

VILLAGE OF MATTAWAN
ZONING BOARD OF APPEALS

AUGUST 11, 2025

AGENDA

1. CALL TO ORDER AT 7:00 P.M.
2. PLEDGE OF ALLEGIANCE
3. ATTENDANCE
4. WELCOME TO THE PUBLIC
5. ANNOUNCEMENT OF MEETING BEING RECORDED
6. OPEN PUBLIC HEARING TO RECEIVE COMMENT ON A REQUEST
APPLICATION SUBMITTED BY EDWARD AND FLORENCE KUCINICH TRUST
FOR INCREASED BUILDING SIZE
7. PUBLIC COMMENT
8. CLOSE PUBLIC HEARING
9. ADDITIONS TO THE AGENDA
10. APPROVAL OF THE AGENDA
11. OLD BUSINESS
12. NEW BUSINESS
 - A. DISCUSSION & DECISION ON VARIANCE REQUEST SUBMITTED BY
EDWARD AND FLORENCE KUCINICH TRUST
13. PUBLIC COMMENT
14. COMMENTS FROM VISITORS
15. COMMENTS FROM MEMBERS
16. ADJOURNMENT @



VARIANCE REQUEST APPLICATION

PERMIT FEE: COMMERCIAL - \$450

RESIDENTIAL - \$400

Date Fee Paid 7/10/25

Check no. 80887

The Variance Request Application will be presented to the Zoning Board of Appeals who will schedule a public hearing. After the public hearing the Zoning Board of Appeals will make a decision on the request without unreasonable delay. Consideration of the Variance Request will be based on the criteria outlined in Sections 23.45 and 23.50 of Ordinance no. 214, Zoning Ordinance, a copy of which is attached.

GENERAL INFORMATION

Name of Property Owner Edward Kucinich & Florence J. Kucinich Trustees of Living Trust of Edward Kucinich & Florence Kucinich

Address of Property Owner 1398 Palmetto Drive Portage, MI 49002

Day time Phone number 269-599-2805

SPECIFIC VARIANCE INFORMATION

Address of property for which Variance is being requested 2344E. McGillen Street Mattawan, MI

Property tax ID number PID: 80-46-700-057-01

Current zoning of property Village General Business District (VGBD)

Description of Variance (Specify which section of the Zoning Ordinance requires a Variance)

We are requesting a variance from Section 10.30E of the Village of Mattawan Zoning Ordinance to allow the construction of a gas station convenience store exceeding 1,000 square feet. While buildings over 1,000 sq ft are permitted under special land use in the VGBD, the proposed use includes fueling stations, which are not explicitly addressed in the VGBD as they are in the Highway Business District.

What practical difficulties or unnecessary hardships are present?

The proposed development requires a building size that exceeds the 1,000 sq ft threshold to meet modern operational standards for a gas station and convenience store, including safety, accessibility, and customer service needs.

Will the granting of this Variance be detrimental to adjacent property and the surrounding neighborhood?

The project will be designed to align with the character of the surrounding area and will not negatively impact adjacent properties or the neighborhood.

What exceptional or extraordinary circumstances apply to this property that do not generally apply to other similarly zoned properties?

The property's location and intended use as a fueling station create unique conditions not generally applicable to other VGBD parcels.

Is the condition or situation of the property unique compared to surrounding properties?

The site's proximity to major roads and its suitability for a fueling station make it distinct from other properties in the district.

Is a Variance necessary to allow you to enjoy your property to the same extent as other property owners in the same zoning district and in the vicinity?

A variance is necessary to utilize the property in a manner consistent with its location and potential, similar to other commercial properties in the vicinity.

Any other information you would like to add?

I acknowledge that I have been notified that this request will be considered at a public hearing to be held on _____ at _____ o'clock. I certify that all requirements of Article 23 of Ordinance 214 pertaining to Variances will be met.

I understand that no order of the Zoning Board of Appeals permitting the erection or alteration of a building, an open air land use, or a parking lot shall be valid for longer than twelve (12) months, unless such use is established within such period or a permit for such erection or alteration is obtained within such period and such erection or alteration is commenced and proceeds to a completion in accordance with the terms of the permit.

Owner's signature

Date 7-10-2024

Received by

Date 6/26/25

Payment not received at time of Application Paid 7/10/25

FOR OFFICE USE ONLY

Application approved?

☐ YES

☐ NO

Additional comments:

Signature _____

Village Clerk

Date _____

ARTICLE 10

VILLAGE GENERAL BUSINESS DISTRICT (VGBD) -

Section 10.10	Purpose (pg. 88)
Section 10.20	Principal Permitted Uses (pg. 89)
Section 10.30	Special Uses (pg. 91)
Section 10.40	Development Requirements (pg. 93)

Section 10.10 Purpose

The purpose of this district is to permit a wide range of business, retail, and service uses, which are needed to serve the nearby residential areas. It is further the intent of this district to encourage a concentration of uses and high quality site development standards for the mutual advantage of both merchants and consumers to avoid conventional strip commercial development along major streets located within the Village.

Further objectives of this Article include:

- A. To accommodate patrons arriving primarily in personal vehicles
- B. To avoid development that would result in hazards, offensive and loud noises, vibration, smoke, glare, heavy traffic, and late hours of operation.
- C. To serve as a buffer between the Historic Central Business District, Highway Business District, and residential areas within the Village.

Section 10.20 Principal Permitted Uses

No building or land shall be used and no building shall be erected except for one (1) or more of the following specified uses, unless otherwise provided in this Ordinance.

- A. Adult day care and foster care facilities
- B. Art galleries

- C. Bed and breakfast inns
- D. Business service establishments, such as office machine sales and repair, printing, blueprinting; provided that each occupies a total useable floor area of not more than ten-thousand (10,000) square feet
- E. Business establishments that perform services on premises such as, but not limited to: banks, savings and loans, and credit unions (including drive-through facilities); brokerage houses; insurance, real estate, and travel agencies
- F. Catering Establishments
- G. Data processing and computing centers with up to ten thousand (10,000) square feet gross floor area
- H. Essential public services when conducted within a completely enclosed building, excluding storage yards
- I. Medical offices with up to ten thousand (10,000) square feet gross floor area
- J. Mixed-use buildings with business, commercial, or service uses on the ground floor and residential, office, or warehouse uses on upper floors
- K. Offices of an executive, administrative, or professional nature with up to ten thousand (10,000) square feet gross floor area
- L. Outdoor cafes and outdoor eating areas
- M. Personal fitness centers up to ten thousand (10,000) square feet gross floor area
- N. Personal service establishments within a completely enclosed building, including but not limited to such uses as: repair shops (watches, radio, television, shoes, etc), tailor and dressmaking shops, beauty parlors and styling salons, barber shops, dry cleaners, photographic studios, film processing outlets, copy centers, interior decorators, and postal

center; provided that each occupies a total usable floor area of not more than ten-thousand (10,000) square feet

- O. Public, quasi-public, and institutional uses such as, but not limited to, municipal buildings and offices, courthouses, public off-street parking facilities, libraries, museums, public safety facilities, parks and playgrounds, post offices, and civic center, but excluding storage yards for any use
- P. Restaurants (excluding drive-in restaurants or those with predominately drive-through facilities), where the patrons are served while seated within the buildings occupied by such establishments
- Q. Retail businesses which supply commodities on the premise of up to ten-thousand (10,000) square feet of gross floor area, such as but not limited to groceries, meats, fruits and produce, dairy products, baked goods, candies, specialty wines, and other specialty food products; and stores selling drugs, dry goods, flowers, clothing, notions, books and magazines, toys, sporting goods, shoes, tobacco products, musical instruments, recorded music, video rentals and sales, gifts and souvenirs, antiques furniture, and hardware
- R. Retail sales in which both a workshop and retail outlet or showroom are required, such as but not limited to, plumbing, electrician, interior decorating, upholstering, printing, photographic-reproducing, radio, and home appliance and similar establishments of similar character, subject to the provision that not more than eighty percent (80%) of the total useable floor area of the establishment shall be used for servicing, repairing, or processing activities and further provided that such retail outlet or showroom activities shall be provided in that portion of the building where the customer entrance is located
- S. Studios for art, music, dance, or theatrical instruction

- T. Veterinary clinics and animal grooming, provided that all activities are conducted within an enclosed building, with up to ten-thousand (10,000) square feet gross floor area
- U. Public utility buildings, telephone exchange buildings, electric transformer stations and substations, and gas regulator stations when operating requirements necessitate the locating within the district in order to serve the immediate vicinity, but not including service or storage yards
- V. Retail establishments whose principal activity is the sale or rental of merchandise within a completely enclosed building of less than sixty-thousand (60,000) square feet of gross floor area, including supermarkets and commercial centers
- W. Theaters, cinemas, assembly halls, community centers, or similar places of assembly, when conducted completely within enclosed buildings
- X. Churches and other facilities normally incidental thereto
- Y. Mortuaries and funeral homes
- Z. Accessory structures and uses customarily incidental to the above permitted uses, including drive-thru service windows, except as otherwise noted in this Article

Section 10.30 Special Uses

The following uses shall be considered conditional and shall require a special use approval, and shall comply with any applicable special use requirements of Article 21:

- A. Automobile and other vehicle wash facilities
- B. Bars, taverns, pubs and brewpubs, cocktail lounges, and nightclubs
- C. Business schools, colleges, universities, or private schools operated for a profit

- D. Commercial parking lots and structures
- E. Commercial greenhouses, nurseries, and garden centers less than one-thousand (1,000) square feet
- F. Commercial parking lots and structures
- G. Hospitals
- H. Indoor recreational centers such as, but not limited to bowling alleys, roller and ice skating rinks, pool or billiard halls, pinball and mechanical device arcades, and other general indoor recreation facilities
- I. Open air business uses, such as but not limited to retail sales of trees, shrubs, plants, flowers, topsoil, fruit, vegetables, and miniature golf
- J. Party Stores
- K. Rental facilities
- L. Veterinary hospitals and clinics, boarding, or other similar uses, with outdoor pens
- M. Automotive fueling stations including those combined with convenience stores of less than one-thousand (1,000) square feet, or automotive fueling stations and automobile service centers/stations, without accessory or combined convenience stores
- N. Other commercial uses not specifically stated or implied elsewhere which, in the determination of the Planning Commission, are similar to the principal permitted uses provided herein, and in harmony with the character of the District and the purpose and intent of this Article and the Village of Mattawan Master Plan

Section 10.40 Development Requirements

The following requirements shall be met within a Village General Business District (VGBD):

1. Site plan approval for all permitted and conditional uses as specified in Article 15 of this Ordinance.
2. Off-street parking, loading, and access management standards for all uses as specified in Article 20 of this Ordinance.
3. Signs for all uses as specified in Article 19 of this Ordinance.
4. Height, area, lot coverage, yard regulations, building mass, and yard regulations as specified in Article 16 of this Ordinance.
5. Landscaping requirements as specified in Article 18 of this Ordinance.
6. Design, architectural, and building material standards as specified in Article 17 of this Ordinance.

ARTICLE 23

ZONING BOARD OF APPEALS

Section 23.05	Purpose (pg. 305)
Section 23.10	Creation; Membership; Terms of Office (pg. 305)
Section 23.15	Legal Counsel (pg. 306)
Section 23.20	Rules of Procedure (pg. 306)
Section 23.25	Appeals (pg. 306)
Section 23.30	General Powers and Duties (pg. 307)
Section 23.35	Administrative Reviews (pg. 307)
Section 23.40	Interpretation of District Boundaries (pg. 308)
Section 23.45	Variances (pg. 308)
Section 23.50	Standards for Judging Appeals and Variances (pg. 309)
Section 23.55	Conditions of Appeals and Variances (pg. 310)
Section 23.60	Effective Period of Orders (pg. 310)
Section 23.65	Appeals to Circuit Court (pg. 311)
Section 23.70	Stay of Proceedings (pg. 311)
Section 23.75	Fees (pg. 311)

Section 23.05 Purpose.

In order that the objectives of this Ordinance may be fully and equitably achieved, that a means shall be provided for the competent interpretation of the Ordinance, that adequate but controlled flexibility be provided in the application of this Ordinance, that the health, safety, and welfare of the public is secured, and that justice be done, there is hereby established a Zoning Board of Appeals.

Section 23.10 Creation; Membership; Terms of Office.

There is hereby established in and for the Village of Mattawan, a Zoning Board of Appeals, which shall perform its duties and exercise its powers as provided in Section 5 of Act 207 of the Public Acts of 1921, as amended (MCLA 125.585), in such a way that the objectives of this Ordinance shall be observed, public safety secured and substantial justice done.

The Village Council shall serve as the Zoning Board of Appeals and shall consist of these individuals then serving on the Village Council and the terms of the members of the Board of Zoning Appeals shall coincide with their terms as Council members. The Village President shall serve as the Chairperson, the Village President Pro-Tem shall serve as the Vice-Chairperson, and the Village Clerk shall serve as the Secretary of the Zoning Board of Appeals.

Section 23.15 Legal Counsel.

The Village Attorney or his or her representative shall act as legal counsel for the Board and, subject to prior approval of the Village Council, shall be present at meetings of the Board upon request.

Section 23.20 Rules of Procedure.

- A. Hearings shall be public and minutes, including action taken by the members, shall be kept for public record by its designated Secretary, and submitted to the Village Clerk for filing.
- B. A quorum will consist of a majority of members present.
- C. A two-thirds (2/3) majority of the members present affirmative vote shall be required to reverse any order, requirement, decision, or determination of any administrative official in the use of this Ordinance and to grant any variances from uses of land which may be permitted by this Ordinance.
- D. Records and minutes shall be recorded of all proceedings which shall contain evidence and data relevant to every case considered together with the votes of the members and the final disposition of such case. The grounds of every determination shall be stated. Such minutes shall accompany and be attached to the standard forms required to persons appealing as part of the Zoning Board of Appeals= permanent records.

Section 23.25 Appeals.

- A. An appeal may be taken to the Zoning Board of Appeals by any person, officer, department, board or bureau affected by a decision of the Village concerning this Ordinance. Such appeal shall be taken within thirty (30) days from the decision by filing with the Zoning Official and with the Board a notice of appeal specifying the grounds thereof. The Zoning Official shall forthwith transmit to the Board all of the papers constituting the record upon which the action appealed from was taken.

- B. The Board shall select a reasonable time and place for the hearing of the appeal, shall give due notice thereof to the parties, and shall render a decision on the appeal without unreasonable delay. Any person may appear and testify at the hearing either in person or by duly authorized agent or attorney.
- C. The Board, in conducting any public hearing, shall fix a reasonable time for the hearing of the appeal and shall give due notice to the parties concerned, including all owners of record of property and occupants of single and two-family dwellings thereof, if not the owner of record, within three hundred (300) feet of the premises in question. For structures containing more than four (4) dwelling units owned or leased by different individuals, partnerships, businesses, or organizations, notice shall be given to the manager or owner of the structure who shall be requested to post the notice at the primary entrance to the structure.

Such notice shall be delivered at least five (5) days before the date set for the hearing. The board shall decide the appeal within a reasonable period of time.

Section 23.30 General Powers and Duties.

The Board shall have the specific powers and duties as set forth in this Article, all jurisdiction and powers prescribed in other chapters of this Ordinance or the Code of Ordinances, and all jurisdiction and powers granted by Act 207 of the Public Acts of 1921, as amended (MCLA 125.581 et seq.) The power or authority to alter or change this Ordinance or the Zoning Map remains reserved to the Village Council in the manner provided by law.

Section 23.35 Administrative Review.

The Zoning Board of Appeals may hear and decide appeals when it is alleged by the appellant that there is an error of law in any order, requirement, permit, decision, determination, or refusal made by any administrative official in carrying out or enforcing this Ordinance.

Section 23.40 Interpretation of District Boundaries.

The Zoning Board of Appeals shall interpret the official Zoning Map of the Village of Mattawan, including the interpretation of the specific locations of zoning district boundaries when in doubt.

Section 23.45 Variances.

- A. The Zoning Board of Appeals may authorize, upon an appeal, a variance from the strict application of any provision of this Ordinance, where, by reason of exceptional irregularity, narrowness, shallowness, shape, or area of a specific piece of property at the effective date of this Ordinance, or by reason of exceptional topographic conditions or other extraordinary or exceptional conditions of such property, the strict application of this Ordinance would result in peculiar or exceptional practical difficulties to or unnecessary undue hardship upon the owner of such property.
- B. In hearing and deciding appeals for variances, the Board shall adhere to the following criteria in determining whether or not practical difficulties and/or unnecessary hardships exist:
1. That if the property owner complies with this Ordinance, he or she can secure no reasonable return from or make no reasonable use of his or her property;
 2. That the hardship results from the application of this Ordinance to his or her property, rather than from some other factor;
 3. That the hardship of which he or she complains is suffered merely by his or her property directly and not by others;
 4. That the hardship is not the result of his or her own actions; and
 5. That the hardship is peculiar to the property of the applicant.

The Board shall grant no variance, if it finds an applicant does not meet all of the above listed criteria for determining whether or not a practical difficulty and/or unnecessary hardship exists.

Section 23.50 Standards for Judging Appeals and Variances.

In consideration of all appeals and proposed variations of this Ordinance, the Zoning Board of Appeals shall, before making any variation from this Ordinance, in a specific case, first determine that the proposed variation affirmatively meets all of the following general standards:

- A. A practical difficulty and/or unnecessary hardship exists according to the standards of this Article.
- B. The proposed variation involves exceptional circumstances not found in other areas of the same zoning district.
- C. The proposed variation will be in harmony with the general purposes and intent of this Ordinance.
- D. The proposed variation will not in any respect impair the public health, safety, comfort, or welfare of the inhabitants of the Village.
- E. The proposed use will be of such location, size, and character that it will be in harmony with the appropriate and orderly development of the surrounding neighborhood.
- F. The proposed use will be of a nature that will make vehicular and pedestrian traffic no more hazardous than is normal for the distance involved, taking into consideration vehicular turning movements in relation to routes of traffic flow, proximity and relationship to intersections, adequacy of sight distances, location and access of off-street parking and provisions for pedestrian traffic, with particular attention to minimizing child-vehicle contact.

- G. The location, size, intensity, site layout and periods of operation of such proposed use will be designed to eliminate any possible nuisances emanating therefrom, which nuisance might be noxious to the occupants of any other nearby permitted uses, whether by reason of dust, noise, fumes, vibration, smoke, or lights.
- H. The location and height of buildings or structures and the location, nature, and height of walls and fences will be such that the proposed use will not interfere with or discourage the appropriate development and use of adjacent land and buildings or unreasonably affect their value.

Section 23.55 Conditions of Appeals and Variances.

- A. The Zoning Board of Appeals, in acting favorably on any appeal in connection with a request for a variance may attach any conditions to its approval which it finds necessary to accomplish the reasonable application of the standards set forth in this Article. In addition, the Board may require some form of guarantee that the conditions will be adhered to.
- B. In exercising the powers described in this chapter, the Board may reverse or affirm, wholly or partly, or modify, the order, requirement, decision, or determination appealed from and may make such order, requirement, decision, or determination as ought to be made.

Section 23.60 Effective Period of Orders.

No order of the Zoning Board of Appeals permitting the erection or alteration of a building, an open air land use, or a parking lot shall be valid for longer than twelve (12) months, unless such use is established within such period or a permit for such erection or alteration is obtained within such period and such erection or alteration is commenced and proceeds to a completion in accordance with the terms of the permit.

Section 23.65 Appeals to Circuit Court.

The decision of the Zoning Board of Appeals shall be final. However, a person having an interest affected by this Ordinance may appeal such decision to the Circuit Court.

Section 23.70 Stay of Proceedings.

An appeal stays all proceedings in furtherance of the action appealed from unless the Zoning Official certifies to the Zoning Board of Appeals after the notice of the appeal shall have been filed with him that, for reasons of facts stated in the certificate, a stay would, in his opinion, cause imminent peril to life or property, in which case proceeding shall not be stayed otherwise than by a restraining order, which may be granted by the Zoning Board of Appeals or by Circuit Court, upon application.

Section 23.75 Fees.

The Village Council, may from time to time, prescribe and amend, a reasonable schedule of fees to be charged to the applicants for appeals to the Zoning Board of Appeals. At the time the notice of appeal is filed, said fee shall be paid to the Village.

OWNER/DEVELOPER:
CASEY'S GENERAL STORES, INC.
ONE SE CONVENIENCE BLVD.
ANKENY, IA 50021
PHONE: (515) 381-5722
CONTACT: ERIK NIKKEL

ENGINEER:
CESO, INC.
2800 CORPORATE EXCHANGE DR, SUITE 400
COLUMBUS, OH 43221
PHONE: (440) 773-3461
CONTACT: JEFF LONCHOR, P.E.
EMAIL: LONCHOR@CESOINC.COM
EOR: ZACHARY FRESHNER, P.E.

GOVERNING AGENCIES AND UTILITY COMPANIES:

SEWER:
VILLAGE OF MATTAWAN PUBLIC WORKS
PHONE: 269-668-2128
CONTACT: TOM ANTHONY
EMAIL: TOM@MATTAWANMI.COM

GAS SERVICE:
CONSUMERS ENERGY
PHONE: 800-477-5050

WATER:
VILLAGE OF MATTAWAN PUBLIC WORKS
PHONE: 269-668-2128
CONTACT: TOM ANTHONY
EMAIL: TOM@MATTAWANMI.COM

COMMUNICATIONS:
SPECTRUM
PHONE: 866-874-2389

STORMWATER:
VILLAGE OF MATTAWAN PUBLIC WORKS
PHONE: 269-668-2128
CONTACT: TOM ANTHONY
EMAIL: TOM@MATTAWANMI.COM

ELECTRIC:
INDIANA MICHIGAN POWER
PHONE: 888-311-6424

ZONING:
VILLAGE OF MATTAWAN
PHONE: 269-668-2128
CONTACT: TERRI MCLEAN
EMAIL: OFFICES@MATTAWANMI.COM

PROPERTY DATA:

PARCEL OWNER: KUCINICH EDWARD & FLORENCE

PARCEL ID: 80-46-700-057-20

ADDRESS: 23968 MCGILLEN AVENUE
MATTAWAN, MI 49071

EXISTING PROPERTY AREA: 16.262 ACRES

PROPOSED PROPERTY AREA: 2.295 ACRES

EXISTING ZONING: AG - AGRICULTURE

PROPOSED ZONING: VGB - VILLAGE GENERAL BUSINESS

PROPOSED USE: C-STORE & GAS STATION

	REQUIRED	PROPOSED
BUILDING SETBACKS		
FRONTAGE ALONG STREET:	0'	55.72'
SIDE:	10'	138.74'
REAR:	15'	108.3'

PARKING AREA SETBACKS
FRONT: 10' - PROPERTY 155'

SIGN SETBACKS: 15' - SIDE 48'

MAXIMUM BUILDING HEIGHT: 35' 25'

BUILDING AREA: 3,219 SF

PARKING:
TOTAL PARKING SPACES: 11 14
ADA PARKING SPACES: N/A 1

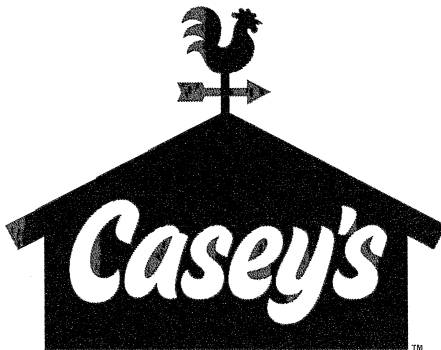
FLOODPLAIN DESIGNATION: PARCEL IS LOCATED WITHIN "ZONE X" AS INDICATED BY THE FLOOD
INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NUMBER 26159C0375C,
EFFECTIVE DATE: 12/03/2009; PUBLISHED BY THE FEDERAL EMERGENCY
MANAGEMENT AGENCY

LEGEND

EXISTING FEATURES LEGEND
APPLIES TO ALL CIVIL SHEETS

	RIGHT OF WAY LINE		BENCHMARK
	PARCEL LINE		SET 5/8" x 30" IRON REBAR WITH YELLOW CAP STAMPED "CESO"
	SUBJECT PROPERTY BOUNDARY LINE		SANITARY MANHOLE
	EASEMENT LINE		TELEPHONE BOX
	CURB		CLEANOUT
	EDGE OF PAVEMENT		GUY WIRE ANCHOR
	EDGE OF WALK		CATCH BASIN
	PAVEMENT MARKINGS		CURB INLET
	STORM SEWER		LIGHT POLE
	SANITARY SEWER		POWER POLE
	WATER LINE		ELECTRIC METER
	GAS LINE		SIGN
	OVHD ELECTRIC LINE		ELECTRIC BOX
	UGND ELECTRIC LINE		TRAFFIC BOX
	UGND TELECOMM LINE		WATER VALVE
	MAJOR CONTOUR		FIRE HYDRANT
	MINOR CONTOUR		SIGNAL POLE

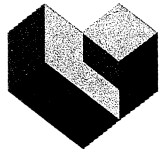
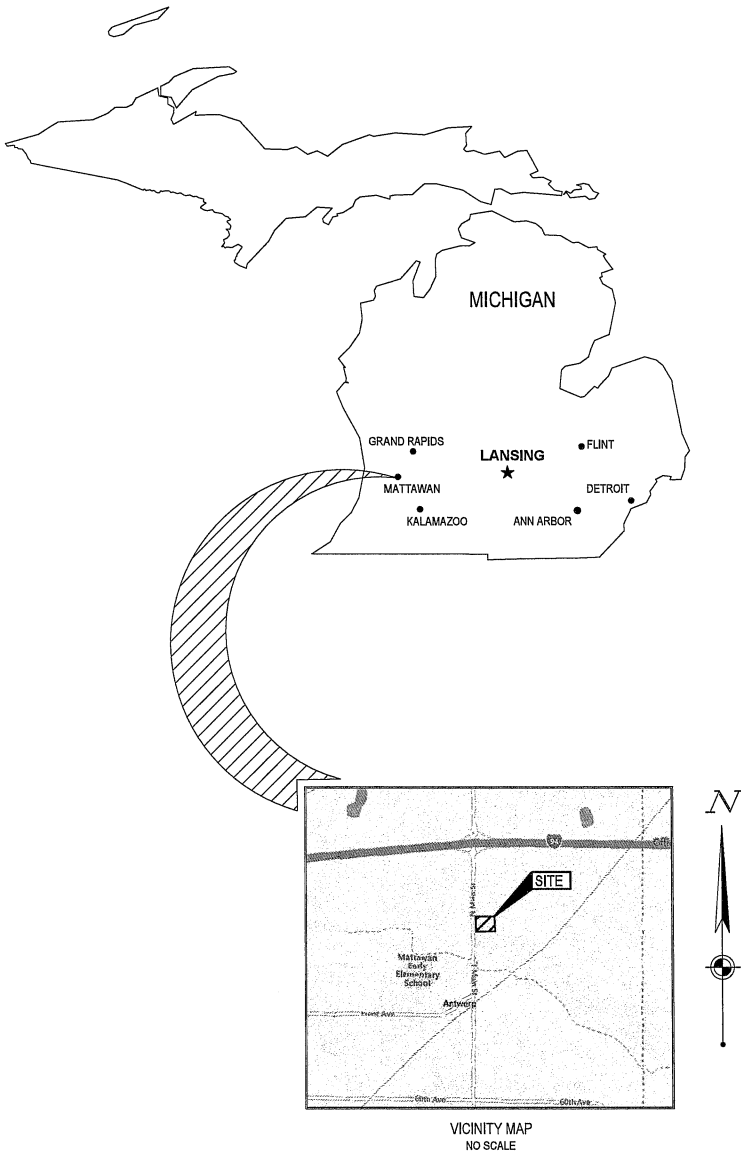
VILLAGE OF MATTAWAN, VAN BUREN COUNTY, MICHIGAN
SITE IMPROVEMENTS
FOR
CASEY'S #4605
23968 MCGILLEN AVENUE
MATTAWAN, MICHIGAN 49071



SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
C-001	COVER SHEET
C-002	GENERAL NOTES
C-003	ALTA NSPS LAND TITLE SURVEY
C-004	ALTA NSPS LAND TITLE SURVEY
C-100	DEMOLITION PLAN
C-101	SITE PLAN
C-101A	ALTERNATIVE PAVEMENT PLAN
C-201	GRADING PLAN
C-301	UTILITY PLAN
C-401	SWPPP
C-402	SWPPP DETAILS
C-500	PHOTOMETRIC PLAN
C-601	CONSTRUCTION DETAILS
C-602	CONSTRUCTION DETAILS
C-603	CONSTRUCTION DETAILS
C-604	CONSTRUCTION DETAILS
C-701	LANDSCAPE PLAN
C-702	LANDSCAPE DETAILS

BENCHMARK	
Vertical Datum: NAVD88 derived from GPS Observations	
BM "A":	Bench nail set west side of power pole, next to green cable box, east side of Main Street, southwest corner of Mattawan Fire Station property. Elevation = 840.27'
BM "B":	Chiseled "X" on southeast bolt of signal pole base, behind sidewalk on northwest corner of Main Street and West McGillen Avenue intersection. Elevation = 841.61'
BM "C":	Bench nail set north side of power pole # V524-165, between sidewalk and south side of West McGillen Avenue, next to green telephone riser, east from entrance to McGillen's Crossing. Elevation = 843.27'

NOTE: REFER TO ALTA SURVEY, SHEET C-004, FOR
BENCHMARK LOCATIONS



WWW.CESOINC.COM

175 Montrose West Ave., Suite 400
Ann Arbor, MI 48106
Phone: 330.695.0660 Fax: 888.308.4838



CASEY'S #4605

MATTAWAN, MI

23968 MCGILLEN AVENUE
MATTAWAN, MI 49071

Revisions / Submissions

ID	Description	Date
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© 2024 CESO, INC.

Project Number: 764183

Scale: NO SCALE

Drawn By: BTD

Checked By: JMS

Date: 12/12/2024

Issue: PERMIT SET

Drawing Title:

COVER SHEET

C-001



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

GENERAL NOTES

DEMOLITION NOTES

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

SITE NOTES

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. ALL MATERIAL NOTED ON DRAWINGS WILL BE SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS TO COORDINATE ACCESS POINTS AND ELEVATIONS. REFER TO ARCHITECTURAL PLANS. FOR EXACT LOCATIONS AND DIMENSIONS OF DOORS, ENTRY RAMP, AND CANOPY.
4. THE CONTRACTOR SHALL OBTAIN ALL PERMITS FOR ALL SITE DEVELOPMENT WORK, PAY ALL FEES FOR PERMITS AND CHECK ALL GOVERNING AUTHORITIES' SPECIFICATIONS FOR BUT NOT LIMITED TO, GUTTERS, SIDEWALKS, POLES, AND OTHER STRUCTURES, INCLUDING THE REMOVAL OR RELOCATION OF EXISTING UTILITIES OR OTHER PHYSICAL OBJECTS SHOWN ON PLANS OR NOTED OTHERWISE.
5. THE CONTRACTOR SHALL CREATE AND IMPLEMENT AN EROSION AND SEDIMENTATION CONTROL PLAN FOR ALL SITE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROJECT. THE PLAN MUST CONFORM TO THE EROSION AND SEDIMENTATION REQUIREMENTS OF THE CONSTRUCTION GENERAL PERMIT OR LOCAL STANDARDS AND CODES, WHICHEVER IS MORE STRINGENT.
6. ALL COSTS FOR INSPECTIONS AND/OR TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS NOTED OTHERWISE.
7. ACCESSIBILITY STANDARDS SHALL BE IN ACCORDANCE WITH FEDERAL AND LOCAL REQUIREMENTS FOR HANDICAP ACCESSIBILITY, INCLUDING BUT NOT LIMITED TO THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES. ADA PARKING STALLS SHALL MEET ADA GRADE GUIDELINES. CONTRACTOR SHALL FIELD VERIFY EXISTING GRADES AT ACCESS POINTS, ACCESSIBLE ROUTES, AND EXISTING PARKING TO REMAIN TO DETERMINE COMPLIANCE WITH STANDARDS.
8. ALL DISTURBED AREAS ARE TO RECEIVE 6" OF TOPSOIL, SEED, MULCH AND WATER UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.
9. ALL DIMENSIONS AND RADII ARE TO THE FACE OF THE CURB OR EDGE OF PAVEMENT, AS APPLICABLE, UNLESS OTHERWISE NOTED.
10. ALL CURB RADII ARE 5 FEET UNLESS OTHERWISE NOTED.
11. PROVIDE SIGNAGE AND STRIPING AS SHOWN. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL COMPLY WITH THE GOVERNING MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.). PAVEMENT MARKINGS ON ASPHALT SHALL BE WHITE. PAVEMENT MARKINGS ON CONCRETE SHALL BE YELLOW.
12. REFER TO ARCHITECTURAL PLANS FOR PROPOSED BUILDING SIGNAGE.
13. REFER TO MECHANICAL PLANS FOR EQUIPMENT LAYOUT.
14. REFER TO ELECTRICAL PLANS FOR ELECTRICAL WORK.
15. REFER TO GEOTECHNICAL ENGINEERING REPORT PREPARED BY TERRACON, DATED 8/13/2024 FOR SITE WORK PREPARATION/RECOMMENDATIONS AND PAVEMENT SECTIONS.
16. REFER TO ORIGINAL SURVEY PROVIDED BY CESO, DATED 5/14/2024.
17. ALL LIGHT POLES TO BE LOCATED 3' FROM THE BACK OF CURB, AS MEASURED FROM THE FACE OF POLE FOUNDATION, UNLESS OTHERWISE DENOTED ON PLANS.
18. THE CONTRACTOR SHALL FOLLOW ALL LOCAL REQUIREMENTS AND REGULATIONS FOR FILLING AND DISPOSING OF TANK BALLAST WATER.

GRADING NOTES

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

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

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

UTILITY NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE.
2. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
3. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF O.S.H.A. DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, AND OTHER MEANS OF PROTECTION. THIS TO INCLUDE BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITY DURING CONSTRUCTION AT NO COST TO THE OWNER.
5. ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
6. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY REGULATIONS AND THE OWNER'S INSPECTION AUTHORITIES.
7. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITY'S INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
8. WATER AND SANITARY UTILITIES SHALL HAVE TEN (10) FEET OF HORIZONTAL CLEARANCE WHEN PARALLEL OR 18" VERTICAL CLEARANCE WHEN CROSSING. ALL CLEARANCE DISTANCES SHALL BE MEASURED FROM OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE. THE CROSSING SHALL BE ARRANGED SO THAT THE SANITARY SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER LINE JOINTS.
9. IF A WATER LINE PASSES UNDER THE SANITARY SEWER LINE, THE SEWER LINE SHOULD BE CONSTRUCTED OF A WATERTIGHT MATERIAL APPROVED BY THE REGULATORY AGENCY FOR USE IN WATER MAIN CONSTRUCTION AND SHALL EXTEND TEN (10) FEET ON BOTH SIDES OF THE CROSSING, AS MEASURED PERPENDICULAR TO THE WATER LINES. ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO MAINTAIN LINE AND GRADE.
10. UNDERGROUND LINES SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
11. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY REGULATIONS AND THE OWNER'S INSPECTION AUTHORITIES.
12. UTILITY TRENCHES WITHIN PAVED AREAS TO BE BACKFILLED PER UTILITY TRENCH DETAIL PROVIDED WITHIN THE CONSTRUCTION DETAILS SHEET.
13. ALL WATER LINE WORK SHALL BE PERFORMED IN ACCORDANCE WITH VILLAGE OF MATTAWAN CONSTRUCTION STANDARDS AND STATE REGULATIONS.
14. INSTALL ALL WATER LINES WITH A MINIMUM COVER OF 4'-0".
15. ON-SITE WATER LINE MATERIAL SHALL BE AS FOLLOWS:

MATERIAL	PRESSURE RATING	PIPE SPEC	FITTINGS	INSTALLATION	ACCEPTABLE AREAS OF USE
HIGH-DENSITY POLY-ETHYLENE (HDPE TUBING)	SDR 9 P.C. = 250 PSI	ASTM D2239 AWWA C901 ASTM F714	ASTM D3350 ASTM D3261	ASTM D2774	ON SITE, < 3" DIA.
COPPER 1"-3"	TYPE "K"	ASTM B88	AWWA C800	AWWA C800	DOMESTIC WATERLINES 1"-3"
PE 4710 POLY-ETHYLENE PLASTIC (IPE)	SDR 11 P.C. = 200 PSI	ASTM D3035 AWWA C901	ASTM D3350 ASTM D3261	ASTM D2774	ON SITE, 2" TO 3" DIA.
P.V.C. POLY VINYL CHLORIDE 4"- 8" C900	C900	AWWA C901 (RATED DR 14)	ASTM F-477 ASTM D3139	AWWA C900 C951	ON SITE, 4"-8" WATER LINES & FIRE LINES INSTALL W/ TRACER & TAPE #12 COPPER
DUCTILE IRON PIPE 4"-12"	CLASS 52 P.C. = 350PSI	AWWA C104, C110, C151, C500	AWWA C111	AWWA C600, C651	8" FIRE HYDRANT LEADS
PE 4710 POLY-ETHYLENE PLASTIC (IPE)	SDR 9 P.C. = 250 PSI	ASTM D2239 ASTM F714 AWWA C906	ASTM D3350 ASTM D3261	ASTM D2774	ON SITE, 4" DIA. AND LARGER

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

MATERIAL	PRESSURE RATING	PIPE SPEC	FITTINGS	INSTALLATION	ACCEPTABLE AREAS OF USE
POLY VINYL CHLORIDE (PVC)	SDR 35	ASTM D3034	ASTM D3212	ASTM D2321 WITH TYPE 1 BEDDING	ON SITE, 8" TO 8" DIA. LESS THAN 8.5' OF COVER
POLY VINYL CHLORIDE (PVC)	SDR 26	ASTM 3034	ASTM D3212	ASTM 2321 WITH TYPE 1 BEDDING	ON SITE, 8" TO 8" DIA. GREATER THAN OR EQUAL TO 8.5' OF COVER

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

QUANTITIES SUMMARY

ITEM	QUANTITY	UNIT	ITEM	QUANTITY	UNIT
18" CONCRETE PAVEMENT		SQ. FT.	WATER QUALITY DEVICE		EACH
18" CONCRETE PAVEMENT		SQ. FT.	EARTHWORK CUT & HAUL		CU. YD.
CONCRETE CURB, ON-SITE/APPROACHES		LIN. FT.	EARTHWORK CUT & RESPREAD		CU. YD.
SIDEWALK, NOT ADJACENT TO STORE		SQ. FT.	EARTHWORK IMPORT & PLACE		CU. YD.
DETENTION SYSTEM		CU. FT.	6" TALL CHAIN LINK FENCE		LIN. FT.
WATER MAIN		LIN. FT.	SOD AREA		SQ. FT.
SEWER SERVICE - SDR 35 (DIRECT BURY)		LIN. FT.	SEED AREA		SQ. FT.
WATER SERVICE - TYPE K SOFT COPPER (DIRECT BURY)		LIN. FT.	ASPHALT PAVEMENT DEMOLITION, ON-SITE		SQ. FT.
STORM PIPING - NOTE MATERIAL		LIN. FT.	CONCRETE PAVEMENT DEMOLITION, ON-SITE		SQ. FT.
SANITARY SEWER CLEANOUT		EACH	GRAVEL DEMOLITION, ON-SITE		SQ. FT.
STORM SEWER CLEANOUT		EACH	BUILDING DEMOLITION - FRAME GARAGE		SQ. FT.
GREASE TRAP		EACH	BUILDING DEMOLITION - ONE AND ONE-HALF STORY HOME		SQ. FT.
STORM STRUCTURES		EACH	BUILDING DEMOLITION - ONE-STORY FRAME COMMERCIAL		SQ. FT.
NYLOPLAST 30" MANHOLE		EACH	BUILDING DEMOLITION - TWO-STORY FRAME COMMERCIAL		SQ. FT.
STORMWATER MANAGEMENT BASIN		CU. FT.			

*CONTRACTOR TO PROVIDE A COMPLETE QUANTITIES TABLE PER THE CONSTRUCTION DOCUMENTS, QUANTITIES PROVIDED AS PART OF THIS SUMMARY ARE FOR REFERENCE PURPOSES ONLY AND ARE NOT A BASIS FOR CHANGE ORDER IF ADDITIONAL QUANTITY IS INSTALLED AS PART OF THE ORIGINAL BID DOCUMENTS.



CESO
WWW.CESODINC.COM

175 Monroe West Ave., Suite 400
Akron, OH 44321
Phone: 330.695.0600 Fax: 330.258.4835



CASEY'S #4605

MATTAWAN, MI

23988 MCGILLEN AVENUE
MATTAWAN, MI 48071

Revisions / Submissions

ID	Description	Date
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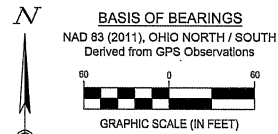
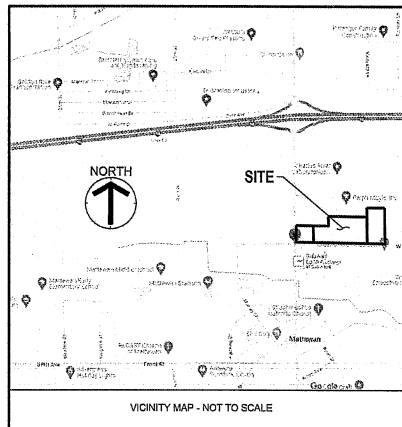
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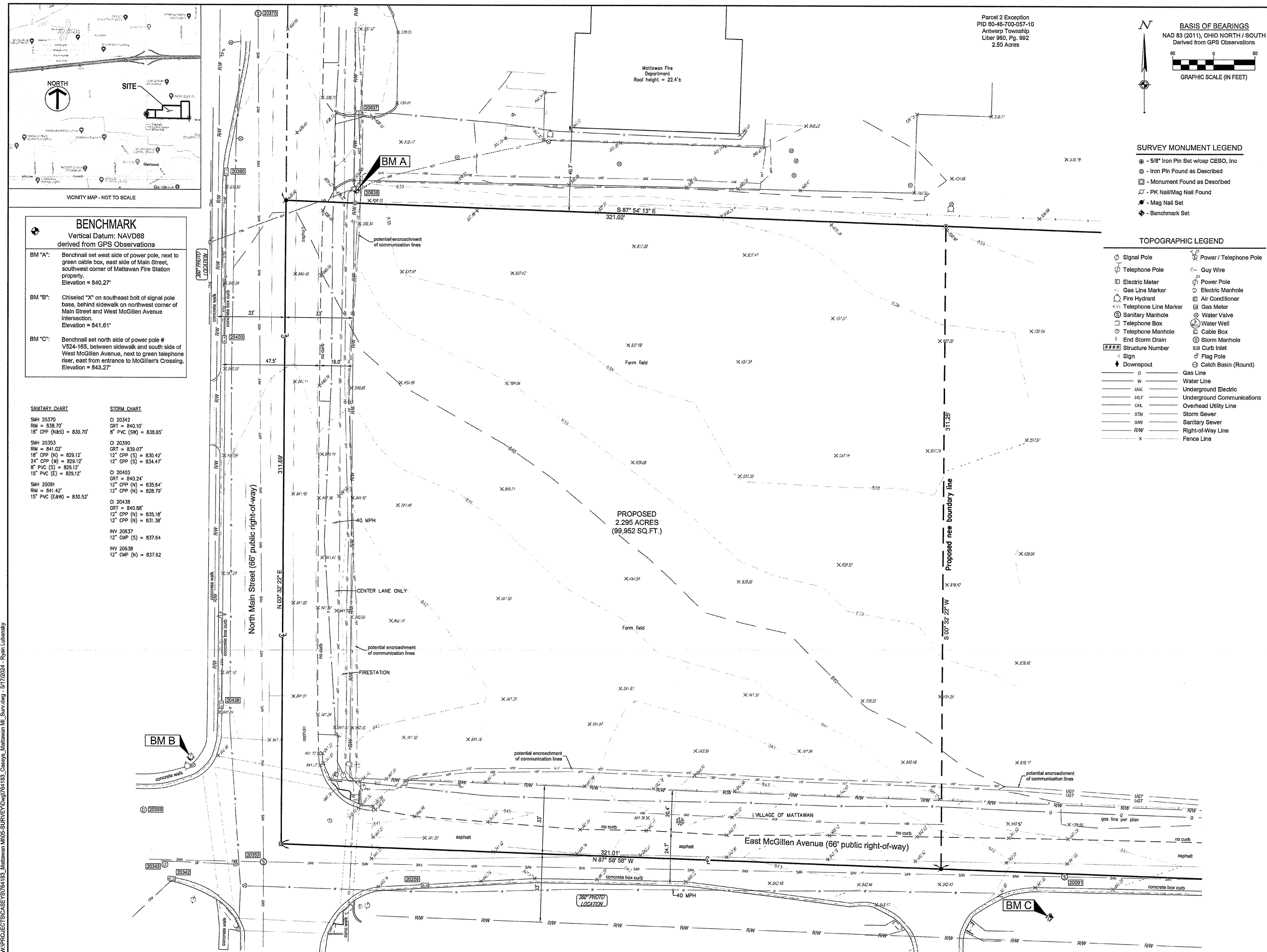
Project Number: 764183
Scale: NO SCALE
Drawn By: BTD
Checked By: JMS
Date: 12/12/2024
Issue: PERMIT SET

Drawing Title:

GENERAL NOTES

C-002





SURVEY MONUMENT LEGEND

TOPOGRAPHIC LEGEND

Casey's Retail Company

**23440 East McGillen Street
Mattawan, MI**

Village of Mattawan, Van Buren County, Michigan
Southwest Quarter Section 12, Township 3 South, Range 13 West

Revisions / Submissions

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Project Number: 764183

Scale: 1" = 60'

Drawn By: RSL

Checked By: RLC

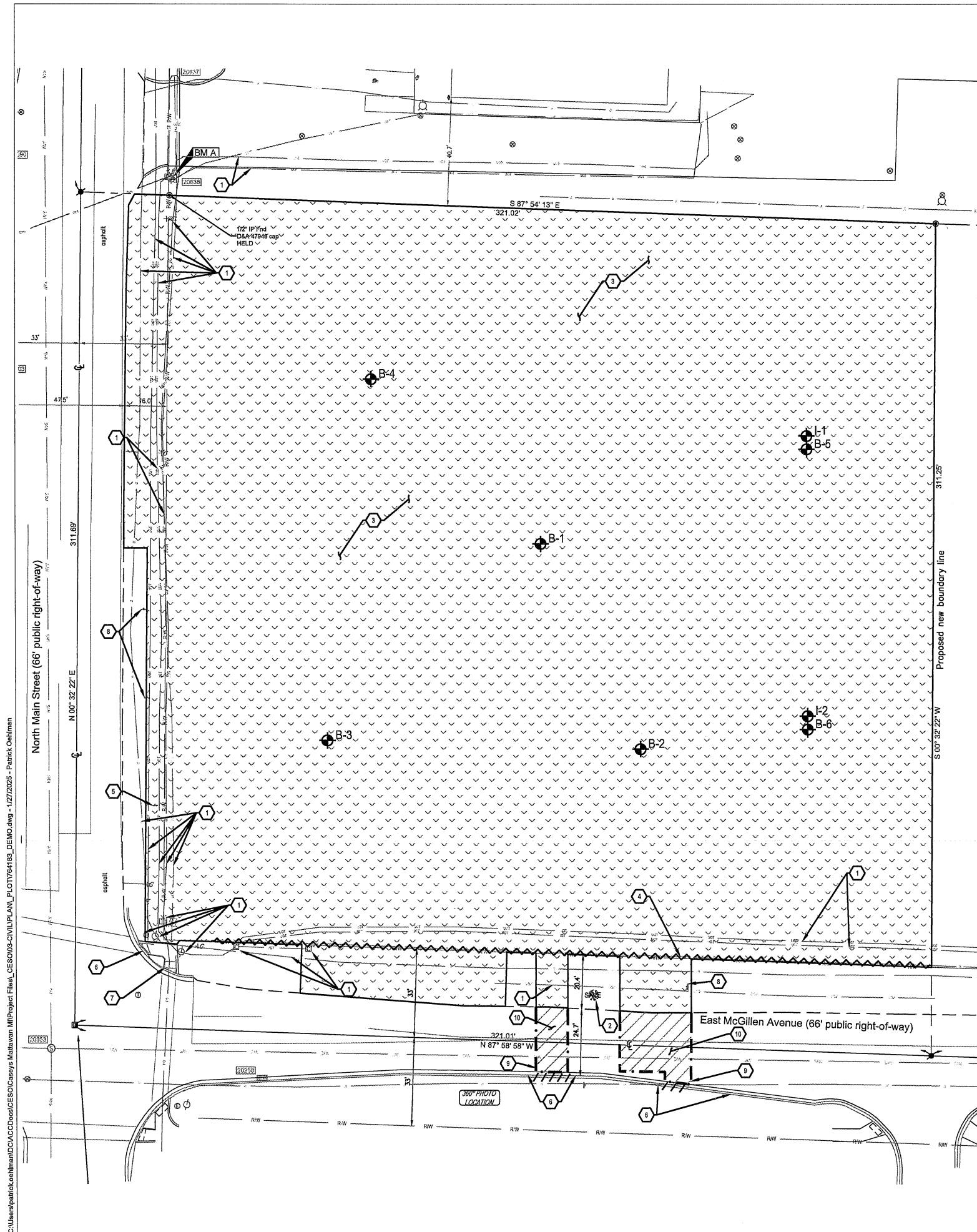
Date: 5/17/2024

Issue: Survey

Drawing Title:
ALTA / NSPS
Land Title Survey

C-004

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CONTRACTOR NOTE:

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

CODED NOTES:

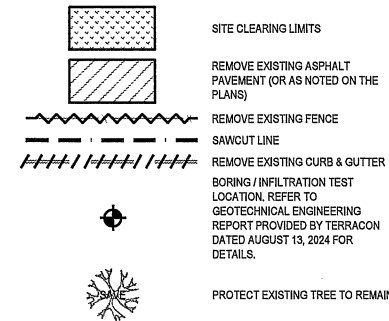
1. PROTECT EXISTING UTILITY LINE/STRUCTURE TO REMAIN. CONTRACTOR TO PROTECT IN PLACE.
2. PROTECT ALL EXISTING TREES WITH CALIPER OF 2" OR LARGER TO REMAIN. TREES SHALL BE PROTECTED IN PLACE.
3. EXISTING VEGETATIVE COVER/SHRUBS SHALL BE REMOVED AT DISCRETION OF OWNER.
4. REMOVE EXISTING FENCE.
5. EXISTING SIGN TO BE RELOCATED. REFER TO SHEET C-101. CONTRACTOR TO COORDINATE WITH THE VILLAGE OF MATTAWAN FOR FINAL LOCATION.
6. PROTECT EXISTING CURB TO REMAIN.
7. PROTECT EXISTING SIDEWALK TO REMAIN.
8. PROTECT EXISTING SIGN TO REMAIN.
9. SAWCUT SIDEWALK, CURB OR PAVEMENT TO FULL DEPTH.
10. REMOVE EXISTING PAVEMENT/GRAVEL.

DEMOLITION LEGEND

EXISTING

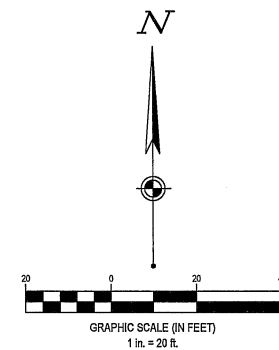
REFER TO C-001 FOR EXISTING FEATURES LEGEND

PROPOSED



BENCHMARK	
Vertical Datum: NAVD88 derived from GPS Observations	
BM "A":	Benchmark set west side of power pole, next to green cable box, east side of Main Street, southwest corner of Mattawan Fire Station property. Elevation = 840.27'
BM "B":	Chiseled "X" on southeast bolt of signal pole base, behind sidewalk on northwest corner of Main Street and West McGillen Avenue intersection. Elevation = 841.61'
BM "C":	Benchmark set north side of power pole # V524-165, between sidewalk and south side of West McGillen Avenue, next to green telephone riser, east from entrance to McGillen's Crossing. Elevation = 843.27'

NOTE: REFER TO ALTA SURVEY, SHEET C-003, FOR BENCHMARK LOCATIONS



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



CASEY'S #4605

MATTAWAN, MI

23963 MCGILLEN AVENUE
MATTAWAN, MI 49071

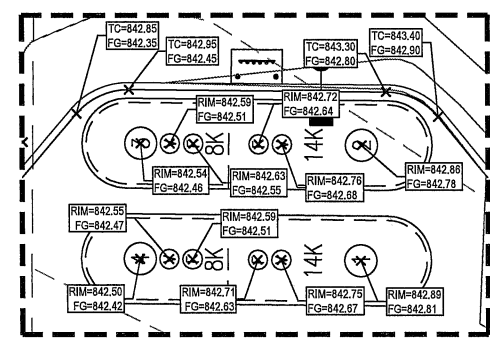
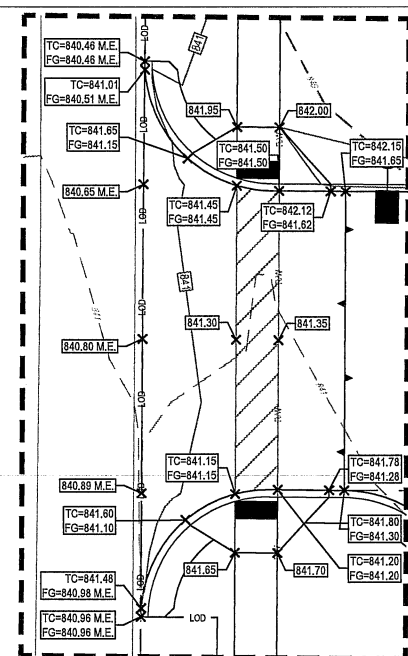
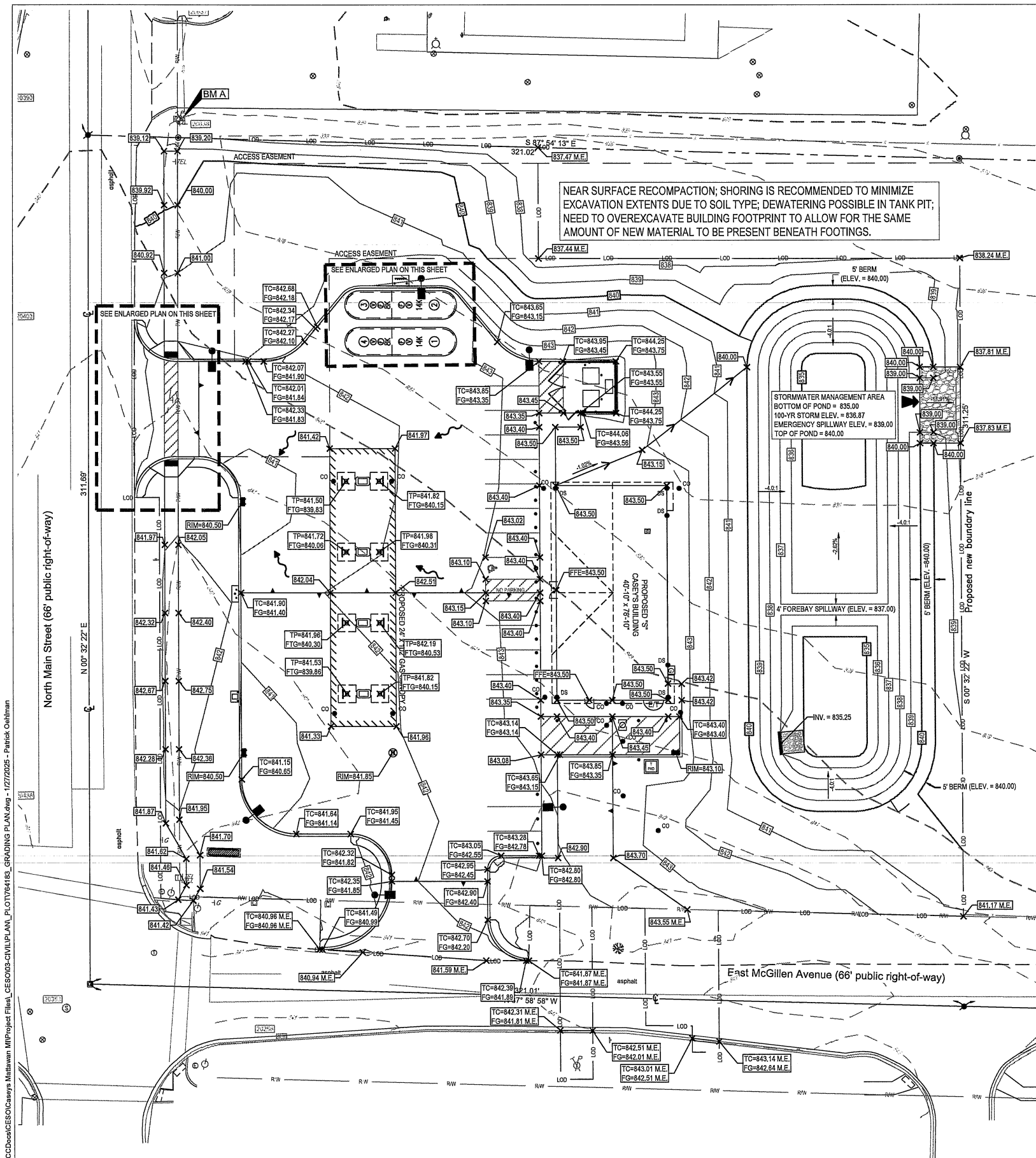
Revisions / Submissions
ID Description Date

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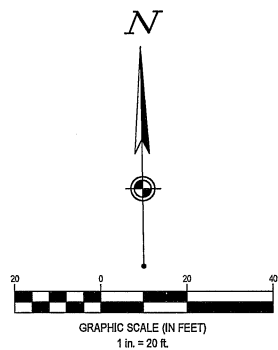
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Checked By: JMS
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Issue: PERMIT SET

Drawing Title:
DEMOLITION PLAN

C-100



<u>GRADING LEGEND</u>	
<u>EXISTING</u>	
REFER TO C-001 FOR EXISTING FEATURES LEGEND	
<u>PROPOSED</u>	
	BUILDING
	CANOPY
	SEE ENLARGED PLAN, THIS SHEET
	MAJOR CONTOUR
	MINOR CONTOUR
	GRADE BREAK
	SWALE
	FLOW LINE
	STRUCTURE NUMBER
	STORM MANHOLE
	CURB INLET
	CLEANOUT
	DOWNSPOUT
	FINISHED GRADE ELEVATION
	RIM ELEVATION
	BACK OF CURB ELEVATION
	<u>TOP OF CURB ELEVATION</u> FINISHED GRADE ELEVATION
	<u>TOP OF PAVEMENT ELEVATION</u> TOP OF FOOTING ELEVATION
	<u>UGST RIM ELEVATION</u> FINISHED GRADE ELEVATION
	MATCH EXISTING ELEVATION
	SLOPE ARROW
	FLOOD ROUTE



BENCHMARK	
Vertical Datum: NAVD88	
derived from GPS Observations	
BM "A":	Benchall set west side of power pole, next to green cable box, east side of Main Street, southwest corner of Mattawan Fire Station property. Elevation = 840.27'
BM "B":	Chiseled "X" on southeast bolt of signal pole inside, behind sidewalk on northwest corner of Main Street and West McGillen Avenue intersection. Elevation = 841.61'
BM "C":	Benchall set north side of power pole # V524-165, between sidewalk and south side of West McGillen Avenue, next to green telephone riser, east from entrance to McGillen's Crossing. Elevation = 843.27'

The logo for Miss Dig 811, featuring the text "MISS DIG" in a bold, sans-serif font, with "811" below it in a larger, stylized font, and a small graphic of a shovel digging into the ground.

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



CASEY'S #4605

MATTAWAN, MI

23968 MCGILLEN AVENUE
MATTAWAN, MI 49071

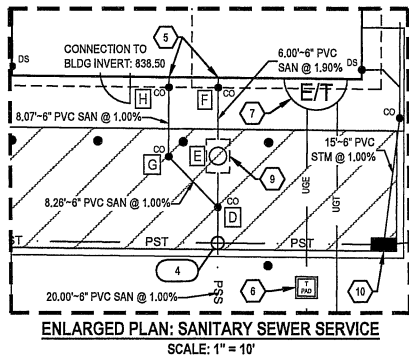
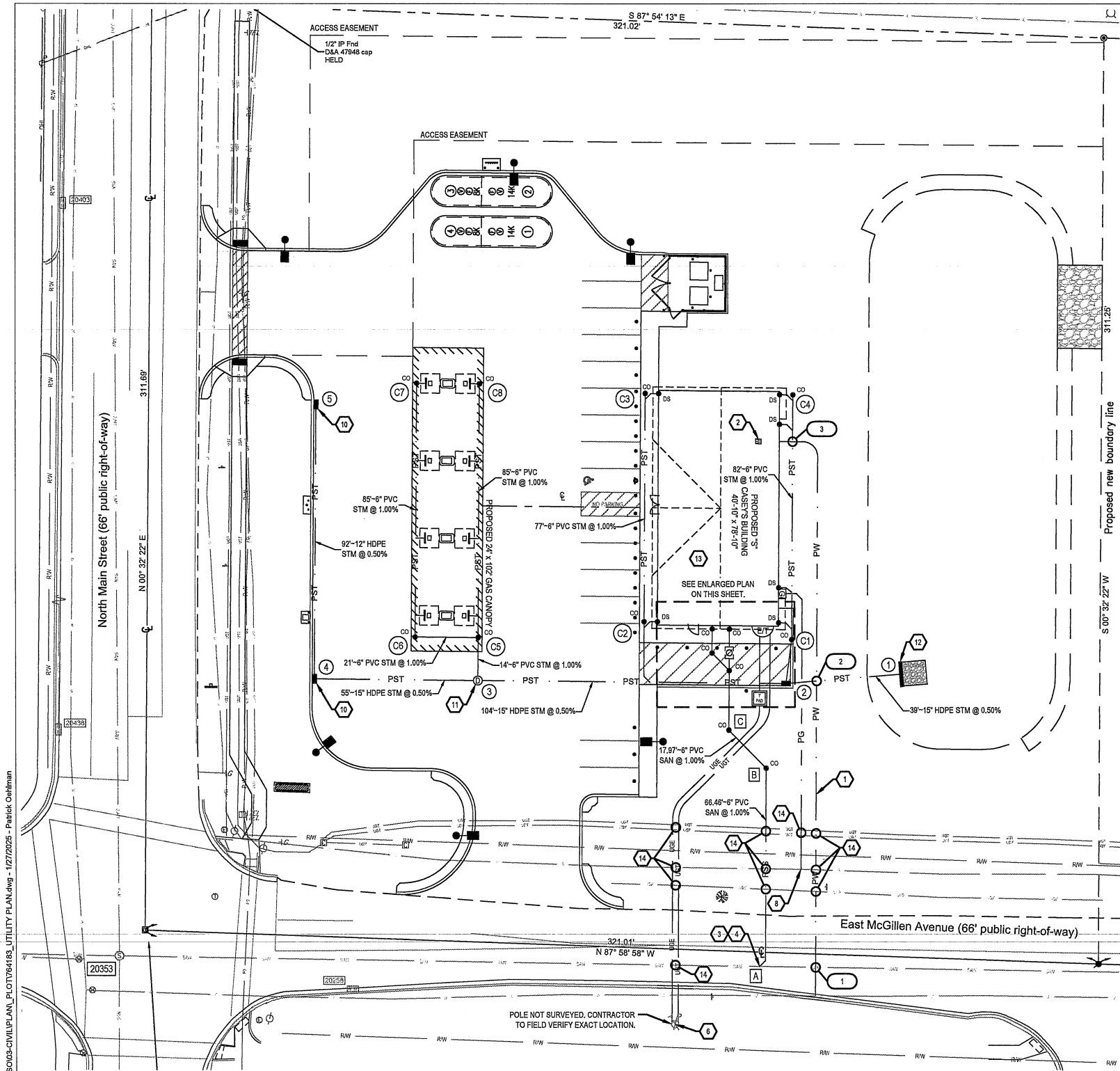
Revisions / Submissions			
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Drawing Title:
GRADING PLAN

C-201

C:\Users\patrick.oeilman\Documents\CESOCasaysMattawan_MIT\Project Files\Utility Plan\PLAN_UTILITY PLAN.dwg - 1/27/2025 - Patrick Oeilman



CONTRACTOR NOTE:

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

CODED NOTES:

- CONTRACTOR SHALL FURNISH AND INSTALL 2" COPPER TUBE SIZE POLYETHYLENE PIPING FROM METER TO NEW 2" TAP. CONTRACTOR IS RESPONSIBLE FOR ALL WORK PERMITS WITHIN THE PUBLIC RIGHT-OF-WAY. NEW WATER TAPS WILL NEED TO BE INSTALLED AT WATER MAIN.
- A SEPARATE IRRIGATION METER SHALL BE PROVIDED. IRRIGATION SYSTEM SHALL BE DESIGN BUILD BY CONTRACTOR.
- CONNECT 6" SDR-35 PVC SANITARY SERVICE TO EXISTING SANITARY SEWER LINE PER VILLAGE OF MATTAWAN STANDARDS. CONTRACTOR TO FIELD LOCATE AND VERIFY EXISTING SANITARY SEWER LINE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO ENGINEER. CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS FOR FINAL CONNECTION.
- CONTRACTOR SHALL WYE INTO EXISTING SANITARY MAIN FOR CASEY'S LATERAL. CONTRACTOR SHALL CONFIRM DEPTH OF MAIN PRIOR TO CONSTRUCTION AND CONTACT DESIGN ENGINEER WITH ANY DISCREPANCIES. CONTRACTOR SHALL COORDINATE WITH VILLAGE OF MATTAWAN FOR SEWER TAP.
- COORDINATE UTILITIES WITH PLUMBING CONTRACTOR, CAP AND MARK FOR FUTURE CONNECTION. FINAL CONNECTION BY PLUMBING CONTRACTOR.
- CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND THE LOCAL UTILITY COMPANY TO INSTALL PRIMARY RISER AS REQUIRED TO PROVIDE ELECTRICAL SERVICE TO THE PROPOSED BUILDING. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND THE LOCAL UTILITY COMPANY TO INSTALL NEW PAD MOUNTED TRANSFORMER.
- ELECTRICAL SERVICE ENTRANCE. COORDINATE WITH ELECTRICAL CONTRACTOR FOR CONNECTION LOCATION OF ELECTRICAL SERVICE.
- CONNECTION TO GAS MAIN. LOCAL GAS COMPANY SHALL FURNISH AND INSTALL GAS LINE FROM METER TO NEW TAP. THE CONTRACTOR SHALL INSTALL THE GAS LINE FROM THE METER TO THE BUILDING SERVICE PER THE BUILDING DRAWINGS.
- GREASE TRAP TO BE PROCURED AND INSTALLED BY CONTRACTOR. GREASE TRAP TO BE PROCURED FROM SCHIER PRODUCTS. CONTACT SCHIER PRODUCTS WITH ANY QUESTIONS OR CASEY'S TEAM MEMBER IF THERE IS AN ISSUE. REFER TO MEP PLANS FOR DETAILS.
- SUPPLY AND INSTALL (3) MDOOT TYPICAL CATCH BASINS PER STD. DWG. R-1-G WITH CASEY'S STANDARD INLET CASTING PER DETAIL 5 ON SHEET C-801.
- SUPPLY AND INSTALL (1) MDOOT TYPICAL MANHOLES PER STD. DWG. R-1-G WITH MDOOT COVER B PER STD. DWG. R-7-F. SEE DETAILS ON SHEET C-804.
- SUPPLY AND INSTALL (1) STANDARD HEADWALL. SEE DETAILS ON SHEET C-803.
- BUILDING UTILITY ENTRANCE LOCATIONS TO BE VERIFIED WITH ARCHITECTURAL PLANS.
- CONTRACTOR TO FIELD VERIFY DEPTH OF EXISTING UTILITY LINES AND NOTIFY ENGINEER OF ANY CROSSING CONFLICTS FOR PROPOSED UTILITY CONNECTIONS.

STORM SEWER STRUCTURE SCHEDULE			
NO.	STRUCTURE	RIM	INVERT
1	HEADWALL		835.25 (15') W
2	CURB INLET	843.10	835.44 (15') W 839.43 (6') N 835.44 (15') E
3	48" MANHOLE	841.85	835.96 (15') W 837.54 (6') N 835.96 (15') E
4	CURB INLET	840.50	836.49 (12') N 836.24 (15') E
5	CURB INLET	840.50	836.95 (12') S

STORM SEWER STRUCTURE SCHEDULE			
NO.	STRUCTURE	RIM	INVERT
C1	6" CO	843.40	839.58 (6') N 839.58 (6') S
C2	6" CO	843.42	840.13 (6') N 840.13 (6') S
C3	6" CO	843.42	840.90 (6') S
C4	6" CO	843.43	840.40 (6') S
C5	6" CO	841.83	837.68 (6') W 837.68 (6') N 837.68 (6') S
C6	6" CO	841.37	837.90 (6') N 837.90 (6') E
C7	6" CO	841.37	838.75 (6') S
C8	6" CO	841.94	838.54 (6') S

BENCHMARK

Vertical Datum: NAVD88
derived from GPS Observations

- BM "A": Benchmark set west side of power pole, next to green cable box, east side of Main Street, southwest corner of Mattawan Fire Station property. Elevation = 840.27'
- BM "B": Chiseled "X" on southeast bolt of signal pole base, behind sidewalk on northwest corner of Main Street and West McGillen Avenue intersection. Elevation = 841.61'
- BM "C": Benchmark set north side of power pole # V524-165, between sidewalk and south side of West McGillen Avenue, next to green telephone riser, east from entrance to McGillen's Crossing. Elevation = 843.27'

NOTE: REFER TO ALTA SURVEY, SHEET C-003, FOR BENCHMARK LOCATIONS

UTILITY LEGEND

EXISTING

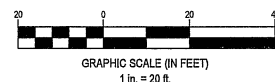
REFER TO C-001 FOR EXISTING FEATURES LEGEND

PROPOSED

	BUILDING
	CANOPY
	CONCRETE CURB
	PAVEMENT/WALK
	STORM SEWER LINE
	SANITARY SEWER LINE
	DOMESTIC WATER LINE
	GAS SERVICE LINE
	UNDERGROUND ELECTRIC LINE
	UNDERGROUND TELEPHONE LINE
	STORM SEWER
	SANITARY SEWER
	CURB INLET
	CLEANOUT
	DOWNSPOUT
	ELECTRICAL SERVICE ENTRANCE
	ELECTRICAL TRANSFORMER PAD
	WATER METER
	GAS METER
	HEADWALL WITH SCOUR MAT

UTILITY CROSSING SCHEDULE			
NO.	UTILITY	ELEVATIONS	DIFF.
1	2" WAT	B/PIPE = 837.86	6.65'
	EX. 15" SAN	T/PIPE = 831.21	
2	15" STM	B/PIPE = 836.19	1.50'
	2" WAT	T/PIPE = 834.69	
3	6" STM	B/PIPE = 840.24	1.81'
	2" WAT	T/PIPE = 838.43	
4	6" SAN	B/PIPE = 838.32	1.53'
	15" STM	T/PIPE = 836.79	

SANITARY SEWER STRUCTURE SCHEDULE			
NO.	STRUCTURE	RIM	INVERT
A	WYE CONNECTION		837.32 (6') N PR. 829.90 (15') E EX. 829.90 (15') W EX.
B	6" CO	842.66	837.98 (6') NW 837.98 (6') S
C	6" CO	843.55	838.16 (6') N 838.16 (6') SE
D	6" CO	843.34	838.32 (6') NW 838.32 (6') N 838.36 (6') S
E	GREASE INTERCEPTOR	843.38	838.36 (6') N 838.36 (6') S
F	6" CO	843.49	838.48 (6') N 838.48 (6') S
G	6" CO	843.40	838.41 (6') N 838.41 (6') SE
H	6" CO	843.49	838.49 (6') N 838.49 (6') S



CASEY'S #4605

MATTAWAN, MI
23968 MCGILLEN AVENUE
MATTAWAN, MI 49071

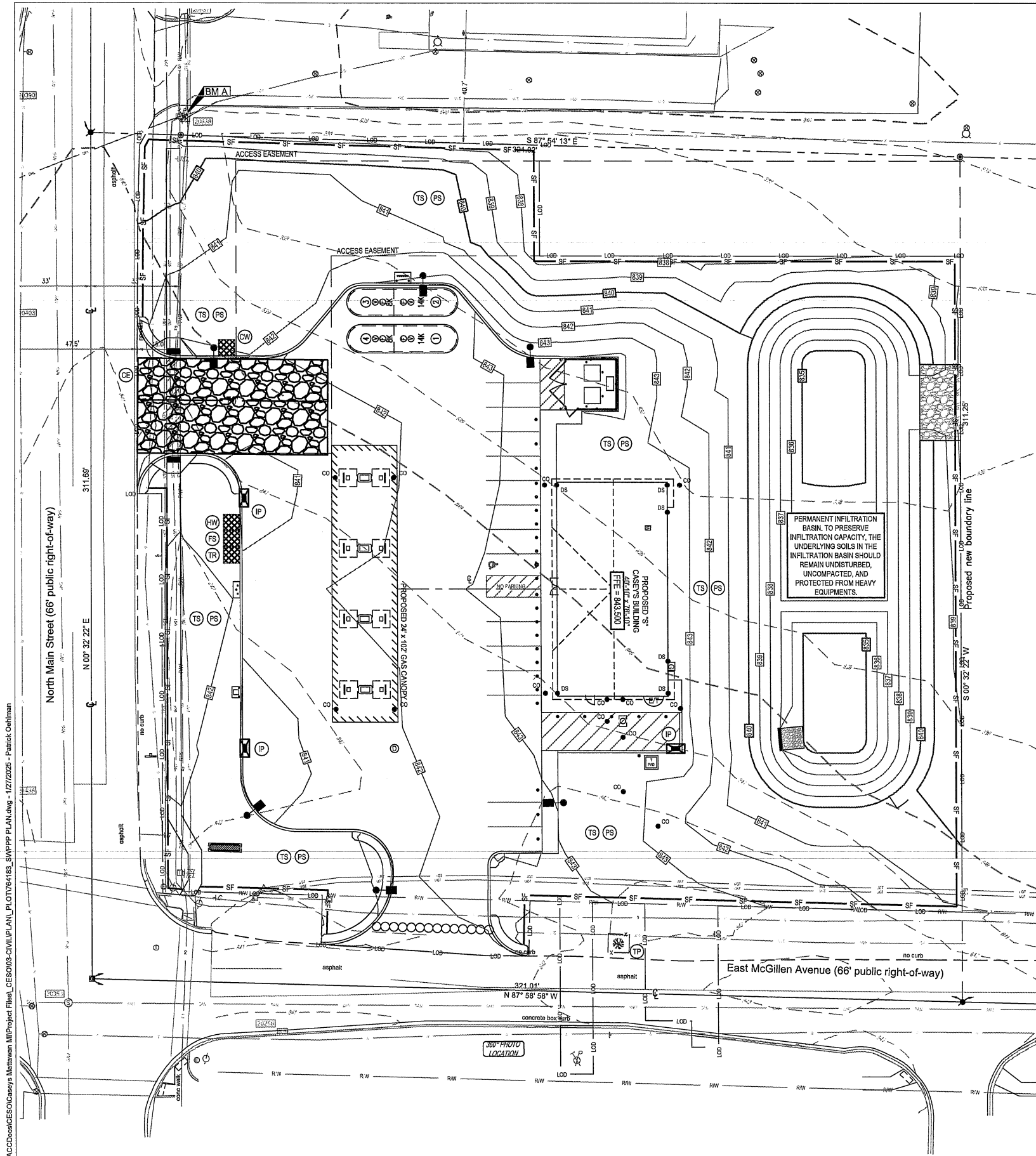
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Issue: PERMIT SET

Drawing Title:
UTILITY PLAN

C-301

C:\Users\patrick.ohlman\Documents\Casesys Mattawan SWPPP PLAN.dwg - 1/27/2025 - Patrick Oehlman



STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PROJECT NARRATIVE:

PLAN ENGINEERS:
CESO, INC.
2800 CORPORATE EXCHANGE DR, SUITE 400
COLUMBUS, OH 43231
PHONE (440) 773-3461
CONTACT: JEFF LONGHOR
EOR: ZACHARY FRESHER

DEVELOPER:
CASEY'S GENERAL STORES, INC.
ONE SE CONVENIENCE BLVD.
ANKENY, IA 50021
PHONE: (515) 446-6402

THE PROPOSED PROJECT IS THE CONSTRUCTION OF GAS STATION AND CONVENIENCE STORE. THE SUBJECT PARCEL IS 1.90 ACRES. THE TOTAL DISTURBED AREA IS 1.85 ACRES.

THE ENTIRE SITE DRAINS FROM SOUTHWEST TO NORTHEAST INTO ADJACENT FIELDS.

ON-SITE SOILS: SB - PLAINFIELD SAND, LAKE PLAIN. 0 TO 6 PERCENT SLOP 100%

HYDROLOGIC SOIL GROUPS: SB - A

EXISTING ON-SITE CONDITIONS: UNDEVELOPED VACANT LOT.

SEQUENCE OF CONSTRUCTION

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

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

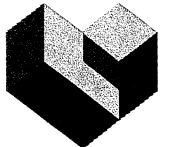
SWPPP LEGEND

EXISTING

REFER TO C-001 FOR EXISTING FEATURES LEGEND

PROPOSED

- | | |
|--|----------------------------------|
| | MAJOR CONTOUR |
| | MINOR CONTOUR |
| | PAVEMENT WALK |
| | TREE PROTECTION |
| | SILT FENCE |
| | STRAW WATTLE |
| | GRADING/SEEDING LIMITS |
| | LIMIT OF DISTURBANCE |
| | STABILIZED CONSTRUCTION ENTRANCE |
| | CONCRETE WASHOUT |
| | BASIN SEDIMENT FILTER |
| | STORM MANHOLE |
| | CATCH BASIN |
| | CURB INLET |
| | STABILIZED CONSTRUCTION ENTRANCE |
| | TEMPORARY SEEDING |
| | PERMANENT SOD |
| | HAZARDOUS WASTE STORAGE AREA |
| | FUEL STORAGE AREA |
| | CONCRETE WASHOUT AREA |
| | INLET PROTECTION |
| | TRASH AREA |
| | TREE PROTECTION |



W W . C E S O . I N C . C O M
175 Montrose West Ave., Suite 400
Mansfield, OH 44820
Phone: 330.695.0960 Fax: 330.695.4828



CASEY'S #4605

MATTAWAN, MI
23968 MCGILLEN AVENUE
MATTAWAN, MI 49071

Revisions / Submissions
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Drawing Title:

SWPPP

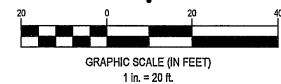
C-401

BENCHMARK

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derived from GPS Observations

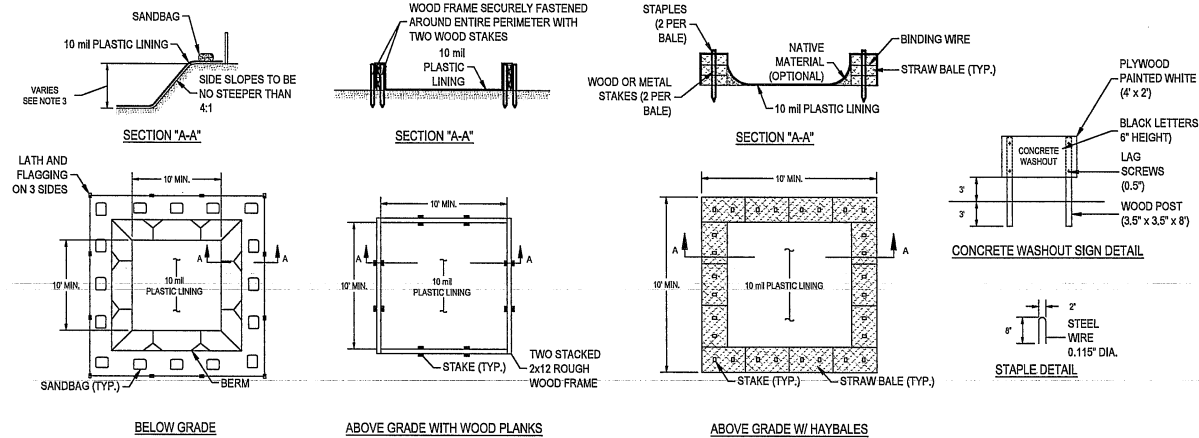
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Elevation = 843.27' |

NOTE: REFER TO ALTA SURVEY, SHEET C-003, FOR BENCHMARK LOCATIONS



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

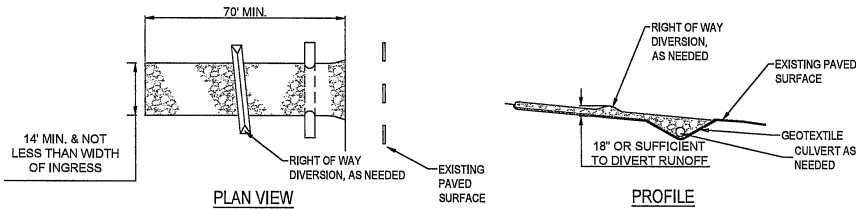
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- NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
 2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
 3. THE WASHOUT MUST HAVE SUFFICIENT VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS INCLUDING BUT NOT LIMITED TO OPERATIONS ASSOCIATED WITH GROUT AND MORTAR.

CONCRETE WASHOUT

NTS

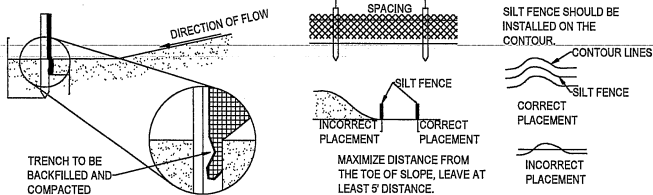


- NOTES:
1. STONE SIZE - (1.5-2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
 2. LENGTH - THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOTS.
 3. THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
 4. WIDTH - THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
 5. GEOTEXTILE - A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:
 6. TIMING - THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICAL BEFORE MAJOR GRADING ACTIVITIES.

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE	
MINIMUM TENSILE STRENGTH	200 lbs.
MINIMUM PUNCTURE STRENGTH	80 psi.
MINIMUM TEAR STRENGTH	50 lbs.
MINIMUM BURST STRENGTH	320 psi.
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS < 0.6 mm.
PERMITIVITY	1x10 ⁻³ cm/sec.

STABILIZED CONSTRUCTION ENTRANCE

NTS



- NOTES:
1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
 2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
 3. TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.
 4. WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
 5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FT. (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE ESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
 6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 IN. ABOVE THE ORIGINAL GROUND SURFACE.

7. THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM F 6 IN. DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICES WHICH WILL ENSURE ADEQUATE UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT THE 6 INCHES OF CLOTH ARE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6 IN. DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.
9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.
10. MAINTENANCE - SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, ONLY ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE:
 - 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED,
 - 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR
 - 3) OTHER PRACTICES SHALL BE INSTALLED.

SILT FENCE DETAIL

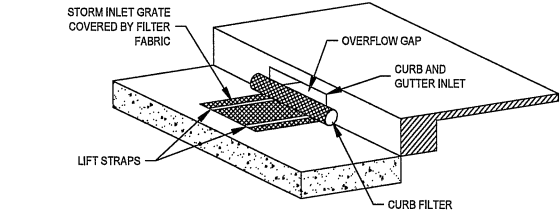
NTS

SPECIFICATIONS FOR SILT FENCE

FABRIC PROPERTIES	VALUES	TEST METHODS
GRAB TENSILE STRENGTH	90 LB. MINIMUM	ASTM D-1682
MULEN BURST STRENGTH	190 PSI MINIMUM	ASTM D-3786
SLURRY FLOW RATE	0.3 GAL/MIN/FT. MAX.	
EQUIVALENT OPENING SIZE	40-80	US STD. SIEVE CW 02215
ULTRAVIOLET RADIATION STABILITY	90% MINIMUM	ASTM - G 26

CRITERIA FOR SILT FENCE MATERIALS

1. FENCE POSTS - THE LENGTH SHALL BE A MINIMUM OF 32 INCHES LONG. WOOD POSTS WILL BE 2 IN. X 2 IN. HARDWOOD OF SOUND QUALITY. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT.
2. SILT FENCE FABRIC (SEE CHART BELOW)



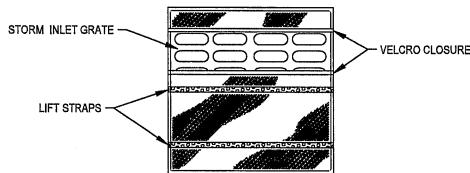
- NOTE:
- INLET PROTECTION SHALL BE DANDY CURB BAG OR APPROVED OTHER.

CURB INLET PROTECTION

NTS

FILTER SOCK

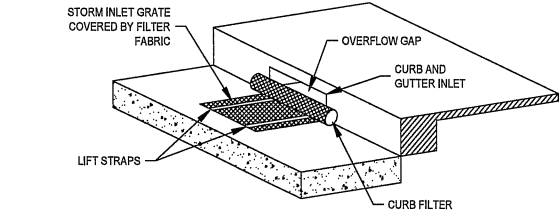
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INLET PROTECTION

NTS



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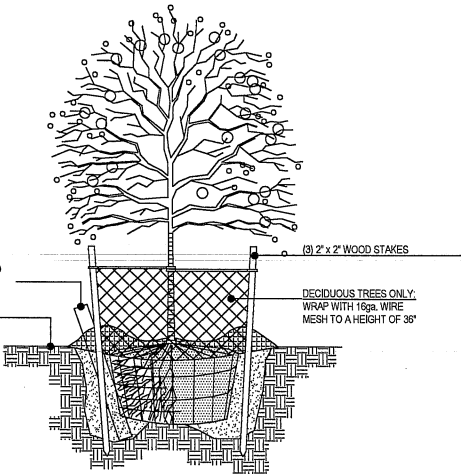
CURB INLET PROTECTION

NTS

- NOTES:
1. MATERIALS - COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF A PARTICLES RANGING FROM 3/8" TO 2".
 2. FILTER SOCKS SHALL BE 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.
- INSTALLATION:
3. FILTER SOCKS WILL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA, ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MIDSLOPE.
 4. FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE, SHALL BE SEED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.
 5. FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS.
- MAINTENANCE:
6. ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
 7. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE.
 8. WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
 9. REMOVAL - FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH AS WAY AS TO FACILITATE AND NOT OBSTRUCT SEEDINGS.

NOTE:
FOR ALL TREES IN OPEN SPACE INSERT ONE 4"-AS PERFORATED PIPE IN EACH ROOTBALL TO DEPTH OF BALL, EXTEND 6" ABOVE GRADE.

FINISH GRADE



TREE PROTECTION

NTS



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CASEY'S #4605

MATTAWAN, MI

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MATTAWAN, MI 49071

Revisions / Submissions

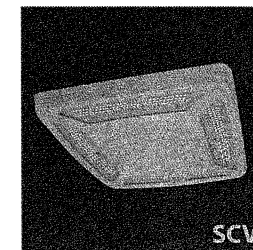
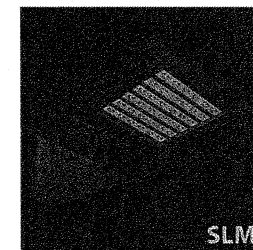
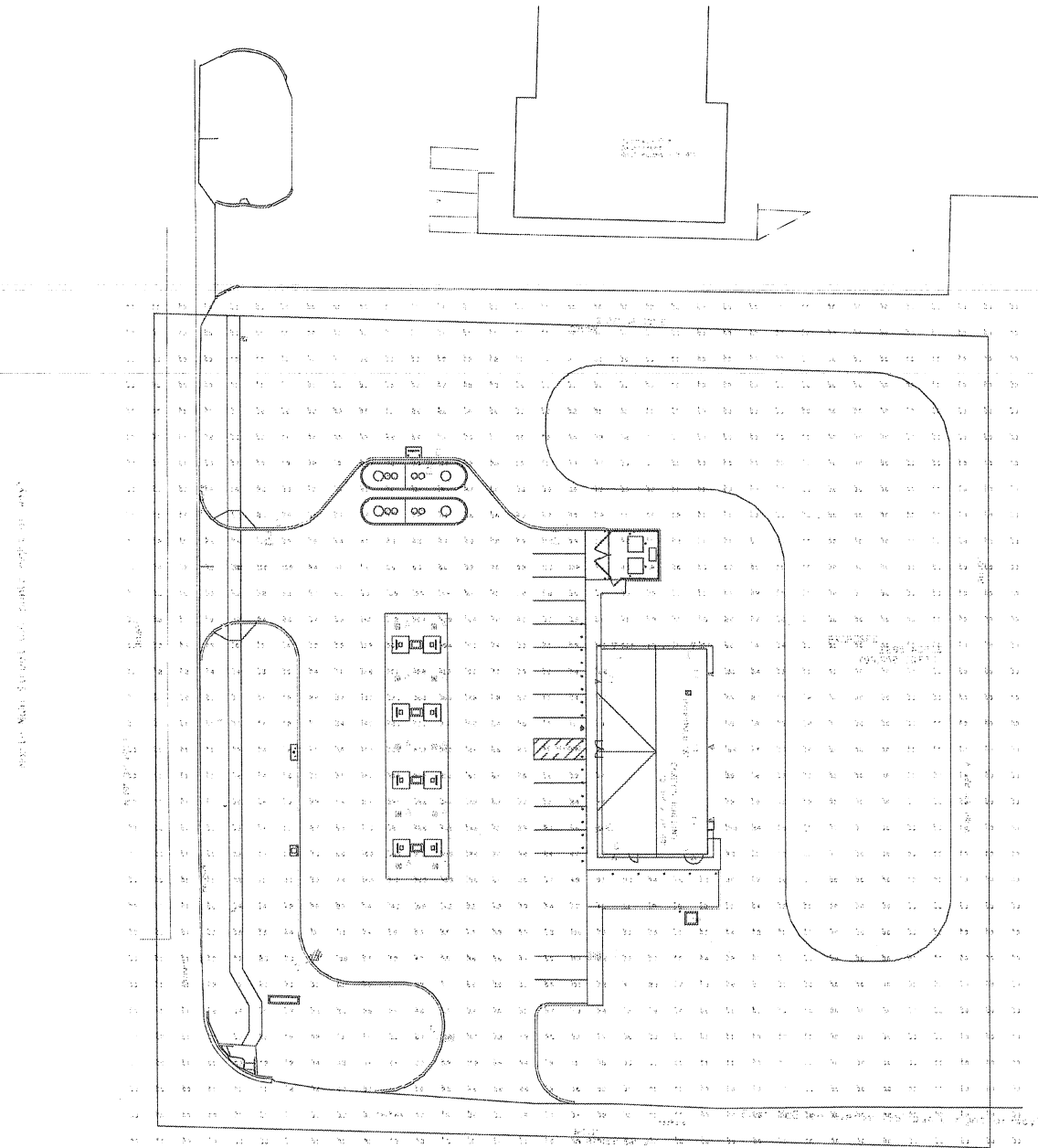
ID Description Date

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Project Number: 764183
Scale: AS SHOWN
Drawn By: BTD
Checked By: JMS
Date: 12/12/2024
Issue: PERMIT SET

Drawing Title:
SWPPP DETAILS

C-402



Based on the results of the analysis, the following conclusions can be drawn:

- The use of the proposed model can significantly reduce the time and cost of the design process.
- The model can be used to optimize the design of a wide range of mechanical components.
- The model can be used to identify the most critical design parameters and their effects on the overall performance.

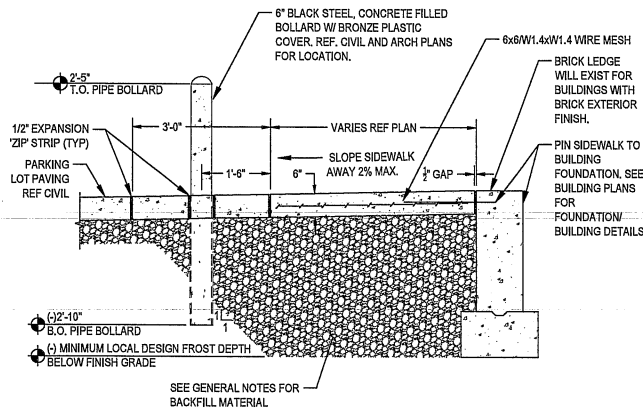
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PHOTOMETRIC PLAN

C-500

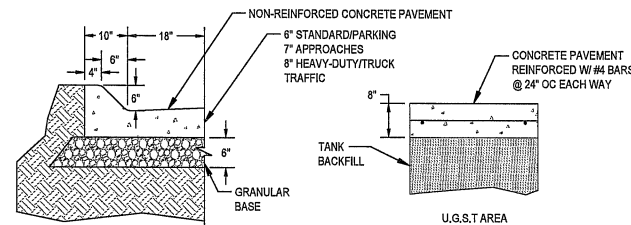


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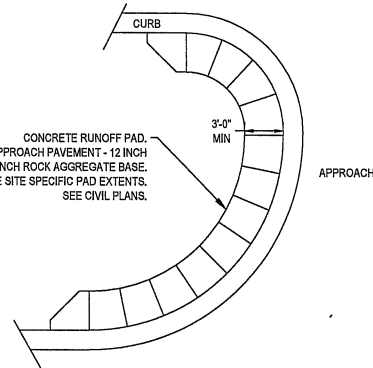
1 TYPICAL BUILDING SIDEWALK AND BOLLARD
NOT TO SCALE

3 PAVING SAW-CUT
NOT TO SCALE



2 CONCRETE PAVING AND CURB
NOT TO SCALE

4 LANDSCAPE PROTECTOR
NOT TO SCALE



GENERAL NOTES

CONCRETE:

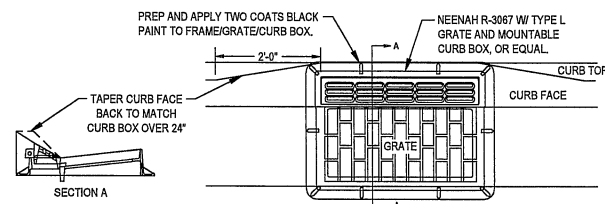
- ALL CONCRETE AND REINFORCING WORK SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE'S "STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," (ACI 318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS," (ACI 301).
- CONCRETE SHALL USE TYPE II CEMENT. CONCRETE MIX DESIGNS SHALL MEET THE FOLLOWING REQUIREMENTS:

	MINIMUM 28-DAY f_c	MAXIMUM W/C RATIO	SLUMP	AIR ENTRAIN
EXTERIOR EXPOSED CONCRETE	4,000 psi	0.42	4" \pm 1"	6% \pm 1%

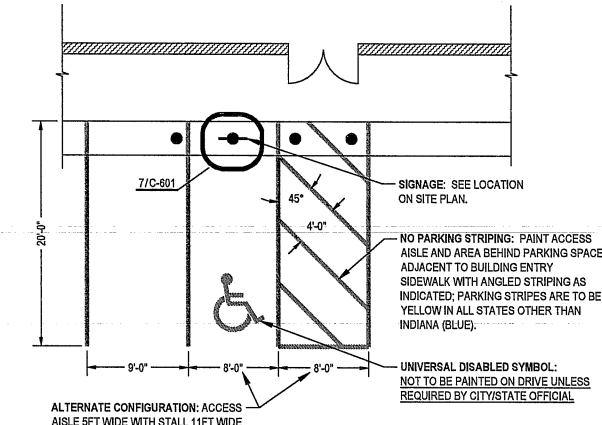
- IF CONTRACTOR DESIRES TO INCREASE SLUMP ABOVE ALLOWABLE LIMITS TO FACILITATE PLACEMENT OR PUMPING, THIS SHALL BE DONE UTILIZING A SUPERPLASTICIZER APPROVED BY THE READY MIX DESIGNER AT A DOSAGE RATE PROVIDED BY READY MIX DESIGNER.
- THE CONTRACTOR SHALL REJECT ANY CONCRETE THAT EXCEEDS THE SLUMP LIMITS NOTED ABOVE (PRIOR TO ADDING SUPERPLASTICIZER) OR CONCRETE THAT CANNOT BE PLACED WITHIN NINETY (90) MINUTES OF BATCH TIME.
 - NO ALUMINUM SHALL BE PLACED IN CONCRETE.
 - ALL CONCRETE IS REINFORCED UNLESS SPECIFICALLY NOTED AS UNREINFORCED. REINFORCE ALL CONCRETE NOT OTHERWISE SHOWN WITH THE SAME REINFORCING AS IN SIMILAR SECTIONS OR AREAS.
 - DURING HOT WEATHER (80 DEGREES F AND ABOVE), THE CONTRACTOR SHALL COMPLY WITH THE RECOMMENDATIONS ACI-305 "HOT WEATHER CONCRETE". DURING COLD WEATHER (40 DEGREES AND BELOW), THE CONTRACTOR SHALL COMPLY WITH THE RECOMMENDATIONS OF ACI-306 "COLD WEATHER CONCRETING".
 - THE CONCRETE MIX DESIGNS ARE TO BE SUBMITTED AS A FORMAL SUBMITTAL TO THE OWNER FOR ACCEPTANCE PRIOR TO CONCRETE BEING DELIVERED TO THE SITE.
 - VERIFY WITH LOCAL AUTHORITIES THE REQUIRED THICKNESS OF POURED CONCRETE FOR APPROACHES AND PARKING LOT.
 - CONTRACTOR TO SPRAY APPLY "SPECOCHEM CURE SHIELD" OR CERTI-VEX GUARD CLEAR AIM TO ALL EXTERIOR CONCRETE SURFACES PER MANUFACTURER INSTRUCTIONS. USE SWISSMEX DS-4350 ACETONE SPRAYER, OR EQUIVALENT. CASEY'S RECOMMENDED APPLICATION RATE IS 200 SQ.FT. PER GALLON. CONTRACTOR TO ENSURE SITE INSTALL IS APPROPRIATE. SUBSTITUTE PRODUCTS MUST BE PRE-APPROVED BY CASEY'S.

SUB-BASE AND AGGREGATE:

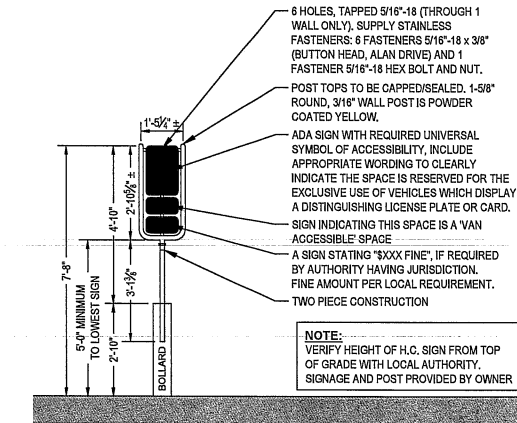
- SUB-BASE COURSE UNDER EXTERIOR CONCRETE PAVED SURFACES: SPREAD AND COMPACT SUB-BASE IN 6" \pm 9" LIFTS COMPACTED TO 98% STANDARD PROCTOR.
- AGGREGATE BACKFILL AS FOLLOWS OR APPROVED EQUAL BY CASEY'S:
 - BUILDING SLAB - 3/4" TO 1-1/2" MAX. CLEAN STONE
 - BUILDING SIDEWALK - 3/4" TO 1-1/2" MAX. CLEAN STONE
 - PAVEMENT - 1" TO 1-1/2" MAX. STONE WITH FINES
 - SIDEWALK NOT ADJACENT TO BUILDING - SAME AS PAVEMENT
 - TANK PIT - SEE OF SHEETS



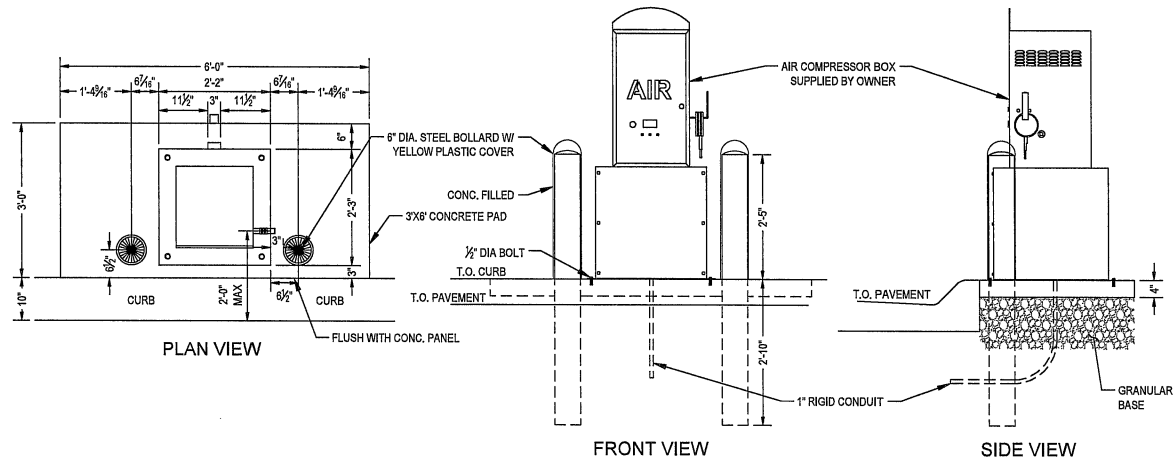
5 CURB INLET
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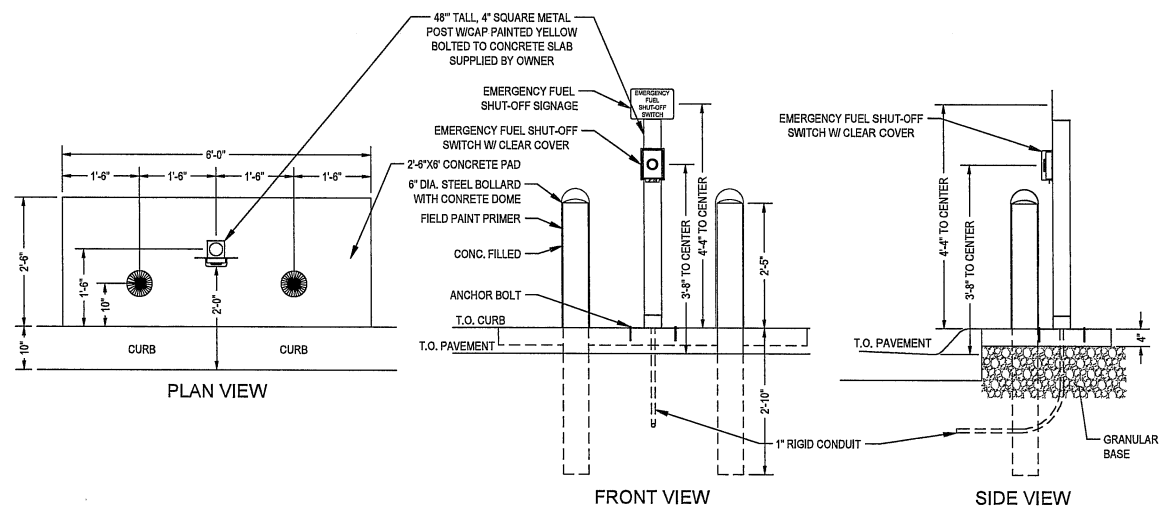
6 ADA PARKING SPACES
NOT TO SCALE



7 ADA PARKING SIGN
NOT TO SCALE



8 AIR COMPRESSOR
NOT TO SCALE



9 EMERGENCY STOP
NOT TO SCALE



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CASEY'S #4605

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MATTAWAN, MI 49071

Revisions / Submissions

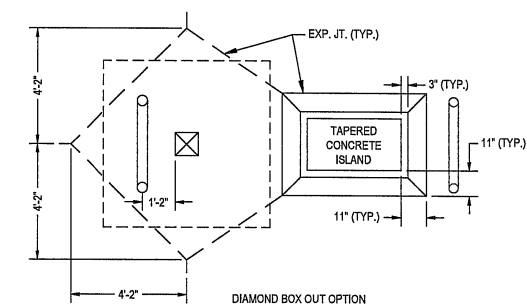
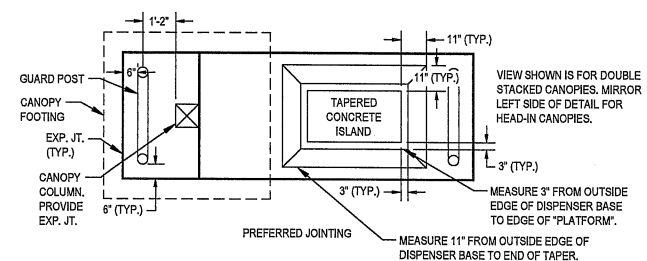
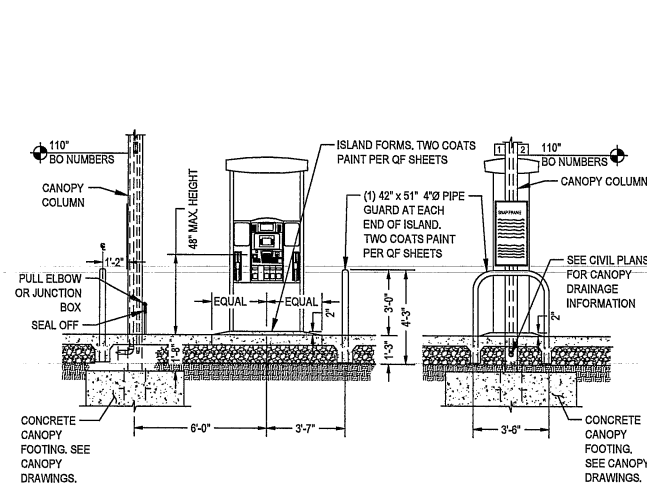
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Drawn By:	BTD
Checked By:	JMS
Date:	12/12/2024
Issue:	PERMIT SET

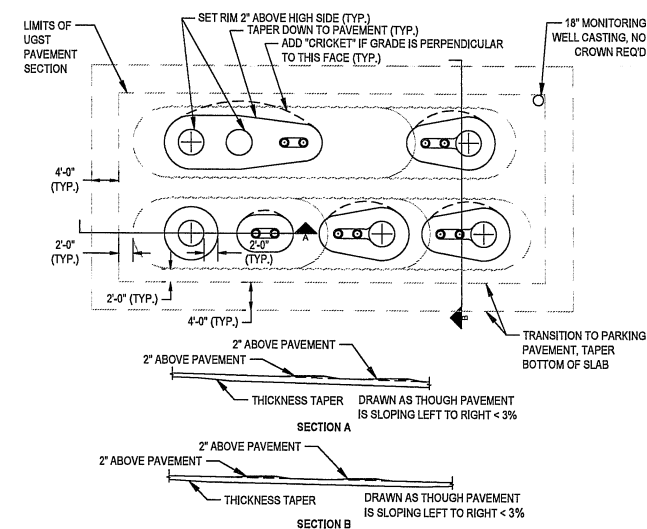
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CONSTRUCTION
DETAILS

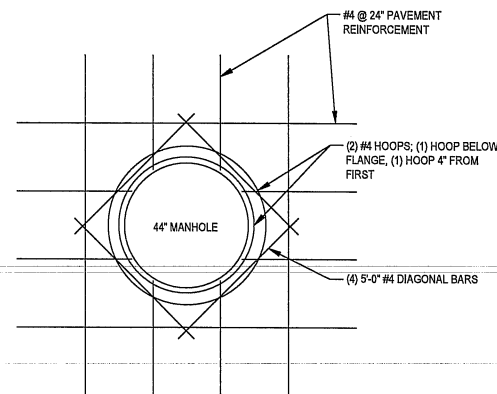
C-601



1 GAS TAPERED FUEL ISLAND (PREFERRED OPTION)
NOT TO SCALE



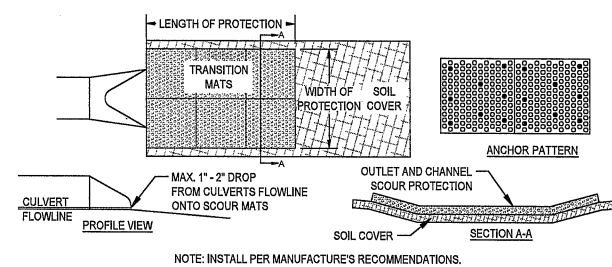
2 UGST PAVING FOR PAVEMENT SLOPE $< 3\%$
NOT TO SCALE



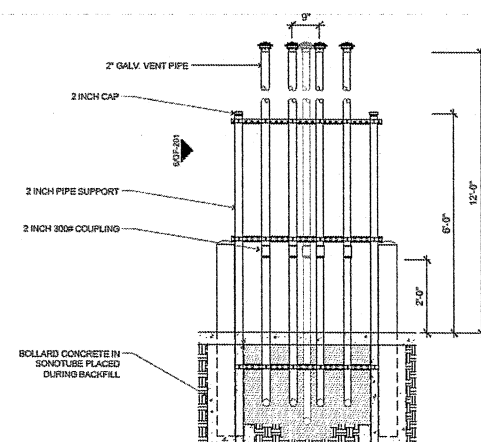
GENERAL NOTES:

1. ALL REINFORCING IS CENTER OF SLAB.

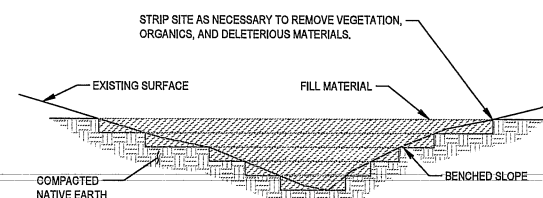
3 UGST MANHOLE DETAIL
NOT TO SCALE



4 SCOUR STOP EROSION CONTROL
NOT TO SCALE



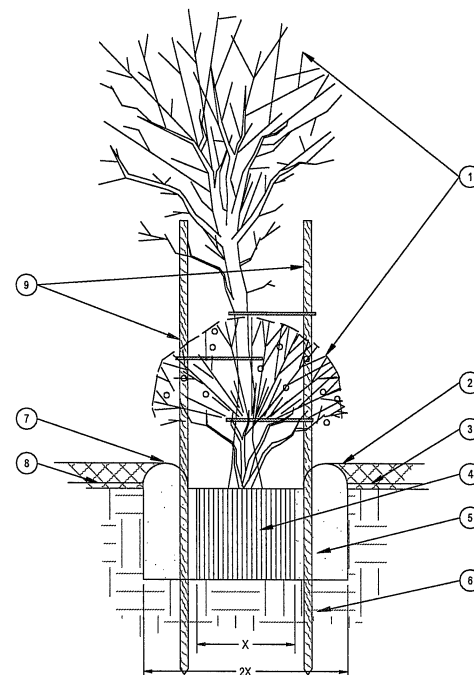
5 Tank Vent Detail - Front
1/2" = 1'-0"



NOTES

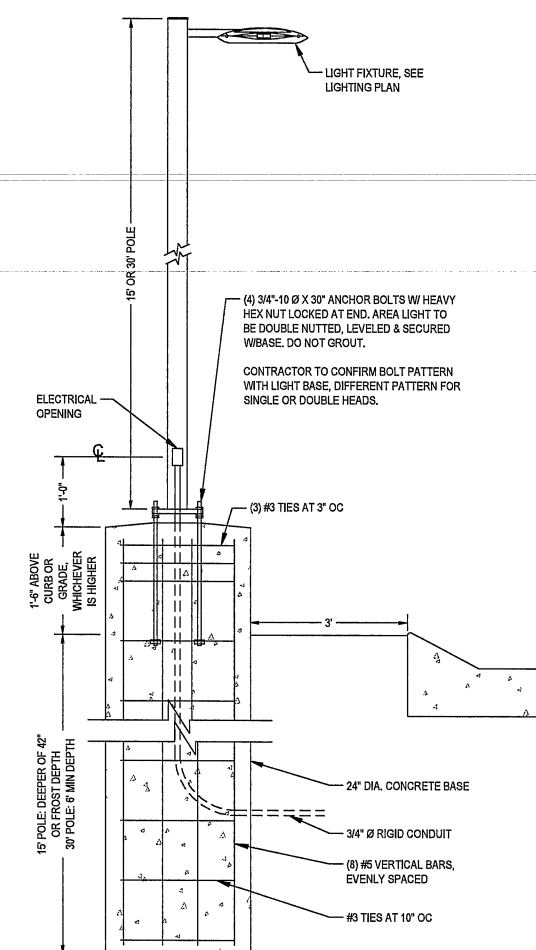
1. BENCH SLOPES TO MAINTAIN VERTICAL SIDE SLOPES AT FILL LIMITS $\pm 3'$ VERTICAL TO $\pm 8'$ HORIZONTAL.
2. COMPACTION SHALL BE IN 8" LIFTS TO 95% STANDARD PROCTOR OR OTHERWISE SPECIFIED IN GEOTECHNICAL REPORT.
3. SCARIFY ORIGINAL GROUND AND BLEND WITH FIRST LIFT ON EACH BENCH.
4. ALL FILL MATERIALS, INCLUDING FILL GENERATED ON-SITE, SHALL BE OF SUITABLE MATERIAL. UNSUITABLE FILL MATERIAL INCLUDES, BUT IS NOT LIMITED TO, SOIL THAT CONTAINS LARGE ROCKS, TREE AND PLANT ROOTS, CONCRETE, TRASH, ETC.

6 TYPICAL FILL SECTION
NOT TO SCALE

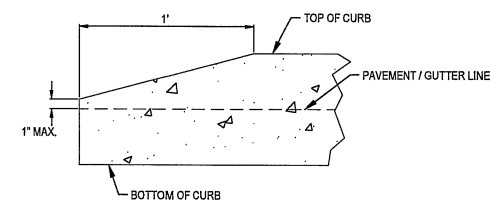


- 1 TREE/SHRUB, PERENNIAL, OR ORNAMENTAL GRASS.
- 2 GROUND COVER: 3" DEPTH OF 1/2" LANDSCAPING STONE AS INDICATED IN LANDSCAPING PLAN.
- 3 FINISH GRADE.
- 4 ROOT BALL.
- 5 BACKFILL, AMEND AND FERTILIZE AS RECOMMENDED BY LOCAL SUPPLIER.
- 6 UNDISTURBED NATIVE SOIL.
- 7 3" HIGH EARTHEN WATERING BASIN.
- 8 HEAVY WEED FABRIC UNDER GROUND COVER.
- 9 FOR TREES, 2 STAKES/GUIDEPOSTS MIN; 3 REQ ON SLOPES WITH TILES

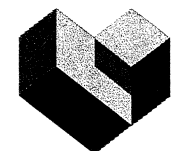
7 PLANT/TREE INSTALLATION
NOT TO SCALE



8 AREA LIGHTING
NOT TO SCALE



CURB TAPER
NTS



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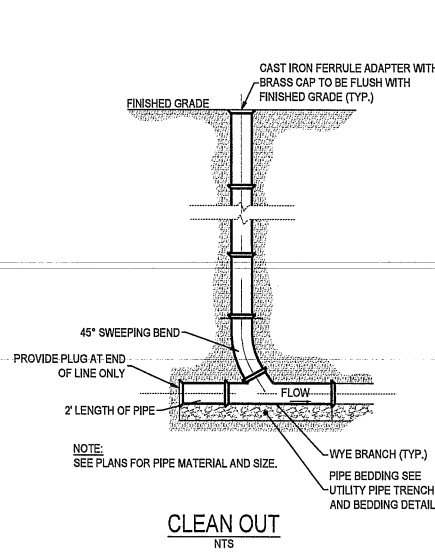
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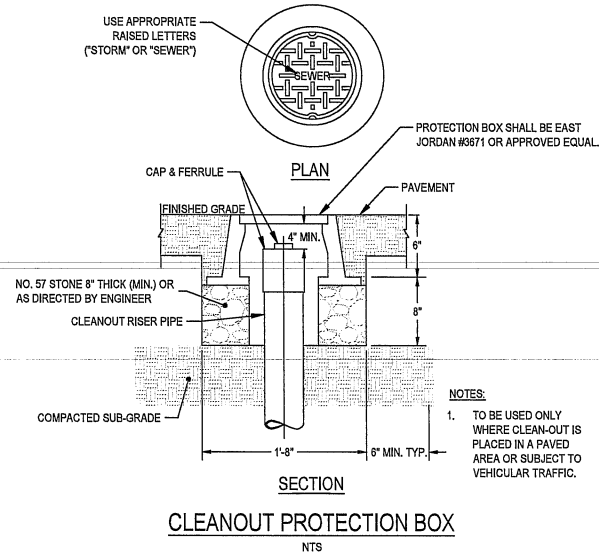
CONSTRUCTION DETAILS

C-602

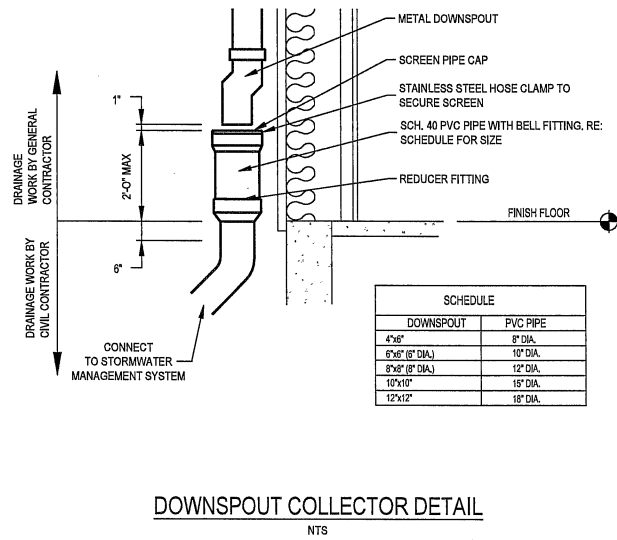
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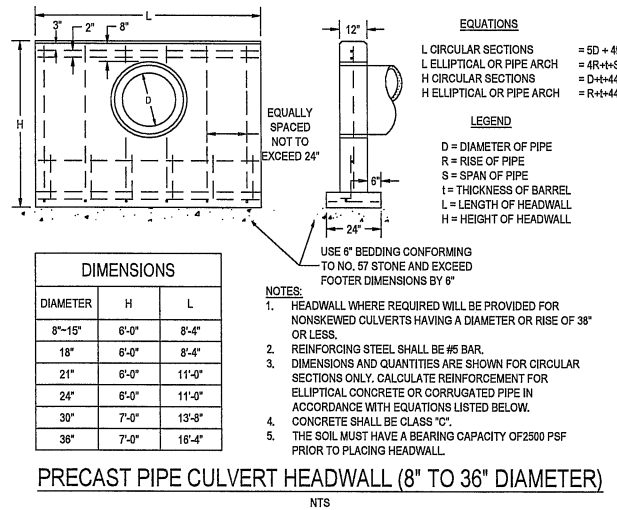
CLEAN OUT
NTS



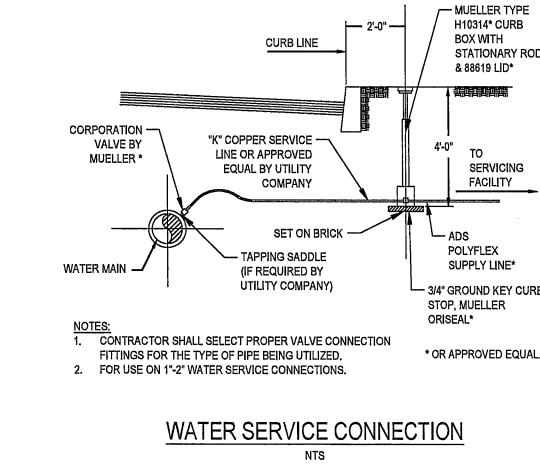
CLEANOUT PROTECTION BOX
NTS



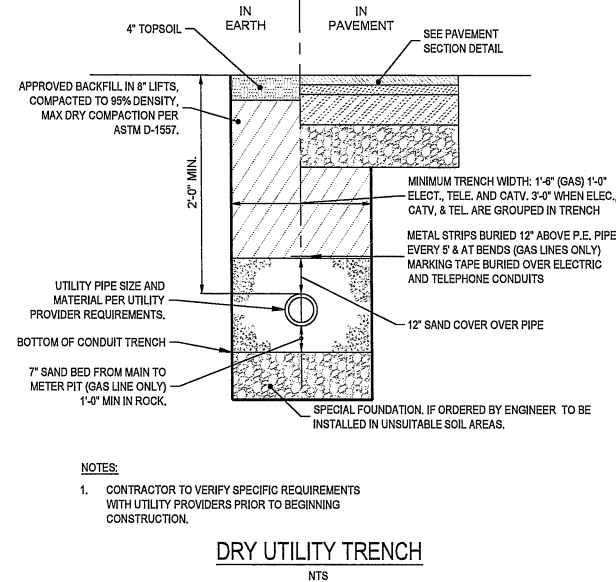
DOWNSPOUT COLLECTOR DETAIL
NTS



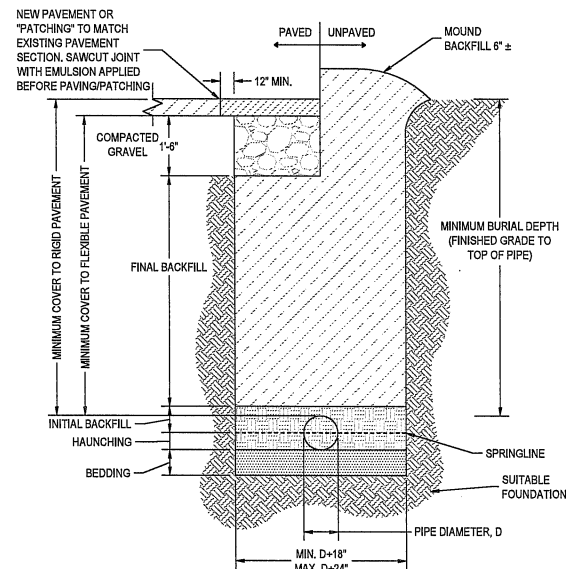
PRECAST PIPE CULVERT HEADWALL (8' TO 36' DIAMETER)
NTS



WATER SERVICE CONNECTION
NTS



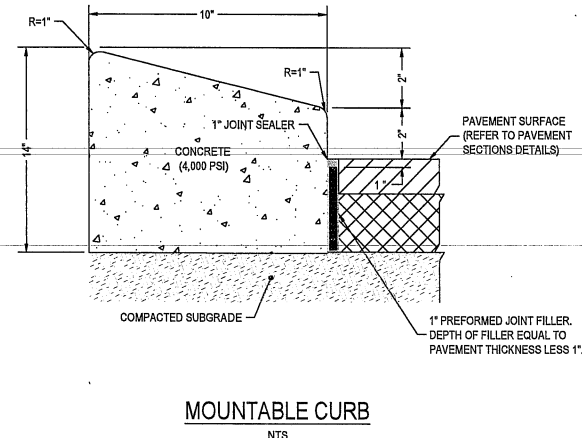
DRY UTILITY TRENCH
NTS



UTILITY PIPE TRENCH AND BEDDING
NTS

TABLE 1: BACKFILL AND EMBEDMENT MATERIALS	
SOIL CLASSIFICATIONS (AS DEFINED IN ASTM D2487 AND D2321)	
CLASS I	CRUSHED ROCK ANGULAR (CLEAN).
CLASS II	GRAVEL AND/OR SANDS, WITH LITTLE OR NO FINES.
CLASS III	SAND/SILT AND SAND/CLAY MIXTURES.
CLASS IV	INORGANIC CLAYS
CLASS V	ORGANIC SILTS, CLAYS, AND PEATS.
SOIL CLASSIFICATIONS (AS DEFINED IN ASCE 15-98)	
CATEGORY I	GRAVELLY SAND
CATEGORY II	SANDY SILT
CATEGORY III	SILTY CLAY

- NOTES:
- IN THE CASE OF TRENCH BOTTOM BEING UNSTABLE, THE CONTRACTOR SHALL REPLACE FOUNDATION WITH SUITABLE MATERIAL AS SPECIFIED BY GEOTECHNICAL ENGINEER.
 - COMPACTION PERCENTAGES SPECIFIED REFER TO STANDARD PROCTOR PERCENT COMPACTION.
 - CONTRACTOR TO MANDATE DEWATERING IN TRENCHES DURING CONSTRUCTION.
 - TRENCHING OPERATIONS SHALL CONFORM TO ALL OSHA REQUIREMENTS.
 - FOR HDPE AND PVC WATERLINES AND LONG SEWER LATERALS, INSTALL METALLIC LOCATOR TAPE 12" (MIN) AND 18" (MAX) BELOW FINISHED SUBGRADE ELEVATION. INSTALL TRACER WIRE LOCATED AT THE TOP OF THE PIPE WITHIN THE INITIAL BACKFILL.
- DESIGNER NOTES:
- REPLACE TRENCH DETAILS / SECTIONS OF THIS DETAIL WITH AHJ STANDARD DETAILS FOR WATERLINES, SEWER TRENCHES, ETC. CERTAIN SECTIONS OR TABLES MAY BE REMOVED AS LOCAL DETAILS WILL SUPERCEDE THESE REQUIREMENTS.
 - REVIEW FILL HEIGHTS AND PIPE MATERIALS (PIPE CLASS, SDR, DR, ETC.) UNDER GENERAL NOTES FOR SHALLOW AND DEEP PIPE INSTALLATIONS. ADDITIONAL MEASURES MAY NEED TO BE SPECIFIED ON THE PLANS SUCH AS CONCRETE ENCASEMENT.
 - REFER TO WWW.CONCRETEPIPE.ORG FOR CONCRETE PIPE DESIGN MANUAL INCLUDING CLASS OF PIPE AND LOAD TABLES, SEE ALSO ELLIPTICAL PIPE TRENCH RECOMMENDATIONS FROM CONCRETEPIPE.ORG.



MOUNTABLE CURB
NTS

PVC PIPE	
ZONE	DEPTH / SOIL MATERIAL
FINAL BACKFILL	CLASS I-V*
INITIAL BACKFILL	MINIMUM DEPTH = D/2 (12" COMMON)** CLASS I, II, AND III*
HAUNCHING	DEPTH = D/2** CLASS I, II, AND III COMPACTED*
BEDDING	DEPTH = 4-6" CLASS I, II, AND III COMPACTED*

NOTE: HAUNCHING ZONE MUST BE COMPACTED PRIOR TO PLACEMENT AND COMPACTION OF INITIAL AND FINAL BACKFILLS TO PREVENT PIPE DEFLECTION.

HDPE PIPE	
ZONE	DEPTH / SOIL MATERIAL
FINAL BACKFILL	MINIMUM COVER UNPAVED AREAS = 12" MINIMUM COVER PAVED AREAS (D <= 48") = 12*** MINIMUM COVER PAVED AREAS (D > 48") = 24*** CLASS I AND II (COMPACTED 90% SPD) AND CLASS III (COMPACTED 95% SPD)*
INITIAL BACKFILL	MINIMUM DEPTH = D/2 (CAN EXTEND TO THE CROWN OF THE PIPE)** CLASS I, II, AND III (TYPE IV CAN BE USED WITH THE APPROVAL OF GEOTECHNICAL ENGINEER)*
HAUNCHING	DEPTH = D/2** CLASS I, II, AND III (TYPE IV CAN BE USED WITH THE APPROVAL OF GEOTECHNICAL ENGINEER)*
BEDDING	DEPTH (D <= 24") = 4*** DEPTH (D > 24") = 6*** CLASS I, II, AND III (TYPE IV CAN BE USED WITH THE APPROVAL OF GEOTECHNICAL ENGINEER)*

NOTE: THE MIDDLE 1/3 BENEATH THE PIPE INVERT IN THE BEDDING ZONE SHALL BE LOOSELY PLACED

RC PIPE	
ZONE	DEPTH / SOIL MATERIAL
FINAL BACKFILL	CATEGORY I, II, III*
INITIAL BACKFILL	DEPTH = D/2** CATEGORY I (85-95% COMPACTION), CATEGORY II (90-95% COMPACTION), OR CATEGORY III (85-95% COMPACTION)*
HAUNCHING	DEPTH = D/2** CATEGORY I (85-95% COMPACTION), CATEGORY II (90-95% COMPACTION), OR CATEGORY III (85-95% COMPACTION)*
BEDDING	MINIMUM DEPTH = D/24 (NOT LESS THAN 3") IF ROCK FOUNDATION, MINIMUM DEPTH = D/12 (NOT LESS THAN 6") CATEGORY I (85-95% COMPACTION), CATEGORY II (90-95% COMPACTION), OR CATEGORY III (85-95% COMPACTION)*

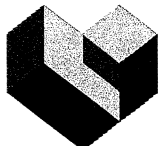
NOTE: FOR ELLIPTICAL AND ARCH PIPE, D SHALL REPRESENT HORIZONTAL SPAN OF PIPE.

DI PIPE	
ZONE	DEPTH / SOIL MATERIAL
FINAL BACKFILL	CLASS I-V*
INITIAL BACKFILL	DEPTH = D/2** CLASS I, II, AND III (APPROX. 90% STANDARD PROCTOR PER AASHTO T-99)*
HAUNCHING	DEPTH = D/2** CLASS I, II, AND III*
BEDDING	MINIMUM DEPTH = 4" CLASS I, II, AND III*

*SEE TABLE 1 FOR SPECIFICATIONS ON SOIL MATERIALS

** D = PIPE DIAMETER

*** MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.



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175 Montrose West Ave., Suite 400
Ann Arbor, MI 48106
Phone: 313.965.0900 Fax: 313.258.4828



CASEY'S #4605

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MATTAWAN, MI 48071

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ID Description Date

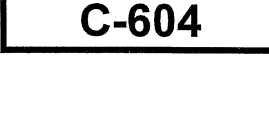
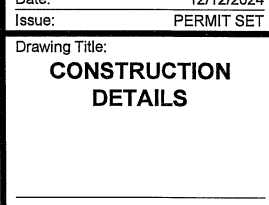
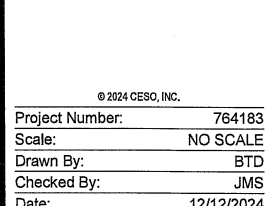
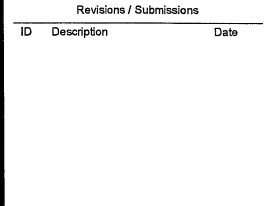
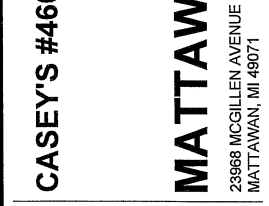
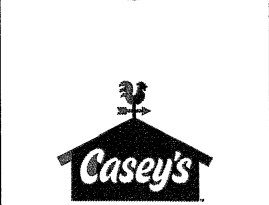
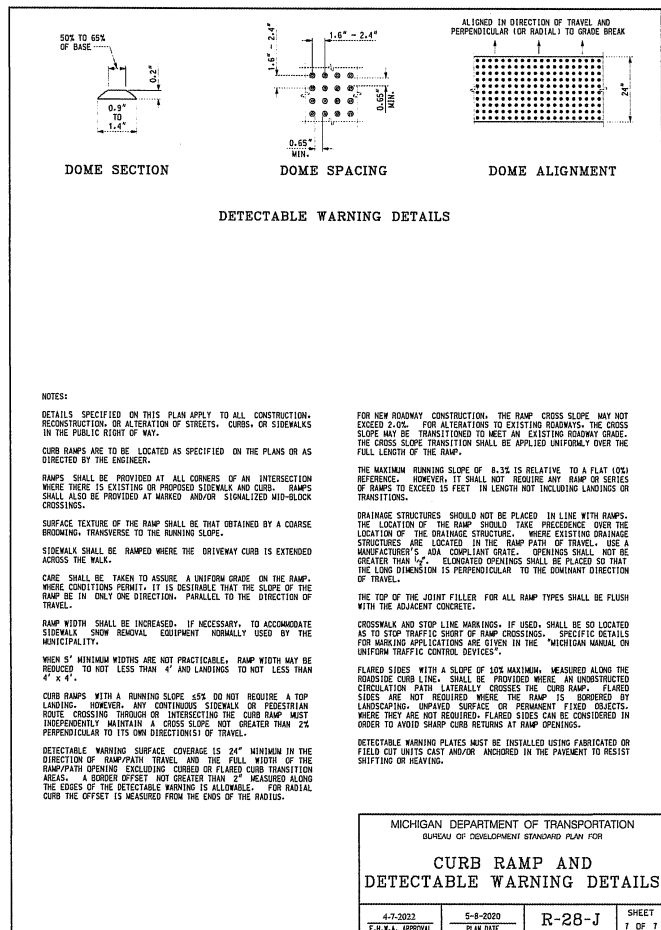
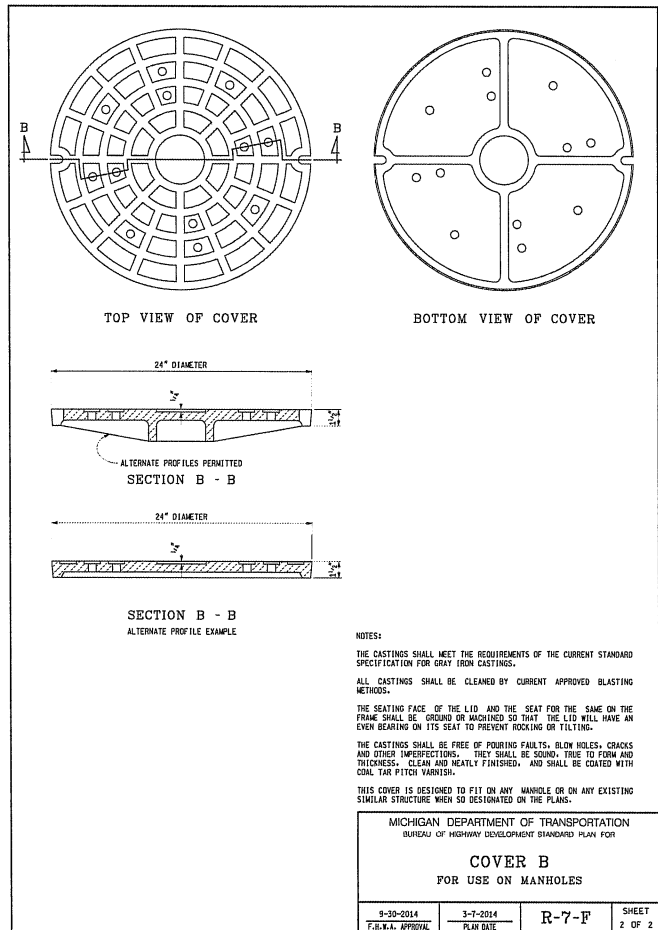
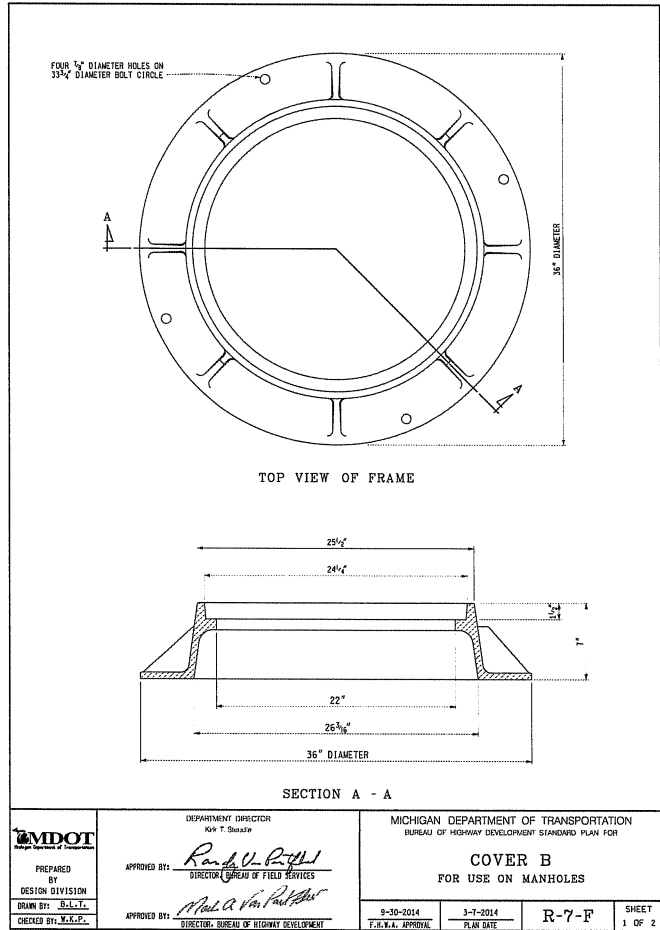
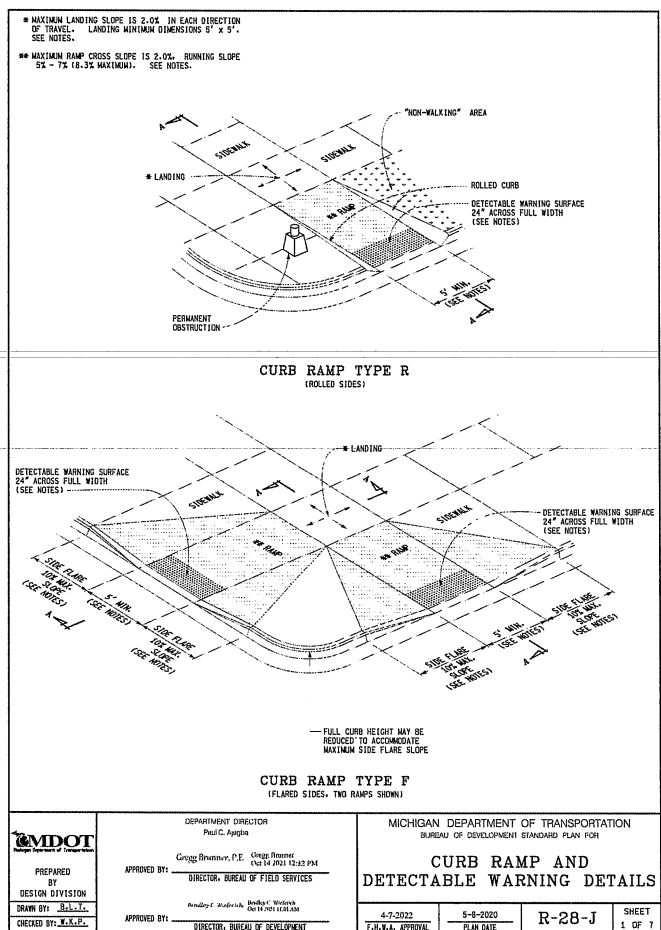
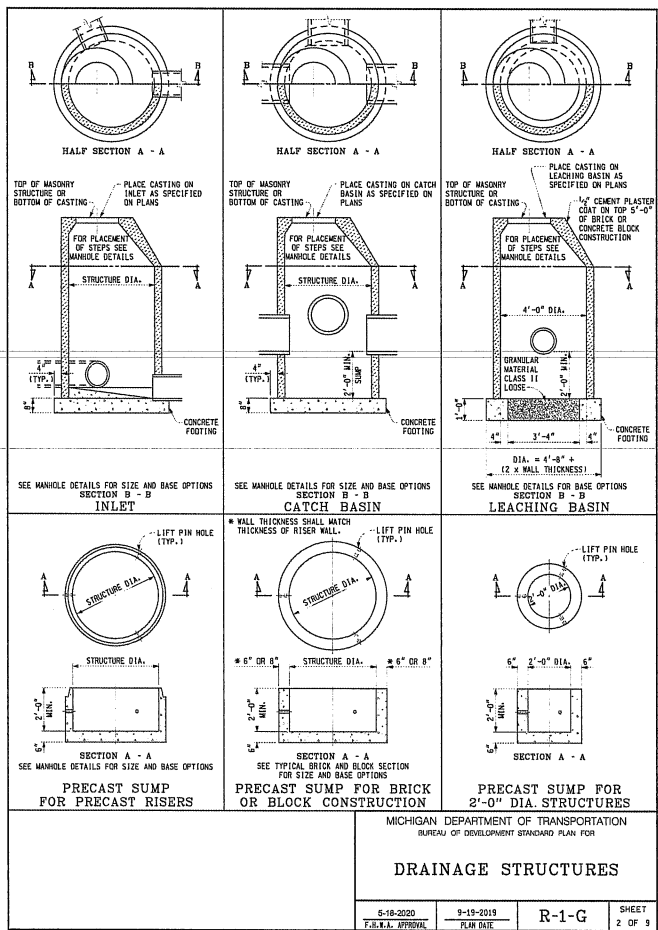
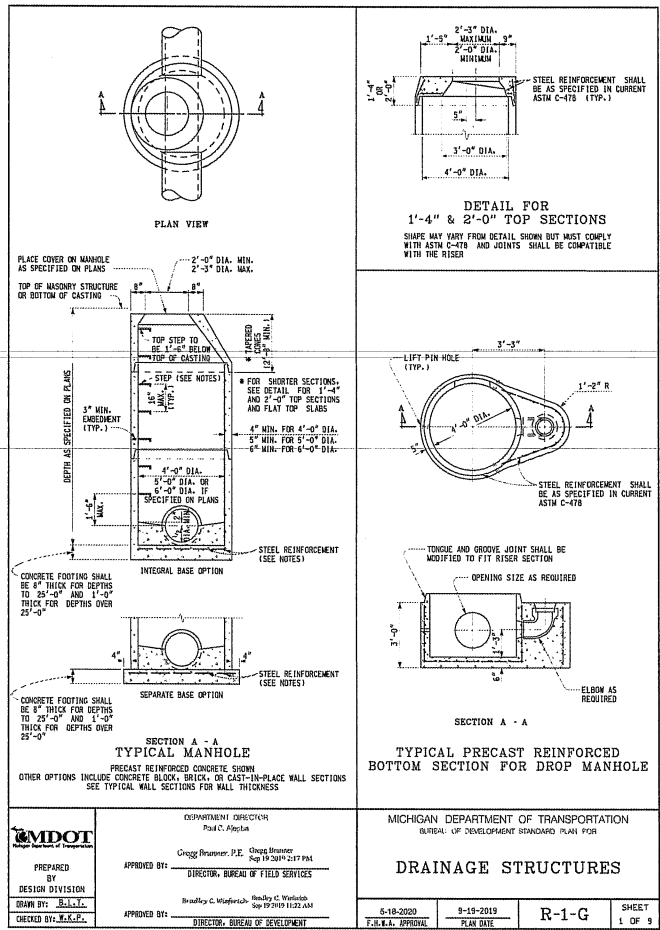
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Date: 12/12/2024
Issue: PERMIT SET

Drawing Title:

CONSTRUCTION
DETAILS

C-603

C:\Users\patrick.cohlan\OneDrive\Documents\CESOWS-Civil\PLAN_PLOT\Y94183_CONSTRUCTION DETAIL.s.dwg - 1/17/2025 - Patrick Cohlan



GENERAL NOTES: LANDSCAPE PLAN

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

SOIL PLANTING MIXTURE (MIX ONSITE)

- THE LANDSCAPE CONTRACTOR SHALL FURNISH FROM THEIR SOURCE A GOOD CLEAN, NATIVE SOIL WHICH SHALL MEET THE APPROVAL OF THE OWNER'S REPRESENTATIVE. THIS SOIL SHALL BE USED FOR THE PLANTING MIXTURE AS FOLLOWS:
 - ONE PART COMPOSTMANURE PLANTING MIX, TOPSOIL OR APPROVED EQUAL
 - ONE PART NATIVE SOIL
- SOILS WITHIN PLANTING AREAS MUST BE SUITABLE FOR PROPOSED PLANTED MATERIAL & SOD WITH REGARD TO: pH, SOIL TEXTURE, SOIL STRUCTURE, AND SEASONAL HIGH WATER TABLE. THE CONTRACTOR SHALL ANALYZE EXISTING SOILS LOCATED IN PROXIMITY TO PROPOSED PLANT MATERIAL AND BE RESPONSIBLE TO AMEND THE SOIL TO OBTAIN ESSENTIAL REQUIREMENTS NECESSARY FOR THE ESTABLISHMENT AND GROWTH OF PLANT LIFE. LANDSCAPE CONTRACTOR TO PROVIDE SOILS REPORT AND APPROPRIATE RECOMMENDATIONS PRIOR TO INSTALLATION TO OWNER'S REPRESENTATIVE FOR REVIEW. FAILURE TO PROVIDE REPORT MAY RESULT IN PLANT MATERIAL BEING REJECTED BY OWNER'S REPRESENTATIVE AND REPLACED AT NO COST TO OWNER.
- THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING PRIOR TO PLANTING, WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, POOR PLANTING SOIL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS.



WWW.CESOINC.COM

175 Montrose West Ave., Suite 400
Ann Arbor, MI 48106
Phone: 313.665.0080 Fax: 888.508.4826



CASEY'S #4605

MATTAWAN, MI

23968 MCGILLEN AVENUE
MATTAWAN, MI 48071

Revisions / Submissions

ID	Description	Date

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Project Number: 764183
Scale: 1"=20'
Drawn By: JC
Checked By: EAB
Date: 12/06/2024
Issue:

Drawing Title:
LANDSCAPE DETAILS

C-702

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