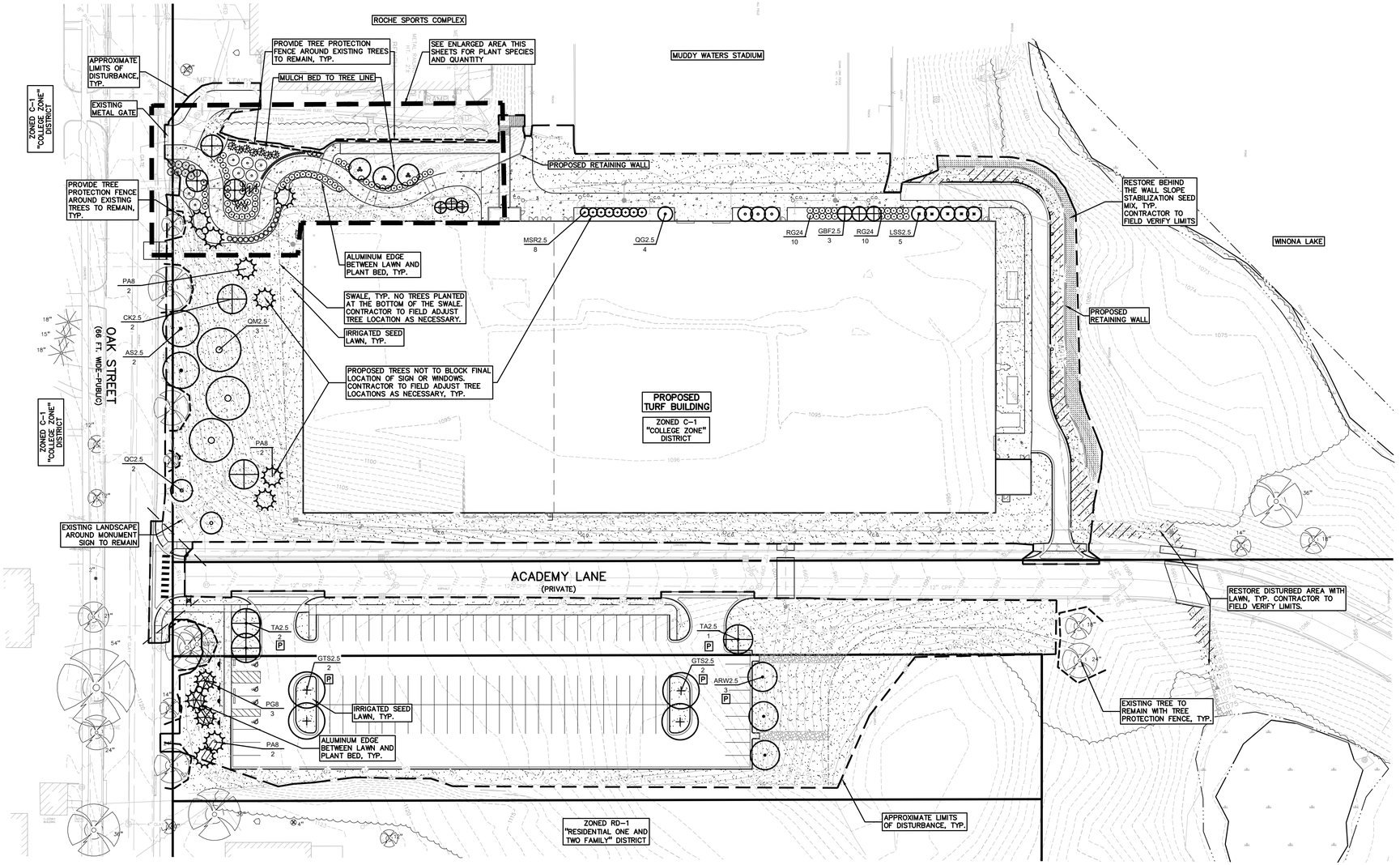
CONSTRUCTION NOTES AND DETAILS - 4

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:

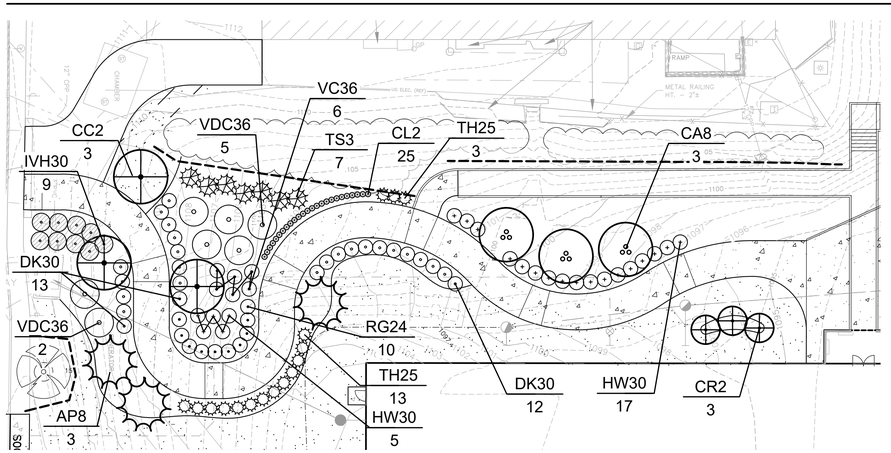
C-9.4

NOT FOR CONSTRUCTION



OVERALL PLAN

SCALE: 1" = 40' 0"



ENLARGED SECTION OF PATH TO DOOR

SCALE: 1" = 40' 0"

KEY:

= PROPOSED DECIDUOUS TREES

= PROPOSED EVERGREEN TREES

= PROPOSED EVERGREEN SHRUBS

= PROPOSED DECIDUOUS SHRUBS SHRUBS

= PROPOSED ORNAMENTAL GRASSES

= EXISTING TREES TO REMAIN WITH TREE PROTECTION FENCE

= IRRIGATED SEED LAWN

= RESTORE WITH NON IRRIGATED LAWN

= SLOPE STABILIZATION SEED MIX SEE DETAIL SHT. L-2.0

LETTER DESIGNATION FOR ORDINANCE REQUIRED MATERIAL

P = PARKING LOT TREES

SEE SHEET L-2.0 FOR PLANTING NOTES AND LANDSCAPE DETAILS
SEE SHEET L-2.1 AND L-2.2 FOR LANDSCAPE SPECIFICATIONS
IRRIGATION PLAN BY OTHERS, ALL LAWN AND PLANT BED AREAS

LANDSCAPE CALCULATIONS:

PER CITY OF HILLSDALE ZONING ORDINANCE,
ZONED C-1 (COLLEGE ZONE DISTRICT)
ADJACENT ZONING:
NORTH C-1 (COLLEGE ZONE DISTRICT)
EAST:B-3 (GENERAL BUSINESS)
SOUTH:RD-1 (RESIDENTIAL ONE AND TWO FAMILY)
WEST:C-1 (COLLEGE ZONE DISTRICT)

LANDSCAPED (SEC.36-150 (a)(2))

REQUIRED:
25% OF THE SITE SHALL BE LANDSCAPED AREA
249,023 SF - 96,090 - 36,220 = 116,713 X .25 = 29,178 SF LANDSCAPE AREA
REQUIRED
(LIMITS OF DISTURBANCE - BUILDING FOOTPRINT AND PARKING AREA)
1 EVERGREEN TREE OR SHRUB PER 1,000 SF
29,178 / 1,000 = 29 EVERGREN TREES OR SHRUBS
1 SMALL OR LARGE DECIDUOUS TREE PER 2,000 SF
29,178 / 2,000 = 15 DECIDUOUS TREES
30% OF LANDSCAPING BETWEEN ROADWAY AND BUILDING
SEE SHEET C-1.0 FOR OPEN SPACE CALCULATION

PROVIDED:
69,048 X 0.39 = 26,928 SF LANDSCAPED AREA
12 EVG TREES, 17 ORN TREES, 18 DEC TREES , 122 SHRUBS AND 25 PERENNIALS

PARKING LOT LANDSCAPING (SEC 36-150 (c)) = P
REQUIRED:
IF 16+ SPACES, PERIMETER LANDSCAPING REQUIRED.

1 TREE FOR EVERY 10 PARKING SPACES
97 / 10 = 9.7 = 10 PARKING LOT TREES

MINIMUM 3-FOOT WIDE LANDSCAPE STRIPS BETWEEN PAVED PARKING SURFACES AND BUILDINGS AND PROPERTY LINES WHERE POSSIBLE.

PROVIDED: 10 PARKING LOT TREES

FRONT YARD LANDSCAPING (SEC 36-150 (e))
REQUIRED:
GREENBELT WITH A MINIMUM WIDTH OF THE REQUIRED ZONING FRONT YARD SETBACK (40 FEET) REQUIRED.

SITE LANDSCAPING:
IN ADDITION TO GREENBELT AND PARKING LOT LANDSCAPING - 10% OF SITE AREA (EXCLUDING R.O.W.) SHALL BE LANDSCAPED. STORM DRAINAGE AREAS MAY BE INCLUDED BUT NOT COUNT FOR MORE THAN 5% OF SITE AREA.

ARTICLE X - PLANT MATERIAL SEC 36.-712
(a) PLANT MATERIAL NO CLOSER THAN 4 FEET FROM PROPERTY LINE
(b) ROWS OF PLANTS SHALL BE STAGGERED

PLANT SCHEDULE L-1.0

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	DESIGNATION	REMARKS
DECIDUOUS TREES								
ARW2.5	3	ACER RUBRUM 'BRANDYWINE'	BRANDYWINE RED MAPLE	2.5" CAL.	B&B	PER PLAN	NATIVE	
AS2.5	2	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2.5" CAL.	B&B	PER PLAN	NATIVE	
CK2.5	2	CLADRASTIS KENTUKEA	AMERICAN YELLOWWOOD	2.5" CAL.	B&B	PER PLAN	NATIVE	
GBF2.5	3	GINKGO BILOBA 'FASTIGIATA'	FASTIGIATE MAIDENHAIR TREE	2.5" CAL.	B&B	PER PLAN	NON-NATIVE	
GTS2.5	4	GLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE'	SUNBURST HONEY LOCUST	2.5" CAL.	B&B	PER PLAN	NATIVE	
LSS2.5	5	LIQUIDAMBAR STYRACIFLUA 'SLENDER SILHOUETTE'	SLENDER SILHOUETTE SWEET GUM	2.5" CAL.	B&B	PER PLAN	NON-NATIVE	
QM2.5	3	QUERCUS MACROCARPA	BURR OAK	2.5" CAL.	B&B	PER PLAN	NATIVE	
QC2.5	2	QUERCUS ROBUR X ALBA 'CRIMSCHMIDT'	CRIMSON SPIRE™ OAK	2.5" CAL.	B&B	PER PLAN	NATIVE	
QG2.5	4	QUERCUS ROBUR X ALBA 'JFS-KW2QX'	SKINNY GENES® OAK	2.5" CAL.	B&B	PER PLAN	NATIVE	
TA2.5	3	TILIA AMERICANA 'AMERICAN SENTRY'	AMERICAN SENTRY LINDEN	2.5" CAL.	B&B	PER PLAN	NATIVE	
	31	SUBTOTAL:						
EVERGREEN TREES								
AP8	3	ABIES BALSAMEA PHANEROLEPIS	CANAAN BALSAM FIR	8` HT.	B&B	PER PLAN	NATIVE	
PA8	6	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	
	12	SUBTOTAL:						
ORNAMENTAL TREES								
CC2	3	CERCIS CANADENSIS	EASTERN REDBUD	2" CAL.	B&B	PER PLAN	NATIVE	
CR2	3	CERCIS CANADENSIS 'JN2'	THE RISING SUN™ EASTERN REDBUD	2" CAL.	B&B	PER PLAN	NATIVE	
CA8	3	CORNUS ALTERNIFOLIA	PAGODA DOGWOOD	8` HT.	B&B	PER PLAN	NATIVE	
MSR2.5	8	MALUS X 'JFS KW213MX'	RASPBERRY SPEAR® CRABAPPLE	2.5" CAL.	B&B	PER PLAN	NON-NATIVE	
	17	SUBTOTAL:						
SHRUBS								
DK30	25	DIERVILLA X 'G2X88544'	KODIAK® ORANGE DIERVILLA	30"HT.	B&B OR CONT.	4` O.C.	NON-NATIVE	
HW30	22	HYDRANGEA QUERCIFOLIA 'PEE WEE'	PEE WEE OAKLEAF HYDRANGEA	30" HT.	B&B OR CONT.	4` O.C.	ADAPTED NATIVE	
IVH30	9	ITEA VIRGINICA 'HENRY'S GARNET'	HENRY'S GARNET SWEETSPIRE	30"HT.	B&B OR CONT.	5` O.C.	NON-NATIVE	
RG24	30	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	24" SPRD	B&B OR CONT.	4` O.C.	NATIVE	
TH25	16	THUJA OCCIDENTALIS 'HETZ MIDGET'	HETZ MIDGET ARBORVITAE	24" HT.	B&B OR CONT.	4` O.C.	NATIVE	
TS3	7	THUJA STANDISHII X PLICATA 'STEEPLECHASE'	STEEPLECHASE ARBORVITAE	5` HT.	B&B	8` O.C.	ADAPTED NATIVE	
VC36	6	VIBURNUM CARLESII 'COMPACTUM'	COMPACT KOREANSPICE VIBURNUM	36" HT.	B&B OR CONT.	4` O.C.	NON-NATIVE	
VDC36	7	VIBURNUM DENTATUM 'CHICAGO LUSTRE'	CHICAGO LUSTRE VIBURNUM	36" HT.	B&B OR CONT.	8` O.C.	NATIVE	
	122	SUBTOTAL:						
PERENNIALS								
CL2	25	CHASMANTHIUM LATIFOLIUM	NORTHERN SEA OATS	1 GAL.	POT	18"O.C.	NATIVE	
	25	SUBTOTAL:						

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
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STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 1385
REGISTERED

NORTH

SEE PLAN FOR SCALE

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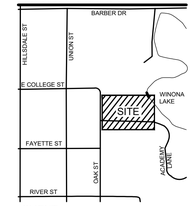

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175 & 201 OAK STREET
HILLSDALE, MICHIGAN

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ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

LANDSCAPE PLAN

PEA JOB NO.	26-0130
P.M.	MM
DN.	CAL
DES.	JLE

DRAWING NUMBER:

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\\peainc\pea\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG_CONSTRUCTION\L-1.0_LANDSCAPE PLAN -26-0130.dwg PLOT DATE:9/4/2026 10:56 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 in 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

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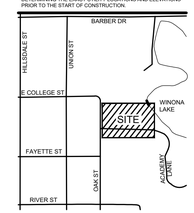
STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 1320
REGISTERED LANDSCAPE ARCHITECT

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 REPRESENTATION 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

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

LANDSCAPE SPECIFICATIONS

PEA JOB NO.	26-0130
P.M.	MM
DN.	CAL
DES.	JLE

DRAWING NUMBER:

L-2.1

NOT FOR CONSTRUCTION

\\peainc\pea\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\L-2.0 LANDSCAPE SPECS= 26-0130.dwg PLOT DATE:9/4/2026 10:41 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 provide 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.

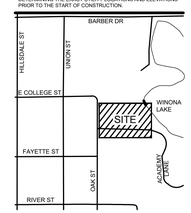
NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 1302
LICENSED
LANDSCAPE ARCHITECT

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 WARRANTIES 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
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
LANDSCAPE SPECIFICATIONS

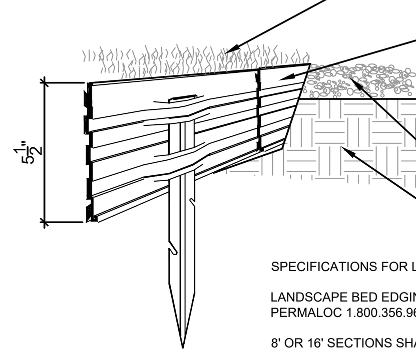
PEA JOB NO.	26-0130
P.M.	MM
DN.	CAL
DES.	JLE

DRAWING NUMBER:
L-2.2

\\peainc\geo\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\LD_CONSTRUCTION\L-2.0 LANDSCAPE SPECS--26-0130.dwg PLOT DATE:9/4/2026 10:41 AM BY:Charlotte L'Esperance

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.



SPECIFICATIONS FOR LANDSCAPE BED EDGING:

LANDSCAPE BED EDGING SHALL BE ALUMINUM AS MANUFACTURED BY PERMALOC 1.800.356.9660

8' OR 16' SECTIONS SHALL BE USED WITH ONE STAKE PER 38" OF EDGING

EDGING SHALL BE 3/16" THICK X 4" DEPTH WHEN ADJ. TO MULCH AND 3/16" THICK X 5½" DEPTH WHEN ADJ. TO ROCK, FINISH: BLACK DURAFLEX MEETING AAMA 2603

STAKE SHALL SECURELY ENGAGE EDGING AND SHALL BE ENTIRELY BELOW TOP SURFACE OF EDGING

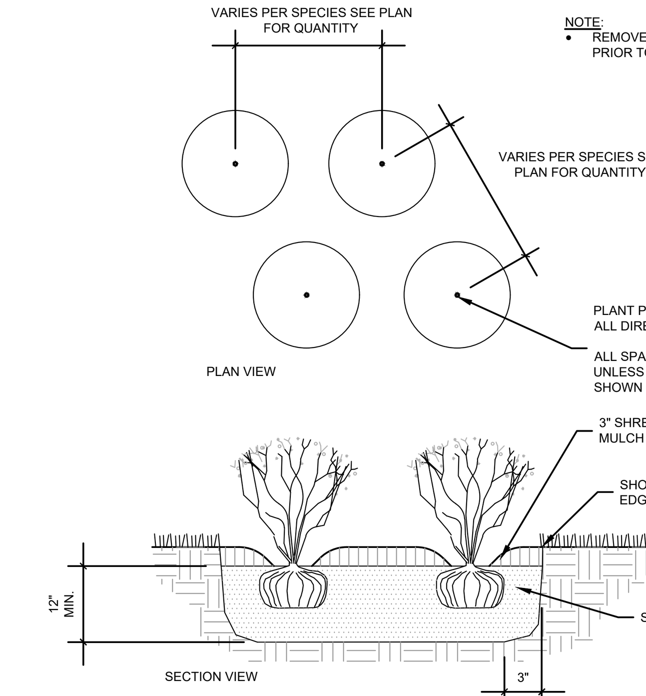
EDGING SHALL HAVE A MINIMUM OF 2" OF INTERLOCKING OVERLAP BETWEEN SECTIONS

INSTALL AS PER MANUFACTURER'S SPECIFICATIONS WITH TOP OF EDGING 1/4"-1/2" ABOVE COMPACTED FINISH GRADE. FINISH GRADE TO BE COMPACTED ON BOTH SIDES OF EDGING TO MAINTAIN STABILITY

6 ALUMINUM EDGE DETAIL

NOT TO SCALE

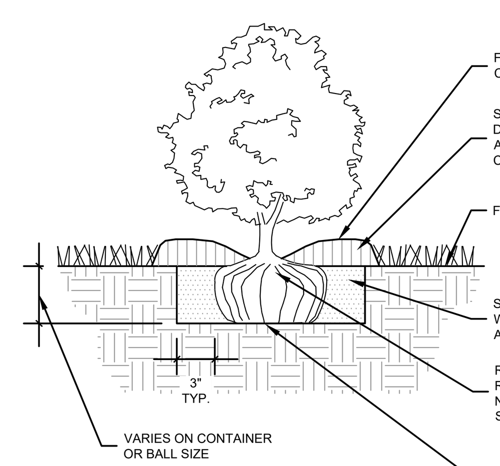
NOTE:
- REMOVE ALL CONTAINERS PRIOR TO PLANTING



3 PERENNIAL PLANTING DETAIL

NOT TO SCALE

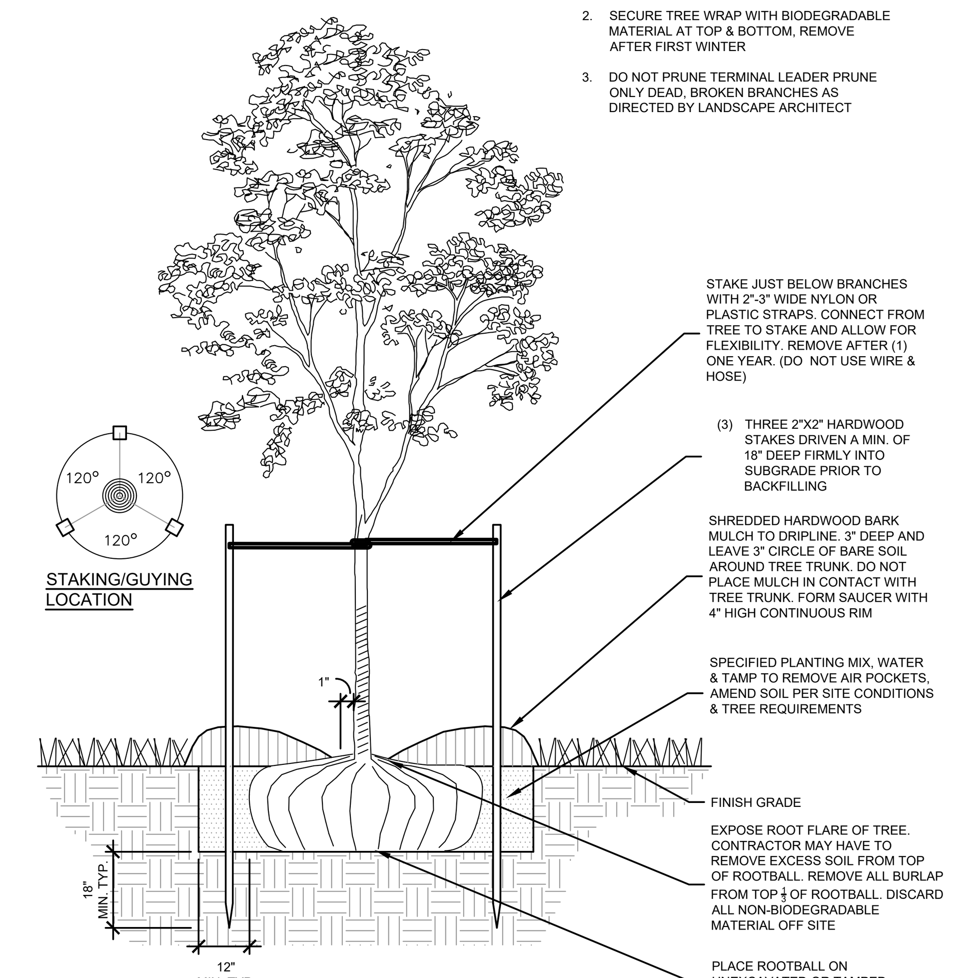
NOTE:
1. PLANT SO THAT TOP OF ROOT BALL IS FLUSH TO GRADE OR 1-2" HIGHER IF IN POORLY DRAINED SOILS
2. DO NOT COVER TOP OF ROOTBALL WITH SOIL



5 SHRUB PLANTING DETAIL

SCALE: 1" = 1'-0"

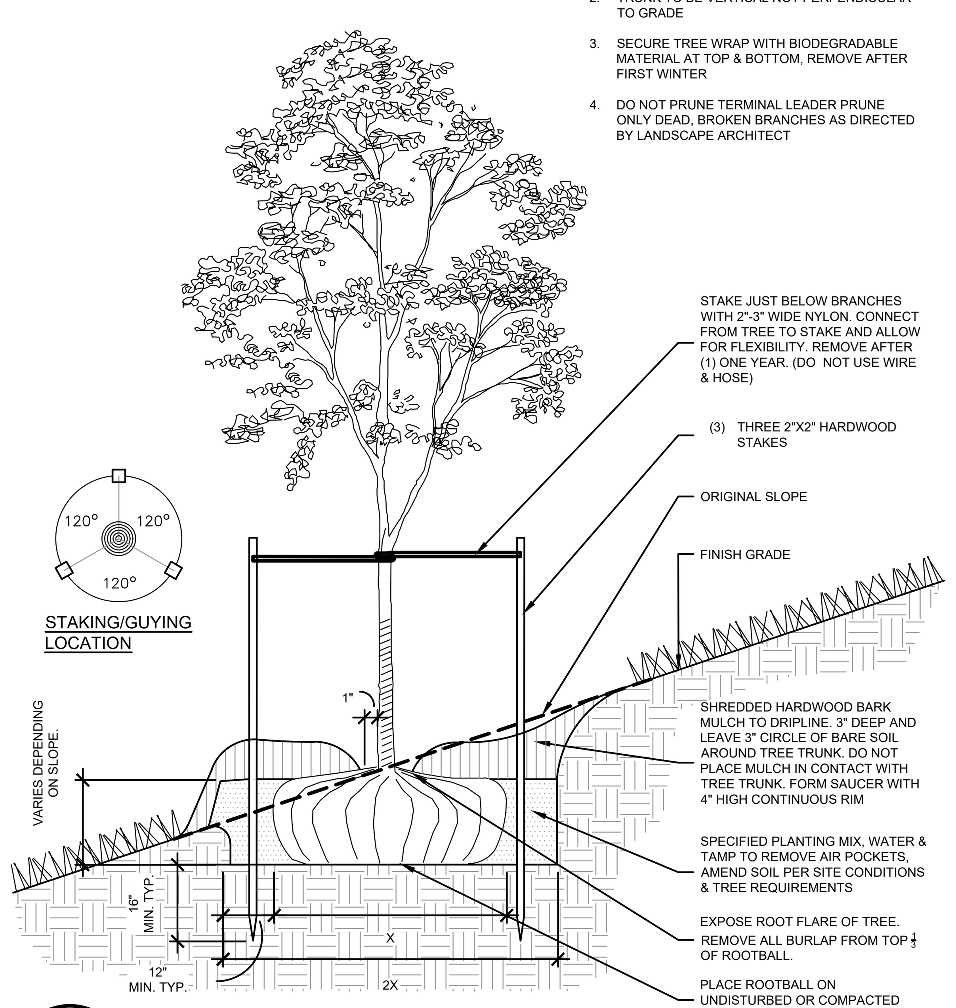
NOTE:
1. PLANT SO THAT THE TREE'S ROOT FLARE (TRUNK FLARE) IS FLUSH WITH GRADE OR 1-2" HIGHER IN POORLY DRAIN SOIL.
2. SECURE TREE WRAP WITH BIODEGRADABLE MATERIAL AT TOP & BOTTOM, REMOVE AFTER FIRST WINTER
3. DO NOT PRUNE TERMINAL LEADER PRUNE ONLY DEAD, BROKEN BRANCHES AS DIRECTED BY LANDSCAPE ARCHITECT



2 DECIDUOUS TREE PLANTING DETAIL

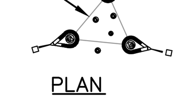
SCALE: 1" = 3'-0"

NOTE:
1. PLANT SO THAT THE TREE'S ROOT FLARE (TRUNK FLARE) IS FLUSH WITH GRADE OR 1-2" HIGHER IN POORLY DRAIN SOIL.
2. TRUNK TO BE VERTICAL NOT PERPENDICULAR TO GRADE
3. SECURE TREE WRAP WITH BIODEGRADABLE MATERIAL AT TOP & BOTTOM, REMOVE AFTER FIRST WINTER
4. DO NOT PRUNE TERMINAL LEADER PRUNE ONLY DEAD, BROKEN BRANCHES AS DIRECTED BY LANDSCAPE ARCHITECT



8 TREE PLANTING ON A SLOPE

SCALE: 1" = 3'-0"

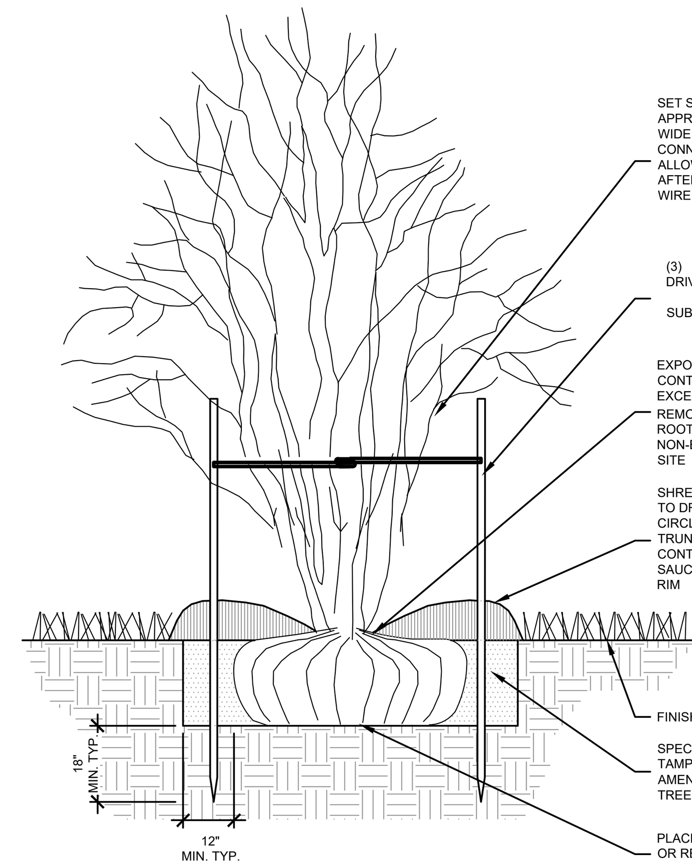


NOTE:
PRUNE ONLY DEAD OR BROKEN BRANCHES AS SPECIFIED OR DIRECTED BY LANDSCAPE ARCHITECT

STAKE 3 LARGEST STEMS, IF TREE HAS MORE THAN 3 LEADERS,

REMOVE ROPES, CABLES, OR TIES FROM AROUND THE BASE OR BRANCHES OF THE TREE.

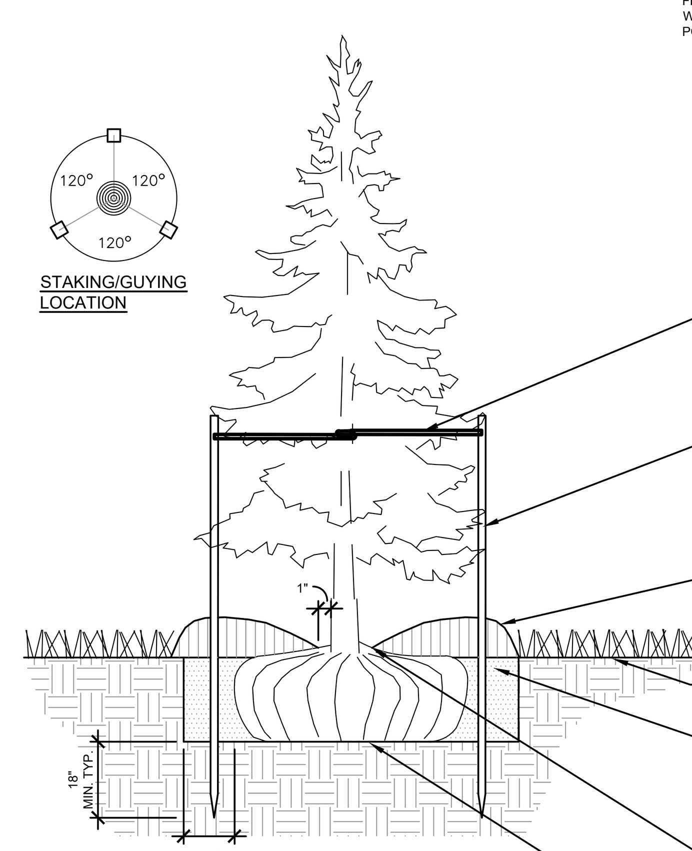
PLANT SO THAT THE TREE'S ROOT FLARE (TRUNK FLARE) IS FLUSH WITH GRADE OR 1-2" HIGHER IN POORLY DRAIN SOIL.



7 MULTI-STEM PLANTING DETAIL

SCALE: 1" = 3'-0"

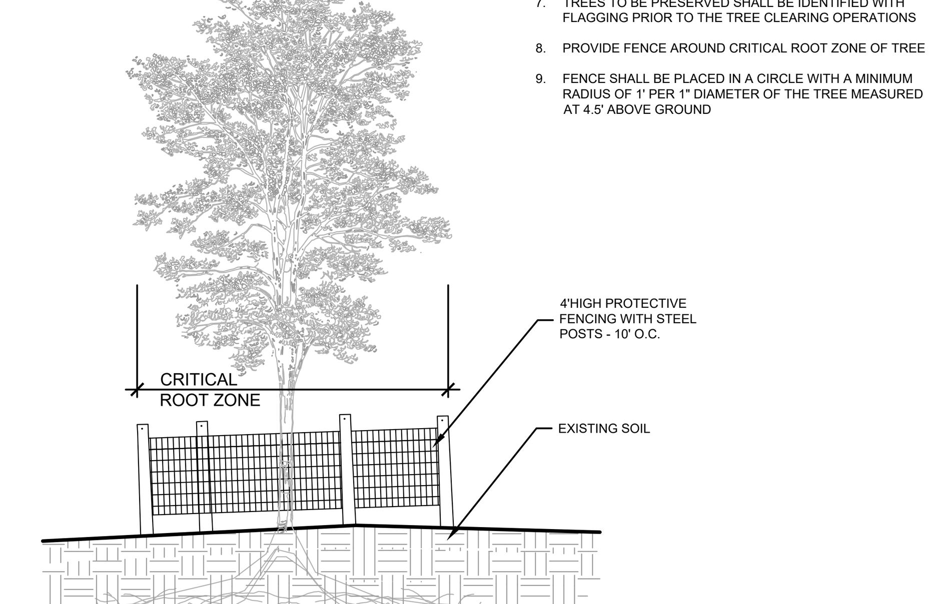
NOTE:
- PLANT SO THAT THE TREE'S ROOT FLARE (TRUNK FLARE) IS FLUSH WITH GRADE OR 1-2" HIGHER IN POORLY DRAIN SOIL.



4 EVERGREEN TREE PLANTING DETAIL

SCALE: 1" = 3'-0"

NOTE:
1. TREE PROTECTION WILL BE ERECTED PRIOR TO START OF CONSTRUCTION ACTIVITIES AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE
2. 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
3. GRADE CHANGES MAY NOT OCCUR WITHIN THE DRIP LINE OF PROTECTED TREES
4. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE
5. 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
6. TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED
7. TREES TO BE PRESERVED SHALL BE IDENTIFIED WITH FLAGGING PRIOR TO THE TREE CLEARING OPERATIONS
8. PROVIDE FENCE AROUND CRITICAL ROOT ZONE OF TREE
9. FENCE SHALL BE PLACED IN A CIRCLE WITH A MINIMUM RADIUS OF 1' PER 1" DIAMETER OF THE TREE MEASURED AT 4.5' ABOVE GROUND



1 TREE PROTECTION DETAIL

NOT TO SCALE

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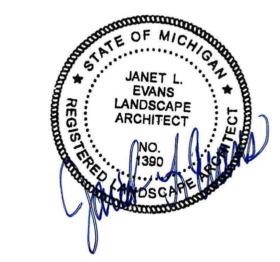
t: 844.813.2949
www.peagroup.com



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

CAUTION!!
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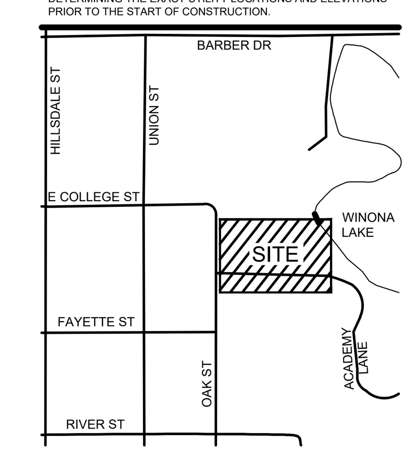


CLIENT

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

LANDSCAPE DETAILS

PEA JOB NO.	26-0130
P.M.	MM
DN.	CAL
DES.	JLE

DRAWING NUMBER:

L-2.0

NOT FOR CONSTRUCTION

\\peainc\pea\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(L-2.0)-LS DETAILS-26-0130.dwg PLOT DATE: 9/4/2026 10:38 AM BY: Charlotte L'Esperance

CONSTRUCTION PLANS

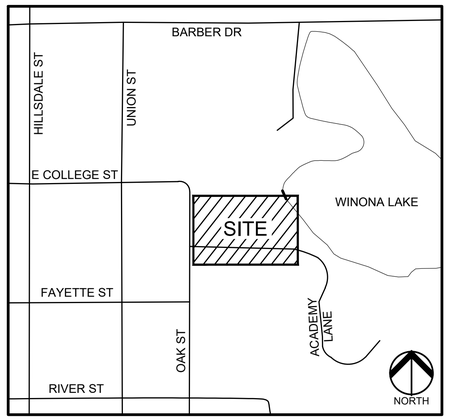
HILLSDALE COLLEGE TURF BUILDING

175-201 OAK STREET

CITY OF HILLSDALE, HILLSDALE COUNTY, STATE OF MICHIGAN

STATE OF MICHIGAN
MICHAEL R. MOTTE
ENGINEER
No. 46398
LICENSED PROFESSIONAL ENGINEER

PERMIT / APPROVAL SUMMARY		
DATE SUBMITTED	DATE APPROVED	PERMIT / APPROVAL



LOCATION MAP
NO SCALE

INDEX OF DRAWINGS	
NUMBER	TITLE
	COVER SHEET
C-1.0	TOPOGRAPHIC SURVEY
C-2.0	DEMOLITION PLAN
C-3.0	DIMENSION AND PAVING PLAN
C-4.1	GRADING PLAN - NORTHWEST
C-4.2	GRADING PLAN - SOUTHWEST
C-4.3	GRADING PLAN - SOUTHEAST
C-4.4	GRADING PLAN - NORTHEAST
C-5.0	SOIL EROSION AND SEDIMENT CONTROL PLAN
C-6.0	UTILITY PLAN
C-7.1	STORM SEWER PROFILES
C-7.2	STORM SEWER PROFILES
C-8.1	STORM WATER MANAGEMENT PLAN AND CALCULATIONS
C-8.2	STORM SEWER DRAINAGE PLAN AND DESIGN CALCULATIONS
C-9.1	CONSTRUCTION NOTES AND DETAILS - 1
C-9.2	CONSTRUCTION NOTES AND DETAILS - 2
C-9.3	CONSTRUCTION NOTES AND DETAILS - 3
C-9.4	CONSTRUCTION NOTES AND DETAILS - 4
L-1.0	LANDSCAPE PLAN
L-2.0	LANDSCAPE DETAILS
L-2.1	LANDSCAPE SPECIFICATIONS
L-2.2	LANDSCAPE SPECIFICATIONS
	BUILDING & PHOTOMETRIC PLANS BY OTHERS

PEA GROUP

DESIGN TEAM

OWNER/APPLICANT/DEVELOPER

HILLSDALE COLLEGE
33 EAST COLLEGE STREET
HILLSDALE, MICHIGAN 49242
CONTACT: DAVE BILLINGTON
PHONE: 517.607.2451
EMAIL: DBILLINGTON@HILLSDALE.EDU

CIVIL ENGINEER

PEA GROUP
58105 VAN DYKE RD.
WASHINGTON TWP., MI 48094
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PHONE: 844.813.2949
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CONTACT: CHRIS MILLER
EMAIL: CMILLER@DRIVENBYCORE.COM

LANDSCAPE ARCHITECT

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7927 NEMCO WAY, STE. 115
BRIGHTON, MI 48116
CONTACT: JANET EVANS, PLA
PHONE: 844.813.2949
EMAIL: JEVANS@PEAGROUP.COM

REVISIONS	
DESCRIPTION	DATE
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7/31/2026
CITY OF HILLSDALE PLANNING COMMISSION REVIEW	9/4/2026

NOT FOR CONSTRUCTION

LEGAL DESCRIPTION:

PARCEL ID: 30-006-126-129-30
LOT 146 BLK N AND LOT 167 BLK O AND VAC SALEM ST E OF AND ADJ THERETO EXC S 17.5 FT THEREOF BLACKMAR AND GALLAHERS ADDN ALSO BEG NW COR LOT 59 TH S 49.5 FT ALG E LN SALEM ST TO E 330 FT TH N 49.5 FT TO N LN LOT 69 TH W TO POB BEING PRT LOTS 59 AND 69 BLK I FOWLERS ADDN ALSO E 52A SW¼ SEC 23 BEING ALL THAT PRT SD SW¼ LYING E OF BLACKMAR AND GALLAHERS ADDN EXC THAT PRT N OF LN COM SE COR LOT 168 EXT E TO E LN SD SW¼ SEC 23 UNPLATTED 25A M/L SEC 23 AND 26 T6S R3W FIRST WARD SPLIT ON 08/21/2014 FROM 006-123-302-14; COMBINED ON 08/21/2014 FROM 006-123-302-06, 006-123-302-07, 006-123-302-08, 006-123-302-09, 006-123-302-10, 006-123-302-11, 006-123-302-12 AND 006-123-302-13; 10/2/2018 ADDED VAC STS TO DESC - 9/14/1959 RES #46 VAC OAK ST BETWEEN COLLEGE ST AND MECHANIC ST (NKA BARBER DR) AND SALEM ST BETWEEN RIVER ST AND MECHANIC ST (NKA BARBER DR); 12/30/1985 RES #1016 VAC OAK ST BETWEEN N LN LOT 117 AND MECHANIC ST (NKA BARBER DR); COMBINED ON 12/27/2019 FROM 006-123-302-15, 006-123-302-17, 006-123-376-08; SPLIT/COMBINED ON 11/16/2022 FROM 006-123-302-18, 006-126-129-01 WITH 006-123-302-19;

PARCEL ID: 30-06-123-376-04
LOT 147 & S 17.5 FT LOT 146 BLK N ALSO LOT 166 & S 17.5 FT LOT 167 BLK O ALSO VAC SALEM ST LYING E OF & ADJ THERETO 1.3A+/- BLACKMAR & GALLAHERS ADDN SEC 23 T6S R3W FIRST WARD 10/2/2018 ADDED VACATED SALEM STREET TO DESC (VACATED RESOLUTION #46 9/14/1959);

FLOODPLAIN:

(PER FLOOD INSURANCE RATE MAP NUMBER 26059C0167D & 26059C0186D, BOTH EFFECTIVE DATE: FEBRUARY 19, 2014)

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
THE 1% ANNUAL CHANCE FLOOD (100 YEAR FLOOD), ALSO KNOWN AS THE BASE FLOOD, IS THE FLOOD THAT HAS A 1% CHANCE OF BEING EQUALED OR EXCEEDED IN ANY GIVEN YEAR. THE SPECIAL FLOOD HAZARD AREA IS THE AREA SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD. AREAS OF SPECIAL FLOOD HAZARD INCLUDE ZONES A, AE, AH, AO, AR, A99, V AND VE. THE BASE FLOOD ELEVATION IS THE WATER-SURFACE ELEVATION OF THE 1% ANNUAL CHANCE FLOOD.

ZONE AE - BASE FLOOD ELEVATIONS DETERMINED.

FLOODWAY AREAS IN ZONE AE
THE FLOODWAY IS THE CHANNEL OF STREAM PLUS ANY ADJACENT FLOODPLAIN AREAS THAT MUST BE KEPT FREE OF ENCROACHMENT SO THAT THE 1% ANNUAL CHANCE FLOOD CAN BE CARRIED WITHOUT SUBSTANTIAL INCREASES IN FLOOD HEIGHTS.

OTHER FLOOD AREAS
ZONE X - AREA OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

OTHER AREAS
ZONE X - AREA TO BE DETERMINED OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARKS:

(NAVD 88, INTERNATIONAL FOOT, GPS DERIVED)

BM 300 - SOUTHEASTERLY UPPER FLANGE BOLT ON FIRE HYDRANT BEING 50'± SOUTH OF THE CENTERLINE OF ACADEMY LANE AND 30'± EAST OF THE CENTERLINE OF OAK STREET.
ELEVATION: 1120.73

BM 301 - BENCH TIE IN THE EAST FACE ON POWER POLE BEING 20'± WEST OF THE CENTERLINE OF OAK STREET AND 167'± NORTH OF THE CENTERLINE OF ACADEMY LANE.
ELEVATION: 1117.74

BM 302 - BOX CUT ON THE SOUTH SIDE OF CONCRETE BASE OF LIGHT POLE BEING 20'± NORTHEAST FROM THE CENTERLINE OF ACADEMY LANE AND 121'± SOUTHWESTERLY FROM THE SOUTHERLY OVERHAND CORNER OF THE MAIN ENTRANCE TO HILLSDALE ACADEMY.
ELEVATION: 1098.88

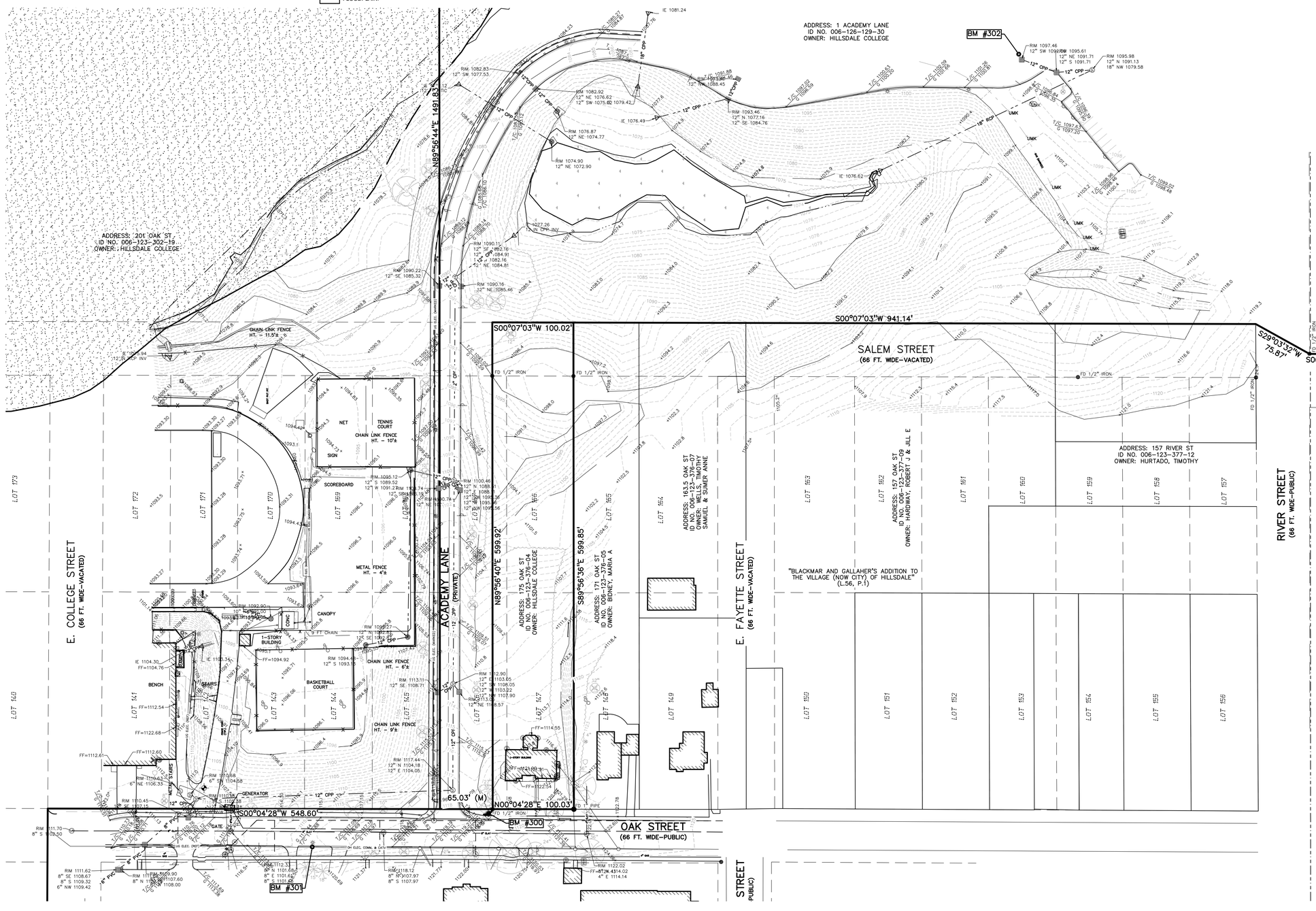
SURVEYOR'S NOTES:

A. BEARINGS WERE ESTABLISHED VIA GNSS OBSERVATIONS AND LINKED TO CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS) WITHIN THE MICHIGAN SPATIAL REFERENCE NETWORK (MSRN).

B. UTILITY IS SHOWN AS REFERENCE UNLESS OTHERWISE NOTED

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



REFERENCE DRAWINGS:

MISS DIG DESIGN TICKET: 20260404805185, DATED: 4/8/2026

CABLE	COMCAST CABLE TV
ELECTRIC	HILLSDALE BOARD OF PUBLIC UTILITIES
FIBER OPTICS	HILLSDALE COLLEGE
GAS	MICHIGAN GAS UTILITIES
SANITARY	HILLSDALE BOARD OF PUBLIC UTILITIES
STORM	HILLSDALE BOARD OF PUBLIC UTILITIES
STORM	HILLSDALE COUNTY DRAIN COMMISSION
TELEPHONE	AT&T TELEPHONE
TELEPHONE	HILLSDALE COLLEGE
WATER	HILLSDALE BOARD OF PUBLIC UTILITIES

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www.peagroup.com

STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER
No. 45998
LICENSED PROFESSIONAL ENGINEER

NORTH

0 30 60 120
SCALE: 1" = 60'

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

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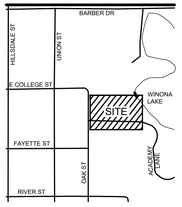

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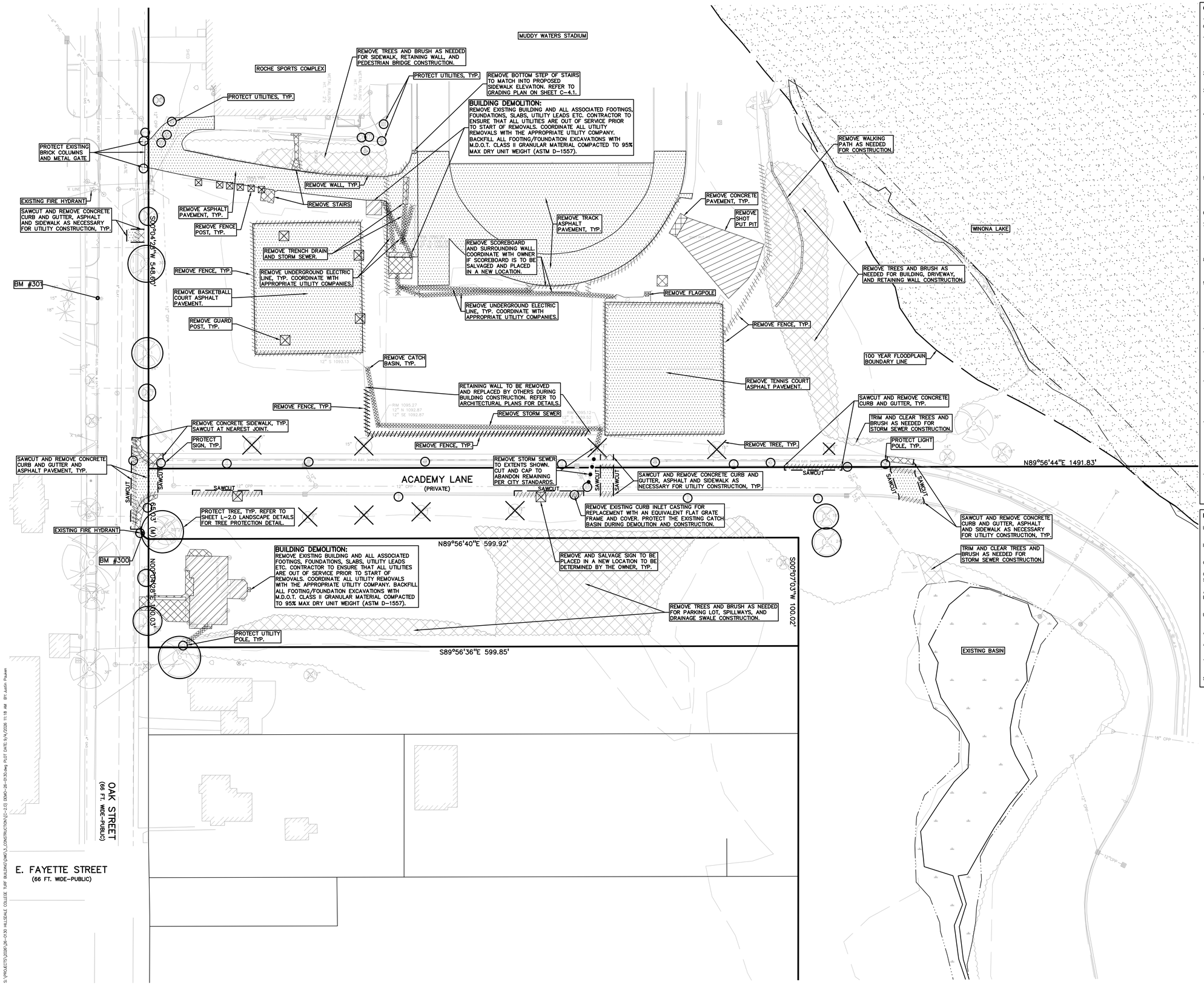
DRAWING TITLE
TOPOGRAPHIC SURVEY

PEA JOB NO.	26-0130
P.M.	WSF
DN.	JML

DRAWING NUMBER:
C-1.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-1.0) TOPO-26-0130.dwg PLOT DATE: 9/4/2026 11:18 AM BY: Justin Paulsen



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. REFER TO SHEET L-2.0 FOR TREE PROTECTION DETAILS.
7. 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.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPING AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
9. 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.
10. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES TO CONFIRM THAT UTILITY LEADS HAVE BEEN TAKEN OUT OF SERVICE PRIOR TO DEMOLITION.
11. 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.
12. 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.)
13. 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.
14. 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

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ENGINEER
No. 45998
LICENSED PROFESSIONAL ENGINEER

NORTH

0 20 40 80
SCALE: 1" = 40'

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

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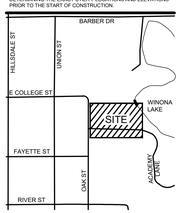


CLIENT

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

DEMOLITION PLAN

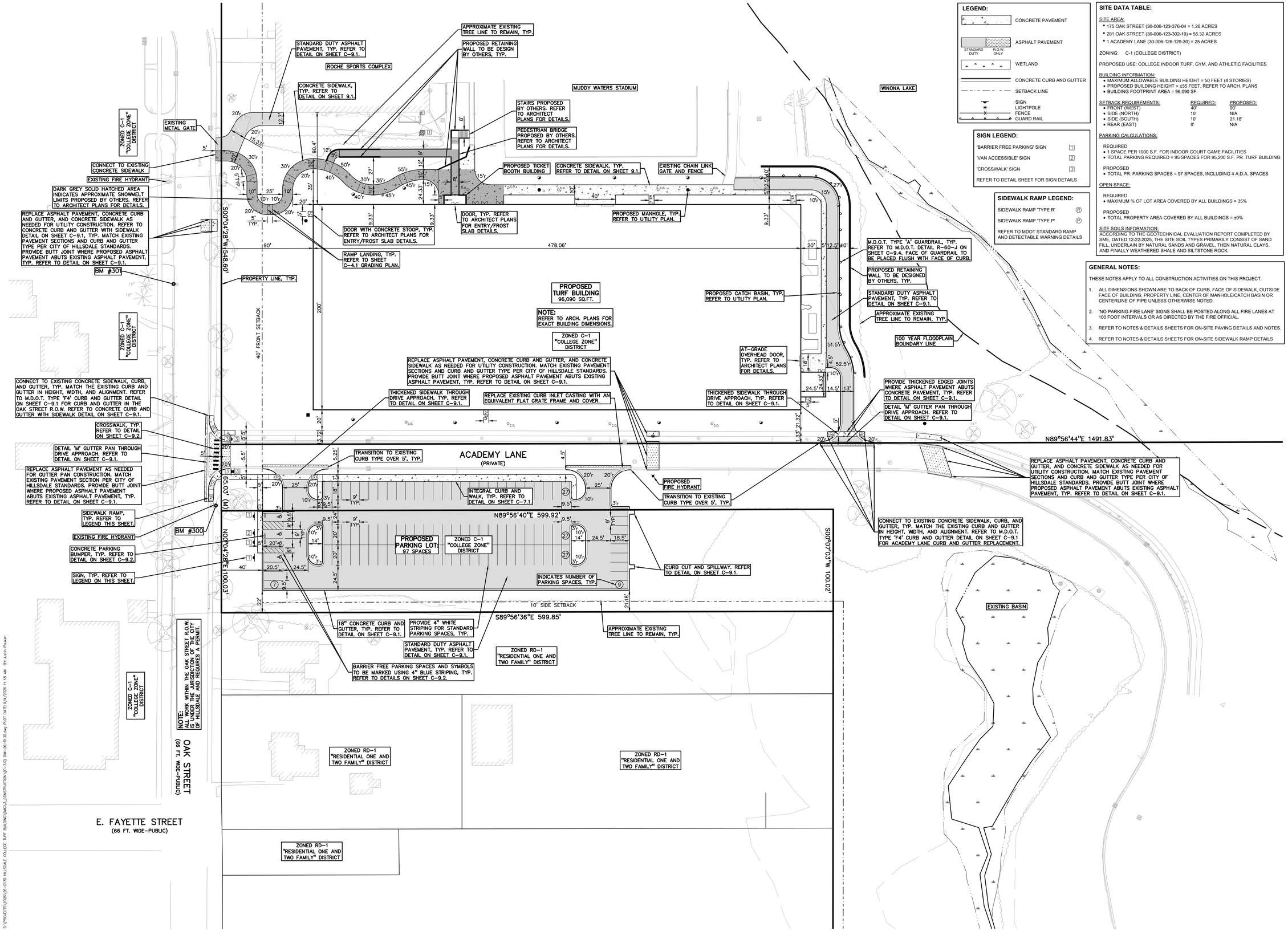
PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:

C-2.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-2.0) DEMO-26-0130.dwg PLOT DATE: 9/4/2026 11:18 AM BY: Justin Pauwen



LEGEND:

- CONCRETE PAVEMENT
- ASPHALT PAVEMENT (STANDARD DUTY / R.O.W. ONLY)
- WETLAND
- CONCRETE CURB AND GUTTER
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL

SIGN LEGEND:

'BARRIER FREE PARKING' SIGN	1
'VAN ACCESSIBLE' SIGN	2
'CROSSWALK' SIGN	3

REFER TO DETAIL SHEET FOR SIGN DETAILS

SIDEWALK RAMP LEGEND:

SIDEWALK RAMP 'TYPE R'	R
SIDEWALK RAMP 'TYPE P'	P

REFER TO MDOT STANDARD RAMP AND DETECTABLE WARNING DETAILS

SITE DATA TABLE:

SITE AREA:
- 175 OAK STREET (30-006-123-376-04 = 1.26 ACRES
- 201 OAK STREET (30-006-123-302-19) = 55.32 ACRES
- 1 ACADEMY LANE (30-006-126-129-30) = 25 ACRES

ZONING: C-1 (COLLEGE DISTRICT)

PROPOSED USE: COLLEGE INDOOR TURF, GYM, AND ATHLETIC FACILITIES

BUILDING INFORMATION:
- MAXIMUM ALLOWABLE BUILDING HEIGHT = 50 FEET (4 STORIES)
- PROPOSED BUILDING HEIGHT = ±55 FEET, REFER TO ARCH. PLANS
- BUILDING FOOTPRINT AREA = 96,090 SF.

SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
• FRONT (WEST)	40'	90'
• SIDE (NORTH)	10'	N/A
• SIDE (SOUTH)	10'	21.18'
• REAR (EAST)	0'	N/A

PARKING CALCULATIONS:

REQUIRED
- 1 SPACE PER 1000 S.F. FOR INDOOR COURT GAME FACILITIES
- TOTAL PARKING REQUIRED = 95 SPACES FOR 95,200 S.F. PR. TURF BUILDING

PROPOSED
- TOTAL PR. PARKING SPACES = 97 SPACES, INCLUDING 4 A.D.A. SPACES

OPEN SPACE:

REQUIRED
- MAXIMUM % OF LOT AREA COVERED BY ALL BUILDINGS = 35%

PROPOSED
- TOTAL PROPERTY AREA COVERED BY ALL BUILDINGS = ±9%

SITE SOILS INFORMATION:
ACCORDING TO THE GEOTECHNICAL EVALUATION REPORT COMPLETED BY SME, DATED 12-22-2025, THE SITE SOIL TYPES PRIMARILY CONSIST OF SAND FILL, UNDERLAIN BY NATURAL SANDS AND GRAVEL, THEN NATURAL CLAYS, AND FINALLY WEATHERED SHALE AND SILTSTONE ROCK.

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 SHEETS FOR ON-SITE PAVING DETAILS AND NOTES.
4. REFER TO NOTES & DETAILS SHEETS FOR ON-SITE SIDEWALK RAMP DETAILS

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45598 LICENSED PROFESSIONAL ENGINEER

NORTH

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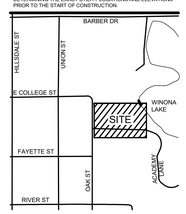

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PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
DIMENSION AND PAVING PLAN

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-3.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\C-3.0 DIM-26-0130.dwg PLOT DATE: 9/4/2026 11:18 AM BY: Justin Pulvem

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 THE COUNTY PRIOR TO CONSTRUCTION.
5. ALL EARTHWORK AND GRADING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE SOILS INVESTIGATION AND REPORT.
6. REFER TO SOIL EROSION CONTROL PLAN FOR ADDITIONAL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND NOTES.
7. ALL SLOPES EXCEEDING 1:4 MUST BE STABILIZED BY SODDING OR BY PLACING A MULCH BLANKET PEGGED IN PLACE OVER SEED.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. ANY SUB-GRADE WATERING REQUIRED TO ACHIEVE REQUIRED DENSITY SHALL BE CONSIDERED INCIDENTAL TO THE JOB.

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 RIDGE LINE
	PROPOSED SWALE/DITCH

ABBREVIATIONS

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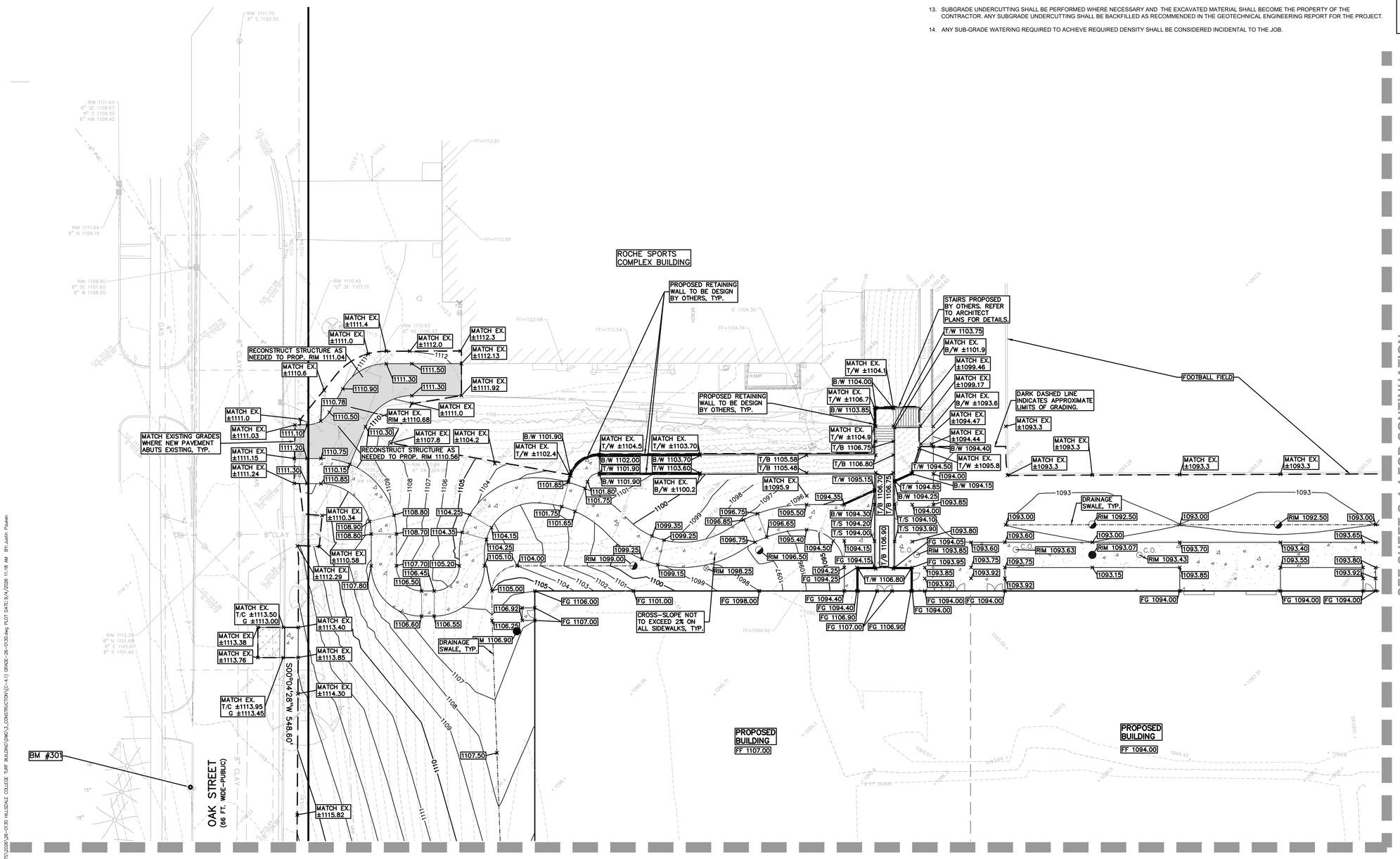
BENCHMARKS:

(NAVD 88, INTERNATIONAL FOOT, GPS DERIVED)

BM 301 - BENCH TIE IN THE EAST FACE ON POWER POLE BEING 20'± WEST OF THE CENTERLINE OF OAK STREET AND 167'± NORTH OF THE CENTERLINE OF ACADEMY LANE. ELEVATION: 1117.74



PEA GROUP

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STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45998 LICENSED PROFESSIONAL ENGINEER

NORTH

0 10 20 40

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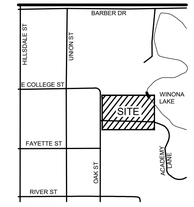

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4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE: JULY 31, 2026

DRAWING TITLE

GRADING PLAN - NORTHWEST

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

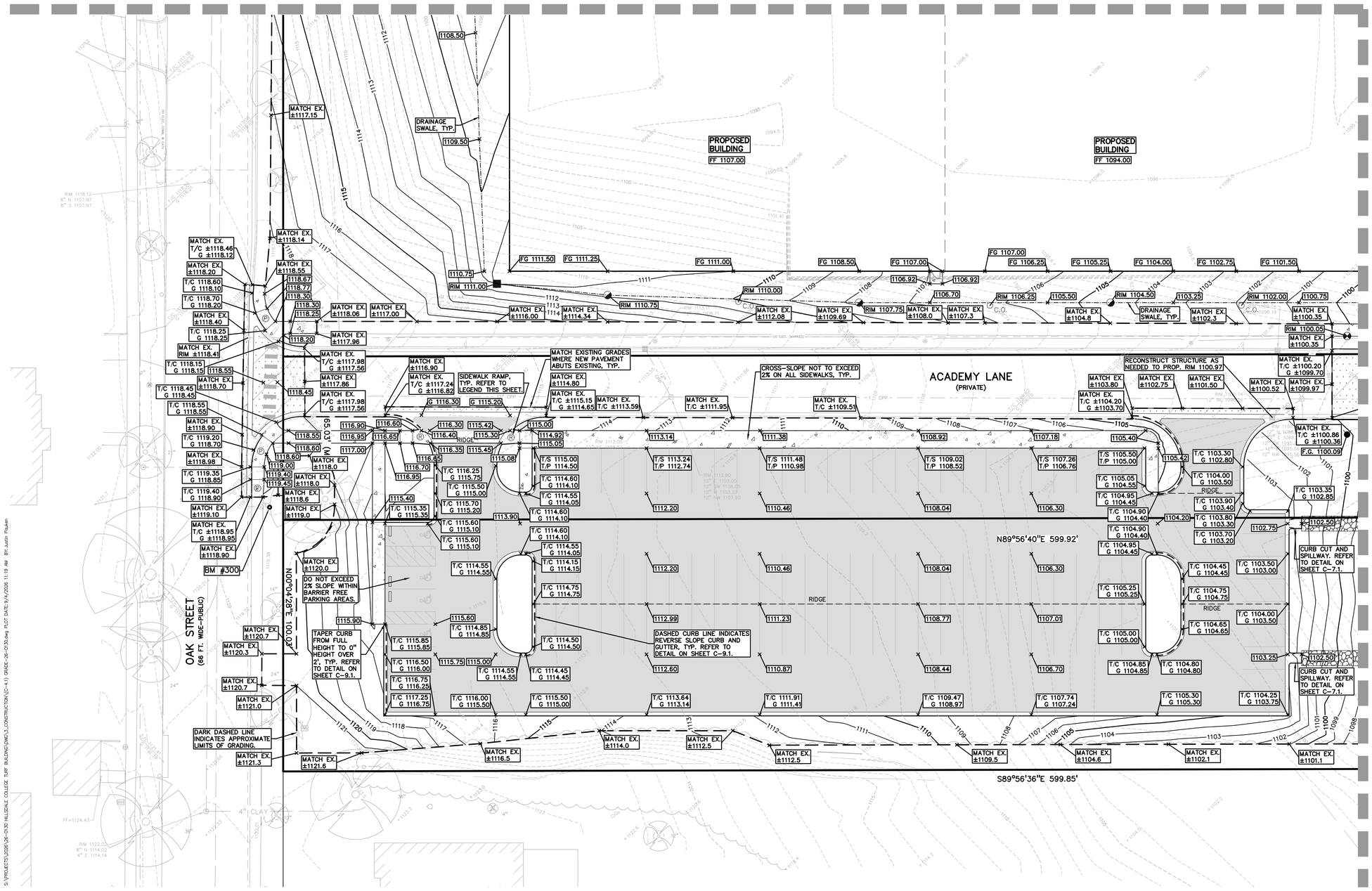
DRAWING NUMBER:

C-4.1

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-4.1) GRADE-26-0130.dwg PLOT DATE:9/4/2026 11:18 AM BY:Justin Pulvem

SEE SHEET C-4.1 FOR CONTINUATION



SEE SHEET C-4.3 FOR CONTINUATION

SIDEWALK RAMP LEGEND:

SIDEWALK RAMP 'TYPE R' Ⓡ

SIDEWALK RAMP 'TYPE P' Ⓟ

REFER TO STANDARD RAMP AND DETECTABLE WARNING DETAILS

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BENCHMARKS:
(NAVD 88, INTERNATIONAL FOOT, GPS DERIVED)

BM 300 - SOUTHEASTERLY UPPER FLANGE BOLT ON FIRE HYDRANT BEING 50± SOUTH OF THE CENTERLINE OF ACADEMY LANE AND 30'± EAST OF THE CENTERLINE OF OAK STREET. ELEVATION: 1120.73

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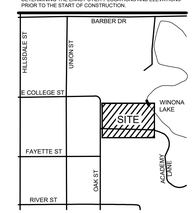

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PROJECT TITLE
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HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
GRADING PLAN - SOUTHWEST

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

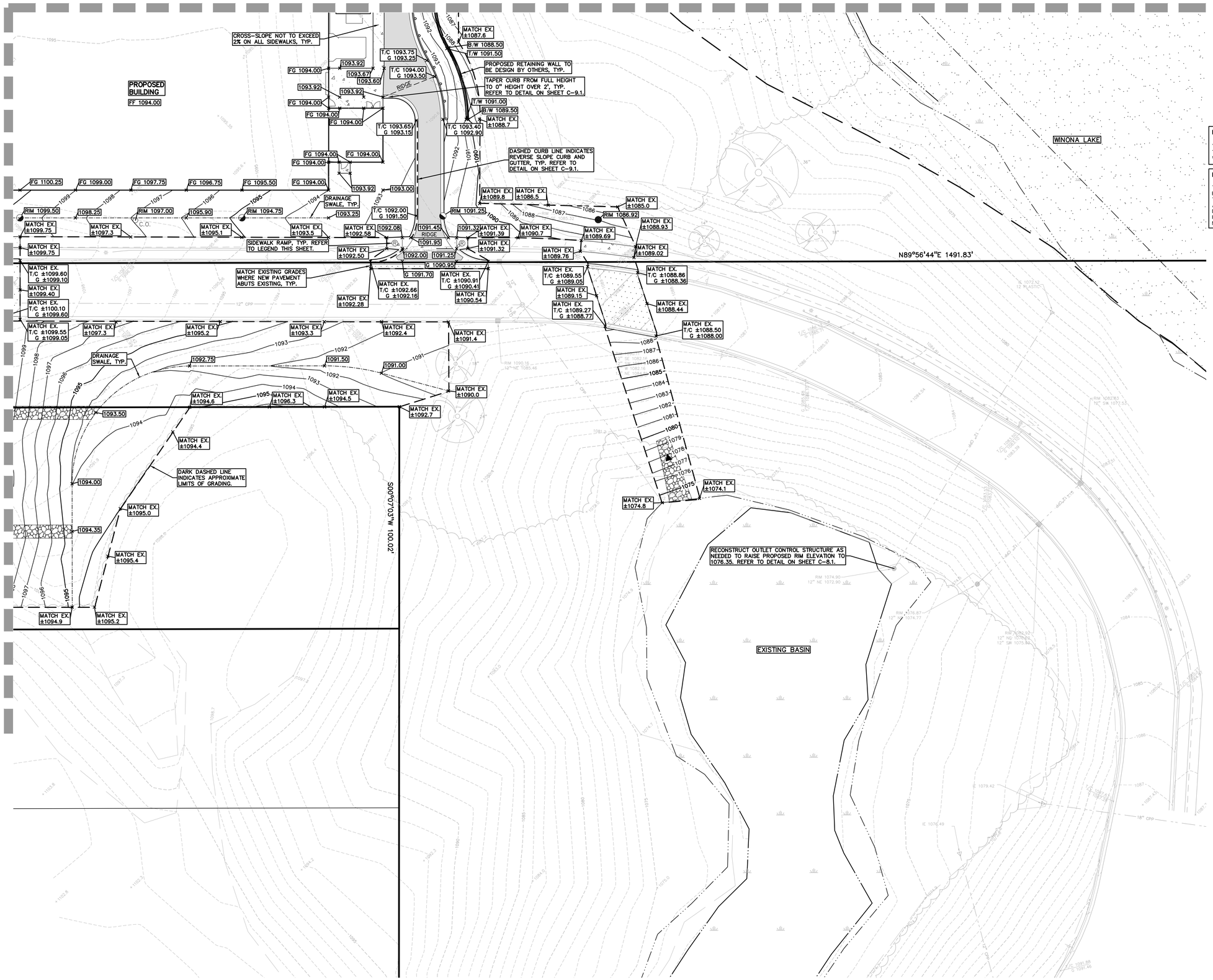
DRAWING NUMBER:
C-4.2

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-4.1) GRADE-26-0130.dwg PLOT DATE: 9/4/2026 11:19 AM BY: Justin Paulsen

SEE SHEET C-4.4 FOR CONTINUATION

SEE SHEET C-4.2 FOR CONTINUATION



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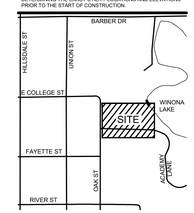

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DRAWING TITLE
GRADING PLAN - SOUTHEAST

PEA JOB NO.	26-0130
P.M.	MM
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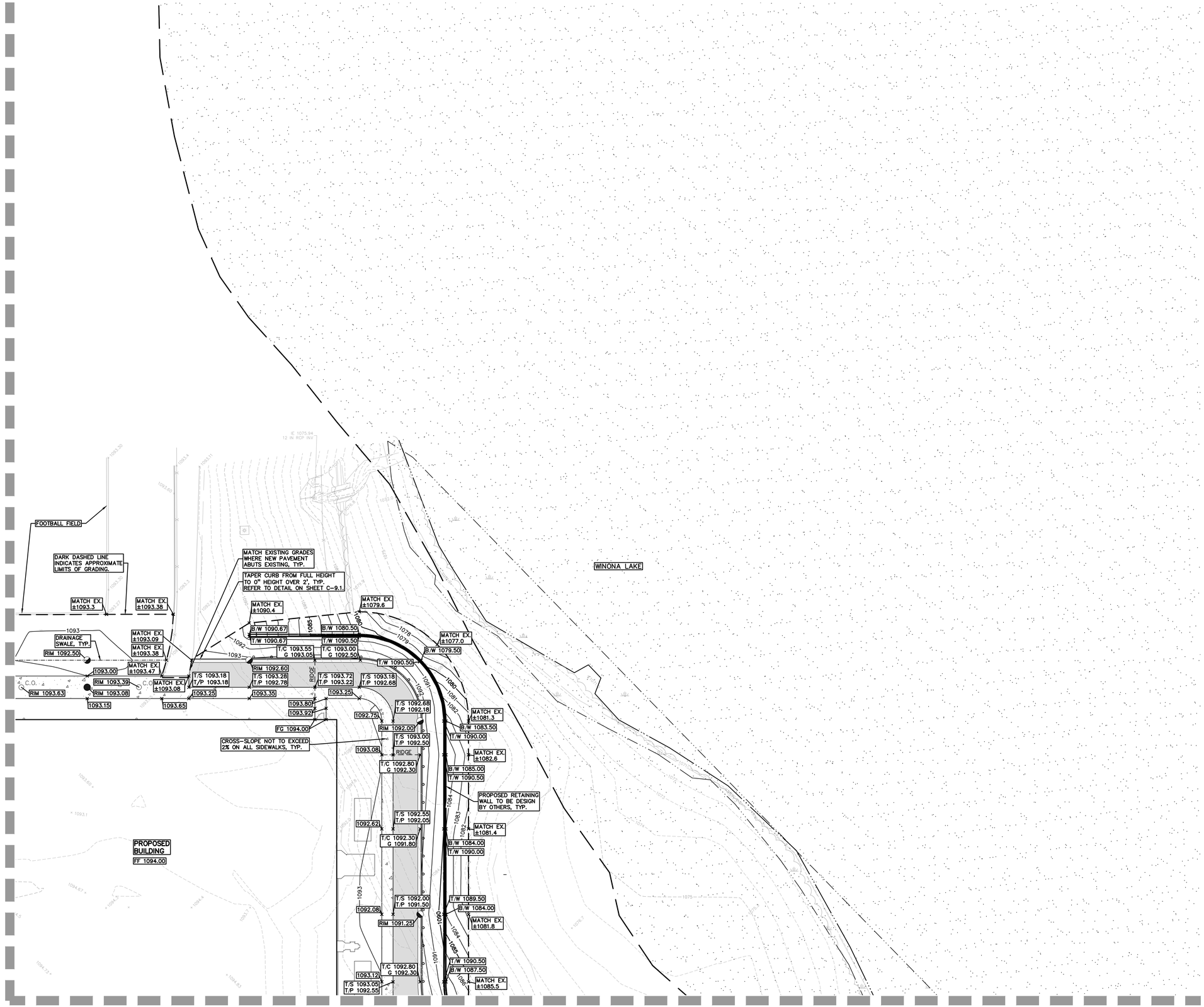
DES.	JP

DRAWING NUMBER:
C-4.3

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-4.1) GRADE-26-0130.dwg PLOT DATE:9/4/2026 11:19 AM BY:Justin Paulsen



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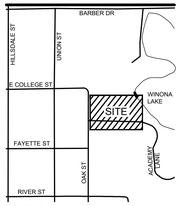


CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

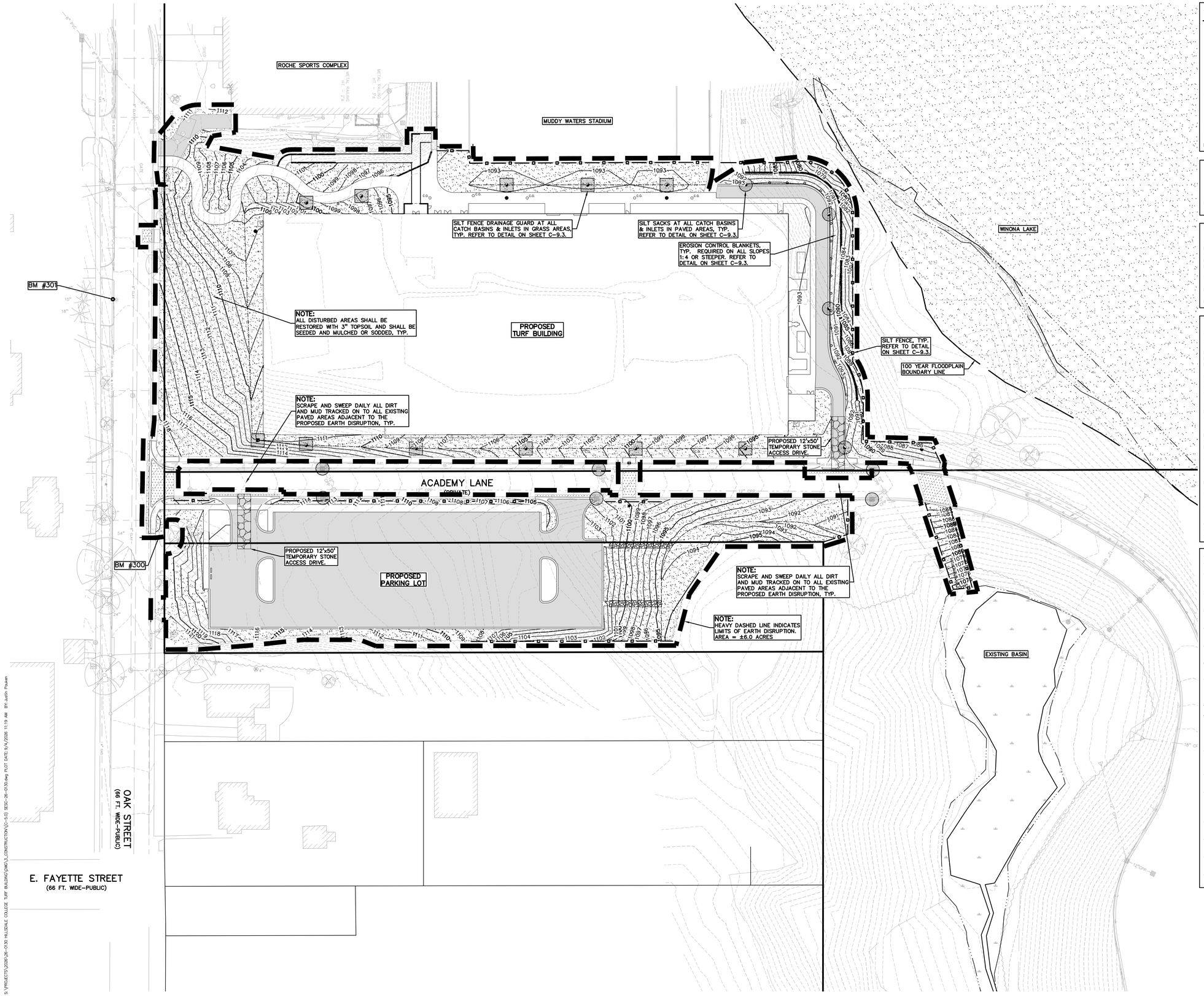
DRAWING TITLE
GRADING PLAN - NORTHEAST

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-4.4

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG_CONSTRUCTION\(C-4.1) GRADE-26-0130.dwg PLOT DATE: 9/4/2026 11:19 AM BY: Justin Paulen



SYMBOLS: EROSION CONTROL:

- SILT FENCE
- SILT SACK INLET FILTER
- RYCB INLET FILTER
- TEMPORARY STONE ACCESS DRIVE
- EROSION CONTROL BLANKET
- RIPRAP
- TEMPORARY SEED AND MULCH

REFER TO NOTES AND DETAILS SHEETS FOR ALL DEVICE DETAILS.

EROSION CONTROL QUANTITIES:

SILT FENCE	1500 LF
R.Y.C.B. INLET FILTER	11 EA.
SILTSACK INLET FILTER	9 EA.
TEMPORARY CONSTRUCTION ACCESS DRIVE	2 EA.
EROSION CONTROL BLANKETS	1300 S.Y.
APPROXIMATE TEMP. SEED & MULCH RESTORATION	7750 S.Y.

GENERAL SITE CONDITIONS:

ACCORDING TO THE GEOTECHNICAL EVALUATION REPORT COMPLETED BY SME, DATED 12-22-2025, THE SITE SOIL TYPES PRIMARILY CONSIST OF SAND FILL, UNDERLAIN BY NATURAL SANDS AND GRAVEL, THEN NATURAL CLAYS, AND FINALLY WEATHERED SHALE AND SILTSTONE ROCK.

TOTAL DISTURBED AREA = ±6.0 ACRES

DISTANCE TO NEAREST WATERWAY = ±30 FEET TO WINONA LAKE

N.P.D.E.S. NOTICE OF COVERAGE IS REQUIRED

SOIL EROSION MAINTENANCE SCHEDULE AND NOTES:

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

IF ANY DAMAGE HAS OCCURRED AS A RESULT OF STORM WATER DISCHARGE FROM THE SITE, THE FOLLOWING STEPS SHALL BE IMPLEMENTED:

1. ANY DEBRIS OR DIRT ON ANY PAVED AREA RESULTING FROM CONSTRUCTION TRAFFIC SHALL BE CLEANED IN A PROMPT MANNER BY THE CONTRACTOR. THE CONSTRUCTION DRIVE SHALL BE CLEANED AT THE END OF EACH DAY.

2. ALL DIRT AND MUD TRACKED ONTO PAVED AREAS SHALL BE REMOVED BY THE CONTRACTOR DAILY BY SCRAPING. STREET SWEEPING IS REQUIRED WEEKLY.

3. SILT FENCE MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY BUILT UP SEDIMENT WHEN THE SEDIMENT HEIGHT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE FENCE. THE CONTRACTOR IS RESPONSIBLE TO REMOVE, REPLACE, RETRENCH OR REBACKFILL THE SILTATION FENCE SHOULD IT FALL OR BE DAMAGED DURING CONSTRUCTION.

4. INLET FILTER MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY ACCUMULATED SILT OR OTHER DEBRIS. THE REMOVAL OF SILT SHOULD BE WITH THE USE OF A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL. IF INLET FILTERS CAN NOT BE CLEANED OR ARE DAMAGED, THEN THE FABRIC MUST BE REPLACED.

5. CONTRACTOR SHALL PROVIDE WATER TRUCK TO WATER DOWN THE SITE ON A DAILY BASIS AS REQUIRED TO MAINTAIN DUST CONTROL.

6. IF HIGH GROUNDWATER IS ANTICIPATED OR ENCOUNTERED DURING CONSTRUCTION A DEWATERING PLAN MUST BE SUBMITTED TO THE CITY ENGINEERING DIVISION FOR REVIEW.

SOIL EROSION AND SEDIMENTATION CONTROL SEQUENCE OF CONSTRUCTION

1. SEE SHEET C-9.3 FOR ALL SOIL EROSION CONTROL RELATED DETAILS.
2. PLACE SILT FENCE & INSTALL INLET FILTERS ON EXISTING STORM SEWER STRUCTURES ACCORDING TO PLANS.
3. INSTALL TEMPORARY CRUSHED CONCRETE ACCESS DRIVE AT ALL CONSTRUCTION ENTRANCES.
4. REMOVE CURB, PAVEMENT, TREES, ETC. AS DIRECTED ON THE DEMOLITION PLAN.
5. STRIP AND STOCKPILE TOPSOIL FOR RESTORATION REQUIREMENTS.
6. DISPOSE OF ALL EXCESS, UNSUITABLE MATERIALS OFF SITE IN A LEGAL MANNER. NO BURN OR BURY PITS ALLOWED.
7. UNSUITABLE MATERIALS CONSIST OF, BUT ARE NOT NECESSARILY LIMITED TO THE FOLLOWING: CONCRETE, ASPHALT, TREES, BRUSH, STUMPS, ROOTS, OR OTHER MISCELLANEOUS DEBRIS OR TRASH.
8. MASS GRADE THE SITE IN ACCORDANCE WITH THE PLANS.
9. INSTALL SEED, MULCH AND EROSION CONTROL BLANKETS AS SHOWN ON THE PLAN WITHIN 5 DAYS OF COMPLETION OF MASS GRADING OR WHENEVER DISTURBED AREAS WILL REMAIN UNCHANGED FOR 30 DAYS OR GREATER. 3-4" TOPSOIL WILL BE USED WHERE VEGETATION IS REQUIRED.
10. COMPLETE ROUGH GRADING OF SITE AND INSTALL UTILITIES. PLACE INLET FILTERS AT ALL INLETS AND CATCH BASINS, AS SHOWN.
11. FINISH GRADE AND PAVE SITE AS PROPOSED TO DRAIN TO STORM SEWER SYSTEM. REPAIR INLET FILTERS AS REQUIRED.
12. APPLY TOPSOIL, SEED AND MULCH/SOD TO ALL DISTURBED AREAS UPON COMPLETION OF GRADING. THE CONTRACTOR SHALL STAGE CONSTRUCTION ACTIVITIES IN ORDER TO MINIMIZE THE EXPOSURE OF UNSTABILIZED AREAS.
13. CLEAN PAVEMENT AND STORM SEWERS. REMOVE SILT FENCE, AND INLET FILTERS ONCE VEGETATION HAS BEEN ESTABLISHED.
14. CLEAN DETENTION BASIN AND OVERFLOW SPILLWAYS AND REPAIR RIPRAP AS NECESSARY.
15. ALL DIRT AND MUD TRACKED ONTO PUBLIC ROADS SHALL BE REMOVED DAILY.
16. STREET CATCH BASINS TO BE PERIODICALLY CLEANED AND FILTER CLOTH CHANGED AND MAINTAINED.

PEA GROUP
t: 844.813.2949
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STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER
No. 45998
LICENSED PROFESSIONAL ENGINEER

NORTH

0 20 40 80
SCALE: 1" = 40'

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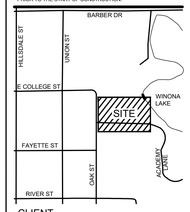

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SESC PLAN

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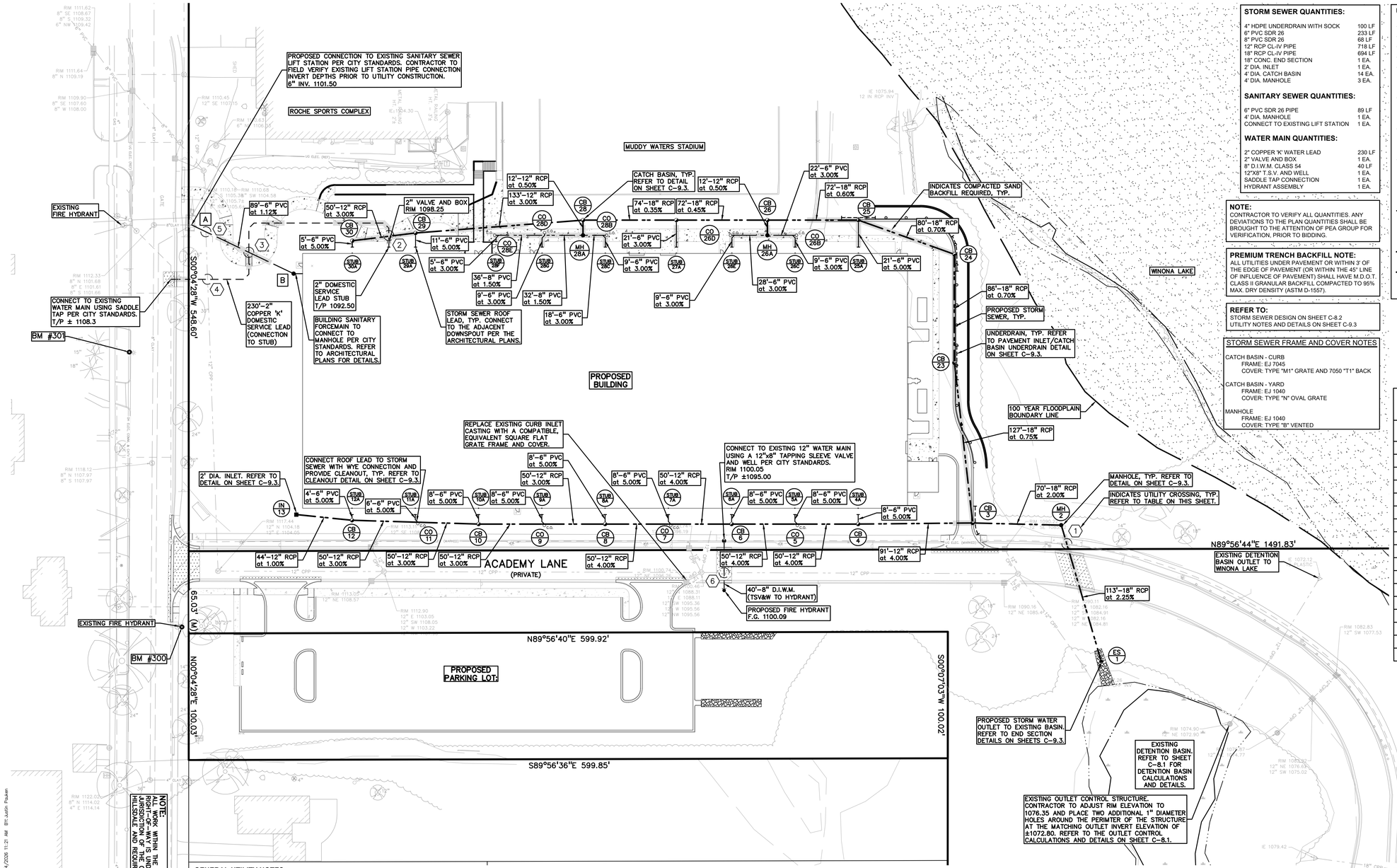

STORM SEWER QUANTITIES:

4" HDPE UNDERDRAIN WITH SOCK	100 LF
6" PVC SDR 26	233 LF
8" PVC SDR 26	68 LF
12" RCP CL-IV PIPE	718 LF
18" RCP CL-IV PIPE	694 LF
18" CONC. END SECTION	1 EA.
2' DIA. INLET	1 EA.
4' DIA. CATCH BASIN	14 EA.
4' DIA. MANHOLE	3 EA.

SANITARY SEWER QUANTITIES:

6" PVC SDR 26 PIPE	89 LF
4' DIA. MANHOLE	1 EA.
CONNECT TO EXISTING LIFT STATION	1 EA.

WATER MAIN QUANTITIES:

2" COPPER 'K' WATER LEAD	230 LF
2" VALVE AND BOX	1 EA.
8" D.I.W.M. CLASS 54	40 LF
12"X8" T.S.V. AND WELL	1 EA.
SADDLE TAP CONNECTION	1 EA.
HYDRANT ASSEMBLY	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).

REFER TO:
STORM SEWER DESIGN ON SHEET C-8.2
UTILITY NOTES AND DETAILS ON SHEET C-9.3

STORM SEWER FRAME AND COVER NOTES

CATCH BASIN - CURB
FRAME: EJ 7045
COVER: TYPE "M1" GRATE AND 7050 "T1" BACK

CATCH BASIN - YARD
FRAME: EJ 1040
COVER: TYPE "N" OVAL GRATE

MANHOLE
FRAME: EJ 1040
COVER: TYPE "B" VENTED

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

END SECTIONS

1	END SECTION 18" 1077.50

ROOF DOWNSPOUT LEAD STUBS

4A	6" S INV. 1089.70
5A	6" S INV. 1092.13
6A	6" S INV. 1095.18
7A	6" S INV. 1097.63
8A	6" S INV. 1099.78
9A	6" S INV. 1102.13
10A	6" S INV. 1103.78
11A	6" S INV. 1105.05
12A	6" S INV. 1106.63
25A	6" N INV. 1088.84
26C	6" N INV. 1088.90
26E	6" N INV. 1089.08
27A	6" N INV. 1088.87
28C	6" N INV. 1089.35
28F	6" N INV. 1089.73
28G	6" N INV. 1089.31
29A	6" N INV. 1093.03
30A	6" N INV. 1094.73

STORM CLEANOUTS

7	C.O. IN BOX RIM. 1102.00 INV. 1097.00
9	C.O. IN BOX RIM. 1106.25 INV. 1101.50
11	C.O. IN BOX RIM. 1110.00 INV. 1104.50
26B	C.O. IN BOX RIM. 1093.39 INV. 1088.62
26D	C.O. IN BOX RIM. 1093.63 INV. 1088.81
28B	C.O. IN BOX RIM. 1093.43 INV. 1089.07
28D	C.O. IN BOX RIM. 1093.63 INV. 1088.90
28E	C.O. IN BOX RIM. 1093.85 INV. 1089.44

SANITARY STRUCTURES

B	MH (4' DIA.) RIM = 1106.90 6" NW 1102.50

EXISTING SANITARY STRUCTURES

A	EXISTING LIFT STATION EX. 8" W ±1101.50 PR. 6" SE 1101.50 EX. S FORCEMAIN OUTLET

STORM STRUCTURES

MH	2	(4' DIA./0' SUMP) RIM = 1086.92 18" W 1081.50 18" S 1080.04
CB	3	(4' DIA./2' SUMP) RIM = 1091.25 18" N 1084.15 12" W 1084.40 18" E 1082.90
CB	4	(4' DIA./2' SUMP) RIM = 1094.75 12" W 1089.50 6" N 1089.32 12" E 1088.02
CB	6	(4' DIA./2' SUMP) RIM = 1099.50 12" W 1095.00 6" N 1094.80 12" E 1093.50
CB	8	(4' DIA./2' SUMP) RIM = 1104.50 12" W 1100.00 6" N 1099.40 12" E 1099.00
CB	10	(4' DIA./2' SUMP) RIM = 1107.75 12" W 1103.00 6" N 1103.40 12" E 1103.00
CB	12	(4' DIA./2' SUMP) RIM = 1110.75 12" W 1106.00 6" N 1106.40 12" E 1106.00
IN	13	(2' DIA./2' SUMP) RIM = 1111.00 12" E 1106.45
CB	23	(4' DIA./2' SUMP) RIM = 1091.25 18" N 1085.11 18" S 1085.11
CB	24	(4' DIA./2' SUMP) RIM = 1092.00 18" W 1085.91 18" S 1085.71
CB	25	(4' DIA./2' SUMP) RIM = 1092.60 18" W 1086.67 6" S 1087.77 18" E 1086.47
MH	26A	(4' DIA./0' SUMP) RIM = 1093.08 6" W 1087.96 6" E 1087.96 12" N 1087.56
CB	26	(4' DIA./2' SUMP) RIM = 1092.50 18" W 1087.10 12" S 1087.50 18" E 1087.10
CB	27	(4' DIA./2' SUMP) RIM = 1092.50 18" W 1087.43 6" S 1088.23 18" E 1087.43
MH	28A	(4' DIA./0' SUMP) RIM = 1093.07 6" E 1088.55 8" W 1088.41 12" N 1088.15
CB	28	(4' DIA./2' SUMP) RIM = 1092.50 12" W 1088.09 12" S 1088.09 18" E 1087.69
CB	29	(4' DIA./2' SUMP) RIM = 1096.50 12" W 1092.07 6" S 1092.47 12" E 1092.07
CB	30	(4' DIA./2' SUMP) RIM = 1099.00 6" S 1094.48 12" E 1093.58

UTILITY CROSSING TABLE

CROSSING	CROSSING PIPE 1				CROSSING PIPE 2				CLEARANCE	NOTES
1	18 "	ST	T/P=	1081.41	12 "	WM	B/P=	1083.40	1.99	
2	12 "	ST	B/P=	1092.54	2 "	WM	T/P=	1091.04	1.50	DIP WATER LEAD
3	6 "	SAN	B/P=	1102.01	2 "	WM	T/P=	1100.40	1.61	
4	6 "	SAN	T/P=	1102.20	12 "	ST	B/P=	1105.03	2.84	
5	12 "	ST	B/P=	1104.89	2 "	WM	T/P=	1103.39	1.50	DIP WATER LEAD
6	12 "	ST	T/P=	1088.85	8 "	WM	B/P=	1092.83	3.98	

GENERAL UTILITY NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY.
2. 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 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.
3. 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.
4. 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.
5. 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.
6. ALL SEWER CLEANOUTS TO BE PROVIDED WITH EJ #1565 BOX OR EQUAL.
7. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE AND TO END OF FLARED END SECTION UNLESS NOTED OTHERWISE.
8. 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.

WATER MAIN NOTES:

1. ALL WATER MAIN SHALL BE INSTALLED WITH A MINIMUM COVER OF 6.0' BELOW FINISH GRADE. WHEN WATER MAINS MUST DIP TO PASS UNDER A STORM SEWER OR SANITARY SEWER, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE KEPT TO A MINIMUM LENGTH BY THE USE OF VERTICAL TWENTY TWO AND A HALF (22.5°) DEGREE BENDS, PROPERLY ANCHORED.
2. ALL TEES, BENDS, CONNECTIONS, ETC. ARE CONSIDERED INCIDENTAL TO THE JOB.
3. MAINTAIN 10' HORIZONTAL CLEARANCE BETWEEN OUTER EDGE OF WATERMAIN AND ANY SANITARY/STORM SEWER OR STRUCTURE.
4. NO PHYSICAL CONNECTION TO THE EXISTING WATER MAIN CAN BE MADE UNTIL ALL NEW WATER MAIN PASSES PRESSURE AND BACTERIOLOGICAL TESTS TO THE SATISFACTION OF THE CITY.
5. ALL WATER MAIN AND FITTINGS (3" DIAMETER AND LARGER) SHALL BE DUCTILE IRON, CLASS 54.
6. WATER MAIN SERVICE LEADS SHALL BE TYPE 'K' ANNEALED SEAMLESS COPPER WITH FLARED FITTINGS, UNLESS OTHERWISE NOTED.
7. ALL FIRE HYDRANTS SHALL BE EJIW #5BR MODEL #250 OR PER CITY STANDARDS.
8. ALL HYDRANTS TO BE A MINIMUM OF 5' FROM BACK OF CURB, TYP.
9. ALL NECESSARY FITTINGS, THRUST BLOCKS, RESTRAINING GLANDS, BLOW OFFS, ETC. FOR WATER MAIN ARE CONSIDERED INCIDENTAL TO THIS PROJECT. THE CONTRACTOR SHALL INSTALL THESE ITEMS AS NECESSARY AND AS REQUIRED BY THE CITY.
10. UNLESS NOTED SPECIFICALLY OTHERWISE ON THE PLANS, THE DESIGN INTENT IS TO HAVE THE WATER MAIN CONSTRUCTED WITH THIS PROJECT BE INSTALLED VIA OPEN CUT TRENCH BY THE CONTRACTOR. IF THE CONTRACTOR CHOOSES A DIFFERENT METHOD OF CONSTRUCTION, OTHER THAN WHAT IS SHOWN ON THE APPROVED PLANS UPON WHICH THE PERMIT WAS GRANTED, THE CONTRACTOR WILL BE RESPONSIBLE TO CONTACT THE REGULATORY AGENCIES TO REVISE THE APPROVED PERMIT.
11. ALL PIPES, PROTECTIVE MATERIALS, JOINING AND SEALING MATERIALS, AND MECHANICAL DEVICES USED IN THE WATERMAIN CONSTRUCTION SHALL COMPLY WITH THE CURRENT NSF/ANSI 61 STANDARDS FOR DRINKING WATER SYSTEM COMPONENTS.
12. THE WATER MAIN CONTRACTOR SHALL NOTIFY THE INSPECTION DEPARTMENT OF THE CITY AT LEAST THREE WORKING DAYS IN ADVANCE OF STARTING CONSTRUCTION.

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. ALL STORM SEWER LEADS SHALL BE CONSTRUCTED AT 1.00% MINIMUM SLOPE.
3. ALL STORM SEWER 10" OR LESS AND/OR LEADS SHALL BE PVC SDR 26.
4. JOINTS FOR P.V.C. PIPE SHALL BE ELASTOMERIC (RUBBER GASKET) AS SPECIFIED IN A.S.T.M. DESIGNATION D-3212.

SANITARY SEWER NOTES:

1. DOWNSPOUTS, WEEP TILE, FOOTING DRAINS OR ANY CONDUIT THAT CARRIES STORM OR GROUND WATER SHALL NOT BE ALLOWED TO DISCHARGE INTO A SANITARY SEWER.
2. ALL SANITARY LEADS SHALL BE CONSTRUCTED AT 1.00% MINIMUM SLOPE.
3. ALL SANITARY SEWER 8" OR LARGER SHALL BE PVC SDR 26 PIPE (ASTM D2680) AND FITTINGS, WITH ELASTOMERIC GASKET JOINTS PER ASTM D3212 UNLESS OTHERWISE NOTED.
4. ALL SANITARY SEWER LEADS SHALL BE POLYVINYL CHLORIDE (PVC) SDR 23.5 PIPE AND FITTINGS. ALL JOINTS TO BE ELASTOMERIC GASKET JOINTS PER ASTM D3212 UNLESS OTHERWISE NOTED.
5. SANITARY LEADS SHALL BE PROVIDED WITH CLEANOUTS EVERY 100 FEET AND AT EVERY BEND AS SHOWN.

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45998 LICENSED PROFESSIONAL ENGINEER

NORTH

0 20 40 80
SCALE: 1" = 40'

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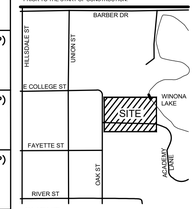

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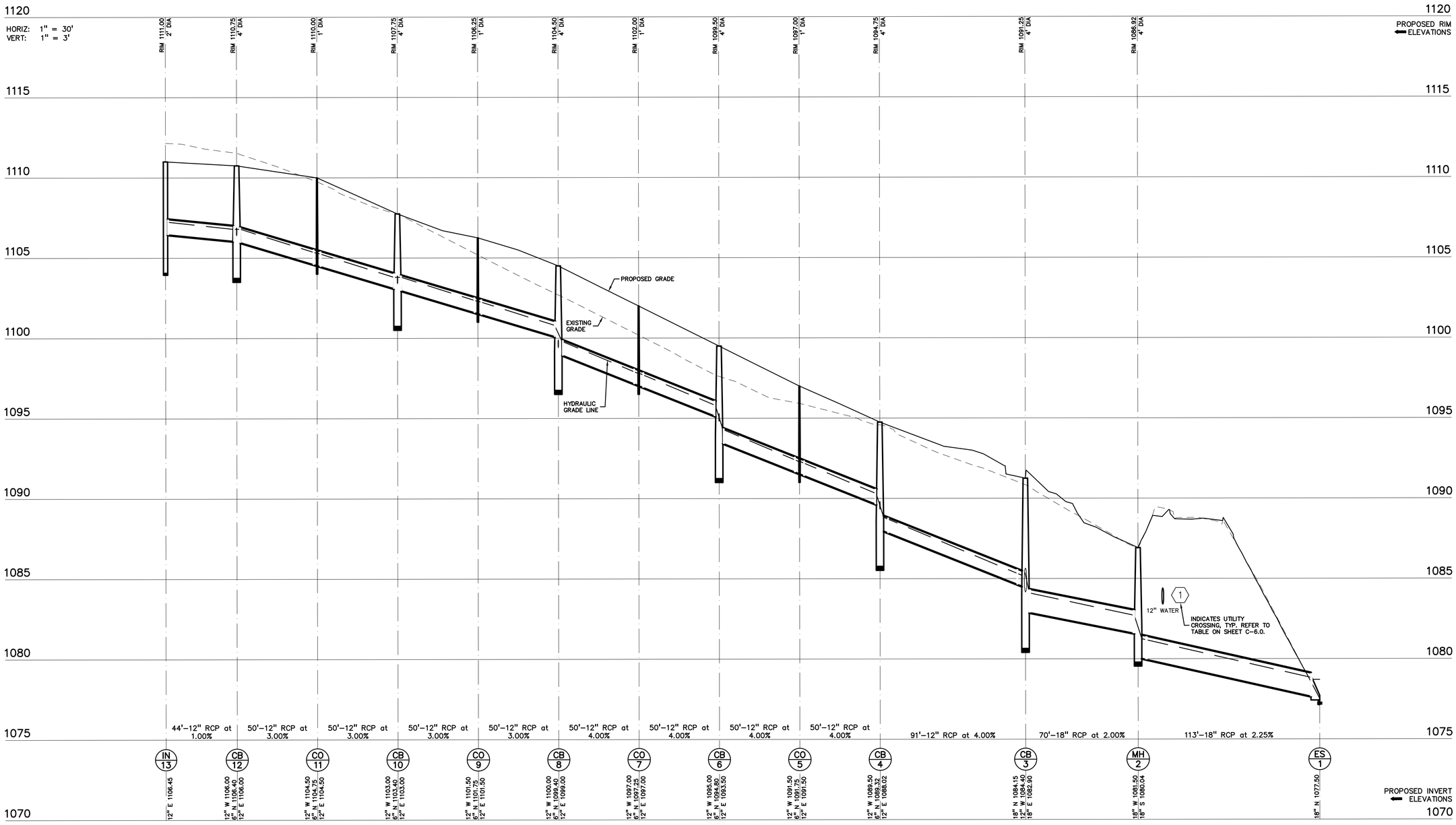
C-6.0

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\C-6.0_UTIL-26-0130.dwg PLOT DATE:9/4/2026 11:21 AM BY:Justin Paulen



ST 13–1 PROFILE

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-7.1) PROF-26-0130.dwg PLOT DATE:9/4/2026 11:30 AM BY:Justin Pulaski

PEA GROUP

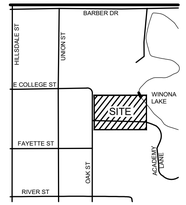
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER No. 45998
LICENSED PROFESSIONAL ENGINEER

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 COMPANTEE 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.



CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

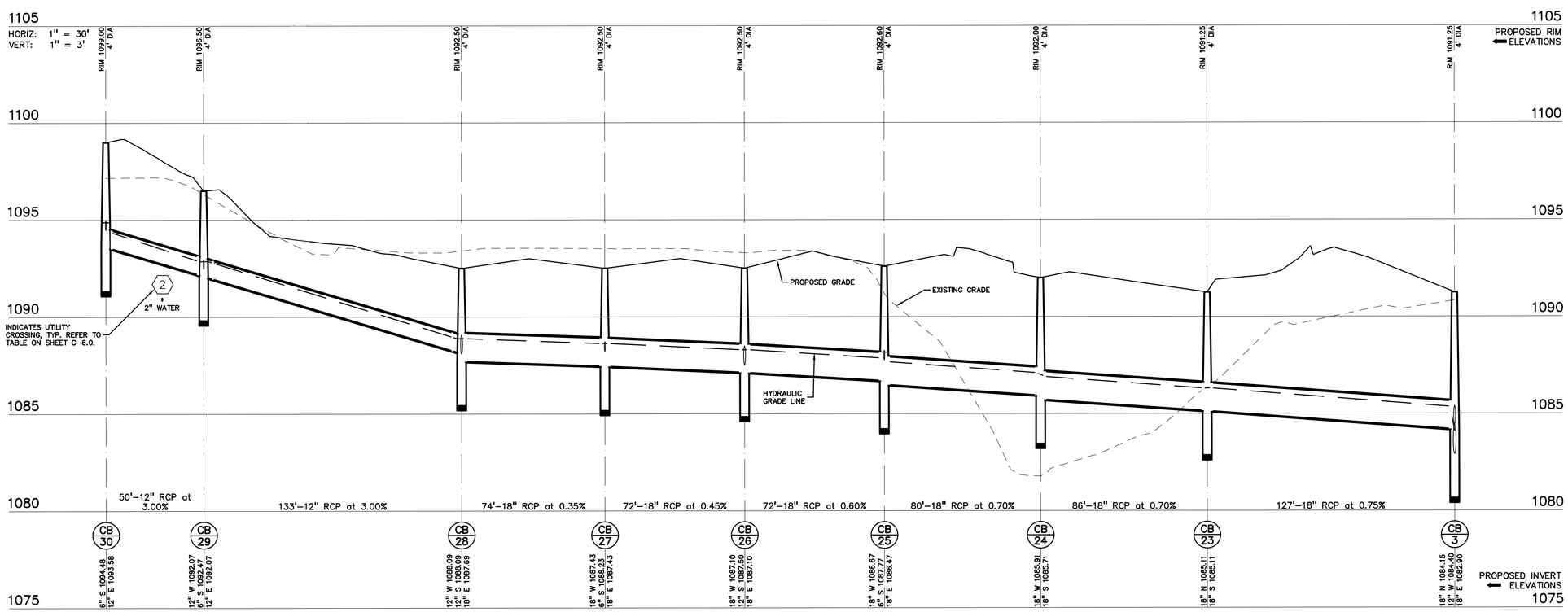
REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
STORM SEWER PROFILES

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-7.1



ST 30-3 PROFILE

NOT FOR CONSTRUCTION

PEA GROUP

t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER
No. 45998
LICENSED PROFESSIONAL ENGINEER

0 15 30 60
SCALE: 1" = 30'

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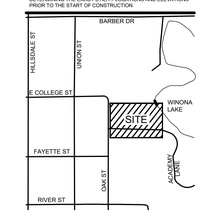


CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS
PRELIMINARY BID SET - SITE AND FOUNDATIONS 7-31-26
PLANNING COMMISSION REVIEW 9-4-26

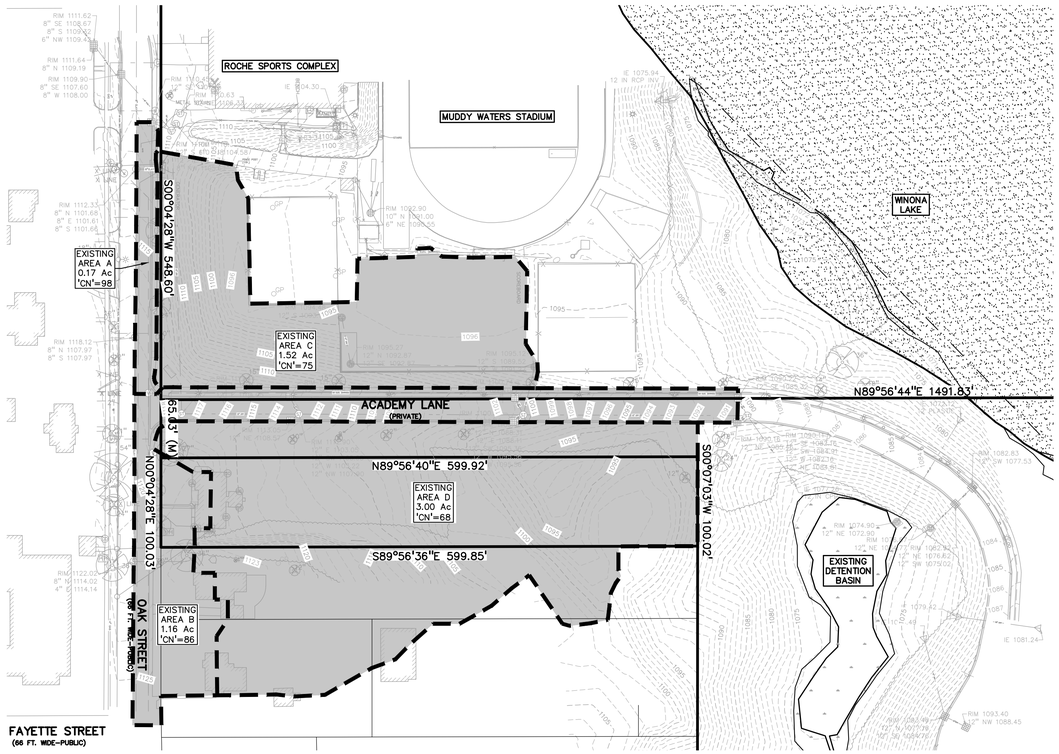
ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
STORM SEWER PROFILES

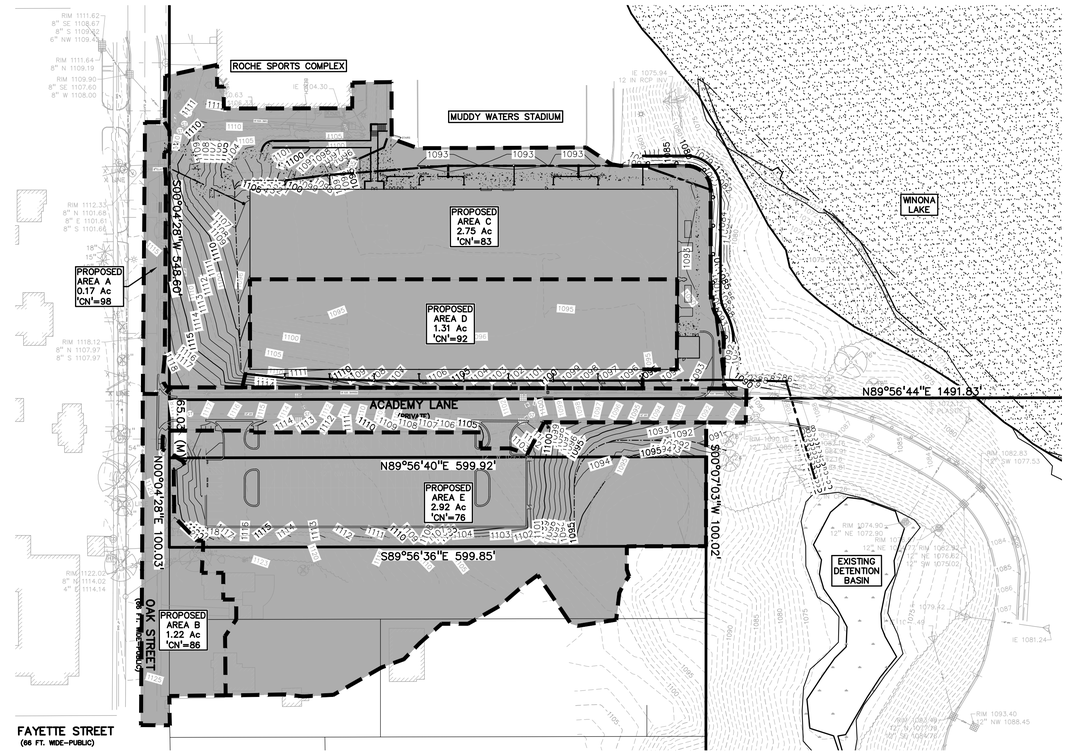
PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-7.2

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG_CONSTRUCTION\C-7.1 PROF-26-0130.dwg PLOT DATE:9/4/2026 11:31 AM BY:Justin Poulsen



PRE-DEVELOPMENT IMPACTED DRAINAGE AREAS TRIBUTARY TO THE EXISTING DETENTION BASIN



POST-DEVELOPMENT IMPACTED DRAINAGE AREAS TRIBUTARY TO THE EXISTING DETENTION BASIN

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45998 LICENSED PROFESSIONAL ENGINEER

NORTH

0 40 80 160
SCALE: 1" = 80'

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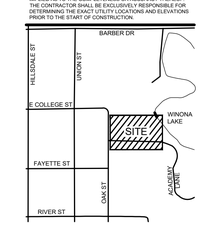


CLIENT

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

STORMWATER MANAGEMENT DESIGN NARRATIVE:

ON-SITE STORMWATER RUNOFF FROM THE PROPOSED TURF BUILDING IS PROPOSED TO BE DIRECTED THROUGH ROOF DOWNSPOUT CONDUCTORS TO THE PROPOSED STORM SEWER AND DISCHARGE TO THE EXISTING DETENTION BASIN. RUNOFF FROM THE PROPOSED SITE IMPROVEMENTS AND AREAS ADJACENT TO THE PROPOSED TURF BUILDING SHOWN ABOVE WILL ALSO BE CAPTURED BY THE PROPOSED STORM SEWER AND DISCHARGE TO THE EXISTING DETENTION BASIN. RUNOFF FROM THE PROPOSED PARKING LOT WILL SHEET DRAIN TO THE EAST AND BE CARRIED THROUGH PROPOSED CURB-CUT SPILLWAYS AND A SWALE DIRECTING THE DISCHARGE TO THE EXISTING DETENTION BASIN.

FOR DRAINAGE AREAS TRIBUTARY TO THE EXISTING DETENTION BASIN THAT WILL BE IMPACTED BY THE PROPOSED TURF BUILDING DEVELOPMENT, PREDEVELOPMENT AND POSTDEVELOPMENT RUNOFF VOLUMES WERE DETERMINED THROUGH AN ANALYSIS AND CALCULATIONS USING A SCS METHOD HYDRAFLOW HYDROGRAPHS PROGRAM, WITH RAINFALL DATA SOURCED FROM THE NOAA NATIONAL WEATHER SERVICE (NWS) - PRECIPITATION FREQUENCY DATA SERVER (PFDS) FOR HILLSDALE, MICHIGAN. THE FOLLOWING PRE AND POST DEVELOPMENT RUNOFF VOLUMES (IN CUBIC FEET) WERE DETERMINED FOR THE 10 YEAR AND 100 YEAR STORM PRECIPITATION DATA FROM NOAA NWS PDFS:

PRE DEVELOPMENT 10 YEAR RUNOFF VOLUME: 28,826 CF

POST DEVELOPMENT 10 YEAR RUNOFF VOLUME: 56,609 CF

INCREASE IN 10 YEAR RUNOFF VOLUME TO BE DETAINED IN THE EXISTING DETENTION BASIN = 56,609 CF - 28,826 CF = 27,783 CF

PRE DEVELOPMENT 100 YEAR RUNOFF VOLUME: 60,594 CF

POST DEVELOPMENT 100 YEAR RUNOFF VOLUME: 107,970 CF

INCREASE IN 100 YEAR RUNOFF VOLUME TO BE DETAINED IN THE EXISTING DETENTION BASIN = 107,970 CF - 60,594 CF = 47,376 CF

ACCORDING TO THE STORMWATER MANAGEMENT REPORT AND EXHIBIT DRAWINGS FOR THE 2023 HILLSDALE ACADEMY ADDITION PROJECT, PREPARED BY MT ENGINEERING AND PROVIDED TO PEA GROUP BY THE CITY OF HILLSDALE, MODIFICATIONS WERE MADE TO THE EXISTING DETENTION BASIN'S OUTLET PIPE TO WINONA LAKE AS A PART OF THE PROJECT. AN OUTLET CONTROL STRUCTURE WAS INSTALLED AT THE OUTLET PIPE OF THE EXISTING DETENTION BASIN TO DETAIN AN INCREASE OF STORMWATER RUNOFF VOLUME RESULTING FROM THE HILLSDALE ACADEMY ADDITION'S CONSTRUCTION. THE RIM ELEVATION OF THE OUTLET CONTROL STRUCTURE WAS DESIGNED TO AN ELEVATION OF 1074.80 TO DETAIN THE CALCULATED ADDITIONAL RUNOFF VOLUME OF 47,500 CF. 1074.80 IS THE WATER ELEVATION OF THE ADDITIONAL RUNOFF VOLUME WITHIN THE EXISTING DETENTION BASIN, ABOVE THE PERMANENT WATER LEVEL AND EXISTING INVERT ELEVATION OF THE BASIN'S OUTLET PIPE OF 1072.73, PER THE PROVIDED STORMWATER MANAGEMENT REPORT. TO DRAIN THIS VOLUME OVER APPROXIMATELY 96 HOURS (4 DAYS), THE OUTLET CONTROL STRUCTURE WAS DESIGNED TO HAVE FOUR 1 INCH DIAMETER HOLES PLACED AROUND THE STRUCTURE AT AN INVERT ELEVATION OF 1072.80, PER THE REPORT.

AS SHOWN IN THE DETENTION AND OUTLET CONTROL STRUCTURE CALCULATIONS ON THIS SHEET, PEA GROUP HAS CALCULATED STORMWATER STORAGE ELEVATIONS OF 1075.84 AND 1076.35 FOR ADDING THE 10 AND 100 YEAR POST DEVELOPMENT INCREASE IN RUNOFF VOLUMES TO THE EXISTING DETENTION BASIN, ABOVE THE 1074.80 HILLSDALE ACADEMY ADDITION RUNOFF DETENTION ELEVATION. THE STORAGE ELEVATIONS ARE CALCULATED FROM THE AREAS AND VOLUMES OF THE BASIN'S ELEVATION CONTOURS REPORTED IN THE 2023 HILLSDALE ACADEMY ADDITION PROJECT STORMWATER MANAGEMENT REPORT. THE RIM OF THE OUTLET CONTROL STRUCTURE IS PROPOSED TO BE RAISED TO THE CALCULATED 100 YEAR DETENTION STORAGE ELEVATION OF 1076.35, A 1.55' INCREASE FROM THE EXISTING RIM ELEVATION OF 1074.80. ALSO, TWO ADDITIONAL 1 INCH DIAMETER HOLES ARE PROPOSED TO BE PLACED AROUND THE PERIMETER OF THE STRUCTURE AT THE INVERT ELEVATION OF 1072.80 TO MAINTAIN A DRAIN TIME CLOSE TO 96 HOURS.

Detention Storage Volumes

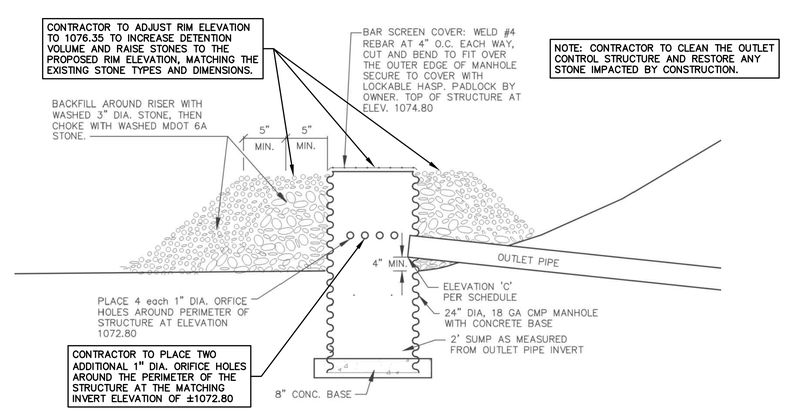
2023 Hillsdale Academy Addition Runoff Volume:	**47,500**	cf
Hillsdale College Turf Building 10 Year Runoff Volume:	**27,783**	cf
Hillsdale College Turf Building 100 Year Runoff Volume:	**47,376**	cf

Existing Detention Basin

10 Year Detention Storage Elevation:	1,075.84	75,283	cf
100 Year Detention Storage Elevation	1,076.35	94,876	cf
Elev. (ft)	**Area (sf)**	**Vol. (cf)**	**Total Vol. (cf)**
1071.80	0	0	0
1072.00	2,911	198	198
1072.70	11,805	4,830	5,028
1074.00	19,576	20,186	25,214
1076.00	35,717	54,490	79,704
1078.00	52,997	87,195	166,899
1080.00	69,765	122,379	289,278
1082.00	84,724	154,247	443,525
Bottom Elevation of Pond:		1,071.80	

Existing Detention Basin Outlet Control Structure Calculations

Basin Outlet Elevation:	1072.80
Existing Rim Elevation:	1074.80
10 Year Runoff Detention Elevation:	1075.84
100 Year Runoff Detention Elevation:	1076.35
Proposed Rim Elevation:	1076.35
10 year 2/3 Head over Orifice (0.67h):	2.03 ft
100 year 2/3 Head over Orifice (0.67h):	2.37 ft
Outlet Restriction Hole Dia.:	1.00 in
Outlet Restriction Hole Area:	0.005 sft
Number of Restriction Holes:	6
Total Restriction Hole Area:	0.033 sft
Discharge Rate (Q)	
Q_{10} = 0.62 * A * (2 * g *0.67h)^0.5=	0.232 cfs
Q_{100} = 0.62 * A * (2 * g * 0.67h)^0.5=	0.250 cfs
2023 Hillsdale Academy Addition Runoff Volume:	47,500 cf
+Hillsdale College Turf Building 10 Year Runoff Volume:	75,283 cf
+Hillsdale College Turf Building 100 Year Runoff Volume:	94,876 cf
10 Year Runoff Volume Head Drain Time:	90.30 hrs
100 Year Runoff Volume Head Drain Time:	105.30 hrs



EXISTING OUTLET CONTROL STRUCTURE DETAIL

(REFERENCED FROM 2023 HILLSDALE ACADEMY ADDITION PLANS AND UPDATED FOR PROPOSED MODIFICATIONS TO STRUCTURE)

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

STORM WATER MANAGEMENT PLAN AND CALCULATIONS

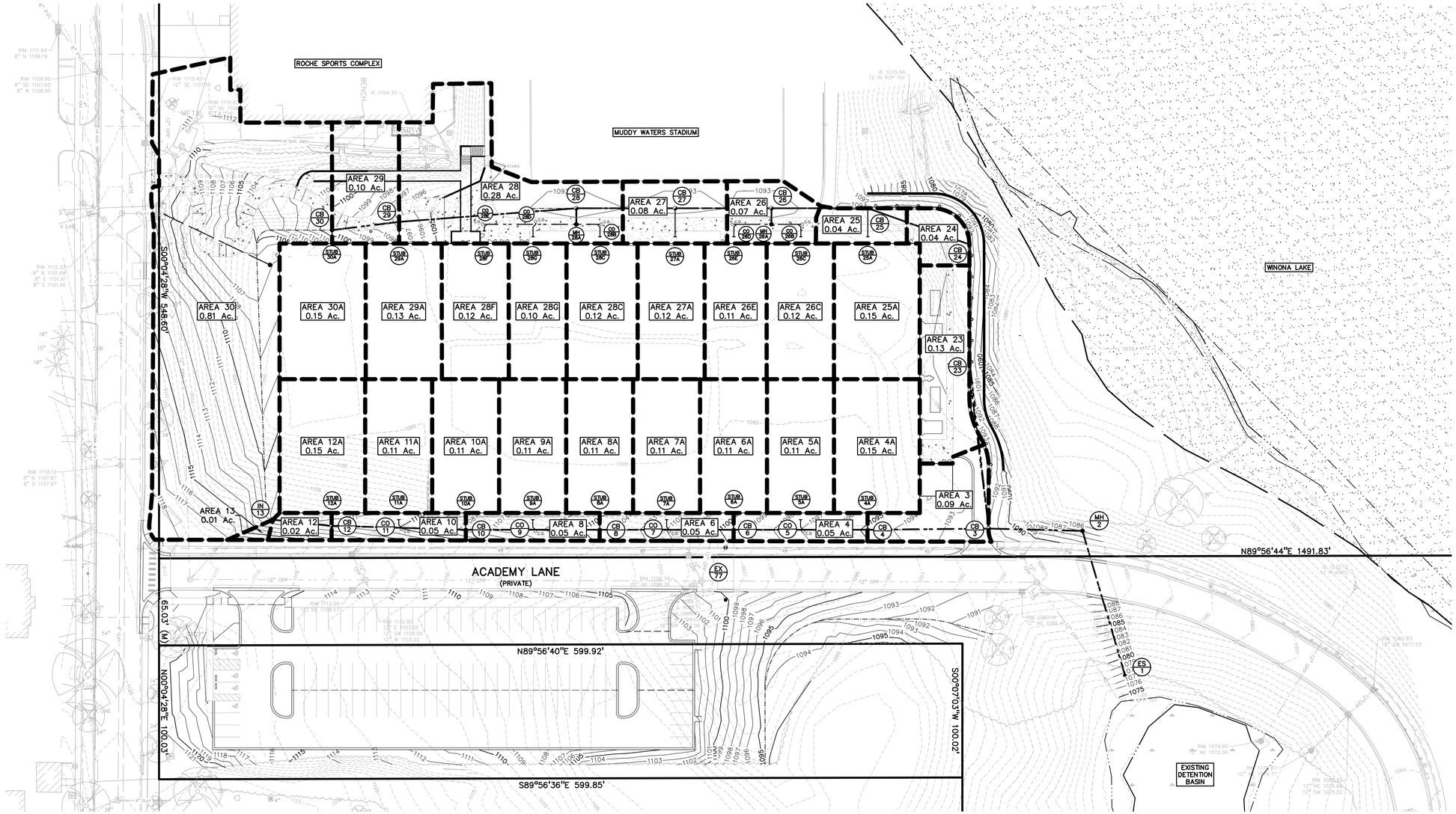
PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:

C-8.1

NOT FOR CONSTRUCTION

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-8.1) DRAIN-26-0130.dwg PLOT DATE: 9/4/2026 11:21 AM BY: Justin Poulsen



STORM SEWER SYSTEM DESIGN

Region Michigan
Location: Hillsdale

T = 10 (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	0.01	0.30	0.00	0.00	0.01	10.00	4.70	0.01	3.56	12	44	1.00	0.00%	4.5	0.2	1107.25	1106.80	1111.00	1110.75	1106.45	1106.00	3.39	3.58	3.75	3.95
12	11	0.02	0.30	0.01	0.15	0.17	10.20	4.67	0.69	6.17	12	50	3.00	0.04%	7.9	0.1	1106.80	1105.30	1110.75	1110.00	1106.00	1104.50	3.58	4.33	3.95	4.70
11	10	0.00	0.00	0.00	0.26	0.29	10.30	4.65	1.19	6.17	12	50	3.00	0.11%	7.9	0.1	1105.30	1103.80	1110.00	1107.75	1104.50	1103.00	4.33	3.58	4.70	3.95
10	9	0.05	0.30	0.01	0.38	0.45	10.40	4.64	1.76	6.17	12	50	3.00	0.24%	7.9	0.1	1103.80	1102.30	1107.75	1106.25	1103.00	1101.50	3.58	3.58	3.95	3.95
9	8	0.00	0.00	0.00	0.49	0.56	10.50	4.62	2.26	6.17	12	50	3.00	0.40%	7.9	0.1	1102.30	1100.80	1106.25	1104.50	1101.50	1100.00	3.58	3.33	3.95	3.70
8	7	0.05	0.31	0.01	0.61	0.73	10.60	4.61	2.82	7.13	12	50	4.00	0.63%	9.1	0.1	1099.80	1097.80	1104.50	1102.00	1099.00	1097.00	4.33	3.83	4.70	4.20
7	6	0.00	0.00	0.00	0.72	0.84	10.70	4.59	3.31	7.13	12	50	4.00	0.87%	9.1	0.1	1097.80	1095.80	1102.00	1099.50	1097.00	1095.00	3.83	3.33	4.20	3.70
6	5	0.05	0.30	0.01	0.84	1.00	10.80	4.58	3.87	7.13	12	50	4.00	1.18%	9.1	0.1	1094.30	1092.30	1099.50	1097.00	1093.50	1091.50	4.83	4.33	5.20	4.70
5	4	0.00	0.00	0.00	0.95	1.12	10.90	4.56	4.35	7.13	12	50	4.00	1.49%	9.1	0.1	1092.30	1090.30	1097.00	1094.75	1091.50	1089.50	4.33	4.08	4.70	4.45
4	3	0.05	0.30	0.01	1.11	1.31	11.00	4.55	5.04	7.13	12	91	4.00	2.00%	9.1	0.2	1088.82	1085.20	1094.75	1091.25	1088.02	1084.40	5.56	5.68	5.93	6.05
3	2	0.00	0.00	0.00	2.94	3.98	11.20	4.52	13.27	14.85	18	70	2.00	1.60%	8.4	0.1	1084.10	1082.70	1091.25	1086.92	1082.90	1081.50	6.64	3.71	7.15	4.22
2	1	0.00	0.00	0.00	2.94	3.98	11.30	4.50	13.27	15.76	18	113	2.25	1.60%	8.9	0.2	1081.24	1078.70	1086.92	1082.29	1080.04	1077.50	5.17	3.08	5.68	3.59
4A	4	0.15	0.95	0.14	0.14	0.15	10.00	4.70	0.66	1.25	6	8	5.00	1.37%	6.4	0.0	1090.10	1089.72	1095.20	1094.75	1089.70	1089.32	4.88	4.80	5.10	5.03
5A	5	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1092.53	1092.30	1097.45	1097.00	1092.13	1091.75	4.70	4.62	4.92	4.70
6A	6	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1095.58	1095.20	1099.95	1099.50	1095.18	1094.80	4.15	4.07	4.37	4.30
7A	7	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1098.03	1097.80	1102.45	1102.00	1097.63	1097.25	4.20	4.12	4.42	4.20
8A	8	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1100.18	1099.80	1104.95	1104.50	1099.78	1099.40	4.55	4.47	4.77	4.70
9A	9	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1102.53	1102.30	1106.70	1106.25	1102.13	1101.75	3.95	3.87	4.17	3.95
10A	10	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	8	5.00	0.84%	6.4	0.0	1104.18	1103.80	1108.20	1107.75	1103.78	1103.40	3.80	3.72	4.02	3.95
11A	11	0.11	0.95	0.11	0.11	0.11	10.00	4.70	0.51	1.25	6	6	5.00	0.84%	6.4	0.0	1105.45	1105.30	1110.55	1110.00	1105.05	1104.75	4.87	4.62	5.09	4.70
12A	12	0.15	0.95	0.14	0.14	0.15	10.00	4.70	0.66	1.25	6	4	5.00	1.37%	6.4	0.0	1107.03	1106.80	1110.99	1110.75	1106.63	1106.40	3.73	3.72	3.96	3.95

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
30	29	0.81	0.38	0.31	0.45	0.96	10.00	4.70	2.13	6.17	12	50	3.00	0.36%	7.9	0.1	1094.38	1092.87	1099.00	1096.50	1093.58	1092.07	4.25	3.27	4.62	3.63
29	28	0.10	0.63	0.07	0.64	1.20	10.10	4.68	3.01	6.17	12	133	3.00	0.72%	7.9	0.3	1092.87	1088.89	1096.50	1092.50	1092.07	1088.09	3.27	3.25	3.63	3.61
28	27	0.28	0.64	0.18	1.15	1.82	10.40	4.64	5.32	6.21	18	74	0.35	0.26%	3.5	0.3	1088.89	1088.63	1092.50	1092.50	1087.69	1087.43	3.11	3.36	3.81	3.87
27	26	0.08	0.53	0.04	1.30	2.02	10.70	4.59	5.97	7.05	18	72	0.45	0.32%	4.0	0.3	1088.63	1088.30	1092.50	1092.50	1087.43	1087.10	3.36	3.69	3.87	4.20
26	25	0.07	0.45	0.03	1.54	2.31	11.00	4.55	7.02	8.14	18	72	0.60	0.45%	4.6	0.3	1088.30	1087.87	1092.50	1092.60	1087.10	1086.67	3.69	4.22	4.20	4.73
25	24	0.04	0.49	0.02	1.71	2.50	11.30	4.50	7.69	8.79	18	80	0.70	0.54%	5.0	0.3	1087.67	1087.11	1092.60	1092.00	1086.47	1085.91	4.42	4.39	4.93	4.89
24	23	0.04	0.75	0.03	1.73	2.54	11.60	4.46	7.74	8.79	18	86	0.70	0.54%	5.0	0.3	1086.91	1086.31	1092.00	1091.25	1085.71	1085.11	4.59	4.43	5.09	4.94
23	3	0.13	0.73	0.09	1.83	2.66	11.90	4.42	8.08	9.10	18	127	0.75	0.59%	5.2	0.4	1086.31	1085.35	1091.25	1091.25	1085.11	1084.15	4.43	5.39	4.94	5.90
25A	25	0.15	0.95	0.14	0.14	0.15	10.00	4.70	0.67	1.25	6	21	5.00	1.41%	6.4	0.1	1089.24	1088.17	1093.65	1092.60	1088.84	1087.77	4.19	4.20	4.41	4.43
26C	26B	0.12	0.95	0.11	0.11	0.12	10.00	4.70	0.52	0.97	6	9	3.00	0.87%	5.0	0.0	1089.30	1089.02	1093.79	1093.39	1088.90	1088.62	4.27	4.15	4.50	4.37
26B	26A	0.00	0.00	0.00	0.11	0.12	10.00	4.70	0.52	0.97	6	22	3.00	0.87%	5.0	0.1	1089.02	1088.36	1093.39	1093.08	1088.62	1087.96	4.15	4.49	4.37	4.71
26A	26	0.00	0.00	0.00	0.21	0.22	10.10	4.68	1.00	2.52	12	12	0.50	0.08%	3.2	0.1	1088.36	1088.30	1093.08	1092.50	1087.56	1087.50	4.35	3.83	4.71	4.20
26E	26D	0.11	0.95	0.10	0.10	0.11	10.00	4.70	0.48	0.97	6	9	3.00	0.74%	5.0	0.0	1089.48	1089.21	1093.82	1093.63	1089.08	1088.81	4.11	4.19	4.33	4.42
26D	26A	0.00	0.00	0.00	0.10	0.11	10.00	4.70	0.48	0.97	6	28	3.00	0.74%	5.0	0.1	1089.21	1088.36	1093.63	1093.08	1088.81	1087.96	4.19	4.49	4.42	4.71
27A	27	0.12	0.95	0.11	0.11	0.12	10.00	4.70	0.52	0.97	6	21	3.00	0.86%	5.0	0.1	1089.27	1088.63	1093.76	1092.50	1088.87	1088.23	4.27	3.65	4.49	3.87
28C	28B	0.12	0.95	0.12	0.12	0.12	10.00	4.70	0.55	0.97	6	9	3.00	0.97%	5.0	0.0	1089.75	1089.47	1093.90	1093.43	1089.35	1089.07	3.92	3.73	4.15	3.96
28B	28A	0.00	0.00	0.00	0.12	0.12	10.00	4.70	0.55	0.97	6	18	3.00	0.97%	5.0	0.1	1089.47	1088.95	1093.43	1093.07	1089.07	1088.55	3.73	3.90	3.96	4.13
28A	28	0.00	0.00	0.00	0.32	0.34	10.10	4.68	1.51	2.52	12	12	0.50	0.18%	3.2	0.1	1088.95	1088.89	1093.07	1092.50	1088.15	1088.09	3.76	3.25	4.13	3.61
28F	28E	0.12	0.95	0.11	0.11	0.12	10.00	4.70	0.52	0.97	6	5	3.00	0.86%	5.0	0.0	1090.13	1089.98	1093.89	1093.85	1089.73	1089.58	3.54	3.65	3.77	3.88
28E	28D	0.00	0.00	0.00	0.11	0.12	10.00	4.70	0.52	1.48	8	36	1.50	0.19%	4.2	0.1	1089.98	1089.43	1093.85	1093.63	1089.44	1088.90	3.60	3.93	3.88	4.20
28D	28A	0.00	0.00	0.00	0.21	0.22	10.10	4.68	0.97	1.48	8	32	1.50	0.64%	4.2	0.1	1089.43	1088.95	1093.63	1093.07	1088.90	1088.41	3.93	3.86	4.20	4.13
28G	28D	0.10	0.95	0.10	0.10	0.10	10.00	4.70	0.45	0.97	6	9	3.00	0.64%	5.0	0.0	1089.71	1089.43	1093.89	1093.63	1089.31	1089.03	3.96	3.98	4.18	4.20
29A	29	0.13	0.95	0.13	0.13	0.13	10.00	4.70	0.59	1.25	6	11	5.00	1.11%	6.4	0.0	1093.43	1092.87	1097.54	1096.50	1093.03	1092.47	3.88	3.41	4.11	3.63
30A	30	0.15	0.95	0.14	0.14	0.15	10.00	4.70	0.67	1.25	6	5	5.00	1.42%	6.4	0.0	1095.13	1094.88	1100.00	1099.00	1094.73	1094.48	4.65	3.90	4.87	4.12

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NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

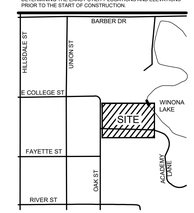
STATE OF MICHIGAN
MICHAEL R. MORTE
ENGINEER
No. 45998
LICENSED PROFESSIONAL ENGINEER

NORTH

0 20 40 80
SCALE: 1" = 40'

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 COMPUTATION IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OF THE INFORMATION THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS
PRELIMINARY BID SET - SITE AND FOUNDATIONS 7-31-26
PLANNING COMMISSION REVIEW 9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
STORM SEWER DRAINAGE PLAN AND DESIGN CALCULATIONS

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-8.2

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 CITY 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, OWNER, CITY AND STATE 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.

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 AND SANITARY SEWER STRUCTURE FRAME AND COVERS INCLUDING CLEAN OUTS
7. WATER DISTRIBUTION SYSTEM PIPING INCLUDING JOINTS
8. WATER DISTRIBUTION SYSTEM STRUCTURES
9. WATER DISTRIBUTION SYSTEM STRUCTURE FRAME AND COVERS
10. WATER DISTRIBUTION SYSTEM SHUT OFF BOXES
11. WATER DISTRIBUTION SYSTEM FIRE HYDRANTS
12. WATER DISTRIBUTION SYSTEM GATE VALVES
13. STORMWATER MANAGEMENT OUTLET CONTROL STRUCTURES INCLUDING COVERS OR GRATES
14. STORMWATER MANAGEMENT OUTLET SEDIMENTATION BASIN RISERS INCLUDING GRATES
15. 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.
16. STORMWATER MANAGEMENT OIL/GREASE SEPARATORS
17. 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.
18. 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
19. PAVEMENT UNDERDRAIN 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
20. 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)
21. SITE FENCING AND GATES INCLUDING FOOTINGS
22. SITE RAILINGS INCLUDING FOOTING OR EMBEDMENTS
23. 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:

•• RETAINING WALL MATERIAL AND STRUCTURAL CALCULATIONS

•• 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.

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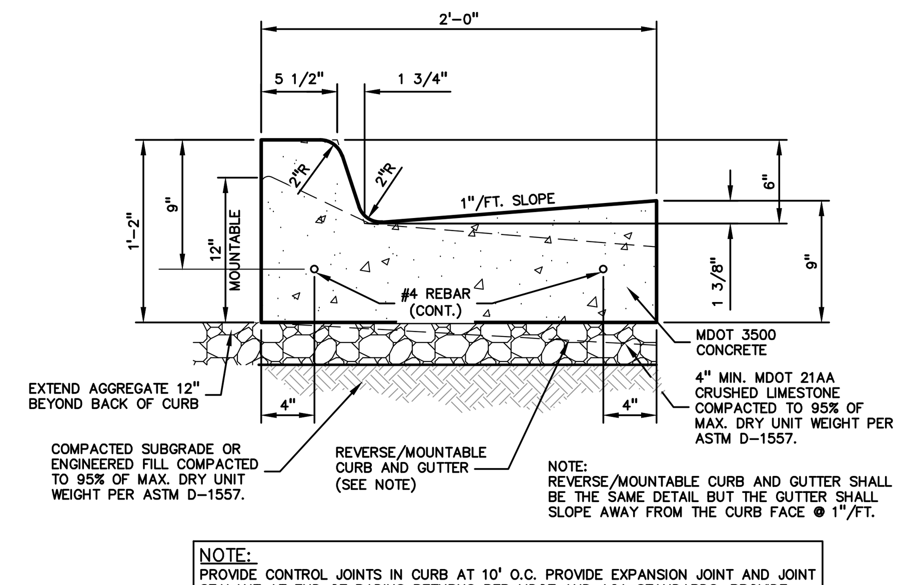
PAVING NOTES:

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

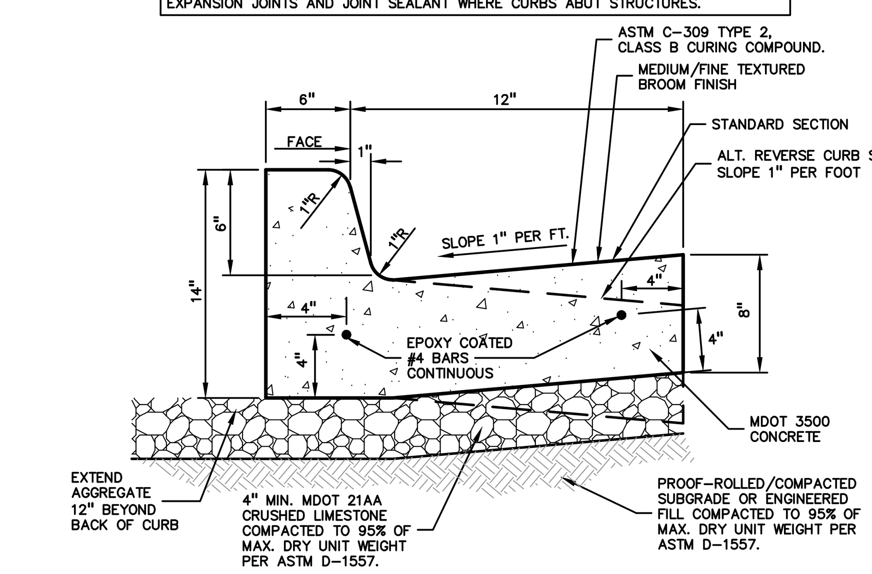


NOTE: PROVIDE CONTROL JOINTS IN CURB AT 10' O.C. PROVIDE EXPANSION JOINT AND JOINT SEALANT AT END OF RADIUS RETURNS PER MDOT AND ACA STANDARDS. PROVIDE EXPANSION JOINTS AND JOINT SEALANT WHERE CURBS ABUT STRUCTURES.

MDOT CURB DETAIL "F-4"
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.



18"x6" STANDARD CONCRETE CURB AND GUTTER
NOT TO SCALE

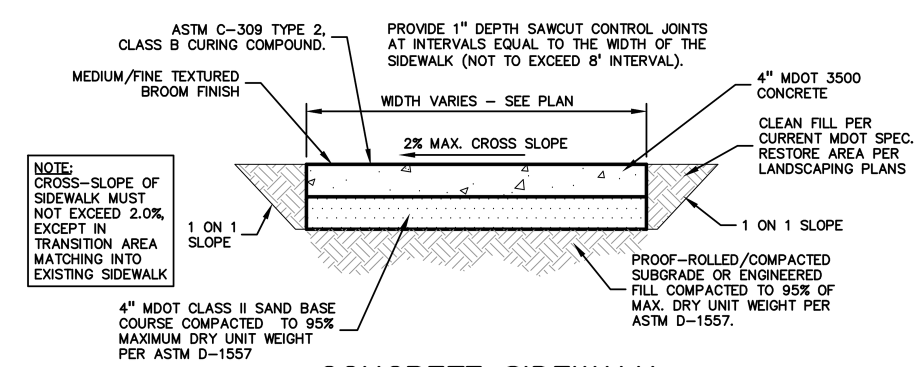
ASPHALT MIX DESIGN CHART					
COMMERCIAL ADT 0-300	COMMERCIAL ADT 301-1000	COMMERCIAL ADT 1001-3400	COMMERCIAL ADT ≥3401	APPLICATION RATE (LB/YD^2), MINIMUM - MAXIMUM	COURSE APPLICATION
2EL	2EML	2EMH	2EH	435-550	BASE
3EL	3EML	3EMH	3EH	330-410	BASE AND/OR LEVELING
4EL	4EML	4EMH	4EH	220-275	LEVELING AND/OR 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		

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.

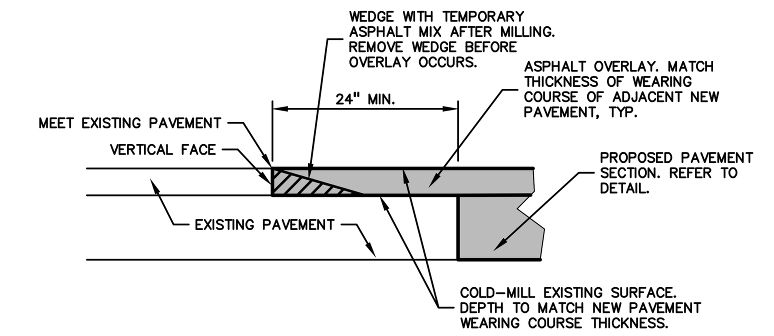
ASPHALT MATERIAL NOTES: HOT-MIX ASPHALT (HMA) MIXTURES UTILIZING RECYCLED ASPHALT PAVEMENT (RAP) SHALL MEET MDOT SPECIAL PROVISION 12SP501(E). REFER TO ADJACENT CHART FOR BINDER.

IF RAP IS USED IN ANY HMA MIX, THE ASPHALT BINDER GRADE MUST BE ADJUSTED IN ACCORDANCE WITH MDOT TIER 1 OR TIER 2 REQUIREMENTS (RAP BINDER CONTRIBUTION UP TO 27% MAXIMUM). TIER 3 MIXES ARE NOT PERMITTED.

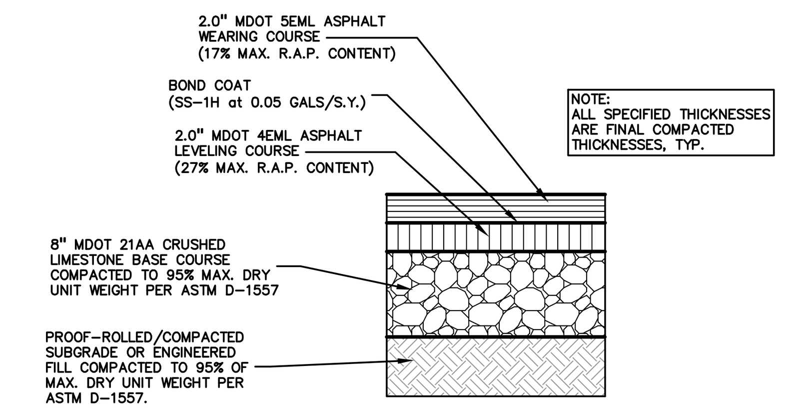
AN APPROVED ASPHALT MIX DESIGN FOR EACH SPECIFIED MIX SHALL BE SUBMITTED TO PEA GROUP FOR REVIEW PRIOR TO CONSTRUCTION.



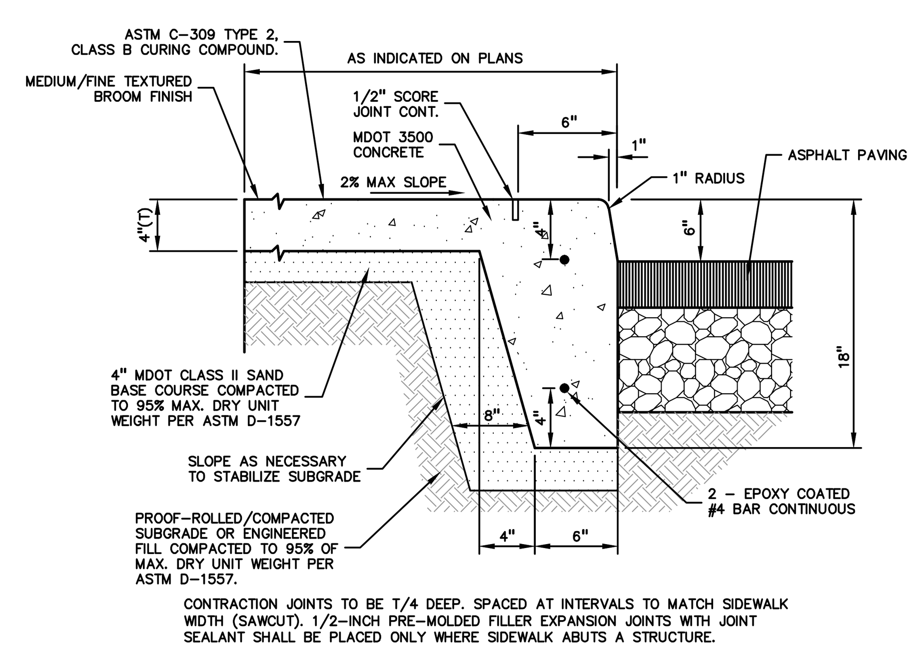
CONCRETE SIDEWALK
NOT TO SCALE



BUTT JOINT DETAIL
NOT TO SCALE



STANDARD DUTY ASPHALT DETAIL
(NOT FOR USE IN THE RIGHT-OF-WAY) NOT TO SCALE



INTEGRAL CURB AND SIDEWALK
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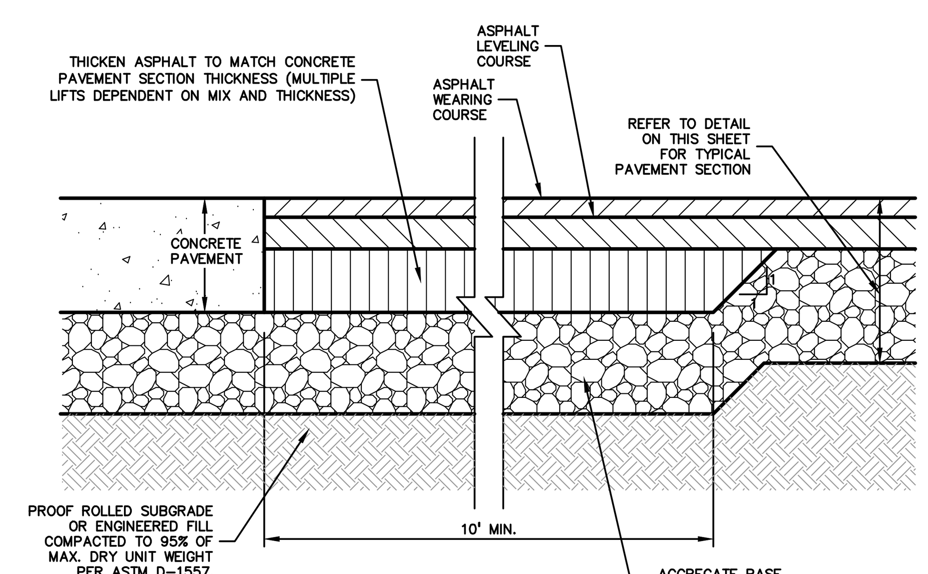

THICKENED EDGE ASPHALT DETAIL
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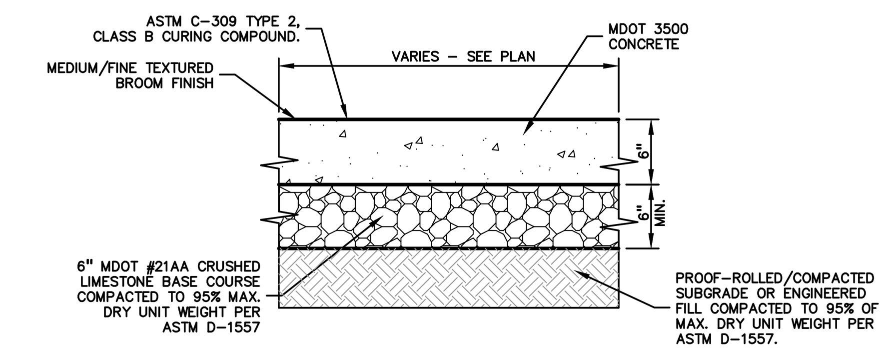

STANDARD DUTY CONCRETE DETAIL
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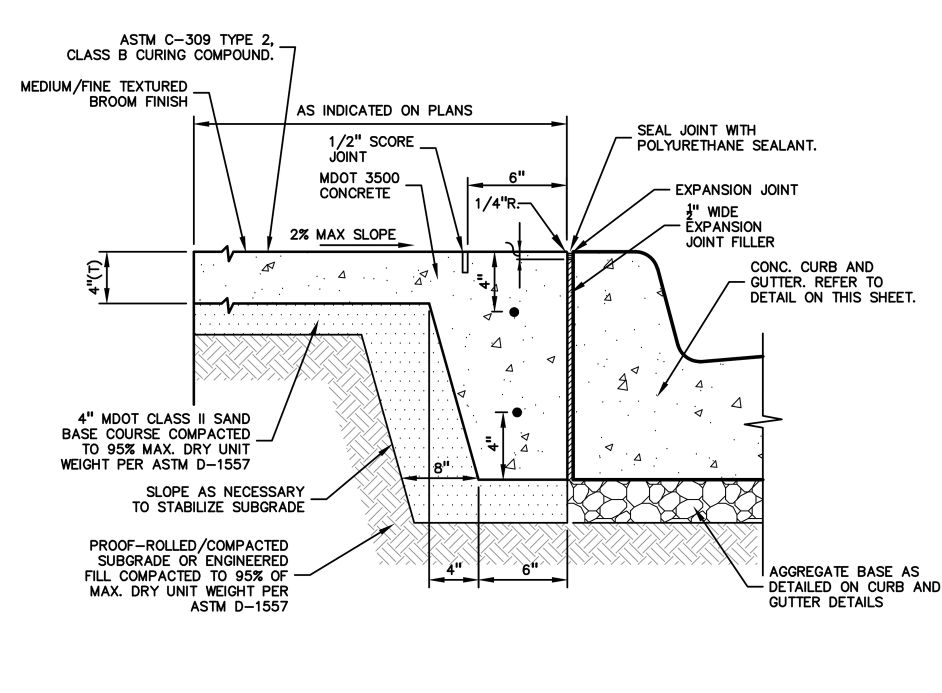
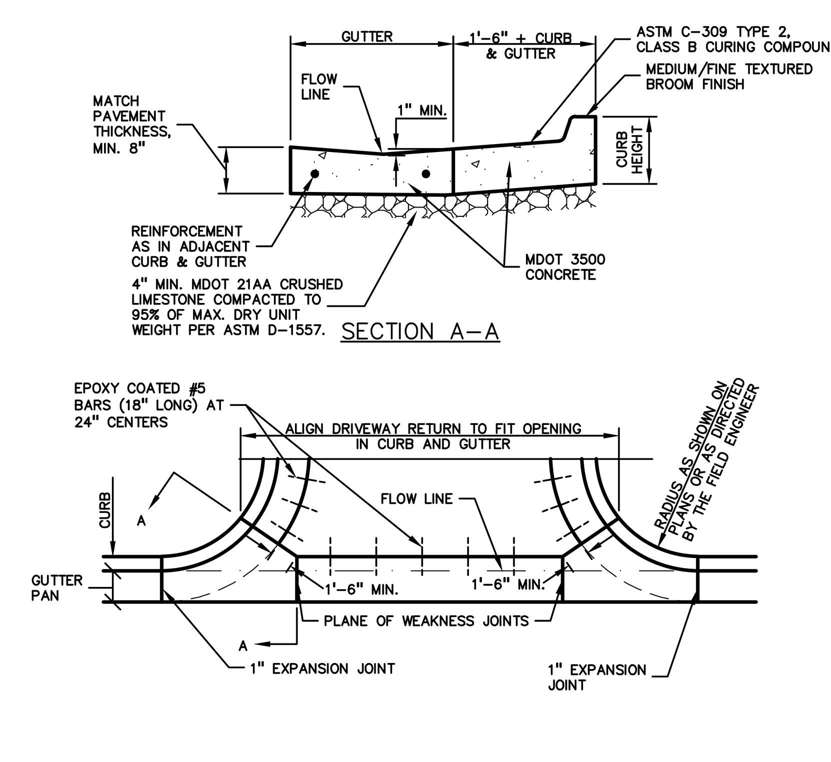
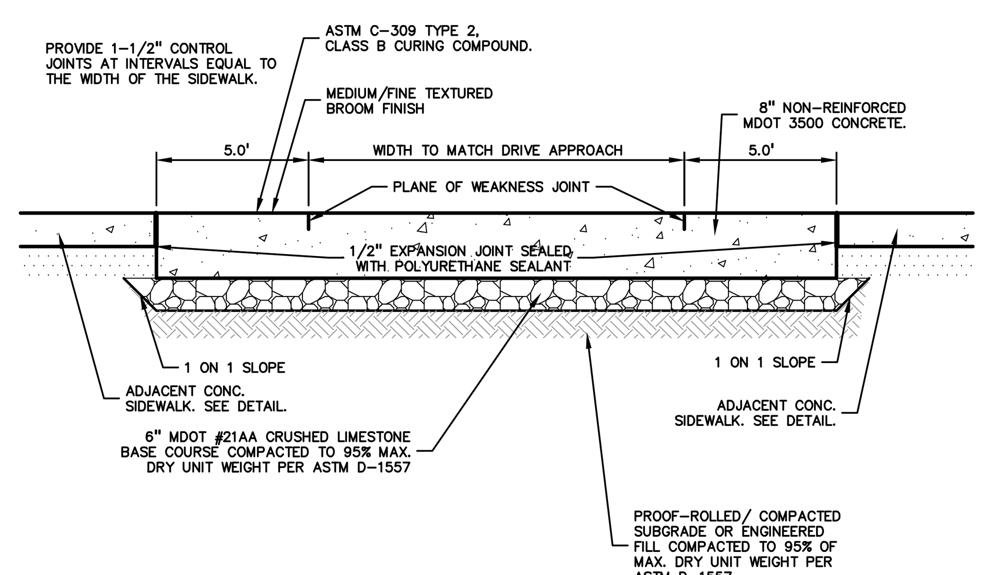


CONCRETE CURB AND GUTTER WITH SIDEWALK
NOT TO SCALE



MDOT DRIVEWAY OPENING-DETAIL 'M'
NOT TO SCALE



THICKENED SIDEWALK AT DRIVE APPROACH DETAIL
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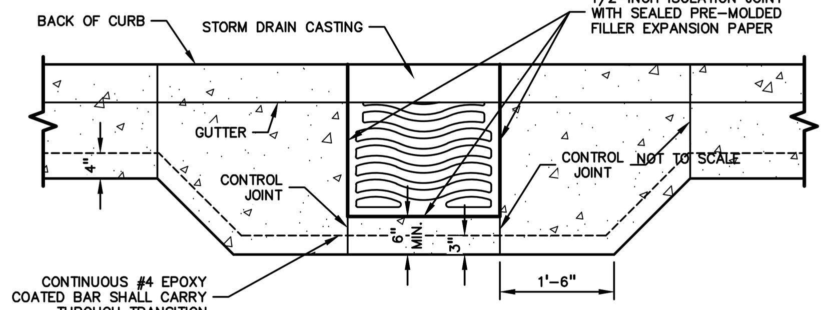
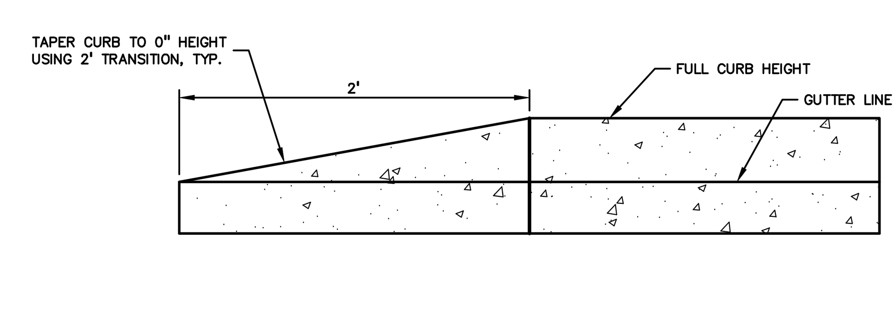
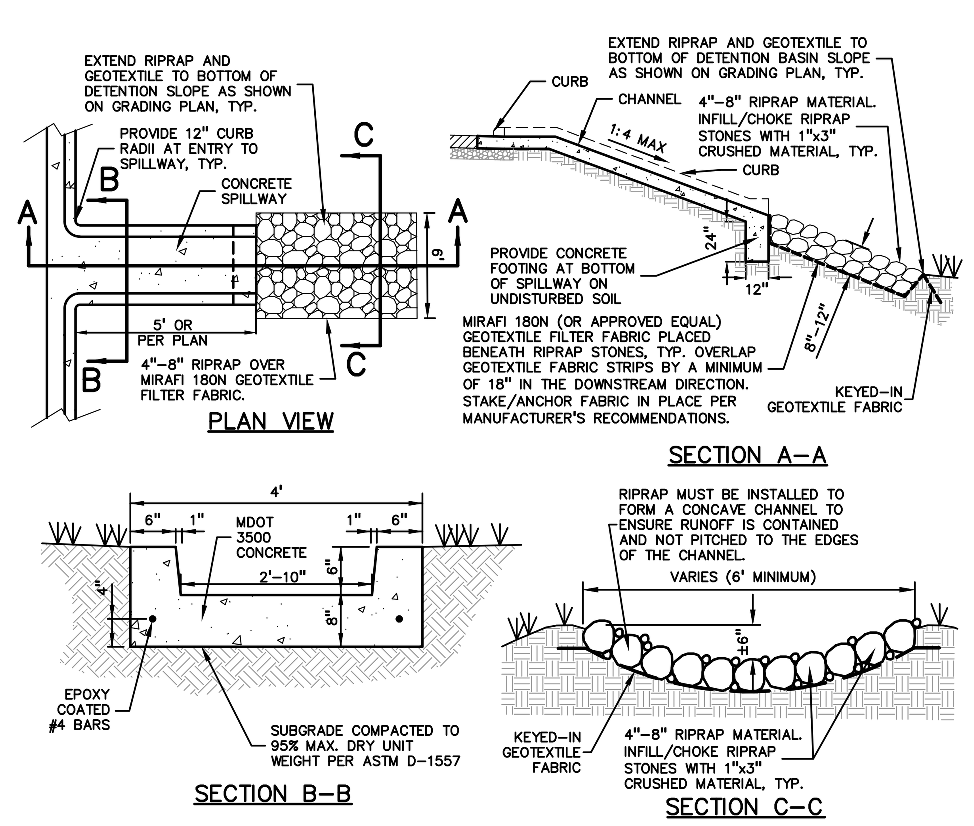


GUTTER PAN TRANSITION AT CATCH BASIN



CURB END TRANSITION DETAIL
NOT TO SCALE



CONCRETE CURB SPILLWAY DETAIL
NOT TO SCALE

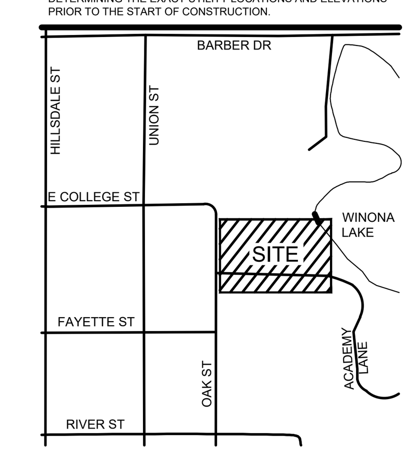
NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45598 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 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
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE: JULY 31, 2026

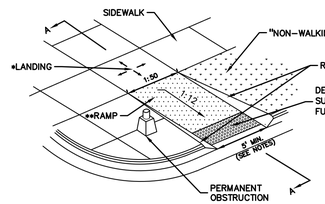
DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS - 1

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-9.1

*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.

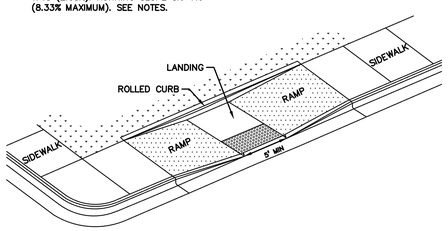


CURB RAMP TYPE R

(ROLLED SIDES)
NOT TO SCALE

*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 P1

(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR
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.

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.

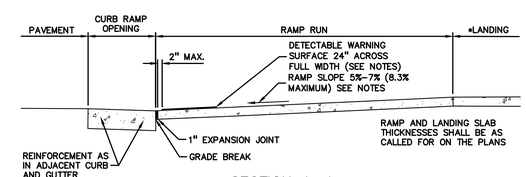
RAMP NOTES

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

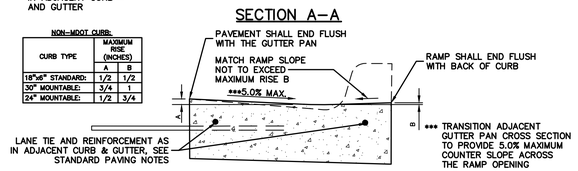
FOR CURB TYPES SEE STANDARD PLAN R–30–SERIES

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

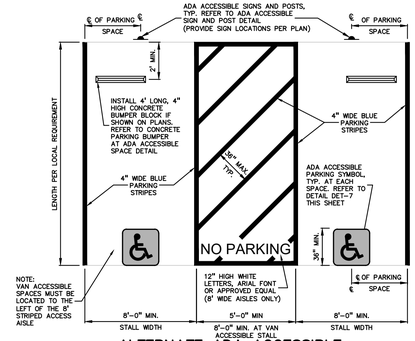


SECTION A–A



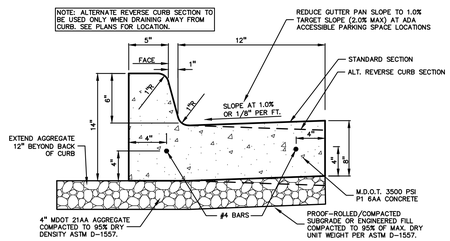
SECTION THROUGH CURB RAMP OPENING

(TYPICAL ALL RAMP TYPES)
NOT TO SCALE

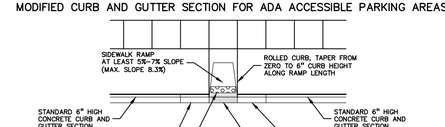


ALTERNATE ADA ACCESSIBLE PARKING STALL DETAIL

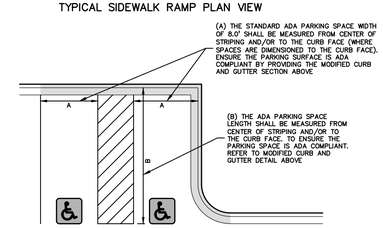
NOT TO SCALE



MODIFIED CURB AND GUTTER SECTION FOR ADA ACCESSIBLE PARKING AREAS



TYPICAL SIDEWALK RAMP PLAN VIEW



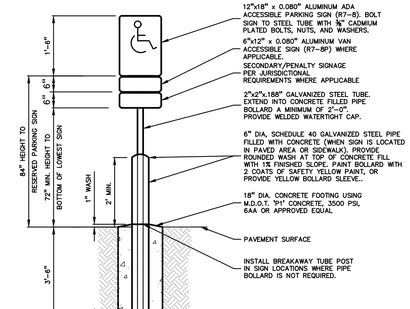
TYPICAL ADA ACCESSIBLE PARKING SPACES

MODIFIED 18"x6" CONCRETE CURB AND GUTTER DETAIL TO BE USED IN ADA ACCESSIBLE AREAS

NOT TO SCALE

ADA ACCESSIBLE SIGN NOTES:

1. ONE SIGN IS REQUIRED AT EACH ADA ACCESSIBLE PARKING SPACE.
2. ALL SIGNS SHALL COMPLY WITH THE LATEST STANDARDS OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD).
3. WHEN TWO ADA ACCESSIBLE PARKING SPACES ARE ADJACENT AND FACING EACH OTHER, TWO SIGNS ARE REQUIRED, BUT CAN BE MOUNTED ON THE SAME POST.
4. SIGN POSTS SHALL BE 2" NOM. SQUARE 14–GAUGE GALVANIZED STEEL TUBE WITH 7/16" HOLES AT 1" CENTERS. POSTS SHALL TELESCOPE INSIDE ANCHOR POSTS A MINIMUM OF 12".
5. ANCHOR POSTS SHALL BE 2.25" NOM. SQUARE 12–GAUGE GALVANIZED STEEL POST, A MINIMUM OF 3 FEET LONG.
6. IF THESE NOTES AND DETAILS CONFLICT WITH LOCAL CODES AND ORDINANCES, THE STRICTER REQUIREMENT SHOULD BE USED.
7. ALTERNATE MATERIALS MAY BE USED IF IN COMPLIANCE WITH ADA GUIDELINES AND LOCAL REQUIREMENTS.



ADA ACCESSIBLE SIGN AND POST DETAIL

NOT TO SCALE

12" x 18" (R7–8) GREEN BORDER AND LEGEND WHITE SYMBOL, BLUE BACKGROUND. REFLECTORIZED

ADA ACCESSIBLE PARKING SIGN DETAIL

NOT TO SCALE

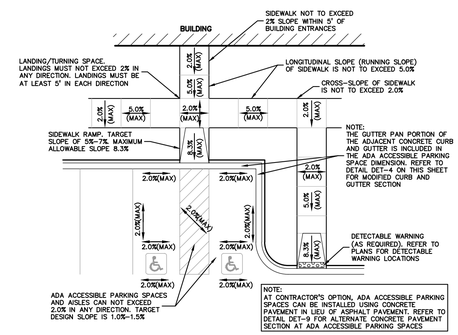
12" x 18" (R7–8) GREEN BORDER AND LEGEND WHITE SYMBOL, BLUE BACKGROUND. REFLECTORIZED

NOTE: MAY ONLY BE USED AT 11' WIDE SPACES LOCATED ON THE LEFT SIDE OF A 5' WIDE AISLE, OR 8' WIDE SPACES LOCATED TO THE LEFT OF 8' WIDE AISLES

6" x 12" (R7–8P) GREEN BORDER AND LEGEND REFLECTORIZED

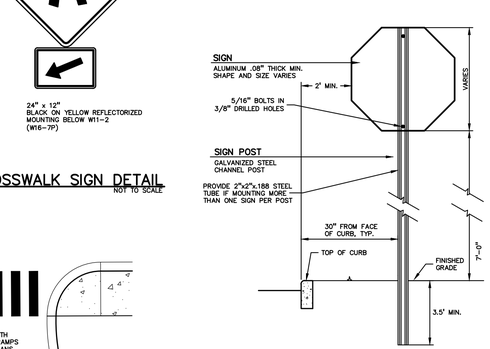
VAN ACCESSIBLE PARKING SIGN DETAIL

NOT TO SCALE



PARKING SPACE GRADING INFORMATION

NOT TO SCALE

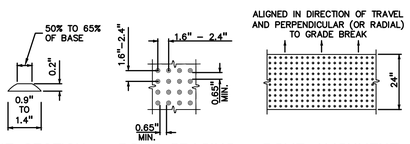


CROSSWALK SIGN DETAIL

NOT TO SCALE

SIGN AND POST INSTALLATION IN LANDSCAPED AREAS

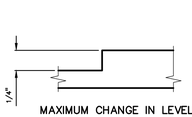
NOT TO SCALE



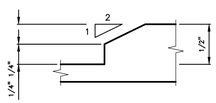
DOME SECTION DOME SPACING DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOT TO SCALE



MAXIMUM CHANGE IN LEVEL

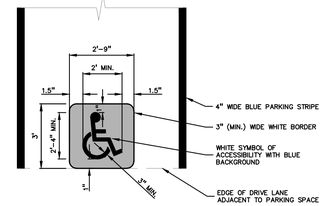


MAXIMUM BEVELED CHANGE IN LEVEL

BARRIER FREE SURFACE CHANGE IN LEVEL TOLERANCE

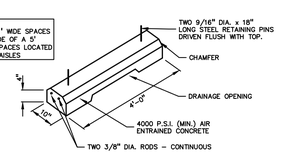
NOT TO SCALE

NOTES:
1. THE ADA ACCESSIBLE PARKING SYMBOL SHALL BE LOCATED IN THE CENTER OF THE PARKING SPACE AND ALONG THE EDGE OF THE ADJACENT DRIVE AISLE, TYP.
2. PARKING SYMBOL STRIPING SHALL HAVE A MINIMUM WIDTH OF 3"
3. CONTRACTOR SHALL ADHERE TO LOCAL/STATE JURISDICTIONAL REQUIREMENTS FOR ALL PAINTING WITHIN ACCESSIBLE SPACES.



ADA ACCESSIBLE PARKING SYMBOL DETAIL (INTERNATIONAL SYMBOL OF ACCESSIBILITY)

NOT TO SCALE



CONCRETE PARKING BUMPER AT ADA ACCESSIBLE SPACES

NOT TO SCALE

NOT FOR CONSTRUCTION

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STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45998 LICENSED PROFESSIONAL ENGINEER

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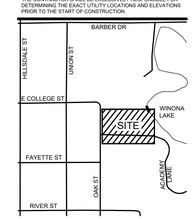

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CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE: JULY 31, 2026

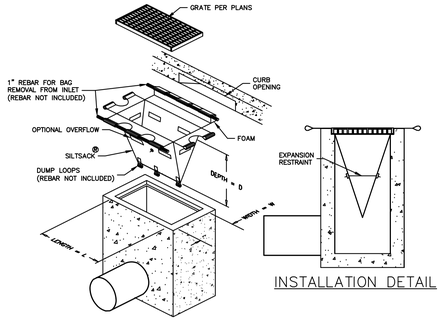
PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS - 2

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

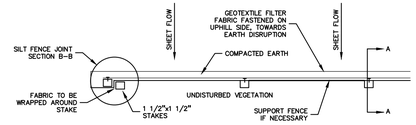
DRAWING NUMBER:
C-9.2

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-9.1) DETAILS-26-0130.dwg PLOT DATE: 9/4/2026 11:21 AM BY: Justin Paulsen

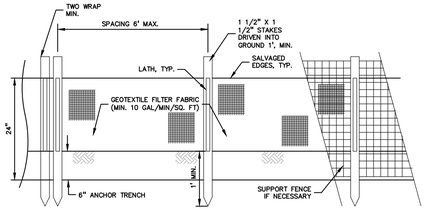


INSTALLATION DETAIL

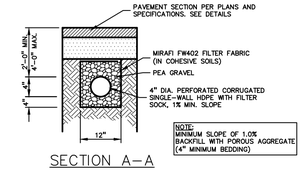
'SILTSACK' DETAIL
NOT TO SCALE



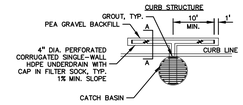
PLAN VIEW



FRONT VIEW

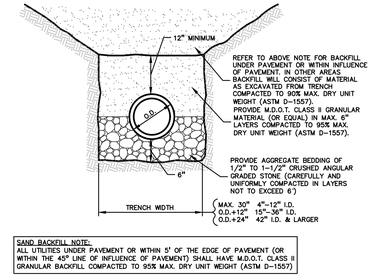


SECTION A-A

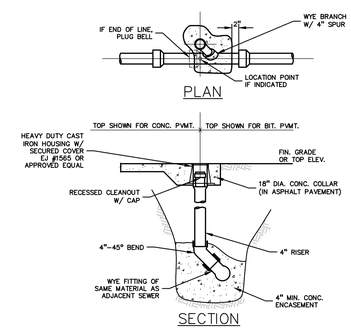


PLAN VIEW – CURB STRUCTURE

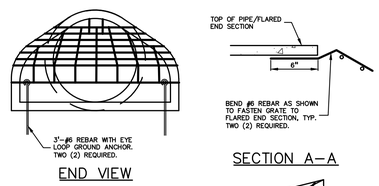
PAVEMENT INLET/CATCH BASIN UNDERDRAIN DETAIL
NOT TO SCALE



STANDARD PIPE BEDDING FOR RIGID PIPE
NOT TO SCALE

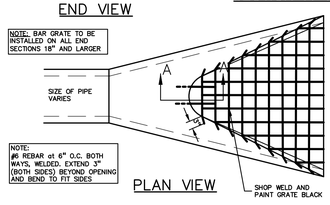


CLEANOUT
NOT TO SCALE



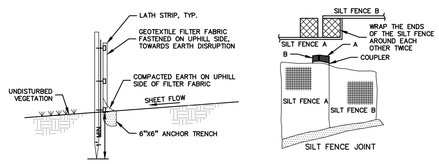
END VIEW

SECTION A-A



PLAN VIEW

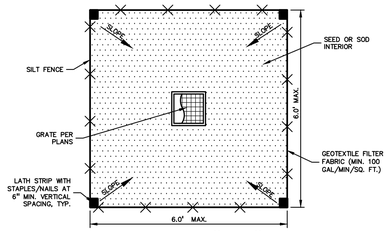
BAR GRATE DETAIL
NOT TO SCALE



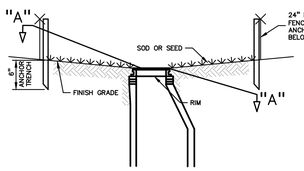
SECTION A-A

SECTION B-B

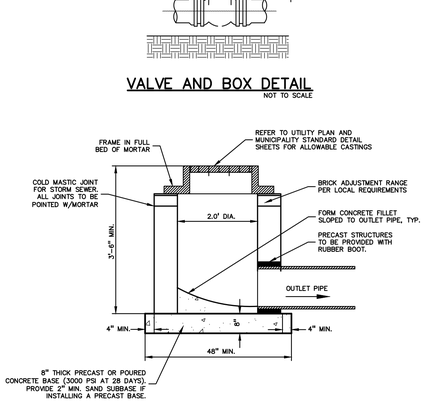
SILT FENCE DETAIL
NOT TO SCALE



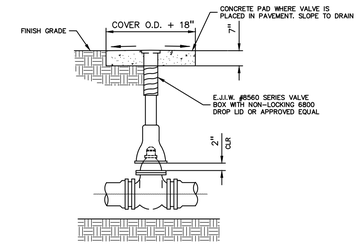
SECTION "A-A"



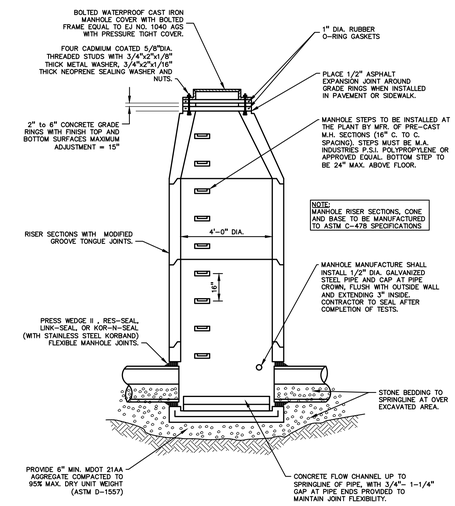
PROFILE VIEW IN UNPAVED AREA SILT FENCE DRAINAGE GUARD DETAIL
NOT TO SCALE



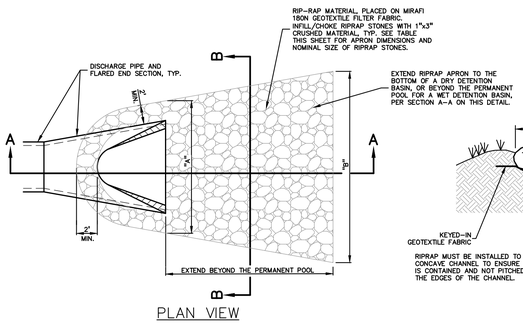
2' DIA. INLET DETAIL
NOT TO SCALE



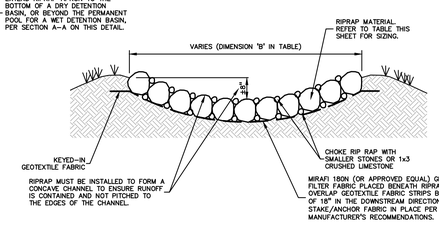
VALVE AND BOX DETAIL
NOT TO SCALE



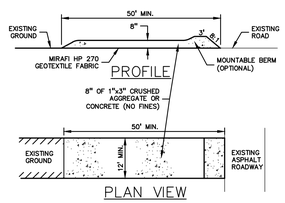
STANDARD SANITARY SEWER MANHOLE DETAIL (ON 8" THROUGH 24" DIAMETER)
NOT TO SCALE



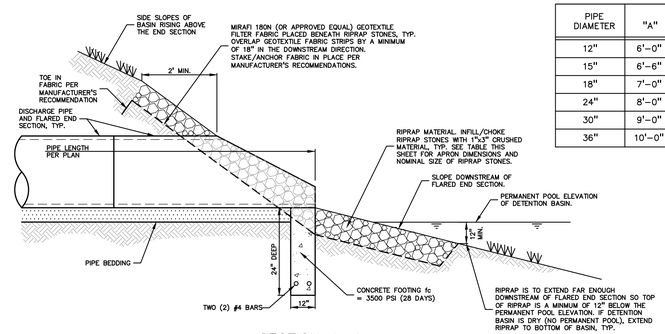
PLAN VIEW



SECTION B-B



TEMPORARY STONE ACCESS DRIVE: TRACKING MAT DETAIL AT CONSTRUCTION ENTRANCE
NOT TO SCALE

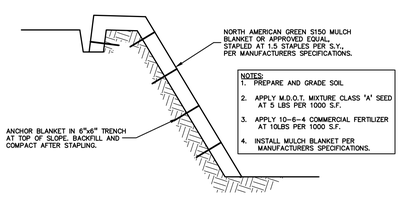


SECTION A-A

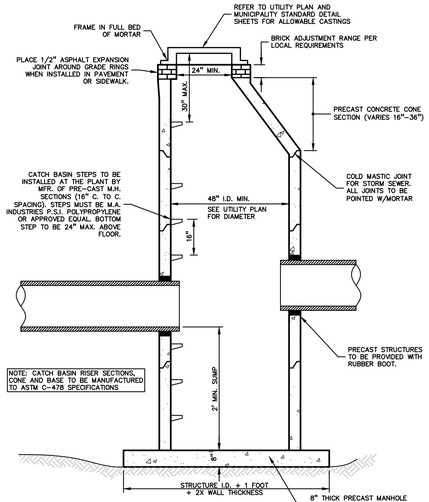
PIPE DIAMETER	"A"	"B"	RIPRAP THICKNESS (MIN).	RIPRAP SIZE
12"	6'-0"	8'-0"	8"	4"-8" APPROX.
15"	6'-6"	9'-0"	8"	4"-8" APPROX.
18"	7'-0"	10'-0"	10"	6"-12" APPROX.
24"	8'-0"	11'-6"	12"	8"-15" APPROX.
30"	9'-0"	13'-0"	12"	8"-15" APPROX.
36"	10'-0"	15'-0"	12"	8"-15" APPROX.

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.

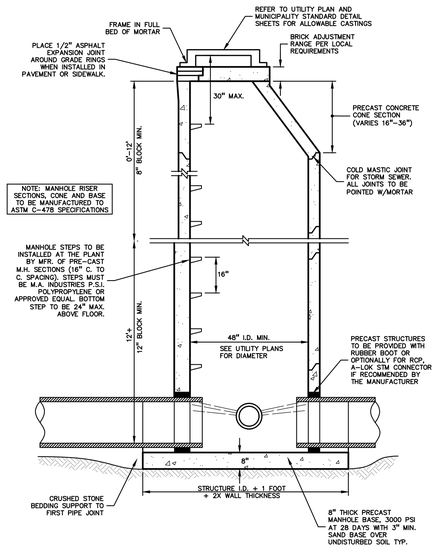
FLARED END SECTION AND RIPRAP DETAIL FOR DETENTION BASIN OUTLET
NOT TO SCALE



TEMPORARY EROSION BLANKET DETAIL
NOT TO SCALE



STANDARD CATCH BASIN DETAIL
NOT TO SCALE



STANDARD STORM MANHOLE DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION

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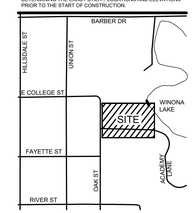

CLIENT
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4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

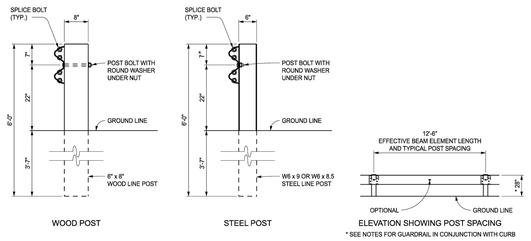
ORIGINAL ISSUE DATE: JULY 31, 2026

DRAWING TITLE
CONSTRUCTION NOTES AND DETAILS - 3

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:
C-9.3

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG_CONSTRUCTION\C-9.1 DETAILS-26-0130.dwg PLOT DATE: 9/4/2026 11:21 AM BY: Justin Paulsen



WOOD POST

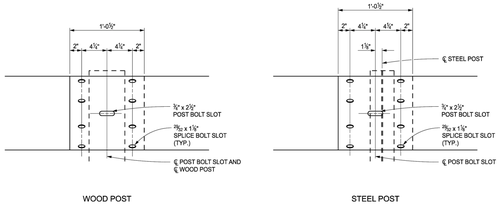
STEEL POST

ELEVATION SHOWING POST SPACING

* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE A

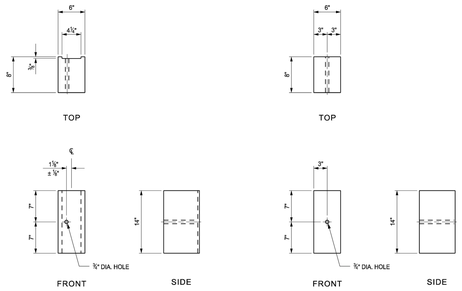
APPROVED BY: ____ DIRECTOR, BUREAU OF FIELD SERVICES	MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D		
APPROVED BY: ____ DIRECTOR, BUREAU OF DEVELOPMENT	DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 1 OF 16



WOOD POST

STEEL POST

BEAM ELEMENT SPLICE DETAILS



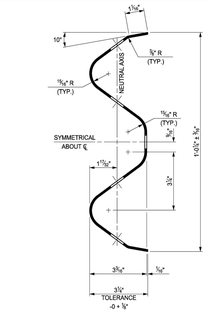
FOR USE ON STEEL POSTS

FOR USE ON WOOD POSTS

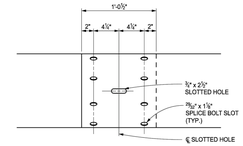
(SEE NOTES ON SHEET 16 OF 16)

WOOD OFFSET BLOCKS FOR GUARDRAIL, TYPE B AND TYPE BD

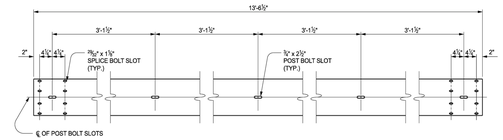
MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D			
DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 3 OF 16	



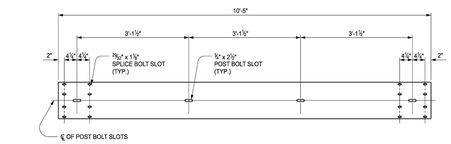
SECTION THROUGH BEAM ELEMENT



BEAM ELEMENT SPLICE DETAILS

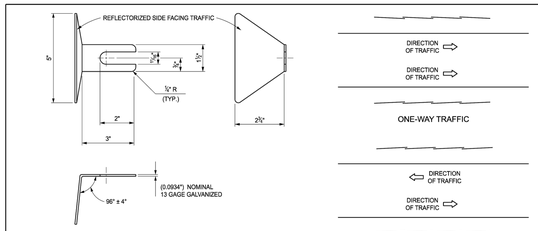


FRONT ELEVATION OF BEAM ELEMENT



FRONT ELEVATION OF MGS (9'-4½") BEAM ELEMENT

MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D			
DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 11 OF 16	

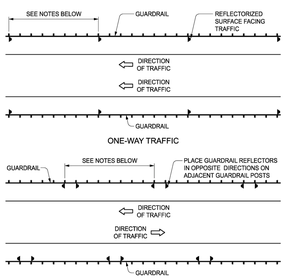


GUARDRAIL REFLECTOR

ONE-WAY TRAFFIC

TWO-WAY TRAFFIC

DIRECTION OF RAIL LAP



ONE-WAY TRAFFIC

TWO-WAY TRAFFIC

PLACEMENT OF GUARDRAIL REFLECTORS

NOTES GOVERNING THE USE OF GUARDRAIL REFLECTORS

1. GUARDRAIL REFLECTORS SHALL BE USED ON ALL STANDARD GUARDRAIL RUNS, REGARDLESS OF ROADWAY LIGHTING.
2. GUARDRAIL REFLECTORS ARE TO BE SPACED AT THE FOLLOWING INTERVALS:
   a) 50'-0" ON TANGENT SECTIONS AND CURVES WITH A RADIUS OF 1150' OR MORE.
   b) 25'-0" ON CURVES WITH A RADIUS LESS THAN 1150'.
3. FOR GUARDRAIL REFLECTOR PLACEMENT ON APPROACH TERMINALS, SEE THE APPROPRIATE GUARDRAIL APPROACH TERMINAL STANDARD PLAN.
4. A GUARDRAIL REFLECTOR IS TO BE PLACED ON THE SECOND POST FROM THE GUARDRAIL DEPARTING TERMINAL.
5. ON GUARDRAIL, TYPE T AND TYPE TD GUARDRAIL REFLECTORS ARE TO BE PLACED ON THE UPPER POST BOLT.
6. GUARDRAIL REFLECTORS SHALL MATCH COLOR OF EDGE LINE.

NOTES:

DETAILS SPECIFIED ON THIS STANDARD ARE ACCORDING TO THE AASHTO-AGC-ARTBA JOINT COMMITTEE, TASK FORCE 13 PUBLICATION TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE."

BEAM ELEMENTS SHALL BE SHOP BENT TO PLAN RADIUS FOR CURVE RADII 150' OR LESS. A TAG IDENTIFYING THE CURVATURE OF THE SHOP BENT SECTION WILL BE REQUIRED FOR EACH CURVED ELEMENT.

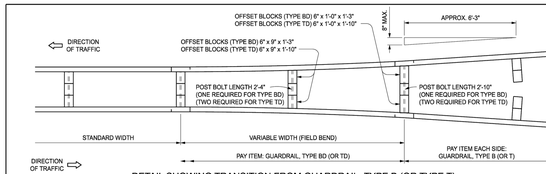
SEE STANDARD PLAN R-62-SERIES OR R-63-SERIES FOR GUARDRAIL APPROACH TERMINALS, STANDARD PLAN R-66-SERIES FOR GUARDRAIL DEPARTING TERMINALS AND STANDARD PLAN R-67-SERIES FOR GUARDRAIL ANCHORAGE, BRIDGE.

WOOD POSTS WITH ¾" BEVELS AT THE TOP MAY BE USED IN LIEU OF WOOD POSTS WITHOUT BEVELS SPECIFIED. THE LENGTH, WIDTH AND DEPTH OF THE POST SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT.

WOOD OFFSET BLOCKS WITH ¾" BEVELS AT THE TOP AND BOTTOM OR A 1" BEVELED TOP MAY BE USED IN LIEU OF WOOD BLOCKS WITHOUT BEVELS SPECIFIED. THE LENGTH (FRONT AND BACK FACE), WIDTH AND DEPTH OF THE BLOCK SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT AND COMPATIBILITY WITH POST HOLES.

WHEN THE FACE OF GUARDRAIL IS PLACED FLUSH WITH FACE OF CURB, THE RAIL HEIGHT SHOULD BE MEASURED FROM THE FRONT EDGE OF THE GUTTER PAN, WHICH IS THE POINT ON THE GUTTER PAN THAT IS CLOSEST TO THE EDGE OF THE TRAVELED LANE. WHEN THE FACE OF THE GUARDRAIL PANEL IS LOCATED BEHIND THE CURB THE RAIL HEIGHT SHOULD BE MEASURED FROM THE GROUND JUST IN FRONT OF THE GUARDRAIL.

MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D			
DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 16 OF 16	



DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD)

POST BOLTS, SPLICE BOLTS AND WASHERS AT BEAM ELEMENT SPLICE POSTS AND AT INTERMEDIATE POSTS

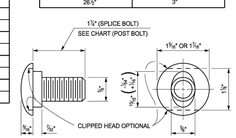
GUARDRAIL TYPE	POST	OFFSET BLOCK	POST BOLTS NO. REQ'D	POST BOLTS LENGTH	SPLICE BOLTS (1¼" LONG) (NO. REQ'D)		WASHERS (ROUND) (NO. REQ'D)
A	WOOD	N/A	1	9½"	8	NOT NEEDED AT INTERMEDIATE POSTS	1
	STEEL	N/A	1	2"			1
B	WOOD	WOOD	1	18"	8		1
	STEEL	WOOD	1	9½"			1
BD	WOOD	WOOD	1	* 26½"	16		——
	STEEL	WOOD	2	9½"			2
T	WOOD	WOOD	2	18"	12		2
	STEEL	WOOD	2	9½"			2
TD	WOOD	WOOD	2	* 26½"	24		——
	STEEL	WOOD	4	9½"			4

THRIE BEAM TRANSITIONS REQUIRE 20 SPLICE BOLTS EACH (12 ON TYPE T END AND 8 ON TYPE B END).

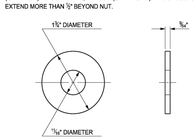
* EXCEPT AS SPECIFIED ON DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD). POST BOLTS SHALL NOT EXTEND MORE THAN ½" BEYOND NUT.

MINIMUM POST BOLT THREAD LENGTH

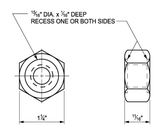
BOLT LENGTH	MINIMUM THREAD LENGTH
9½"	1⅝"
18"	2½"
26½"	3"



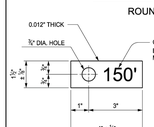
SPLICE BOLT AND POST BOLT



ROUND WASHER



NUT



METAL TAG

FOR CURVED GUARDRAIL WITH RADIUS OF 150' OR LESS

MDOT Michigan Department of Transportation	STANDARD PLAN FOR: GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D			
DEPARTMENT DIRECTOR: BRADLEY C. WIEFERICH, PE	(SPECIAL DETAIL) 01/29/2024 FHWA APPROVAL PLAN DATE	R-60-J	SHEET 14 OF 16	

S:\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(C-9.1) DETAILS-26-0130.dwg PLOT DATE:9/4/2026 11:21 AM BY: Justin Paulsen

PEA GROUP
t: 844.813.2949
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STATE OF MICHIGAN MICHAEL R. MORTE ENGINEER No. 45998 LICENSED PROFESSIONAL ENGINEER

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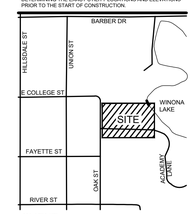
CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO REPRESENTATION IS EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND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



CLIENT

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS

PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

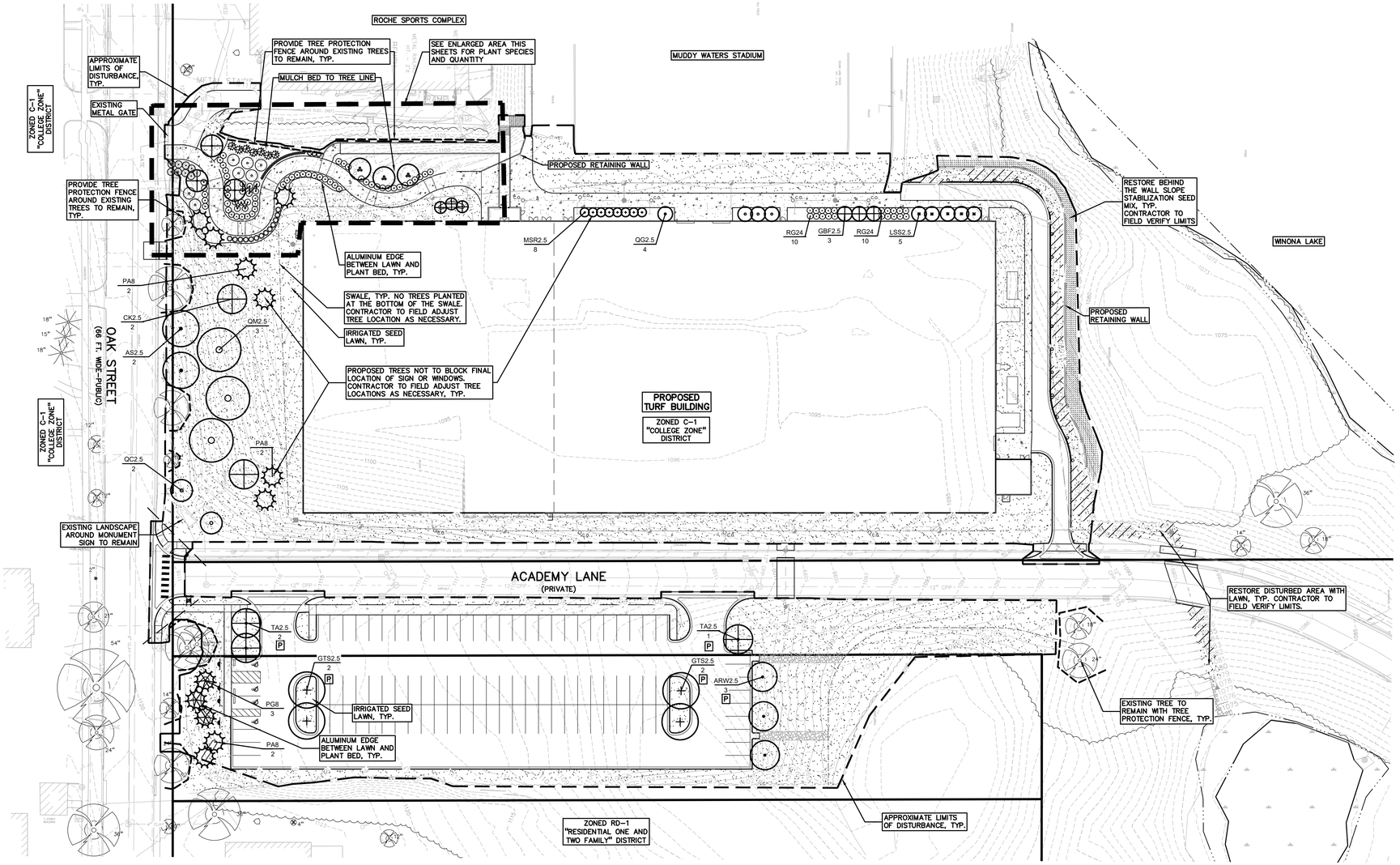
CONSTRUCTION NOTES AND DETAILS - 4

PEA JOB NO.	26-0130
P.M.	MM
DN.	JP
DES.	JP

DRAWING NUMBER:

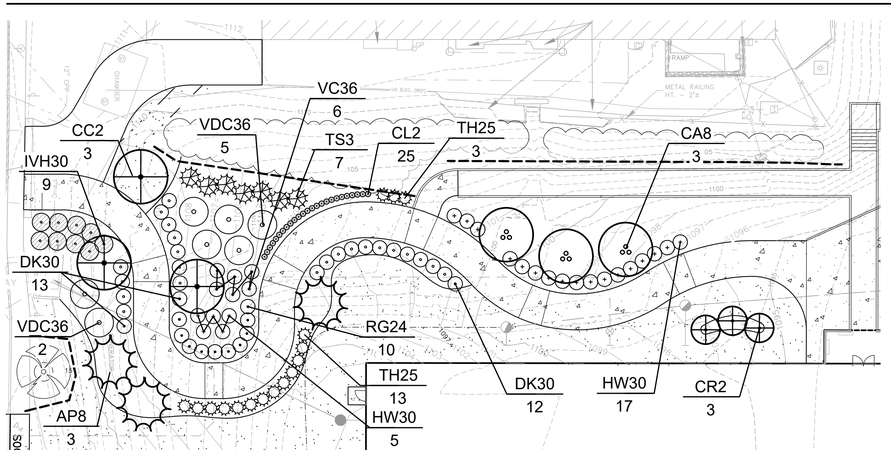
C-9.4

NOT FOR CONSTRUCTION



OVERALL PLAN

SCALE: 1" = 40' 0"



ENLARGED SECTION OF PATH TO DOOR

SCALE: 1" = 40' 0"

KEY:

= PROPOSED DECIDUOUS TREES

= PROPOSED EVERGREEN TREES

= PROPOSED EVERGREEN SHRUBS

= PROPOSED DECIDUOUS SHRUBS SHRUBS

= PROPOSED ORNAMENTAL GRASSES

= EXISTING TREES TO REMAIN WITH TREE PROTECTION FENCE

= IRRIGATED SEED LAWN

= RESTORE WITH NON IRRIGATED LAWN

= SLOPE STABILIZATION SEED MIX SEE DETAIL SHT. L-2.0

LETTER DESIGNATION FOR ORDINANCE REQUIRED MATERIAL

P = PARKING LOT TREES

SEE SHEET L-2.0 FOR PLANTING NOTES AND LANDSCAPE DETAILS
SEE SHEET L-2.1 AND L-2.2 FOR LANDSCAPE SPECIFICATIONS
IRRIGATION PLAN BY OTHERS, ALL LAWN AND PLANT BED AREAS

LANDSCAPE CALCULATIONS:

PER CITY OF HILLSDALE ZONING ORDINANCE,
ZONED C-1 (COLLEGE ZONE DISTRICT)
ADJACENT ZONING:
NORTH C-1 (COLLEGE ZONE DISTRICT)
EAST:B-3 (GENERAL BUSINESS)
SOUTH:RD-1 (RESIDENTIAL ONE AND TWO FAMILY)
WEST:C-1 (COLLEGE ZONE DISTRICT)

LANDSCAPED (SEC.36-150 (a)(2))

REQUIRED:
25% OF THE SITE SHALL BE LANDSCAPED AREA
249,023 SF - 96,090 - 36,220 = 116,713 X .25 = 29,178 SF LANDSCAPE AREA
REQUIRED
(LIMITS OF DISTURBANCE - BUILDING FOOTPRINT AND PARKING AREA)
1 EVERGREEN TREE OR SHRUB PER 1,000 SF
29,178 / 1,000 = 29 EVERGREN TREES OR SHRUBS
1 SMALL OR LARGE DECIDUOUS TREE PER 2,000 SF
29,178 / 2,000 = 15 DECIDUOUS TREES
30% OF LANDSCAPING BETWEEN ROADWAY AND BUILDING
SEE SHEET C-1.0 FOR OPEN SPACE CALCULATION

PROVIDED:
69,048 X 0.39 = 26,928 SF LANDSCAPED AREA
12 EVG TREES, 17 ORN TREES, 18 DEC TREES , 122 SHRUBS AND 25 PERENNIALS

PARKING LOT LANDSCAPING (SEC 36-150 (c)) = P
REQUIRED:
IF 16+ SPACES, PERIMETER LANDSCAPING REQUIRED.

1 TREE FOR EVERY 10 PARKING SPACES
97 / 10 = 9.7 = 10 PARKING LOT TREES

MINIMUM 3-FOOT WIDE LANDSCAPE STRIPS BETWEEN PAVED PARKING SURFACES AND BUILDINGS AND PROPERTY LINES WHERE POSSIBLE.

PROVIDED: 10 PARKING LOT TREES

FRONT YARD LANDSCAPING (SEC 36-150 (e))
REQUIRED:
GREENBELT WITH A MINIMUM WIDTH OF THE REQUIRED ZONING FRONT YARD SETBACK (40 FEET) REQUIRED.

SITE LANDSCAPING:
IN ADDITION TO GREENBELT AND PARKING LOT LANDSCAPING - 10% OF SITE AREA (EXCLUDING R.O.W.) SHALL BE LANDSCAPED. STORM DRAINAGE AREAS MAY BE INCLUDED BUT NOT COUNT FOR MORE THAN 5% OF SITE AREA.

ARTICLE X - PLANT MATERIAL SEC 36.-712
(a) PLANT MATERIAL NO CLOSER THAN 4 FEET FROM PROPERTY LINE
(b) ROWS OF PLANTS SHALL BE STAGGERED

PLANT SCHEDULE L-1.0

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	DESIGNATION	REMARKS
DECIDUOUS TREES								
ARW2.5	3	ACER RUBRUM 'BRANDYWINE'	BRANDYWINE RED MAPLE	2.5" CAL.	B&B	PER PLAN	NATIVE	
AS2.5	2	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2.5" CAL.	B&B	PER PLAN	NATIVE	
CK2.5	2	CLADRASTIS KENTUKEA	AMERICAN YELLOWWOOD	2.5" CAL.	B&B	PER PLAN	NATIVE	
GBF2.5	3	GINKGO BILOBA 'FASTIGIATA'	FASTIGIATE MAIDENHAIR TREE	2.5" CAL.	B&B	PER PLAN	NON-NATIVE	
GTS2.5	4	GLEDITSIA TRIACANTHOS INERMIS 'SUNCOLE'	SUNBURST HONEY LOCUST	2.5" CAL.	B&B	PER PLAN	NATIVE	
LSS2.5	5	LIQUIDAMBAR STYRACIFLUA 'SLENDER SILHOUETTE'	SLENDER SILHOUETTE SWEET GUM	2.5" CAL.	B&B	PER PLAN	NON-NATIVE	
QM2.5	3	QUERCUS MACROCARPA	BURR OAK	2.5" CAL.	B&B	PER PLAN	NATIVE	
QC2.5	2	QUERCUS ROBUR X ALBA 'CRIMSCHMIDT'	CRIMSON SPIRE™ OAK	2.5" CAL.	B&B	PER PLAN	NATIVE	
QG2.5	4	QUERCUS ROBUR X ALBA 'JFS-KW2QX'	SKINNY GENES® OAK	2.5" CAL.	B&B	PER PLAN	NATIVE	
TA2.5	3	TILIA AMERICANA 'AMERICAN SENTRY'	AMERICAN SENTRY LINDEN	2.5" CAL.	B&B	PER PLAN	NATIVE	
	31	SUBTOTAL:						
EVERGREEN TREES								
AP8	3	ABIES BALSAMEA PHANEROLEPIS	CANAAN BALSAM FIR	8` HT.	B&B	PER PLAN	NATIVE	
PA8	6	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	
	12	SUBTOTAL:						
ORNAMENTAL TREES								
CC2	3	CERCIS CANADENSIS	EASTERN REDBUD	2" CAL.	B&B	PER PLAN	NATIVE	
CR2	3	CERCIS CANADENSIS 'JN2'	THE RISING SUN™ EASTERN REDBUD	2" CAL.	B&B	PER PLAN	NATIVE	
CA8	3	CORNUS ALTERNIFOLIA	PAGODA DOGWOOD	8` HT.	B&B	PER PLAN	NATIVE	
MSR2.5	8	MALUS X 'JFS KW213MX'	RASPBERRY SPEAR® CRABAPPLE	2.5" CAL.	B&B	PER PLAN	NON-NATIVE	
	17	SUBTOTAL:						
SHRUBS								
DK30	25	DIERVILLA X 'G2X88544'	KODIAK® ORANGE DIERVILLA	30"HT.	B&B OR CONT.	4` O.C.	NON-NATIVE	
HW30	22	HYDRANGEA QUERCIFOLIA 'PEE WEE'	PEE WEE OAKLEAF HYDRANGEA	30" HT.	B&B OR CONT.	4` O.C.	ADAPTED NATIVE	
IVH30	9	ITEA VIRGINICA 'HENRY'S GARNET'	HENRY'S GARNET SWEETSPIRE	30"HT.	B&B OR CONT.	5` O.C.	NON-NATIVE	
RG24	30	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	24" SPRD	B&B OR CONT.	4` O.C.	NATIVE	
TH25	16	THUJA OCCIDENTALIS 'HETZ MIDGET'	HETZ MIDGET ARBORVITAE	24" HT.	B&B OR CONT.	4` O.C.	NATIVE	
TS3	7	THUJA STANDISHII X PLICATA 'STEEPLECHASE'	STEEPLECHASE ARBORVITAE	5` HT.	B&B	8` O.C.	ADAPTED NATIVE	
VC36	6	VIBURNUM CARLESII 'COMPACTUM'	COMPACT KOREANSPICE VIBURNUM	36" HT.	B&B OR CONT.	4` O.C.	NON-NATIVE	
VDC36	7	VIBURNUM DENTATUM 'CHICAGO LUSTRE'	CHICAGO LUSTRE VIBURNUM	36" HT.	B&B OR CONT.	8` O.C.	NATIVE	
	122	SUBTOTAL:						
PERENNIALS								
CL2	25	CHASMANTHIUM LATIFOLIUM	NORTHERN SEA OATS	1 GAL.	POT	18"O.C.	NATIVE	
	25	SUBTOTAL:						

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STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 1385
REGISTERED

NORTH

SEE PLAN FOR SCALE

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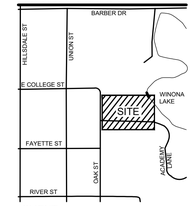

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4293 FIVE OAKS DRIVE
LANSING, MI 48911

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HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

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ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

LANDSCAPE PLAN

PEA JOB NO.	26-0130
P.M.	MM
DN.	CAL
DES.	JLE

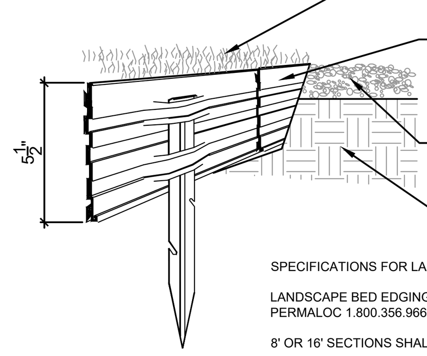
DRAWING NUMBER:

L-1.0

\\peainc\pea\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG_CONSTRUCTION\L-1.0_LANDSCAPE PLAN -26-0130.dwg PLOT DATE:9/4/2026 10:56 AM BY:Charlotte L'Esperance

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.



SPECIFICATIONS FOR LANDSCAPE BED EDGING:

LANDSCAPE BED EDGING SHALL BE ALUMINUM AS MANUFACTURED BY PERMALOC 1.800.356.9660

8' OR 16' SECTIONS SHALL BE USED WITH ONE STAKE PER 38" OF EDGING

EDGING SHALL BE 3/16" THICK X 4" DEPTH WHEN ADJ. TO MULCH AND 3/16" THICK X 5½" DEPTH WHEN ADJ. TO ROCK, FINISH: BLACK DURAFLEX MEETING AAMA 2603

STAKE SHALL SECURELY ENGAGE EDGING AND SHALL BE ENTIRELY BELOW TOP SURFACE OF EDGING

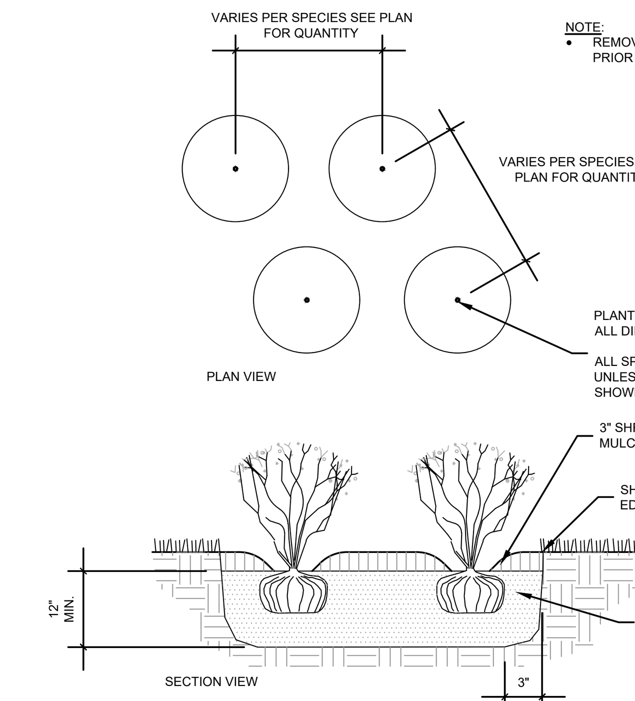
EDGING SHALL HAVE A MINIMUM OF 2" OF INTERLOCKING OVERLAP BETWEEN SECTIONS

INSTALL AS PER MANUFACTURER'S SPECIFICATIONS WITH TOP OF EDGING 1/4"-1/2" ABOVE COMPACTED FINISH GRADE. FINISH GRADE TO BE COMPACTED ON BOTH SIDES OF EDGING TO MAINTAIN STABILITY

6 ALUMINUM EDGE DETAIL

NOT TO SCALE

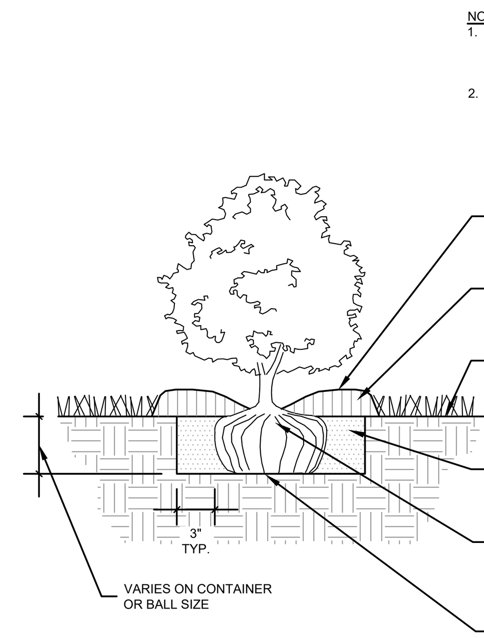
NOTE:
- REMOVE ALL CONTAINERS PRIOR TO PLANTING



3 PERENNIAL PLANTING DETAIL

NOT TO SCALE

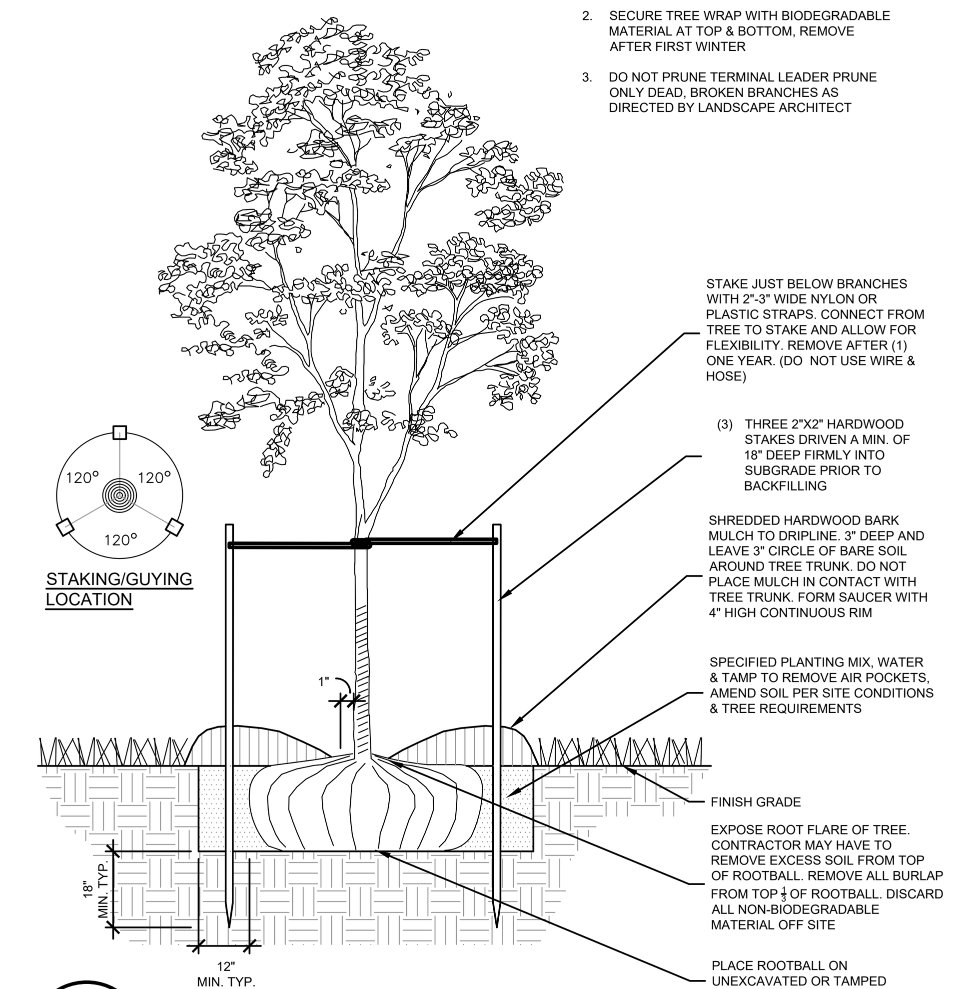
NOTE:
1. PLANT SO THAT TOP OF ROOT BALL IS FLUSH TO GRADE OR 1-2" HIGHER IF IN POORLY DRAINED SOILS
2. DO NOT COVER TOP OF ROOTBALL WITH SOIL



5 SHRUB PLANTING DETAIL

SCALE: 1" = 1'-0"

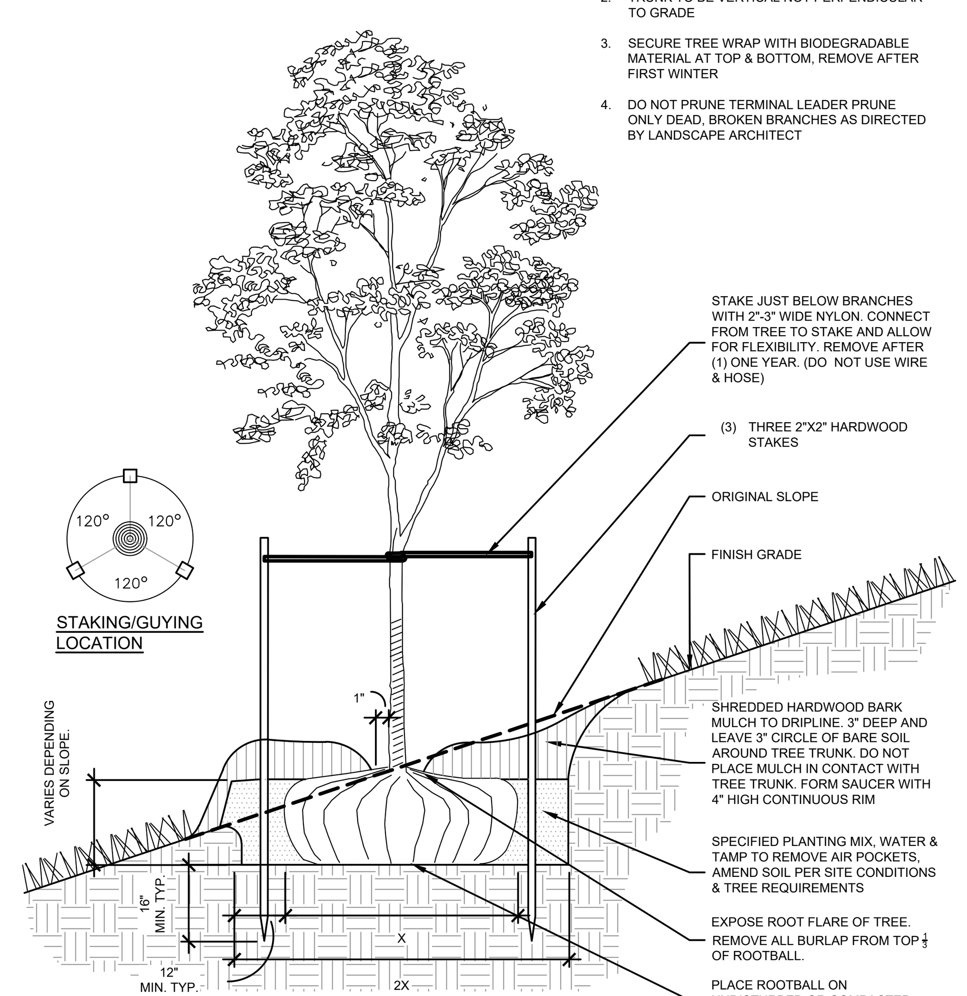
NOTE:
1. PLANT SO THAT THE TREE'S ROOT FLARE (TRUNK FLARE) IS FLUSH WITH GRADE OR 1-2" HIGHER IN POORLY DRAIN SOIL.
2. SECURE TREE WRAP WITH BIODEGRADABLE MATERIAL AT TOP & BOTTOM, REMOVE AFTER FIRST WINTER
3. DO NOT PRUNE TERMINAL LEADER PRUNE ONLY DEAD, BROKEN BRANCHES AS DIRECTED BY LANDSCAPE ARCHITECT



2 DECIDUOUS TREE PLANTING DETAIL

SCALE: 1" = 3'-0"

NOTE:
1. PLANT SO THAT THE TREE'S ROOT FLARE (TRUNK FLARE) IS FLUSH WITH GRADE OR 1-2" HIGHER IN POORLY DRAIN SOIL.
2. TRUNK TO BE VERTICAL NOT PERPENDICULAR TO GRADE
3. SECURE TREE WRAP WITH BIODEGRADABLE MATERIAL AT TOP & BOTTOM, REMOVE AFTER FIRST WINTER
4. DO NOT PRUNE TERMINAL LEADER PRUNE ONLY DEAD, BROKEN BRANCHES AS DIRECTED BY LANDSCAPE ARCHITECT



8 TREE PLANTING ON A SLOPE

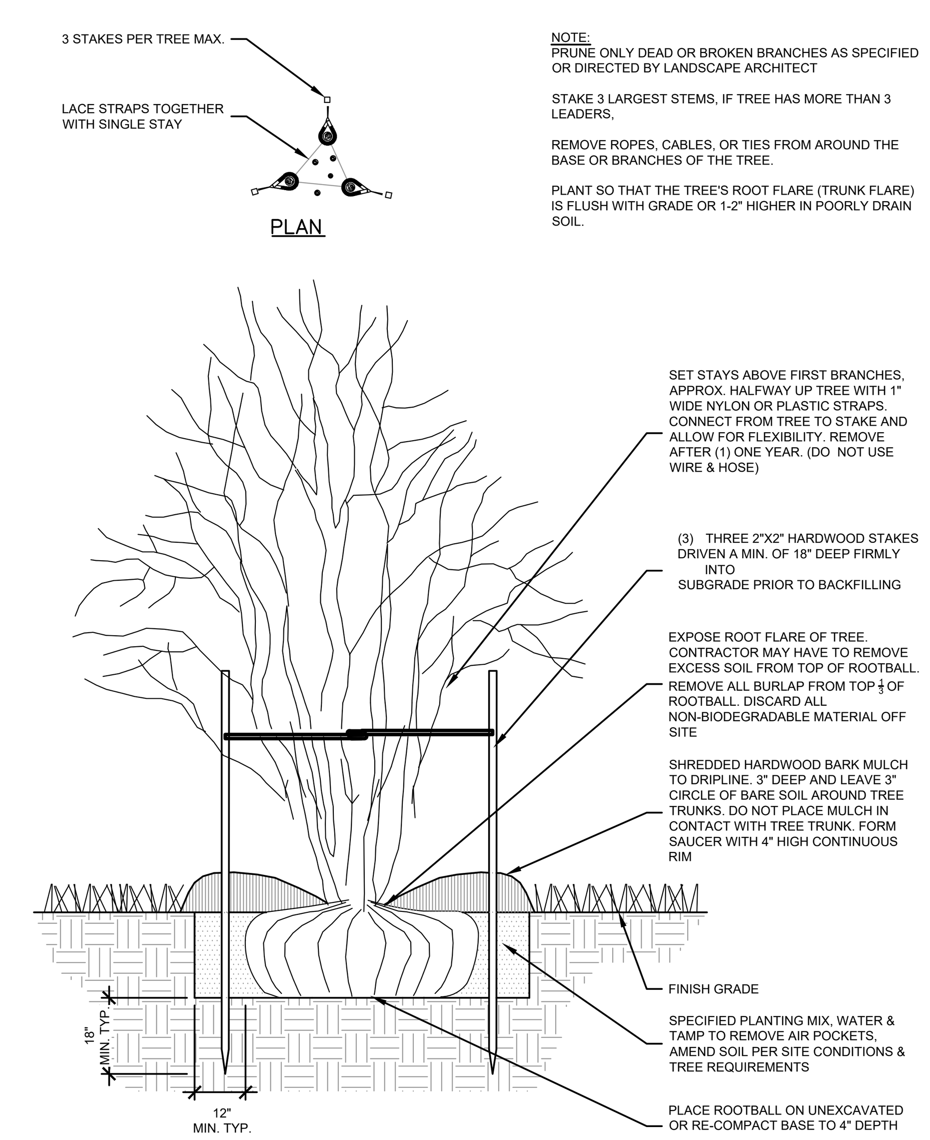
SCALE: 1" = 3'-0"

NOTE:
PRUNE ONLY DEAD OR BROKEN BRANCHES AS SPECIFIED OR DIRECTED BY LANDSCAPE ARCHITECT

STAKE 3 LARGEST STEMS, IF TREE HAS MORE THAN 3 LEADERS,

REMOVE ROPES, CABLES, OR TIES FROM AROUND THE BASE OR BRANCHES OF THE TREE.

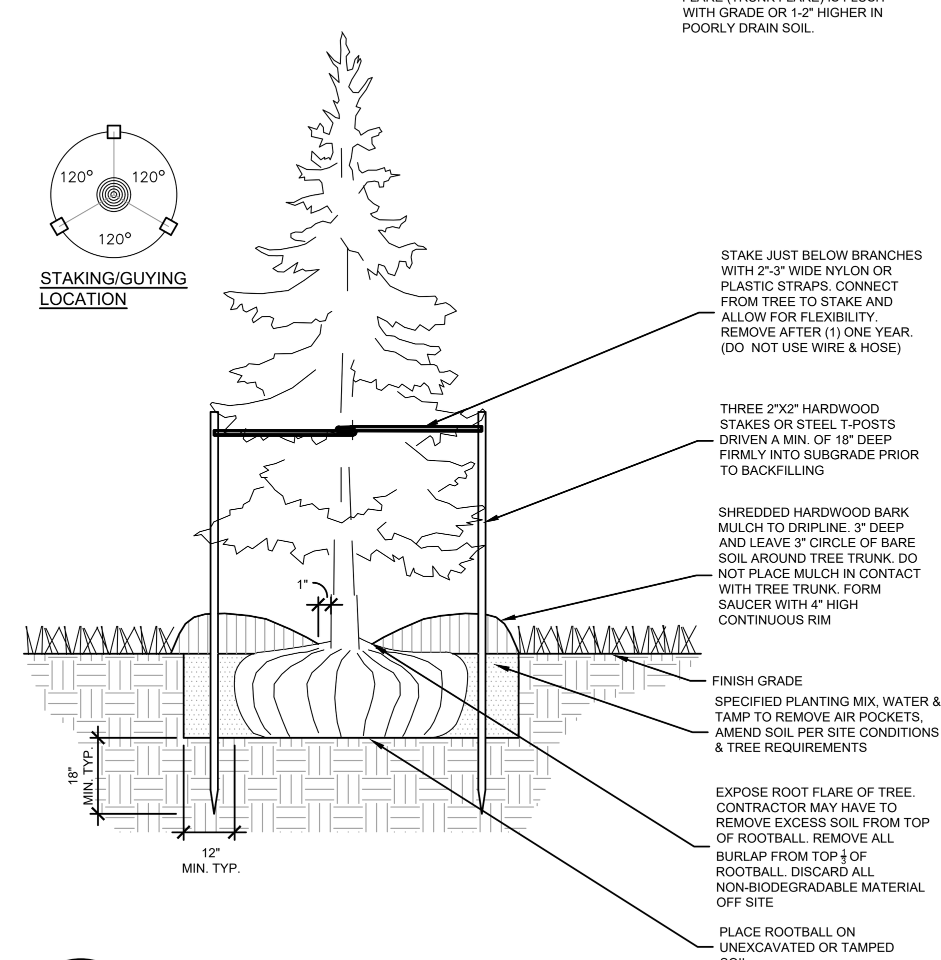
PLANT SO THAT THE TREE'S ROOT FLARE (TRUNK FLARE) IS FLUSH WITH GRADE OR 1-2" HIGHER IN POORLY DRAIN SOIL.



7 MULTI-STEM PLANTING DETAIL

SCALE: 1" = 3'-0"

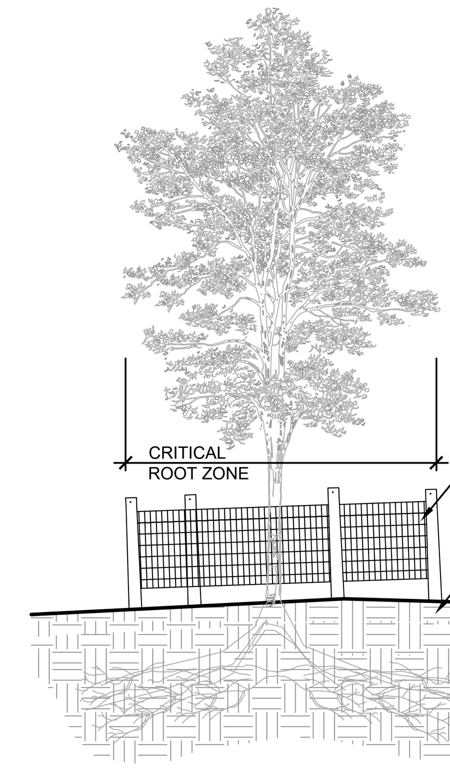
NOTE:
- PLANT SO THAT THE TREE'S ROOT FLARE (TRUNK FLARE) IS FLUSH WITH GRADE OR 1-2" HIGHER IN POORLY DRAIN SOIL.



4 EVERGREEN TREE PLANTING DETAIL

SCALE: 1" = 3'-0"

NOTE:
1. TREE PROTECTION WILL BE ERECTED PRIOR TO START OF CONSTRUCTION ACTIVITIES AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE
2. 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
3. GRADE CHANGES MAY NOT OCCUR WITHIN THE DRIP LINE OF PROTECTED TREES
4. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY REMAINING TREE
5. 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
6. TREES LOCATED ON ADJACENT PROPERTY THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED
7. TREES TO BE PRESERVED SHALL BE IDENTIFIED WITH FLAGGING PRIOR TO THE TREE CLEARING OPERATIONS
8. PROVIDE FENCE AROUND CRITICAL ROOT ZONE OF TREE
9. FENCE SHALL BE PLACED IN A CIRCLE WITH A MINIMUM RADIUS OF 1' PER 1" DIAMETER OF THE TREE MEASURED AT 4.5' ABOVE GROUND



1 TREE PROTECTION DETAIL

NOT TO SCALE

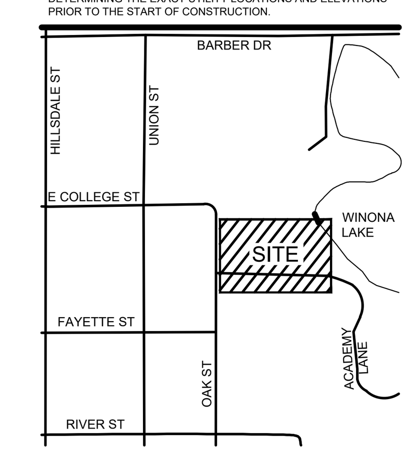
NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 1390
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. 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.



CLIENT

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

LANDSCAPE DETAILS

PEA JOB NO.	26-0130
P.M.	MM
DN.	CAL
DES.	JLE

DRAWING NUMBER:

L-2.0

\\peainc\pea\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\(L-2.0)-LS DETAILS-26-0130.dwg PLOT DATE: 9/4/2026 10:38 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 in 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

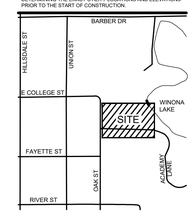
t: 844.813.2949

www.peagroup.com

STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 1320
REGISTERED LANDSCAPE ARCHITECT

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 REPRESENTATION 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

CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE

HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE

LANDSCAPE SPECIFICATIONS

PEA JOB NO.	26-0130
P.M.	MM
DN.	CAL
DES.	JLE

DRAWING NUMBER:

L-2.1

NOT FOR CONSTRUCTION

\\peainc\pea\PROJECTS\2026\26-0130 HILLSDALE COLLEGE TURF BUILDING\DWG\3_CONSTRUCTION\L-2.0 LANDSCAPE SPECS= 26-0130.dwg PLOT DATE:9/4/2026 10:41 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 provide 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.

NOT FOR CONSTRUCTION

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t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN
JANET L. EVANS
LANDSCAPE ARCHITECT
NO. 1302
LICENSED
LANDSCAPE ARCHITECT

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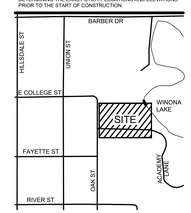

CLIENT
CORE DESIGN & MANAGEMENT, INC.
4293 FIVE OAKS DRIVE
LANSING, MI 48911

PROJECT TITLE
HILLSDALE COLLEGE TURF BUILDING
175 & 201 OAK STREET
HILLSDALE, MICHIGAN

REVISIONS	
PRELIMINARY BID SET - SITE AND FOUNDATIONS	7-31-26
PLANNING COMMISSION REVIEW	9-4-26

ORIGINAL ISSUE DATE:
JULY 31, 2026

DRAWING TITLE
LANDSCAPE SPECIFICATIONS

PEA JOB NO.	26-0130
P.M.	MM
DN.	CAL
DES.	JLE

DRAWING NUMBER:
L-2.2

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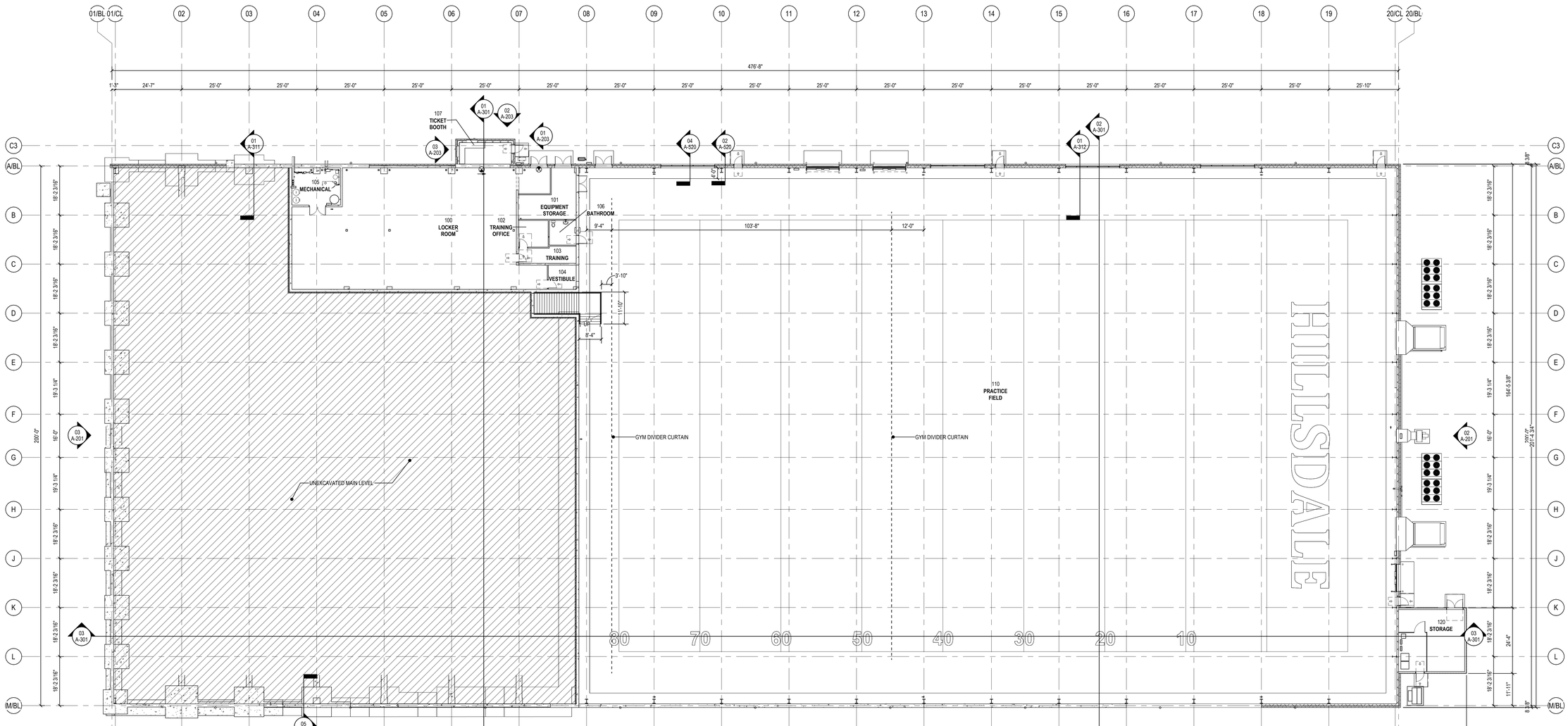
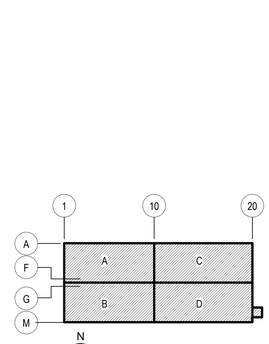


01 FIELD LEVEL FLOOR PLAN

1/16" = 1'-0"

A-100 RE: 01/ A-201



KEY PLAN

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Lansing, Michigan 48911

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Bay City, Michigan 48708

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SEAL

PRELIMINARY

PROJECT TEAM

PROJECT DATA

ADDRESS:
HILLSDALE, MI 49242

CLIENT NAME:
HILLSDALE COLLEGE

PROJECT NAME:
TURF BUILDING

ISSUANCES

DATE	DESCRIPTION
07-31-26	90% CONSTRUCTION DOCUMENTS
08-28-26	CONTRACTOR REVIEW

DRAWING DATA

OVERALL FIELD LEVEL PLAN

PROJECT #: 25-092
APPROVED BY: C. MILLER
CHECKED BY: J. RICE
DESIGNED BY: J. RICE
DRAWN BY: S. FISHER

A-100

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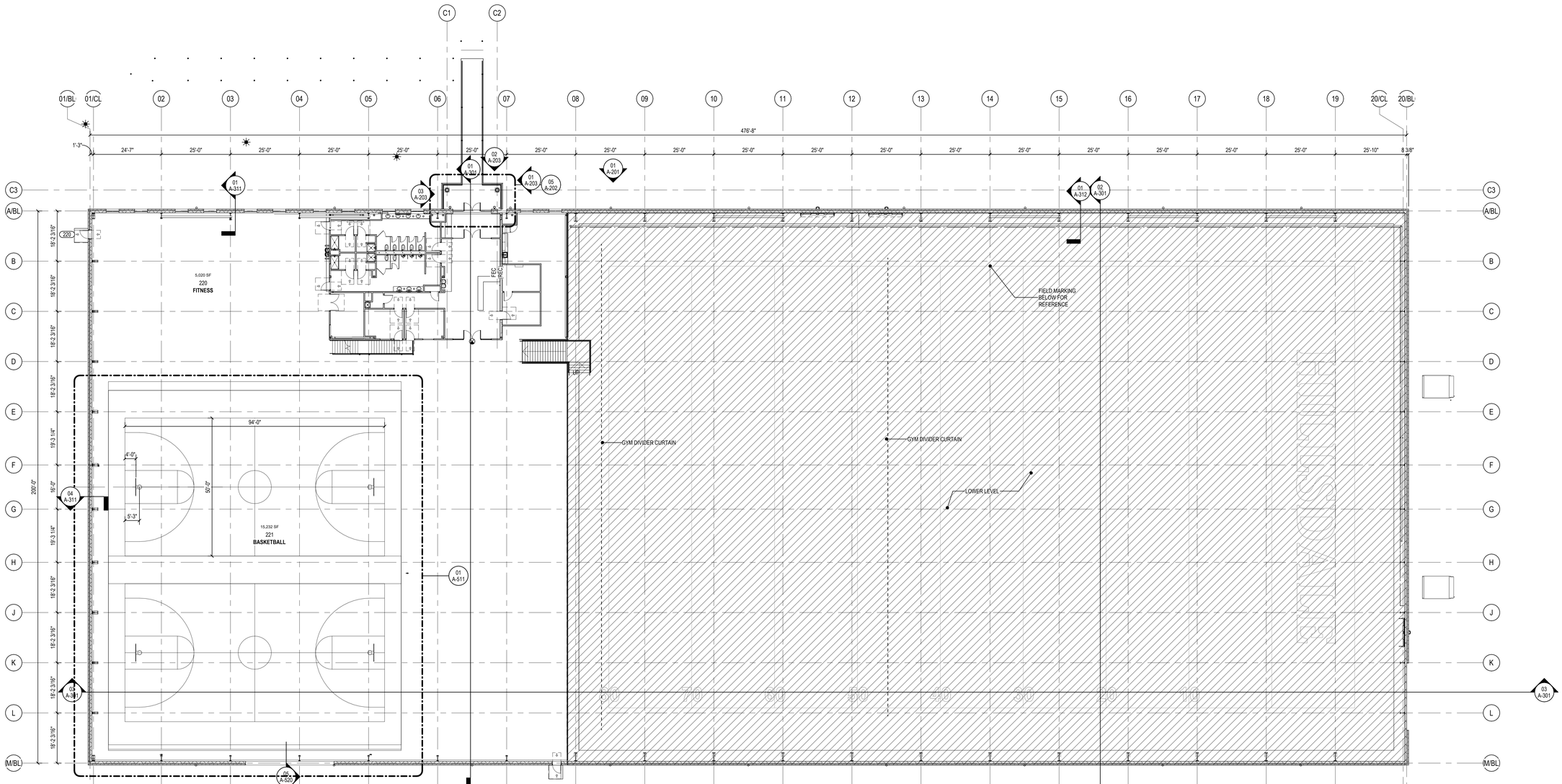

N **01** 1/16" = 1'-0"
OVERALL ENTRY LEVEL PLAN
A-110 RE: 01/ A-201

N **KEY PLAN**

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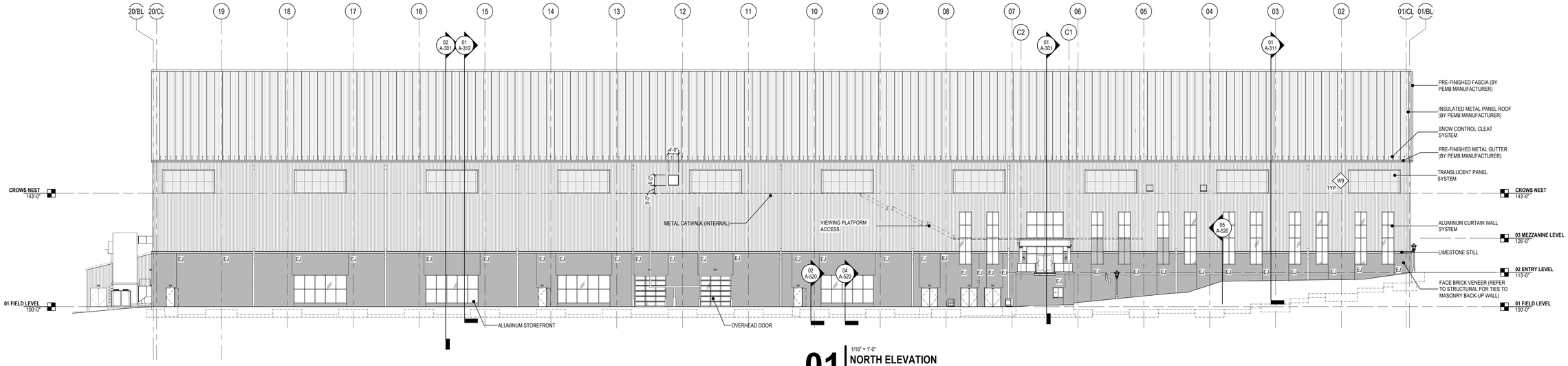

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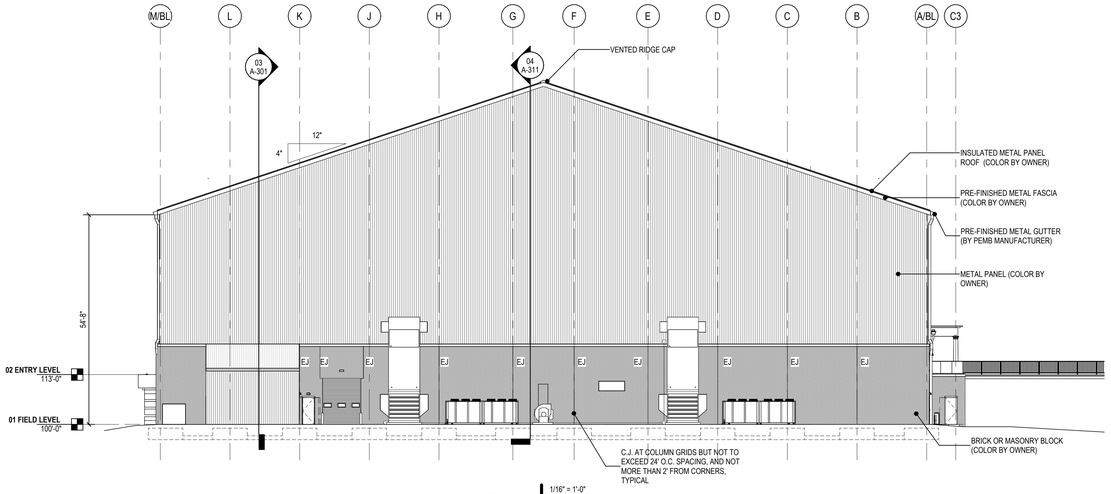
RE: 01/ A-110



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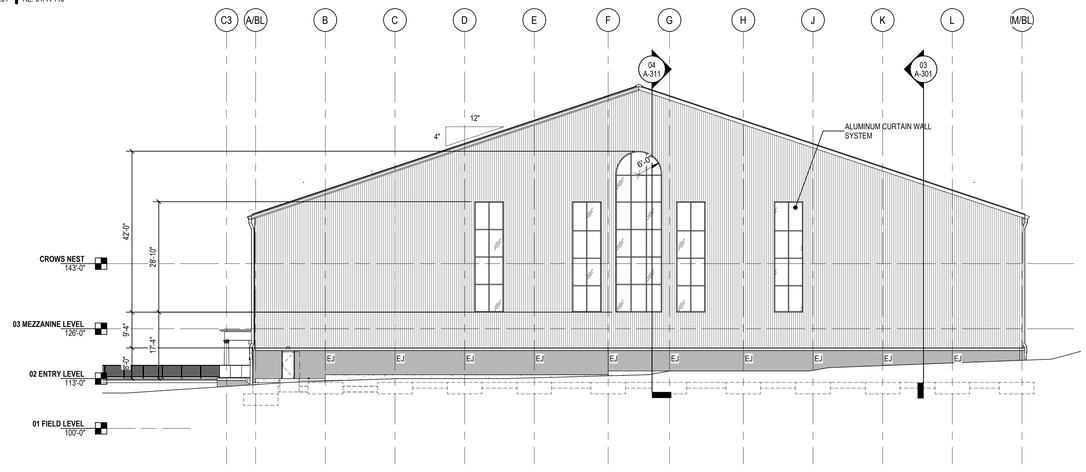
A-201 **EAST ELEVATION**
RE: 01/ A-100



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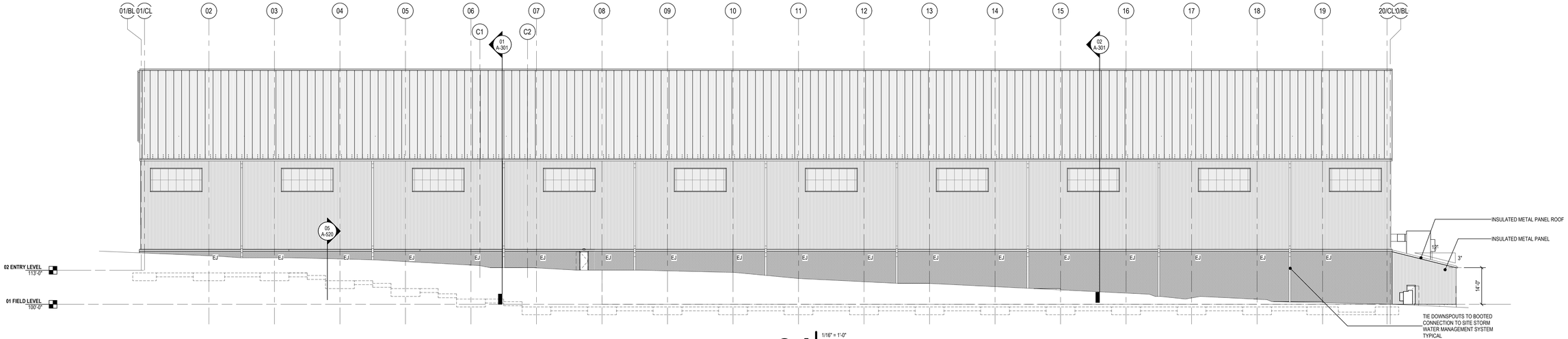

04 1/16" = 1'-0"
A-201 **SOUTH ELEVATION**
RE: 01/ A-700

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DRAWING DATA
EXTERIOR ELEVATIONS

PROJECT #: 25-092
APPROVED BY: C. MILLER
CHECKED BY: J. RICE
DESIGNED BY: J. RICE
DRAWN BY: S. FISHER

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