City of Hart

Notice of Remote/Hybrid Public Meeting

THIS NOTICE IS GIVEN AND PUBLISHED PURSUANT TO MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES EMERGENCY ORDER UNDER MCL 333.2253 – GATHERING PROHIBITION AND MASK ORDER AND PA 228 OF 2020 AMENDMENT TO SECTION 3 OF PA 267 OF 1976 OPEN MEETINGS ACT

Time: Jan 7, 2021 04:00 PM Eastern Time (US and Canada)

Join Zoom Meeting
https://us02web.zoom.us/j/84647825875?pwd=SEU0SFBQckNyalNFdkoxR1VQNnpRZz09

Meeting ID: 846 4782 5875
Passcode: 846273
One tap mobile
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Access is provided through the Michigan Relay Service for individuals with speech or hearing impairments.
https://hamiltonrelay.com/michigan/index.html

PLANNING COMMISSION

1. Call to order / roll call: Cunningham, LaPorte, Root, Splane, J.Wittman, P. Wittman and Goldberg
2. Approval of agenda
3. Approval of minutes of November 5,2020
4. Public comments: **Public comment on any matter that is not included on the agenda for a public hearing by the Council. We ask that you please limit your comments to 3 minutes**
    a. **Public Hearing**: proposed zoning map amendment to rezone of 311 E Main, parcel # 020-209-008-00 from B-1 Central Business District to A – Residential.
5. Action Items:
    a. Consider recommendation to City Council regarding rezone of 311 E Main St, Hart, MI (020-209-008-00) from B-1 Central Business District to A – Residential.
    a. Consider recommendation to City Council regarding approval of final site plan for parcel # 020-818-400-12, W. Polk Rd, Hart, MI
6. Discussion Item.
7. Other business and communications from Commission members
8. Adjourn – next regular meeting on February 4, 2021

With advance notice of seven calendar days, the City will provide interpreter services at all public meetings, including language translation and signage for the hearing impaired. Call 231-873-2488. La Ciudad proporcionará servicio de intérprete para esta reunión pública si se pide con siete días de anticipación, lo cual incluye la traducción de idioma y letreros para los con una discapacidad auditiva. Llame al 231-873-2488.

City Of Hart

407 S. State St
Hart, Mi 49420
Planning Commission
Thursday, November 5th, 2020
Minutes

MEMBERS PRESENT: Gale Goldberg, Diane LaPorte, Peggy Wittman, Jack Wittman, Jim Cunningham, and Rob Splane
ABSENT: Betty Root
OTHERS PRESENT: Lynne Ladner (City Manager), and Karla Swihart (Dep. Clerk), David Jirousek (Horizon Community), (Remote) Eva Kostal (Harbor House), Nicole Steel (HEART) and Sue Payne (Coldwell Banker)

Co-Chairman J. Cunningham called the meeting to order at 4 pm.

A motion was made by R. Splane to approve the agenda and supported by J. Wittman
Ayes 6 Nays 0 Absent 1. The motion carried.

A motion to adopt the Sept 3, 2020, and Work Session Sept 22nd, 2020 meeting minutes by D. LaPorte and supported by G. Goldberg Ayes 6 Nays 0 Absent 1. The motion carried.

PUBLIC COMMENTS, CORRESPONDENCE, EVENTS, PRESENTATIONS:

Public Hearing: Public hearing opened at 4:07 pm to discuss proposed zoning map amendment to rezone 218 Washington St, Hart, Mi (020-209-015-50) from B-1 Central Business District to A-Residential.

- A Residential is appropriate for this location as the houses to the east are zoned Residential.
- Questions regarding the cement slab. Would that have to tear up? Answer is No, due to parking in the back of the home, you would have to enter the house upstairs. Cement is not the issue, but the sign out front will be removed out front.
- Question about being a rental unit if bought. It's not conditional, but the ideal would want to sell as a signal family home.

A motion was made by G. Goldberg that The Planning Commission approve 218 Washington St from a B-1 Commercial to A Residential. And 2nd by D. LaPorte. Ayes 6 Nays 0 Absent 1. The motion carried.

Public Hearing: 2nd Public hearing opened at 4:20 pm regarding the proposed zoning map amendment to conditionally rezone 315 S State St parcel number 020-721-007-00 from A- Residential to B-2 General Business District.

D. Jirousek proposal, The owner proposes to use the building under the category of "Hotel and Motel," a permitted use within the B-2 General Business District, to accommodate a non-profit organization offering transitional lodging to women between the ages of 17 and 27. Several additional voluntary conditions have been offered for consideration and are generally summarized

- There shall be no more than six residents.
- Terms of occupancy shall not exceed 18 months in any 24- month period.
- An owner representative shall reside on the property.
- Guest stays shall be limited
- Building codes shall be satisfied

D. Jirousek recommends looking at the master plan, sees no issues with the rezoning, and recommends approval.

A motion to close the public hearing was made by R. Splane and 2nd by D. LaPorte
Ayes 7, Nays 0, Absent 1. The Public hearing was closed at 4:34 pm.

ACTION ITEMS:

A. Consider recommendation to The City Council regarding rezoning of 218 Washington St, Hart Mi from B-1 Central Business District to A- Residential.
B. Consider recommendation to The City Council regarding conditionally rezoning of 315 S. State St, Hart Mi from A-Residential to B-2 General Business District.

A motion to recommend to The City Council the rezoning of 218 Washington St, Hart Mi from B-1 Central Business District to A-Residential was made by D. LaPorte and 2nd by J. Wittman
Ayes 7, Nays 0, Absent 1. The motion carried.

A motion to recommend to The City Council Conditional rezoning of 315 S State St, Hart Mi from A-Residential to B-2 – General Business District was made by R. Splane and 2nd by G. Goldberg.
Ayes 4, Nays 2, Absent 1. The motion carried.

DISCUSSION ITEMS:

A. Discussion as to whether Planning Commission would be willing to entertain a conditional rezoning for 710 S State St Hart Mi #1235

A private company would like to purchase the building and uses would be some food baking/cooking and also some manufacturing and possibly even use some space as a warehouse.

The Planning Commission agreed to hear more regarding it as it is in the city's best interest to have the building sold and in use than to have it sit there empty. City Manager L. Ladner will get in touch with the company and have them put together more information to present to The Planning Commission.

OTHER BUSINESS AND COMMUNICATIONS FROM THE COMMISSION MEMBERS:

6:45 November 10th, there will be a drive-by celebration to say goodbye to a long time City Mayor Ron LaPorte and also City Council members whose terms are up.

A motion was made by J. Wittman to adjourn the meeting and supported by D. LaPorte
All ayes, Nays 0, Absent 1. The motion was carried, and the meeting was adjourned at 4:50 pm

The next scheduled meeting is on December 3rd at 4 pm

03/20/12

City of Hart, 407 State Street, Hart, Michigan 49420

Planning & Zoning Application

231-873-2488 231-873-0100 (fax) www.ci.hart.mi.us

Apply at Oceana County Annex, 210 Johnson, for your *Building Permit* (231-873-5355).

Address/Location of Subject Property: 311 E. Main St. Date: 11/6/20

Parcel # of Subject Property: MA10-000311-0000-02

Current Zoning & Use of Subject Property: Commercial

Applicant Information:

Name: Brooke Bechtel Organization:

Address: 311 E. Main City/State/Zip: Hart MI 49420

Phone: 231 233 3148 Email: brookethebarber@gmail.com Fax:

I hereby attest that all information on this application is, to the best of my knowledge, true and accurate.

Signature: Brooke Bechtel Date: 11/6/20

I hereby grant permission for members of the City of Hart (Planning Commission) (Zoning Board of Appeals) (City Council) (Staff) to enter the property described below (or as described in the attached) for the purpose of gathering information related to this application. (Note to applicant: This is optional and will not affect any decision on your application.)

Signature of Owner: Date:

Applicant is the: ☒ Owner ☐ Lessee ☐ Optionee ☐ Contractor/Architect

If the applicant is not the owner of the property, complete the following:

Owner's Name:

Address: City/State/Zip:

Phone: Signature:

Proposed Use: Residential Proposed Zoning: Residential

Explanation of Request: Trying to refinance as traditional mortgage. Need to be zoned residential to do so.

If application is for a variance, please attach one (1) copy of a site plan. If application is for a Site Plan Review, please attach twelve (12) copies of a complete site plan.

☐ Approved ☐ Approved with following conditions:

☐ Denied for the following reasons:

TO BE COMPLETED BY CITY

Date received: __/__/__ Fees: $10 (Res) $25 (Com) $025 (Wat) $1200 (Sew) Escrow: $1000 $500 $250 Variance: $50

Receipt Number: CK 7166 Staff:

Zoning Administrator: Date:

Note: Information contained in this application, as well as supporting documentation, may be subject to review by the public if a Freedom of Information Act Request is filed.

s:\sharedhart1\planning&zoning\forms&handouts\zoningapplicationform.doc

Memorandum

To:	**City of Hart Planning Commission**
Date:	**December 31, 2020 (January 7 meeting)**
From:	**David M. Jirousek, AICP – Horizon Community Planning**
RE:	**Brooke Bechtel, 311 East Main: Rezoning Request**
Parcel:	**64-020-209-008-00**

Overview

The applicant requests the rezoning of the subject lot from the B-1 Central Business District to the A-Residential zoning district.



Existing Conditions: The site is home to the Hart Barber Shop (Exhibit 1). In recent years, a second floor was constructed to add an upstairs residential unit. Mixed-use buildings of this nature are only permitted in the B-1 zoning district.

A Zoning Map inset is included in Exhibit 2. The subject property is the last B-1 zoned property before the beginning of an area zoned A-Residential to the east.

Adjacent lands include:

- North: Residential uses (A-Residential, A-1 Residential).
- South: Residential uses (A-Residential).
- East: Residential use (A-Residential).
- West: Former restaurant and current redevelopment priority site (B-1 Central Business District).

Proposal: The applicant seeks a rezoning to refinance the building with a traditional mortgage. No other changes to the use or the site are proposed.

Considerations

While rezoning standards are not included in the Zoning Ordinance, I recommend that the following general factors are considered during the review of the request.

a. *Whether or not the proposed rezoning is consistent with the goals, policies and future land use map of the Master Plan; or, if conditions have changed significantly since the Master Plan was adopted, consistency with recent development trends in the area.*

The Future Land Use Map designates the subject lot as Downtown Commercial/Mixed Use (DC/MU). The description of this category is as follows (see Exhibit 3):

> *This land use designation encompasses the older, traditional commercial core of the City. Retail, service, and residential land uses are appropriate in this area. However, some additional land uses may be acceptable if they complement the downtown core and provide an activity that is not readily available. In traditional downtown fashion, non-residential land uses (primarily retail and services) should occupy store fronts, while residential and office land uses should be located on upper floors. Further development of this area based on the principles of the Hart Main Street program is highly encouraged.*

The current B-1 zoning district corresponds to the DC/MU future land use designation, and B-1 zoning is consistent with the recommendations of the Master Plan.

In master planning processes, it is typical that a higher-level conceptual plan for future land use is adopted. When implementing zoning designations and changes, site-specific concerns, existing land use, and existing conditions are considered with more detail regarding the transition from a commercial business area to a residential area. With this in mind, 218 Washington was considered a natural breakpoint between commercial and residential uses in recent months. However, the subject property does not share the same distinction because it was historically a commercial use and is now a mixed-use building due to the addition of the second-floor residential unit. As such, it is more reasonable to maintain the existing B-1 designation.

b. *The proposed district and the uses allowed are compatible with the site's physical, geological, hydrological and other environmental features.*

Rezoning the parcel to A-Residential would have no discernible impact on the environmental resources of the City and the natural features of the site. As compared to B-1, A-Residential is the least intense zoning district in the City's Zoning Ordinance as it relates to development potential.

c. *The potential uses allowed in the proposed zoning district shall also be compatible with surrounding uses in terms of land suitability, impacts on the community, density, potential influence on property values and traffic impacts.*

Residential zoning and use of the property would be compatible with uses to the east and south. However, the building accommodates a long-standing commercial use. Rezoning the property to A-Residential would result in a nonconforming use, which is not recommended in zoning practice. The intent of the zoning practice is to discourage the long-term existence of nonconforming uses.

d. *Whether, if rezoned, the site is capable of accommodating the uses allowed, considering existing or planned infrastructure including roads, sanitary sewers, storm sewer, water, sidewalks, and road lighting.*

Uses allowed under the A-Residential zoning district are not anticipated to place a significant additional burden on public infrastructure.

Recommendation

I recommend denial of the A-Residential rezoning request for the following reasons:

1. A-Residential is inconsistent with the City's Master Plan.
2. The long-standing principal use of the property is commercial.
3. The rezoning would result in the creation of a nonconforming use.
4. The need for the rezoning has no relation to land use and development but a personal financial consideration.

Exhibit 1: Street View



Exhibit 2: Zoning Map Inset

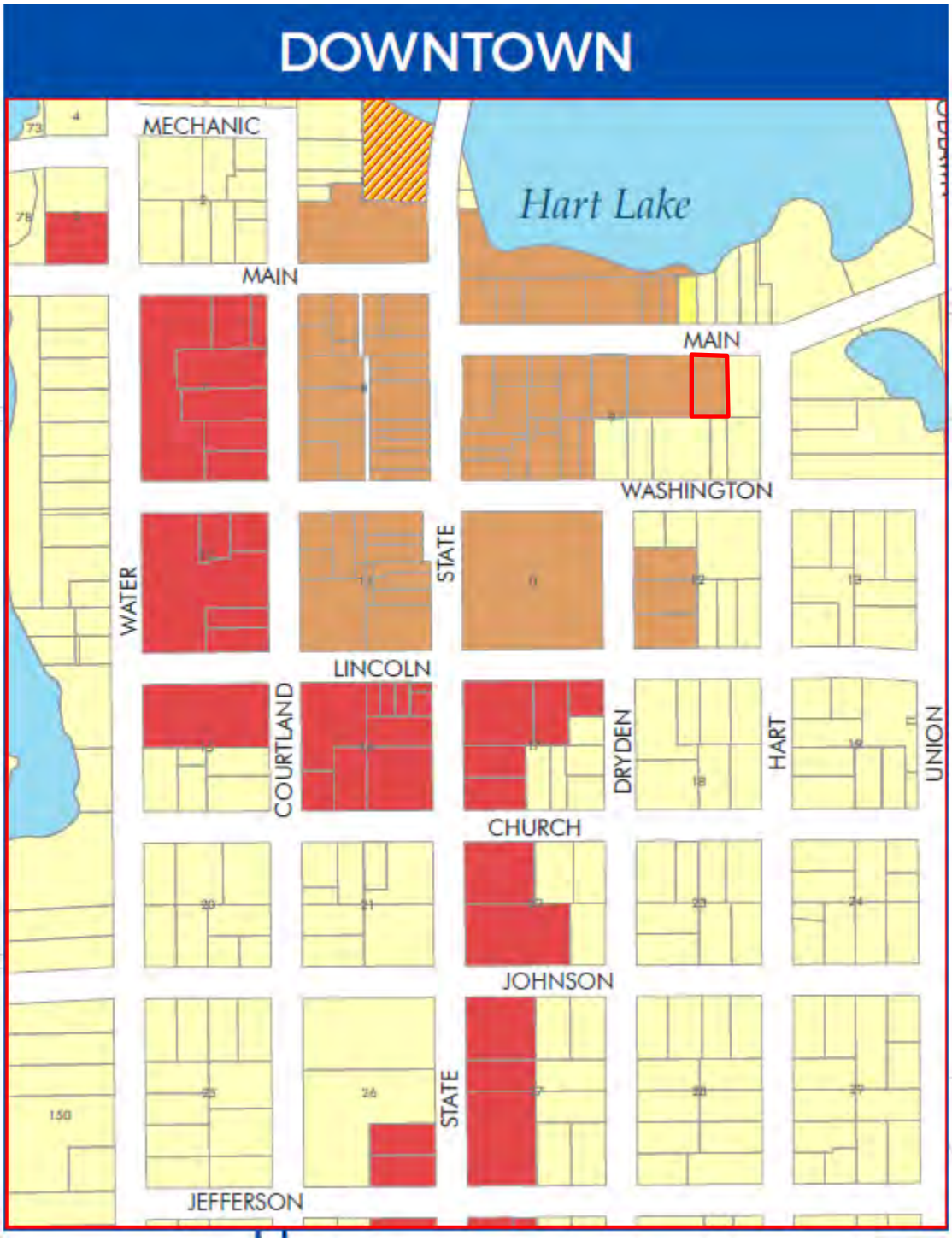


Exhibit 3: Future Land Use Map Inset



City of Hart
Site Plan Review Application Form

The Following, To Be Completed By Applicant Prior To Submittal Of Site Plan:

1.	Developers Name AutoZone Development, LLC
	Address 123 S. Front Street, 3rd Floor, Memphis TN 38103
	Phone Number 901-413-4246 cell phone for Carl Helton of AutoZone
2.	Legal Property Owner Karl Walls and Karl Walls II (current Owner; AutoZone is future landowner)
	Address PO Box 14, Baldwin MI 49304
	Phone Number 231-638-0374
3.	Site Plan Designers Spartan Engineering Solutions, LLC
	Name Wesley R Berlin, PE
	Address 2583 Pine Bluffs Court, Highland MI 48357
	Phone Number 810-746-9928
	Registration Number PE License No. 6201055143
4.	Description of Proposed Development: ☑ New ☐ Addition
5.	If an appeal of the strict application of the standards of the Zoning Ordinance is to be taken, please so indicate below.

Appeal Requested _____

For City Use Only

Initial Site Plan Review fee paid (date) _____

Site Plan Application Number _____

_____Residential Site Plan

_____Non-Residential Site Plan

CITY OF HART

SITE PLAN REVIEW CHECK LIST FORM: PAGE 2

Prior to submittal of a site plan, the applicant shall review the following elements for inclusion, where applicable, on the site plan, and shall be in sufficient detail to meet the intent and purpose of the review process. The applicant will check the box in the left-hand column marked "Applicant" only and will mark all applicable elements. A check mark by the applicant for each element involved will indicate that the applicant made the proper notation on the site plan. If the applicant is satisfied that all such information required is properly noted on the site plan, the applicant will sign and date the checklist in the place provided and submit the signed Site Plan Review Application Form with the site plan to the Planning Commission Coordinator.

	Checked by Applicant	Checked by Review Agency
1. Name of Development	Y	
2. Name, address & phone number of:		
a. Developer	Y	
b. Legal Owner	Y	
c. Designer/Firm	Y	
d. Designer Registration No. and Seal	Y	
3. Scale of Drawing		
a. If less than 3 acres- 1" = 50'	1"=20' typ.	
b. If more than 3 acres 1" = 100'		
c. Sheet size shall not exceed 24" x 36"	Y	
d. Legend	Y	
4. Date	Y	
5. North Point	Y	
6. Complete legal description of entire site i.e. Metes & Bounds description if acreage Parcel, lot #(s) and subdivision name. All Lega l descriptions will include:		
a. Gross # of acres	Y	
b. Net usable acres		
c. Section Number	Y	

	Checked by Applicant	Checked by Review Agency
7. Vicinity Sketch or Site Map which does not have to be drawn to scale	Y	
8. Topographic elevations at 10 foot intervals on and off the site		
a. Existing	Y - 1' interval	
b. Proposed	Y - 1' interval	
9. Existing drainage courses and existing lake or stream elevation's		
10. The location of all existing & proposed on-site utilities including their connection to off-site utilities		
a. Water Supply		
Existing	Y	
Proposed	Y	
b. Sanitary Sewer		
Supply Existing	Y	
Proposed	Y	
c. Storm Sewer		
Supply Existing	Y	
Proposed	Y	
d. Electric Supply (above & below ground)		
Existing	Y	
Proposed	Y	
e. Telephone Supply (above & below ground) Existing	Y	
Proposed		
f. Gas Supply		
Existing	Y	
Proposed	Y	
g. Other		
Existing		
Proposed		
11. Existing Zoning Classification of the parcel	Y	

	Checked by Applicant	Checked by Review Agency
12. Existing Zoning Classification of adjacent parcels	Y	
13. Existing land use on adjacent parcels	Y	
14. The location of all existing buildings & structures within l00' of parcel	Y	
15. The location of all building and structures on site.	Y	
16. All building/structure height's	Y	
17. Location of all off-street parking spaces including required handicapped spaces, vehicle maneuvering lanes, and service drives	Y	
18. Location of all loading and unloading facilities	Y	
19. Location of all driveways, drives, and turning lanes	Y	
20. Location of all drives, driveways & intersections across abutting streets from parcel	Y	
21. Names, locations, right-of-way widths, center- lines, and pavement widths of all bordering roads, streets, and easements	Y	
22. Location of all sidewalks	Y	
23. Critical site dimensions		
a. Along property lines	Y	
b. Between buildings	Y	
c. Between parking & buildings	Y	
d. Between parking & parcel lines	Y	
e. Between principal & accessory buildings	Y	
f. Parking space width/length (typical)	Y	
g. Vehicle maneuvering lane/service drive widths	Y	
h. Curb radius (entrances)	Y	
i. Between buildings & parcel lines	Y	
j. Between buildings & retention/detention ponds		

	Checked by Applicant	Checked by Review Agency
24. Building Layouts (typical floor plan) including:		
a. Principal entrances & service entrances	Y	
b. The relationship between units within a building	Y	
c. Exterior building wall facade drawings of all exposed wall	Y	
25. Building elevation drawings showing the type and color of exterior building wall facade materials to be covered by signs to be attached to the building	Y	
26. Location, size & type of signs to be utilized shall be provided for the site and building's on the site. In instances where signs are not determined due to unknown occupants at the time of site plan review, it shall be required that all signs receive the review and approval of the Planning Commission prior to occupancy of a structure.	Y	
27. The location and extent of any outdoor storage areas	N/A	
28. The type, height & extent of any outdoor storage areas	N/A	
29. The type & height of screening for trash Receptacles	Y	
30. The location type & extent of any required screening devices.		
31. A complete landscape planting plan identifying all landscape plantings by location, type and height. Where earth berms are used, their height and width shall be noted and a cross section of the berm included.	Y	
32: The location & type of all outdoor lighting	Y	

	Checked by Applicant	Checked by Review Agency
33. FOR MULTIPLE DWELLING DEVELOPMENTS:		
a. The maximum lot coverage of all buildings shown		
b. Formula for distances between buildings shown		
c. Site density computations including total number of dwellings units and number of bedrooms per unit. When development is in phases, the requirements for b. and c. above shall be shown for each phase.		
34. FOR NON-RESIDENTIALUSES:		
a. Proposed use	Y	
b. Gross & net usable square feet of floor area	Y	
c. Seating capacity or maximum occupancy permitted		
d. Number of medical examining rooms dental chairs, and square footage of waiting rooms or beds		
e. Number of employees in largest working shift	3-5 typ.	

I hereby certify that I have read and understand the above Checklist items and those items that apply to my site plan, are included on the site plan.

Signature of Applicant: Carl S Helton CARL HELTON FOR AUTOZONE

Date Received: _____

Initials of accepting staff _____

HAZARDOUS SUBSTANCES REPORTING FORM FOR SITE PLAN

Note: This form should be completed and submitted as part of the site plan for all facilities.

Name of Business AutoZone Hart MI1278

Name of Business Owner AutoZone Development, LLC

Street Address 123 S. Front Street, 3rd Floor, Memphis TN 38103

Telephone 901-413-4243 (cell), 901-495-6736 (work desk) : Carl Helton for AutoZone

Owner's signature [signature] CARL HELTON FOR AUTOZONE

Information Compiled by Carl Helton for AutoZone

Part I- Management of Hazardous Substances and Polluting Materials

1. Y ☑ N ☐ Will the proposed facility expect to store, use or generate hazardous now or in the future? If yes, please complete this form and submit with your site plan.

2. Y ☑ N ☐ Will hazardous substances or polluting materials be reused or recycled on-site?

3. Y ☑ N ☐ Will any hazardous substances or polluting materials be stored on-site? If yes, identify the storage location on the site plan. Describe the size and type of secondary containment structure here, on an attached page, or as a detail on the site plan:

See enclosed floor plan. Above ground storage tank with secondary containment for recycled oil

4. Y ☐ N ☑ Will new underground storage tanks be located less than 2000 feet from drinking water wells serving two or more establishments or less than 300 feet from a single-family drinking water well?

5. Y ☐ N ☑ Are existing underground storage tanks on-site less than 200 feet from a drinking water well serving two or more establishments or less than 50 feet from a single-family household?

If the answers to #4 or #5 are yes, current or proposed activities may be in violation of State of Michigan underground storage tank regulations. Michigan Department of Environmental Quality, Environmental Response Division: 734-953-0241.

6. Y ☐ N ☑ Will the interior of the facility have general purpose floor drains?* If yes, will the floor drain connect to: (circle one)

a. Sanitary sewer system
b. On-site holding tank; or
c. On-site system approved by the Michigan Department of Environmental Quality in accordance with groundwater Discharge permit requirements (administered by Waste Management Division).

* Note: General purpose floor drains should not be connected to a storm drain, dry well, or septic system.

7. Y ☐ N ☑ Will hazardous substances or polluting materials be stored, used, or handled out-of-doors near storm drains which discharge to lakes, streams, or wetlands? If yes, describe the type of catch basin or spill containment facilities, which will be used (use an attached sheet with diagram, if appropriate):

_____

_____

_____

Additional information may be requested by the local government to assure that site plans comply with local, county and state environmental protection requirements. (Part II on Following Page)

TYPES AND QUANTITIES OF HAZARDOUS SUBSTANCES AND POLLUTING MATERIALS WHICH WILL BE USED, STORED, OR GENERATED ON-SITE

Please list the hazardous wastes and other polluting materials, which are expected to be used, stored, or generated on-site. Quantities should reflect the maximum volumes on hand at any time. Attach additional pages if necessary, to list all hazardous substances and polluting materials.

Common Name (Trade Name)	Chemical Name (Components)	Form	Max quantity on hand at one time	Type of storage containers
See attached materials list		Key: Liq.= Liquid P.Liq.=Pressurized Liquid S=Solid G=Gas P.G.= Pressurized Gas	Key: AGT= above ground tank DM= Drums UGT= Underground Tanlc CY= Cylinders CM= Metal container CW= Wooden or composite container TP= Portable Tank O= Other (specify)	

BENCHMARKS: (NAVD88 DATUM)
(PER ALTA/NSPS LAND TITLE SURVEY)

BM A:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH FROM CENTERLINE W POLK ROAD & 33'± EAST FROM SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEV = 713.71

BM B:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH FROM CENTERLINE W POLK ROAD & 145'± WEST FROM SUBJECT'S SOUTHEAST PROPERTY CORNER.
ELEV = 714.98

FLOODPLAIN NOTE:
THIS ENTIRE PROPERTY LIES IN ZONE "X", 0.2% ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREAS LESS THAN ONE SQUARE MILE, ACCORDING TO THE MOST RECENT OFFICIAL FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 26127C0150C, DATED 8/4/2014.

AutoZone

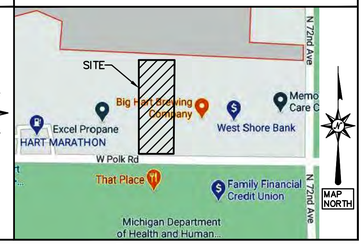
Construction Plans for

Proposed AutoZone Store MI1278
W. Polk Rd. West of N. 72nd Ave.
City of Hart, Oceana County, Michigan

ORIGINAL ISSUE DATE:

NOVEMBER 27, 2020

VICINITY MAP NOT TO SCALE



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EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF SPARTAN ENGINEERING SOLUTIONS, LLC, CONSTRUCTION CONTRACTOR AGREES TO INDEMNIFY AND HOLD ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE CONSTRUCTION PROJECT. JOB SITE CONDITIONS, INCLUDING PERSONNEL SAFETY AND PROPERTY DAMAGE, ARE THE SOLE RESPONSIBILITY OF THE SITE CONSTRUCTION CONTRACTOR.

INFORMATION REGARDING EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING WAS PROVIDED BY OTHERS. SPARTAN ENGINEERING SOLUTIONS, LLC MAKES NO GUARANTEE ON THE ACCURACY OR COMPLETENESS OF INFORMATION PROVIDED BY OTHERS. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS, TYPES, MATERIALS, AND DEPTHS PRIOR TO THE START OF CONSTRUCTION. SPARTAN ENGINEERING SOLUTIONS, LLC SHALL NOT BE HELD LIABLE FOR MISSING OR INCOMPLETE UTILITY INFORMATION, OR CONSEQUENTIAL CLAIMS OR DAMAGES, FOR ANY REASON.

CAUTION!!!
UNDERGROUND AND OVERHEAD UTILITIES ARE PRESENT WITHIN THE WORK AREA. CONTRACTOR TO LOCATE AND PROTECT ALL UNDERGROUND AND OVERHEAD UTILITIES DURING CONSTRUCTION. COORDINATE WITH RESPECTIVE UTILITY PROVIDERS AS REQUIRED PRIOR TO THE ONSET OF CONSTRUCTION.

THE CONSTRUCTION SPECIFIED WITHIN THESE PLANS SHALL BE PERFORMED IN COMPLETE COMPLIANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF HART, OCEANA COUNTY, MDOT, ALL APPLICABLE REFERENCE SPECIFICATIONS, INDEPENDENT UTILITY OWNERS, AND AUTOZONE PROJECT SPECIFICATIONS AS APPLICABLE.

GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF HART, OCEANA COUNTY, CONTRACT DOCUMENTS, UTILITY COMPANY SPECIFICATIONS, AND MDOT AS APPLICABLE.
2. CONTRACTOR SHALL NOTIFY ALL INVOLVED AGENCIES AND MUNICIPALITIES FOR THIS PROJECT A MINIMUM OF 72 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION.
3. UNLESS OTHERWISE INDICATED IN THE CONSTRUCTION CONTRACT AGREEMENT, ALL NECESSARY PERMITS, BONDS AND INSURANCES ETC., SHALL BE PAID FOR BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADING, LIGHTS AND TRAFFIC CONTROL DEVICES TO PROTECT THE WORK AND SAFELY MAINTAIN TRAFFIC IN ACCORDANCE WITH MDOT, CITY OF HART, AND MMUTCD REQUIREMENTS AS APPLICABLE TO THIS PROJECT.
5. ALL EXCAVATIONS SHALL BE SLOPED, SHORED OR BRACED IN ACCORDANCE WITH MI-OSHA REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE AN ADEQUATELY CONSTRUCTED AND BRACED SHORING SYSTEM FOR EMPLOYEES WORKING IN AN EXCAVATION THAT MAY EXPOSE EMPLOYEES TO THE DANGER OF MOVING GROUND.
6. ALL REFERENCES TO MDOT SPECIFICATIONS ARE TO BE IN ACCORDANCE WITH THE 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION, APPLICABLE SPECIAL PROVISIONS, AND RELATED REFERENCED DOCUMENTS.
7. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SECURITY MEASURES TO PROTECT THE PROJECT SITE, CONTRACTOR PROPERTY, EQUIPMENT, WORK, AND TO ENSURE SAFE PASSAGE FOR PEDESTRIAN AND VEHICULAR TRAFFIC ADJACENT TO THE WORK ACTIVITIES.
9. UPON COMPLETION OF THE JOB, THE CONDITION OF THE AFFECTED FEATURES WITHIN THE RIGHT-OF-WAY SHALL BE AS GOOD AS OR BETTER CONDITION THAN EXISTED PRIOR TO BEGINNING WORK FOR THIS PROJECT.
10. TRAFFIC INGRESS AND EGRESS FOR ALL DRIVEWAYS AND PEDESTRIAN ACCESS FACILITIES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
11. THE CONTRACTOR IS RESPONSIBLE FOR THEIR OWN HORIZONTAL AND VERTICAL CONTROL DURING CONSTRUCTION OF THE PROJECT. ALL CONSTRUCTION STAKING IS THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL VERIFY ALL BOUNDARY AND TOPOGRAPHIC INFORMATION PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY CONTACT OWNER AND ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED IN THE FIELD, AND OBTAIN RESOLUTION PRIOR TO COMMENCEMENT OF CONSTRUCTION.
13. AREAS WITH DIRECT PUBLIC ACCESS SHALL BE BARRICADED, ILLUMINATED OR ISOLATED AS REQUIRED TO MAINTAIN PUBLIC SAFETY.

PAVING NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT, CONTRACT DOCUMENTS, AND MDOT REQUIREMENTS AND SPECIFICATIONS.
2. IN AREAS WHERE NEW PAVEMENTS ARE BEING CONSTRUCTED, ALL TOPSOIL AND SOIL CONTAINING ORGANIC MATTER SHALL BE REMOVED PRIOR TO PAVEMENT CROSS SECTION CONSTRUCTION.
3. SUBGRADE UNDERCUTTING, INCLUDING BACKFILLING SHALL BE PERFORMED TO REPLACE MATERIALS SUSCEPTIBLE TO FROST HEAVING OR UNSTABLE SOIL CONDITIONS. PROOF ROLL ALL SUBGRADE PRIOR TO ANY FILL ADDITION IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. PROOF ROLL ALL PAVEMENT BASE MATERIAL PRIOR TO PAVING OPERATIONS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. ANY EXCAVATIONS THAT MAY BE REQUIRED BELOW THE TOPSOIL IN FILL SECTIONS OR BELOW SUBGRADE IN CUT SECTIONS, WILL BE CLASSIFIED AS SUBGRADE UNDERCUTTING.
4. SUBGRADE UNDERCUTTING SHALL BE PERFORMED WHERE NECESSARY AND THE EXCAVATED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ANY SUBGRADE UNDERCUTTING SHALL BE BACKFILLED WITH SAND OR OTHER SIMILAR APPROVED MATERIAL AS OUTLINED IN THE GEOTECHNICAL REPORT. BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM UNIT WEIGHT (PER ASTM D-1557) UNLESS OTHERWISE SPECIFIED.
5. METHOD OF SUBGRADE INSTABILITY RECTIFICATION SHALL BE PER THE GEOTECHNICAL ENGINEERING REPORT. APPROPRIATE METHOD (UNDERCUTTING, MOISTURE CONDITIONING OR CHEMICAL STABILIZATION) SHALL BE COORDINATED WITH OWNER AND GEOTECHNICAL ENGINEER DURING CONSTRUCTION
6. BACKFILL UNDER PAVED AREAS SHALL BE AS SPECIFIED ON PLANS AND DETAILS.
7. ANY SUB-GRADE WATERING OR DE-WATERING REQUIRED TO ACHIEVE REQUIRED DENSITY SHALL BE CONSIDERED INCIDENTAL TO THE JOB.

GENERAL UTILITY NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISS DIG 72 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PERFORM TEST EXCAVATIONS, TEST HOLES, TEST BORINGS, OR WHATEVER ADDITIONAL INVESTIGATIONS ARE NECESSARY TO LOCATE, PROTECT, AND MAINTAIN ALL EXISTING UTILITIES AND SERVICES DURING CONSTRUCTION.
2. ANY CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE PROJECT INSPECTOR, OWNER, AND ENGINEER.
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY AND/OR OBTAIN ANY INFORMATION NECESSARY REGARDING THE PRESENCE OF UNDERGROUND UTILITIES WHICH MAY AFFECT THIS JOB.
4. TRENCHES SHALL BE BACKFILLED PER PLANS AND CONTRACT DOCUMENTS.
5. TAP EXISTING UTILITIES AS SHOWN AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE GOVERNING AUTHORITY. RESTORE DISTURBED PAVEMENT OR GREENBELT AREAS PER THE PLANS AND TO THE SATISFACTION OF THE GOVERNING AUTHORITY.
6. EXACT GRADES AND DEPTHS OF UTILITIES ARE TO BE CHECKED CLOSELY WITH THE FIELD ENGINEER OR INSPECTOR PRIOR TO INSTALLATION.
7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING NEW SITE SERVICES WITH ALL RESPECTIVE UTILITY PROVIDERS.

ALTA/NSPS AND TOPOGRAPHIC SURVEY BY OTHERS:
THE ALTA/NSPS LAND TITLE SURVEY, AND ALL EXISTING FEATURES SHOWN THEREON, WAS PREPARED BY MONUMENT ENGINEERING GROUP ASSOCIATES, INC. SPARTAN ENGINEERING SOLUTIONS, LLC, MAKES NO GUARANTEE, NEITHER EXPRESSED NOR IMPLIED, AS TO THE COMPLETENESS OR ACCURACY OF THE SITE BOUNDARY OR EXISTING FEATURES SHOWN ON THE SURVEY. SPARTAN ENGINEERING SOLUTIONS, LLC WILL NOT BE HELD LIABLE FOR THE ACCURACY OF INFORMATION CONTAINED ON THE SURVEY, NOR FOR ERRORS, OMISSIONS, OR CLAIMS ARISING FROM USE OF SAID INFORMATION PROVIDED BY OTHERS.

PROJECT TEAM

APPLICANT/DEVELOPER	ARCHITECT
AUTOZONE DEVELOPMENT, LLC 123 S. FRONT STREET, 3RD FLOOR MEMPHIS, TN 38103 (901) 495-6736 CARL HELTON	123 S. FRONT STREET, 3RD FLOOR MEMPHIS, TN 38103 (901) 495-8707 LEWIS ELLIS
CIVIL ENGINEER	**SURVEYOR**
SPARTAN ENGINEERING SOLUTIONS, LLC 2583 PINE BLUFFS COURT HIGHLAND, MI 48357 (810) 746-9928 WESLEY R. BERLIN, PE	MONUMENT ENGINEERING GROUP ASSOCIATES, INC. 298 VETERANS DRIVE FOWLERVILLE, MI 48836 (517) 223-3512 ALLAN PRUSS, PE, PS

SHEET INDEX

SHEET NUMBER	SHEET TITLE
C0.0	COVER SHEET
ALT-1	ALTA/NSPS LAND TITLE SURVEY
ALT-2	ALTA/NSPS LAND TITLE SURVEY
D1.0	DEMOLITION PLAN
C1.0	SITE PLAN
C1.0A	OVERALL SITE LAYOUT
C1.1	GRADING PLAN
C1.1A	SOIL EROSION & SEDIMENT CONTROL PLAN
C1.1B	SESC PLAN NOTES AND REQUIREMENTS
C1.2	UTILITY PLAN
C1.3	STORM WATER MANAGEMENT PLAN
C1.3A	INFILTRATION BASIN DESIGN PLAN
C1.3B	STORM WATER QUALITY INFORMATION
C1.A	SITE DETAILS
C1.B	CONSTRUCTION DETAILS
C1.C	CONSTRUCTION DETAILS
C1.D	CONSTRUCTION DETAILS
L1.0	LANDSCAPE PLAN
L1.1	LANDSCAPE DETAILS

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN
WESLEY R. BERLIN
ENGINEER
No. 55143
LICENSED PROFESSIONAL ENGINEER

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103
PROJECT: AUTOZONE HART MI1278
W. POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN
SHEET TITLE: COVER SHEET
C:\PROJECTS\2020-010 AUTOZONE HART MI1278\CIVIL\CONSTRUCTION\001-COS.DWG

SCALE:

3 WORKING DAYS BEFORE YOU DIG
811
Know what's below. Call before you dig.
DIAL 811 OR 1-800-482-7171

REVISED:

P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020

SHEET NO.
C0.0

AUTOZONE STORE #1278

ALTA/NSPS LAND TITLE SURVEY

LEGAL DESCRIPTION (AS PROVIDED)

(PER TITLE AGENCY: FIRST AMERICAN TITLE INSURANCE COMPANY, TITLE COMMITMENT NO: NCS-1018767-MICH, EFFECTIVE DATE: JUNE 26, 2020)

SCHEDULE C DESCRIPTION:

LAND IN THE CITY OF HART, OCEANA COUNTY, MI, DESCRIBED AS FOLLOWS:

ALL OF THE SOUTH 470 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 18, TOWN 15 NORTH, RANGE 17 WEST, WHICH LIES EAST OF PARCEL A DESCRIBED BELOW, AND WHICH LIES WEST OF PARCEL B DESCRIBED BELOW; EXCEPT THE SOUTH 75 FEET THEREOF TAKEN BY THE MICHIGAN STATE HIGHWAY COMMISSION BY DECLARATION OF TAKING AT INSTRUMENT NO. 736087.

PARCEL A:

THE WEST 250 FEET OF THE SOUTH 470 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 18, TOWN 15 NORTH, RANGE 17 WEST, EXCEPT THE SOUTH 75 FEET THEREOF PREVIOUSLY CONVEYED TO THE MICHIGAN STATE HIGHWAY COMMISSION AT OCEANA COUNTY INSTRUMENT NO. 736087. PARCEL IS MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SOUTHEAST CORNER OF SECTION 18; THENCE NORTH 87 DEGREES 52 MINUTES 50 SECONDS WEST ALONG THE SOUTH SECTION LINE 1339.40 FEET; THENCE NORTH 00 DEGREES 41 MINUTES 25 SECONDS EAST ALONG THE 1/16 LINE 75.02 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00 DEGREES 41 MINUTES 25 SECONDS EAST ALONG THE EAST 1/16 LINE 395.12 FEET; THENCE SOUTH 87 DEGREES 52 MINUTES 50 SECONDS EAST PARALLEL WITH AND 470.00 FEET NORTHERLY OF THE SOUTH SECTION LINE FOR A DISTANCE OF 250.08 FEET; THENCE SOUTH 00 DEGREES 41 MINUTES 25 SECONDS WEST PARALLEL WITH AND 250.00 FEET EASTERLY OF THE EAST 1/16 LINE FOR A DISTANCE OF 395.12 FEET; THENCE NORTH 87 DEGREES 52 MINUTES 50 SECONDS WEST PARALLEL WITH AND 75.00 FEET NORTHERLY OF THE SOUTH SECTION LINE FOR A DISTANCE OF 250.08 FEET TO THE POINT OF BEGINNING.

PARCEL B:

COMMENCING AT THE SOUTHEAST CORNER OF SECTION 18, TOWN 15 NORTH, RANGE 17 WEST; THENCE NORTH 87 DEGREES 52 MINUTES 50 SECONDS WEST ON THE SOUTH LINE OF SAID SECTION 500.11 FEET; THENCE NORTH 00 DEGREES 53 MINUTES 50 SECONDS EAST 75.02 FEET TO THE POINT OF BEGINNING; THENCE NORTH 87 DEGREES 52 MINUTES 50 SECONDS WEST ON THE NORTH RIGHT-OF-WAY OF POLK ROAD 150.03 FEET; THENCE NORTH 00 DEGREES 53 MINUTES 50 SECONDS EAST PARALLEL WITH THE EAST SECTION LINE 395.09 FEET; THENCE SOUTH 87 DEGREES 52 MINUTES 50 SECONDS EAST 150.03 FEET; THENCE SOUTH 00 DEGREES 53 MINUTES 50 SECONDS WEST 395.09 FEET TO THE POINT OF BEGINNING.

EXCEPT:

THE WEST 110 FEET OF THE EAST 760 FEET OF THE NORTH 395 FEET OF THE SOUTH 470 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 18, TOWNSHIP 15 NORTH, RANGE 17 WEST, HART TOWNSHIP, OCEANA COUNTY, MICHIGAN.

EXCEPTION PARCEL IS MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SECTION 18, TOWNSHIP 15 NORTH, RANGE 17 WEST; THENCE NORTH 87 DEGREES 52 MINUTES 50 SECONDS WEST ON THE SOUTH LINE OF SAID SECTION 650.14 FEET; THENCE NORTH 00 DEGREES 53 MINUTES 50 SECONDS EAST 75.02 FEET TO THE POINT OF BEGINNING; THENCE NORTH 87 DEGREES 52 MINUTES 50 SECONDS WEST ON THE NORTH RIGHT-OF-WAY OF POLK ROAD 110.03 FEET; THENCE NORTH 00 DEGREES 53 MINUTES 50 SECONDS EAST PARALLEL WITH THE EAST SECTION LINE 395.09 FEET; THENCE SOUTH 87 DEGREES 52 MINUTES 50 SECONDS EAST 110.03 FEET; THENCE SOUTH 00 DEGREES 53 MINUTES 50 SECONDS WEST 395.09 FEET TO THE POINT OF BEGINNING.

SCHEDULE B-SECTION II EXCEPTIONS

TITLE AGENCY: FIRST AMERICAN TITLE INSURANCE COMPANY
TITLE COMMITMENT NO: NCS-1018767-MICH
EFFECTIVE DATE: JUNE 26, 2020

7. THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "RIGHT OF WAY" RECORDED AUGUST 12, 1953 AS LIBER 186, PAGE 379 OF OFFICIAL RECORDS. (IT IS NOT ON, OR DOES NOT TOUCH, THE SURVEYED PROPERTY)

8. THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "RIGHT OF WAY" RECORDED JANUARY 19, 1962 AS LIBER 243, PAGE 57 OF OFFICIAL RECORDS. (IT IS NOT ON, OR DOES NOT TOUCH, THE SURVEYED PROPERTY)

9. THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "DECLARATION OF TAKING" RECORDED DECEMBER 21, 1973 AS INSTRUMENT NO. 736087 OF OFFICIAL RECORDS. (PLOTTED & SHOWN HEREIN)

10. THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "EASEMENT" RECORDED JUNE 24, 1998 AS INSTRUMENT NO. 9813906 OF OFFICIAL RECORDS. (PLOTTED & SHOWN HERE IN)

11. THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "JOINT DRIVEWAY EASEMENT" RECORDED DECEMBER 6, 2007 AS INSTRUMENT NO. 2007/28713 OF OFFICIAL RECORDS. (PLOTTED & SHOWN HERE IN)

12. THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "DECLARATION OF EASEMENTS AND COVENANTS, CONDITIONS, AND RESTRICTIONS FOR COMMERCIAL DEVELOPMENT" RECORDED MAY 14, 2019 AS LIBER 2019, PAGE 8082 OF OFFICIAL RECORDS. (PLOTTED & SHOWN HERE IN)

STRUCTURE SCHEDULE

EX. SANITARY SEWER		
STRUCTURE	RIM ELEV.	PIPES
(25166) SAN	719.41	8" W IE= 707.20 8" E IE= 707.22
(25212) SAN	714.14	8" W IE= 703.24 8" E IE= 703.24
(25411) SAN	718.43	UNABLE TO ACCESS AT TIME OF SURVEY
(25412) SAN	711.22	8" W IE= 698.84 8" E IE= 698.94
(25414) SAN	713.16	8" W IE= 701.21 8" E IE= 701.21
(25415) SAN	713.80	8" W IE= 702.92 8" E IE= 703.02

UTILITY/REFERENCE INFO

WM: CITY OF HART
CONTACT: BRAD WHITNEY
PHONE: 231-873-3100
RECEIVED: 8/31/20

SAN: CITY OF HART
CONTACT: BRAD WHITNEY
PHONE: 231-873-3100
RECEIVED: 8/31/20

STORM: CITY OF HART
CONTACT: BRAD WHITNEY
PHONE: 231-873-3100
RECEIVED: 8/31/20

GAS: DTE GAS TRANSMISSION
CONTACT: BARBARA SAUNDERS
PHONE: 313-235-5111
RECEIVED: 8/24/20

ELEC: CONSUMERS ENERGY
CONTACT: KURT GOULDING
EMAIL: MISSDIGDESIGNTICKETS@CMSENERGY.COM
RECEIVED: N/A

PHONE/CABLE: CHARTER COMMUNICATIONS
CONTACT: PATRICK DELISI
PHONE: 810-247-3899
RECEIVED: 9/8/20

PHONE/CABLE: FRONTIER/VERIZON
CONTACT: KATHERYN ANDERSON
PHONE: 810-724-3127
RECEIVED: N/A

ROAD/ROW: MDOT
RECEIVED: 8/27/20

UTILITY NOTE

- ALL FRANCHISE UTILITIES (GAS, FIBER, CABLE, UG ELEC., TELE.) SHOW ARE BASED ON MISS DIG MARKINGS LOCATED AT TIME OF SURVEY UNLESS NOTED OTHERWISE.
- THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



LOCATION MAP

TABLE A ITEM NOTES

ITEM 1, 4, 5, 6(b), 7(a), 7(b)(1), 7(c), 8, 11, 13, 18, 19, 20 & 21.
(SEE PLAN VIEW ON ALT-2 SHEET FOR MORE INFORMATION)

ITEM 2: THERE IS NO POSTED ADDRESS ON SITE; NO BUILDINGS WERE OBSERVED, SUBJECT PROPERTY IS VACANT LAND.

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

BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THE SUBJECT PROPERTY APPEARS TO LIE ENTIRELY IN ZONE (X) AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD PLAIN ACCORDING TO THE FLOOD INSURANCE RATE MAP FOR THE COUNTY OF OCEANA, COMMUNITY PANEL NO. (26127C0150C), EFFECTIVE DATE AUGUST 4, 2014.

ITEM 6(a): ZONING
A ZONING REPORT OR LETTER WAS NOT PROVIDED TO THE SURVEYOR AS REQUIRED BY 2016 ALTA/NSPS STANDARDS TABLE A ITEMS 6(A) & 6(B).

THIS ZONING INFORMATION SHOWN HEREIN WAS TAKEN FROM THE CITY OF HART ZONING ORDINANCE, EFFECTIVE DATE: NOVEMBER 30, 2019.

ZONING CLASSIFICATION: (B-2)
(GENERAL BUSINESS DISTRICT)

BUILDING SETBACKS:
FRONT = 25' (LOCAL STREET)
20' (MAJOR CITY ST. OR HWY)
SIDE/REAR = NONE
(EXCEPT WHERE A LOT ABUTS A RESIDENTIAL ZONE OR USE, A 10 FOOT SIDE AND REAR SHALL BE PROVIDED.)

MAX. BLDG. HEIGHT = 35'

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

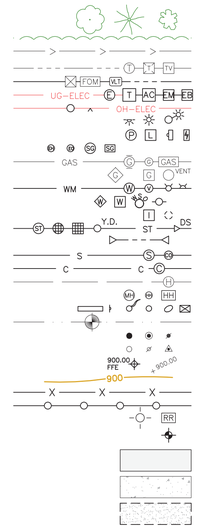
ITEM 9: EXISTING PARKING
THERE ARE NO STRIPED PARKING SPACES ON THE SUBJECT PROPERTY.

ITEM 16: AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE SURFACE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.

ITEM 17: AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF ANY RECENT CHANGES IN STREET RIGHT-OF-WAY LINES EITHER COMPLETED OR PROPOSED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION.

ITEM 18: ACCORDING TO THE NATIONAL WETLAND INVENTORY WEBSITE:
(HTTP:WWW.FWS.GOVWETLANDSDATAMAPPER.HTML), THERE ARE NO NOTED WETLANDS ON THE SUBJECT PARCEL. WETLAND FLAGGING WAS NOT OBSERVED DURING THE FIELD SURVEY. AN OFFICIAL STUDY FOR THE PRESENCE OF WETLANDS WAS NOT CONDUCTED BY MONUMENT ENGINEERING GROUP ASSOCIATES.

EXISTING LEGEND



DECIDUOUS TREE, CONIFEROUS TREE, SHRUB
TREE LINE/ CANOPY
DITCH/ DRAINING COURSE
UG TELE, MH, TELE PED, CABLE PED
UG FIBER, PED, LINE MARKER, VAULT
UG ELEC, MH, TRANSFORMER, AC UNIT, METER
OH ELEC, UTIL POLE, GUY WIRE
GROUND LIGHT, POLE, POLE W/ ARM LT
LIGHT MH, LT CTRL BOX, PARK. METER, CAR CHARGER
ELEC HAND HOLE, OUTLET, SIGNAL MH, SIGNAL BOX
UG GAS, MH, VALVE, LINE MARKER
GAS WELL, METER, VENT
WATER MAIN, MH, VALVE IN BOX, HYDRANT, FDC
WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
IRRIGATION CONTROL VALVE, SPRINKLER HEAD
STORM SEWER, MH, CB, INLET, YARD DRAIN, DOWN SPOUT
CULVERT/ END SECTION
SANITARY SEWER, MH, CLEAN OUT
COMBINED SEWER, MH
STEAM LINE, MH
MISC. MANHOLE, HAND HOLE, HAND BOX
PARKING BLOCK, SIGN, FLAG POLE, POST, ROCK, MAIL BOX
SECTION LINE, SECTION CORNER
FOUND IRON ROD (FIR), FD MON, FD PK
SET IRON ROD (SIR), SET PK, MAG NAIL
FINISH FLOOR ELEVATION, SPOT ELEVATION
CONTOUR
FENCE
GUARD RAIL
RAILROAD SIGNAL, SIGNAL BOX
SOIL BORING
EX. ASPHALT
EX. CONCRETE
EX. GRAVEL

BENCHMARKS

DATUM: NAVD88
(BENCHMARKS ARE BASED OFF A CONTROL POINT THAT WAS ESTABLISHED WITH RTK GPS TIED TO MI CORS.)

BM A:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH FROM CENTERLINE W POLK ROAD & 33'± EAST FROM SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEV = 713.71

BM B:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH FROM CENTERLINE W POLK ROAD & 145'± WEST FROM SUBJECT'S SOUTHEAST PROPERTY CORNER.
ELEV = 714.98

MISCELLANEOUS NOTES

1. THERE IS INDIRECT ACCESS TO THE SUBJECT PROPERTY VIA AN EASEMENT DESCRIBED IN LIBER 2019, PAGE 8082. THERE MAY OR MAY NOT BE DIRECT ACCESS TO POLK ROAD FROM THE SUBJECT PARCEL.
2. THE LOCATIONS OF ALL UTILITIES SHOWN ON THE SURVEY ARE FROM VISIBLE SURFACE EVIDENCE AND PLANS OBTAINED FROM THE UTILITY OWNERS, IF AVAILABLE AT TIME OF SURVEY.
3. THE PROPERTY SURVEYED AND SHOWN HEREON IS THE SAME PROPERTY DESCRIBED IN SCHEDULE C OF TITLE AGENCY: FIRST AMERICAN TITLE INSURANCE COMPANY, TITLE COMMITMENT NO: NCS-1018767-MICH, EFFECTIVE DATE: JUNE 26, 2020.

BEARING REFERENCE

BEARINGS ARE BASED ON MICHIGAN STATE PLANE SOUTH, IFT.

CERTIFICATION

TO: AUTOZONE AND FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6(a), 6(b), 7(a), 7(b)(1), 7(c), 8, 9, 11, 13, 16, 17, 18, 19, 20 & 21 OF TABLE A THEREOF.

THE FIELD WORK WAS COMPLETED ON 11/9/2020.

MARC E. BUDZINSKI, PS
PROFESSIONAL SURVEYOR NO. 53492

11/11/2020
DATE OF PLAT OR MAP:

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

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

DRAFT

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

CLIENT :

AutoZone
123 S. Front Street
Memphis, TN 38103
PH: 901.495.7500

ALTA/NSPS LAND TITLE SURVEY

AUTOZONE STORE #1278
TAX ID: 020-818-400-10
PART OF SE 1/4, SEC. 18, T15N-R17W
CITY OF HART, OCEANA COUNTY, MICHIGAN

PLAN SUBMITTALS/REVISIONS	DATE

ORIGINAL ISSUE DATE: 9/2/2020

PROJECT NO: 20-121

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

FIELD: AJS
DRAWN BY: DC
DESIGN BY:
CHECK BY: MB

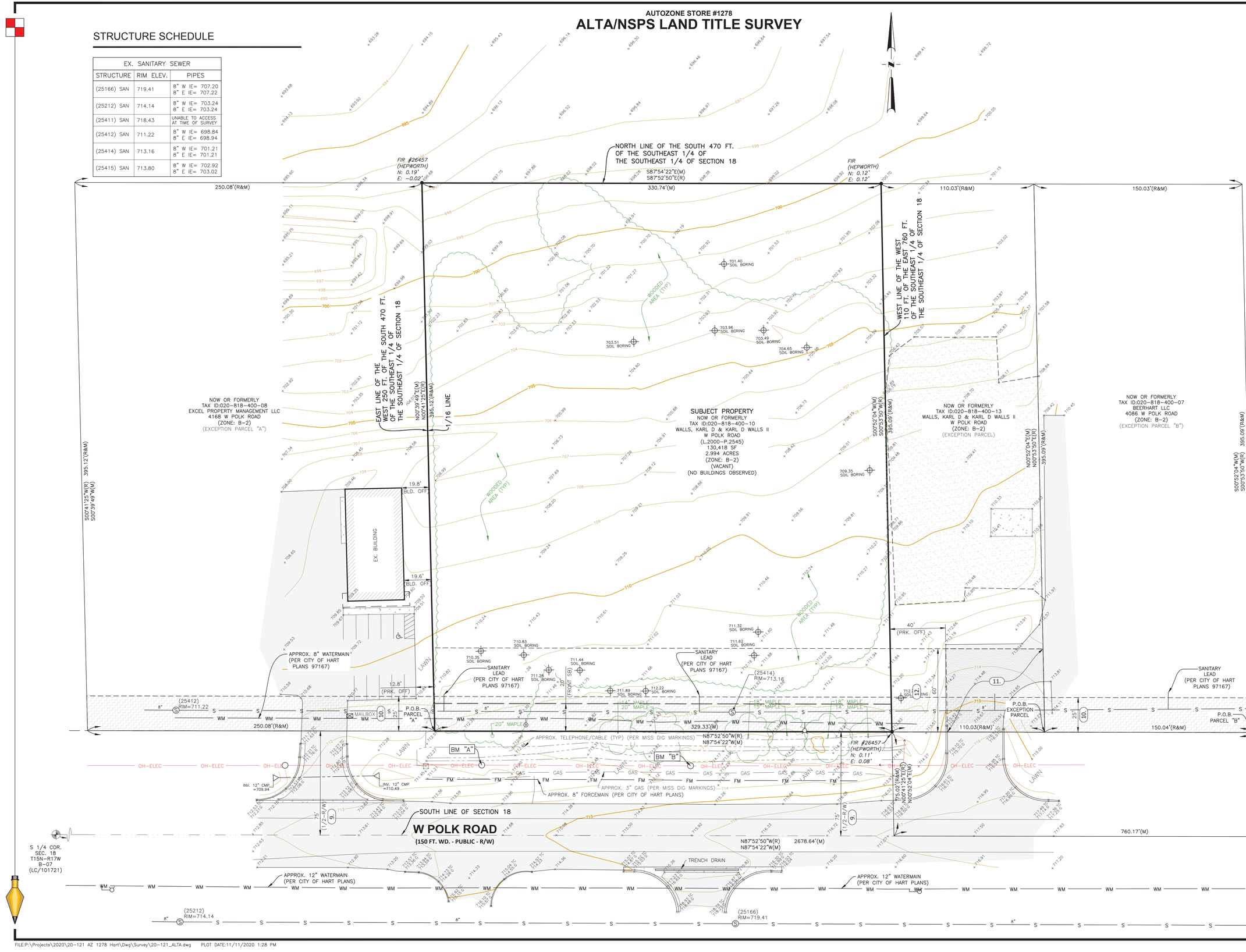
ALT-1

NOT FOR CONSTRUCTION

AUTOZONE STORE #1278
ALTA/NSPS LAND TITLE SURVEY

STRUCTURE SCHEDULE

EX. SANITARY SEWER		
STRUCTURE	RIM ELEV.	PIPES
(25166) SAN	719.41	8" W IE= 707.20 8" E IE= 707.22
(25212) SAN	714.14	8" W IE= 703.24 8" E IE= 703.24
(25411) SAN	718.43	UNABLE TO ACCESS, AT TIME OF SURVEY
(25412) SAN	711.22	8" W IE= 698.84 8" E IE= 698.94
(25414) SAN	713.16	8" W IE= 701.21 8" E IE= 701.21
(25415) SAN	713.80	8" W IE= 702.92 8" E IE= 703.02



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

CLIENT :

AutoZone

123 S. Front Street
Memphis, TN 38103
PH: 901.495.7686

ALTA/NSPS LAND TITLE SURVEY

AUTOZONE STORE #1278
TAX ID: 020-818-400-10
PART OF SE 1/4, SEC. 18, T15N-R17W
CITY OF HART, OCEANA COUNTY, MICHIGAN

DATE	PLAN SUBMITTALS/REVISIONS

ORIGINAL ISSUE DATE: 9/2/2020

PROJECT NO: 20-121

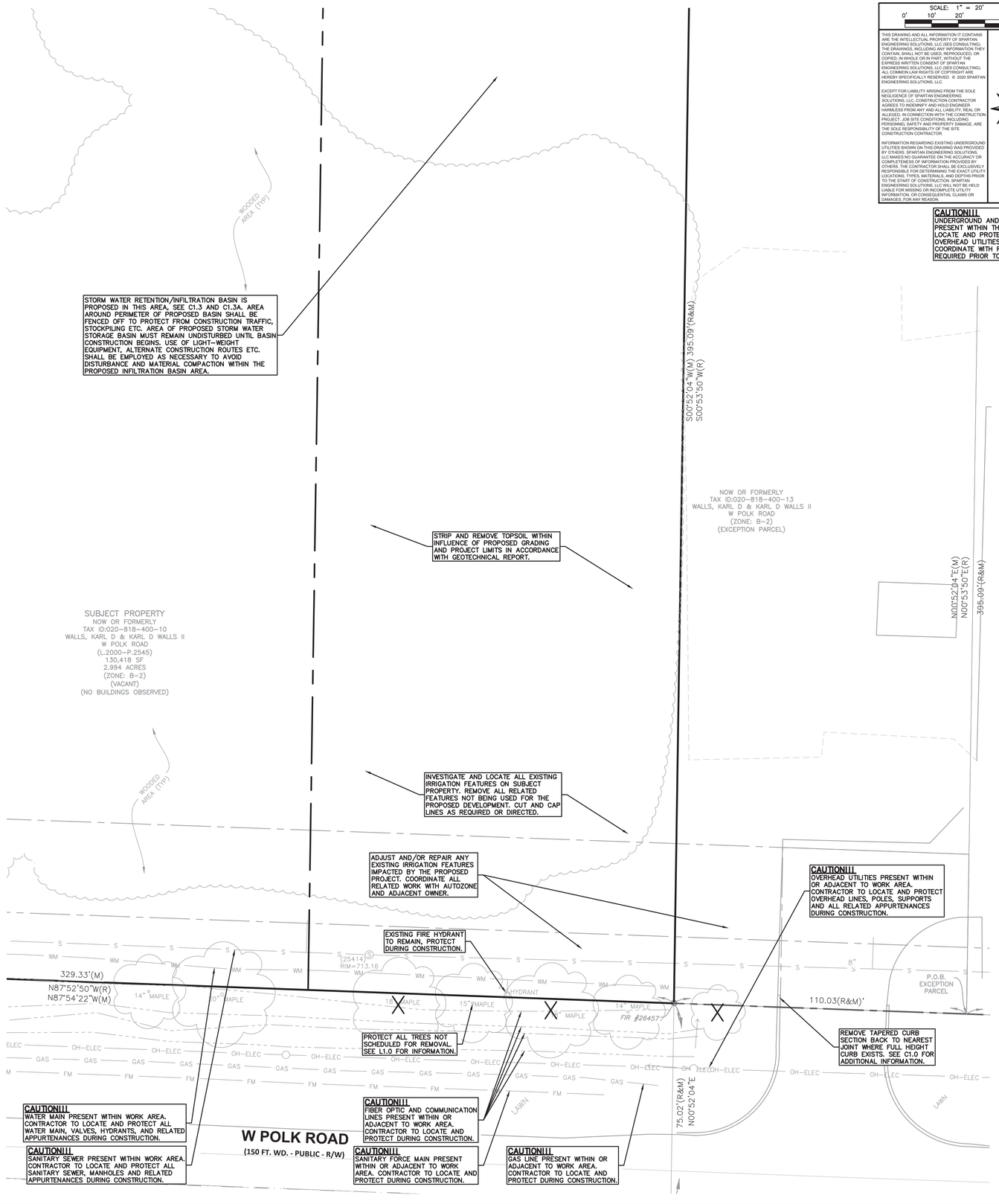
SCALE: 1" = 30'
0 1/2" 1"

FIELD: AJS
DRAWN BY: DC
DESIGN BY:
CHECK BY: MB

ALT-2

NOT FOR CONSTRUCTION

FILE:P:\Projects\2020\20-121 AZ 1278 Hart\Dwg\Survey\20-121_ALTA.dwg PLOT DATE:11/11/2020 1:28 PM



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

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PLAN NORTH

VICINITY MAP NOT TO SCALE



CAUTION!!! UNDERGROUND AND OVERHEAD UTILITIES ARE PRESENT WITHIN THE WORK AREA. CONTRACTOR TO LOCATE AND PROTECT ALL UNDERGROUND AND OVERHEAD UTILITIES DURING CONSTRUCTION. COORDINATE WITH RESPECTIVE UTILITY PROVIDERS AS REQUIRED PRIOR TO THE ONSET OF CONSTRUCTION.

THE CONSTRUCTION SPECIFIED WITHIN THESE PLANS SHALL BE PERFORMED IN COMPLETE COMPLIANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF HART, OCEANA COUNTY, MDOT, ALL APPLICABLE REFERENCE SPECIFICATIONS, INDEPENDENT UTILITY OWNERS, AND AUTOZONE PROJECT SPECIFICATIONS AS APPLICABLE.

DEMOLITION LEGEND:

REMOVE TREE OR BUSH INCLUDING ROOT SYSTEM

EXISTING FEATURES LEGEND

- DECIDUOUS TREE, CONIFEROUS TREE, SHRUB
- TREE LINE/ CANOPY
- DITCH/ DRAINING COURSE
- UG TELE, MH, TELE PED, CABLE PED
- UG FIBER, PED, LINE MARKER, VAULT
- UG ELEC, MH, TRANSFORMER, AC UNIT, METER
- OH ELEC, UTIL POLE, GUY WIRE
- GROUND LIGHT, POLE, POLE W/ ARM LT
- LIGHT MH, LT CTRL BOX, PH, BOOTH, PARK. METER
- ELEC HAND HOLE, OUTLET, SIGNAL MH, SIGNAL BOX
- UG GAS, MH, VALVE, LINE MARKER
- GAS WELL, METER, VENT
- WATER MAIN, MH, VALVE IN BOX, HYDRANT, FDC
- WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
- IRRIGATION CONTROL VALVE, SPRINKLER HEAD
- STORM SEWER, MH, CB, INLET, YARD DRAIN
- CULVERT/ END SECTION
- SANITARY SEWER, MH, CLEAN OUT
- COMBINED SEWER, MH
- STEAM LINE, MH
- MISC. MANHOLE, HAND HOLE, HAND BOX
- SIGN, FLAG POLE, GUARD POST, ROCK
- SECTION LINE, SECTION CORNER
- FOUND IRON ROD (FIR), FD MON, FD PK
- SET IRON ROD (SIR), SET PK, MAG NAIL
- SPOT ELEVATION
- CONTOUR
- FENCE
- GUARD RAIL
- RAILROAD SIGNAL, SIGNAL BOX
- ROW MARKER
- SOIL BORING

TREE REMOVAL NOTE:
PROTECT ALL EXISTING TREES NOT SHOWN FOR REMOVAL WITHIN THE PLANS. REMOVAL OF ANY ADDITIONAL TREES BEYOND THOSE SPECIFICALLY SHOWN IN THE CONTRACT DOCUMENTS MUST BE APPROVED BY THE CITY AND AUTOZONE PRIOR TO ANY DISTURBANCES. INSTALL TREE PROTECTION FENCING AROUND ALL TREE DRIPLINES FOR TREES THAT ARE SCHEDULED TO REMAIN. NO GRADING OR CONSTRUCTION OPERATIONS IS PERMITTED WITHIN ANY TREE DRIPLINE FOR TREES TO REMAIN.

NOTE:
PROTECT ALL EXISTING PAVEMENT AND CONCRETE CURB ADJACENT TO THE AUTOZONE SITE. CONTRACTOR SHALL REPAIR PAVEMENT OR CURB DAMAGED FROM HIS CONSTRUCTION OPERATIONS TO THE SATISFACTION OF THE PROPERTY OWNER AND/OR JURISDICTIONAL AUTHORITY. MATCH EXISTING PAVEMENT CROSS SECTIONS IF REPAIRS ARE REQUIRED. MATERIALS AND CONSTRUCTION PRACTICES SHALL CONFORM TO THE CONTRACT DOCUMENTS AND MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. ALL ASSOCIATED WORK FOR REPAIR OF PAVEMENT DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE AT THE SOLE COST OF THE CONTRACTOR.

GENERAL DEMOLITION NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT:

1. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL CITY, COUNTY AND STATE REGULATIONS.
2. WITHIN THE SUBJECT PROPERTY THE INTENT IS TO HAVE A CLEAN, CLEAR SITE FREE OF ALL EXISTING ITEMS NOTED TO BE REMOVED IN ORDER TO PERMIT THE CONSTRUCTION OF THE NEW PROJECT.
3. UNLESS OTHERWISE SHOWN, ALL ITEMS NOTED TO BE REMOVED SHALL BE DONE SO AS PART OF THE CONTRACT FOR GENERAL CONSTRUCTION.
4. REMOVE AND DISPOSE OF ALL PAVEMENT, CURB, DEBRIS, LANDSCAPING, UTILITIES, FOUNDATIONS, BUILDING COMPONENTS, AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF SITE LANDFILL.
5. THE CONTRACTOR SHALL SECURE ALL PERMITS FOR HIS DEMOLITION AND DISPOSAL OF HIS DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED.
6. THE DETAILED PLANS MAY NOT REFLECT ALL UTILITIES ON THE SITE OR SURROUNDING STREETS AND PROPERTIES. THE CONTRACTOR SHALL VERIFY LOCATIONS AND EXISTENCE OF UTILITY SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CALL MISS DIG AT 800-482-7171, OR 811, MINIMUM 72 HOURS PRIOR TO CONSTRUCTION. SEE C1.2 FOR ADDITIONAL UTILITY INFORMATION.
7. THE CONTRACTOR SHALL REMOVE ALL UTILITIES ON SITE NOT BEING USED FOR THE DEVELOPMENT, OR SERVICES THAT ARE FOR THE MEIJER DEVELOPMENT, TO EXISTING STRUCTURES WHETHER SHOWN OR NOT, OR ARRANGE FOR THE APPROPRIATE UTILITY COMPANY TO CUT AND CAP SERVICE PIPING AT THE PROPERTY LINE OR MAIN (AS REQUIRED). ALL SERVICES MAY NOT BE SHOWN ON THIS PLAN. SEE UTILITY PLAN C1.2 FOR ADDITIONAL INFORMATION.
8. FOR ALL ITEMS NOTED TO BE REMOVED, REMOVE NOT ONLY THE ABOVE GROUND ELEMENTS, BUT ALL UNDERGROUND FEATURES AS WELL INCLUDING BUT NOT NECESSARILY LIMITED TO: FOUNDATIONS, ROOTS, OLD PIPES, ETC.
9. BACKFILL ALL EXCAVATIONS RESULTING FROM THE DEMOLITION WORK TO MEET THE REQUIREMENTS FOR FILL OUTLINED IN THE GEOTECHNICAL REPORT.
10. THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING CONSTRUCTION. ANY DISTURBED PINS, MONUMENTS, ETC. RESULTING FROM CONTRACTOR'S WORK SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
11. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, PAVEMENT, CURB, SIDEWALK OR LANDSCAPED AREA DISTURBED DURING DEMOLITION TO THEIR ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER OR JURISDICTIONAL AUTHORITY.
12. ALL MATERIAL TO BE REMOVED, WHETHER SPECIFICALLY NOTED IN THE PLANS OR NOT, SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF OFF-SITE IN A LEGAL MANNER. NO ON-SITE BURY OR BURN PITS SHALL BE ALLOWED.
13. STAGING/PHASING OF DEMOLITION AND CONSTRUCTION IS TO BE COORDINATED WITH THE OWNER AND THE CONTRACTOR PRIOR TO CONSTRUCTION.
14. SPECIFIC DEMOLITION ITEMS HAVE BEEN INDICATED ON THE PLANS AS A GUIDE TO THE GENERAL SCOPE OF THE WORK. IT IS THE INTENT THAT THESE ITEMS SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR ABOVE AND BELOW GROUND, UNLESS SPECIFICALLY NOTED OTHERWISE, AND THAT DEMOLITION WILL INCLUDE BUT WILL NOT NECESSARILY BE LIMITED TO THESE ITEMS. CONTRACTOR SHALL VISIT SITE TO VERIFY EXISTING CONDITIONS AND EXTENTS OF THE DEMOLITION THAT WILL BE REQUIRED PRIOR TO SUBMITTING A BID.
15. REMOVE ALL STRUCTURES DESIGNATED FOR DEMOLITION ACCORDING TO THE DEMOLITION PLAN. THIS INCLUDES FOUNDATIONS (AS APPLICABLE), UNDERGROUND UTILITIES (AS INDICATED OR REQUIRED), TOPSOIL, GRAVEL, CURB, VEGETATION, ETC.
16. THE CONTRACTOR SHALL, AS A MINIMUM, PROVIDE TREE PROTECTION FENCING AROUND EXISTING TREES TO BE SAVED THAT ARE WITHIN 15' OF CONSTRUCTION ACTIVITIES AND AS INDICATED IN THE PLANS OR PER CITY OF HART REQUIREMENTS.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPING AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
18. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SIGNAGE, MARKINGS, LIGHTS AND OTHER TRAFFIC CONTROL DEVICES TO PROTECT THE WORK ZONE AND SAFELY MAINTAIN TRAFFIC PER CITY OF HART REQUIREMENTS, MACOMB COUNTY REQUIREMENTS, AND MDOT REQUIREMENTS, AND IN ACCORDANCE WITH THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) LATEST EDITION.
19. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES TO COORDINATE ALL UTILITY WORK.

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN
WESLEY R. BERLIN
ENGINEER
No. 55143
LICENSED PROFESSIONAL ENGINEER

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103

PROJECT: AUTOZONE HART MI1278
W. POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: DEMOLITION PLAN

C:\PROJECTS\2020-010 AUTOZONE HART MI1278\CIVIL\CONSTRUCTION\020-010-MI1278-20201116.DWG

SCALE: 1" = 20'

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REVISED:	
P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020
SHEET NO.	D1.0

PARKING INFORMATION

ITEM	REQUIRED	PROVIDED
PARKING REQUIRED	MINIMUM PARKING COUNT: 1 SPACE PER 300 SF GROSS FLOOR AREA 7,381/300 = 25 SPACES MINIMUM	27 SPACES
MIN. PARKING DIMENSIONS	9 FT x 20 FT	9 FT x 20 FT
MIN. DRIVE ISLE WIDTH	N/A	24 FT (MIN.)
ADA PARKING SPACES	2 SPACES	2 SPACES
LOADING SPACE	1 SPACE 12 FT x 25 FT	1 SPACE 24 FT x 25 FT
REFERENCE IS MADE TO THE CITY OF HART ZONING ORDINANCE		

SITE DATA SUMMARY

LOCATION: W. POLK ROAD WEST OF N. 72ND AVENUE
JURISDICTION: CITY OF HART, OCEANA COUNTY, MICHIGAN

ZONING DISTRICT: B-2 GENERAL BUSINESS DISTRICT

USE: AUTO PARTS RETAIL SALES

BUILDING INFORMATION:
GROSS FLOOR AREA = 7,381 SF (EXTERIOR FACE)
BUILDING HEIGHT = 19 FT TO TOP OF PARAPET WALL
NUMBER OF FLOORS = ONE

ITEM	REQUIRED	PROVIDED
MINIMUM FRONT SETBACK	20 FT	121.72 FT (SOUTH)
MINIMUM SIDE SETBACK	0 FT ABUTTING NON-RESIDENTIAL	46.17 (EAST, CANOPY) 11.00 (WEST)
MINIMUM REAR SETBACK	0 FT ABUTTING NON-RESIDENTIAL	156.60 FT (NORTH)
MAXIMUM BUILDING HEIGHT	35 FT	1 STORY/19 FT
MINIMUM LOT SIZE	N/A	54,325 SF
MINIMUM LOT WIDTH	N/A	137.50 FT
REFERENCE IS MADE TO THE CITY OF HART ZONING ORDINANCE		

PAVING LEGEND

- CONCRETE SIDEWALK. SEE PLANS AND DETAILS ON C1.A (FOR AROUND BUILDING).
- STANDARD DUTY CONCRETE PAVING. SEE DETAILS ON C1.A.
- HEAVY DUTY CONCRETE PAVING. SEE DETAILS ON C1.A.

*NOTE: REFER TO CURB DETAILS 1 AND 2 ON C1.A FOR ON-SITE AND CROSS ACCESS DRIVE CONCRETE PAVING AREAS.

SIGN LEGEND

SIGN TYPE	QNTY.
RESERVED PARKING	2
VAN ACCESSIBLE	2
STOP	3

SIDEWALK RAMP LEGEND AND NOTES

PLAN VIEW LOCATION:

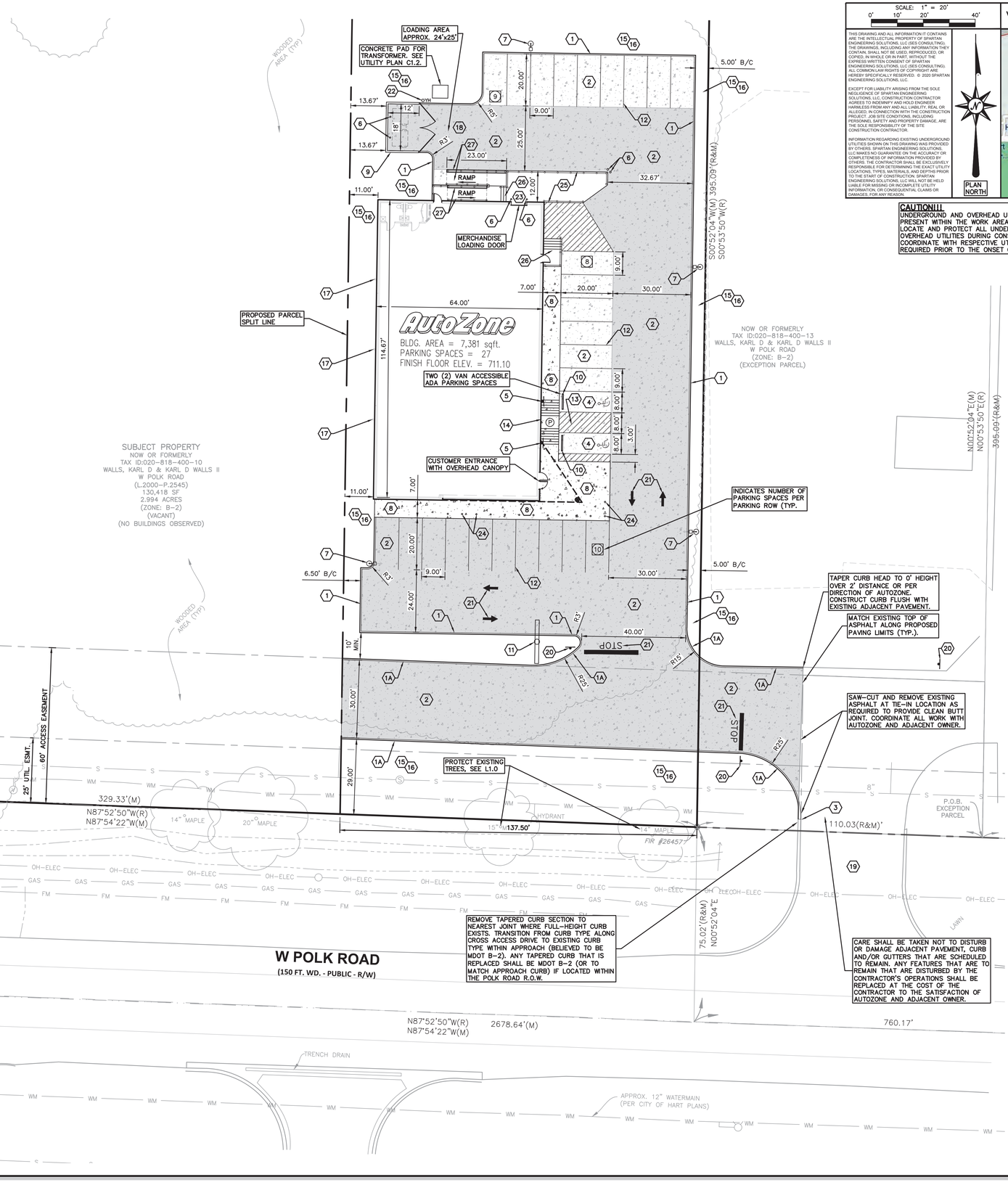
MDOT SIDEWALK RAMP 'TYPE P' (P)

NOTES:
1. REFER TO MDOT R-28-SERIES STANDARD PLANS FOR COMPLETE REQUIREMENTS. SEE DETAIL SHEETS.
2. SEE R-28-SERIES FOR DETECTABLE WARNING SYSTEM PLACEMENT AND RELATED DETAILS.
3. RAMP AND LANDING CONSTRUCTION SHALL CONFORM TO R-28-SERIES STANDARD PLANS.
4. TRANSITION GUTTER PAN AT BOTTOM OF RAMP TO PROVIDE A MAXIMUM 5.0% COUNTER SLOPE ACROSS RAMP OPENING. SEE R-28-SERIES 'SECTION THROUGH CURB OPENING' ON SHEET 2 OF 7 (APPLIES TO RAMPS AT CURB).
5. LANDINGS SHALL BE 5'X5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION (TYP.).
6. LANDING WIDTH SHALL MATCH RAMP WIDTH (TYP.). NO OBSTRUCTIONS ARE PERMITTED WITHIN LANDING AREA IF RESULTING CLEAR WIDTH WOULD BE LESS THAN RAMP WIDTH.
7. MAXIMUM PERMISSIBLE SIDEWALK OR RAMP TRANSVERSE SLOPE IS 2%.
8. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET OR VEHICULAR TRAFFIC AREA.
9. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB PER PLANS AND DETAILS. ALIGN THE ROWS OF DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET OR VEHICULAR TRAFFIC AREA.

GENERAL NOTES:

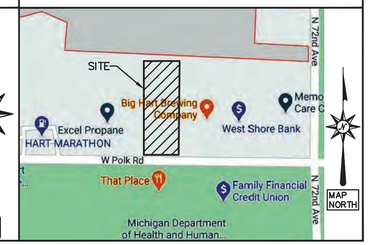
THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT:

1. ALL DIMENSIONS SHOWN ARE TO EDGE OF PAVEMENT, FACE OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
2. ALL DISTURBANCES INCURRED TO ANY ADJOINING PROPERTY DUE TO CONSTRUCTION OR DEMOLITION SHALL BE RESTORED TO THE PREVIOUS CONDITION OR BETTER, AND TO THE SATISFACTION OF THE OWNER, MUNICIPALITY, OR STATE AUTHORITY.
3. PROPERTY LINE AND RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTOR'S EXPENSE BY A LICENSED LAND SURVEYOR.
4. BUILDING DIMENSIONS SHOWN ON THESE CIVIL PLANS ARE FOR REFERENCE ONLY. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR PRECISE BUILDING DIMENSIONS.
5. PROOF ROLL BUILDING AND ALL PARKING AREAS. NOTIFY AUTOZONE INC. OF ANY UNACCEPTABLE AREAS. SEE PROJECT SPECIFICATIONS.
6. ALL WORK WITHIN THE W. POLK ROAD RIGHT-OF-WAY SHALL CONFORM TO THE REQUIREMENTS OF MDOT. A PERMIT IS REQUIRED FROM MDOT PRIOR TO ANY WORK WITHIN THE RIGHT-OF-WAY.
7. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION TO AUTOZONE INC. AND THE CITY OF HART (AS REQUIRED) AT THE END OF CONSTRUCTION.
8. IF REQUIRED BY THE FIRE OFFICIAL, 'NO PARKING-FIRE LANE' SIGNS SHALL BE POSTED ALONG ALL FIRE LANES AT 100 FOOT INTERVALS OR AS DIRECTED.
9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF HART, OCEANA COUNTY (AS APPLICABLE), MDOT CURRENT STANDARDS AND REGULATIONS, AND THE CONTRACT DOCUMENTS AS APPLICABLE.
10. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
11. CHAPTER 14 OF THE IFC (FIRE SAFETY DURING CONSTRUCTION) SHALL BE ADHERED TO DURING ALL CONSTRUCTION ACTIVITIES FOR THIS PROJECT.
12. CONTRACTOR TO MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH CITY OF HART, MDOT AND MMUTCD REQUIREMENTS. CONTRACTOR SHALL PREPARE AND SUBMIT ALL TRAFFIC CONTROL AND TRAFFIC MANAGEMENT PLANS AS REQUIRED BY THE CITY OF HART AND/OR MDOT, AND OBTAIN ALL NECESSARY APPROVALS PRIOR TO ANY TRAFFIC IMPACTS AS APPLICABLE TO THIS PROJECT.
13. REFER TO SHEET C1.A FOR ON SITE CONSTRUCTION DETAILS.
14. REFER TO DETAIL SHEETS FOR ALL OTHER CONSTRUCTION DETAILS.
15. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST THE TOP OF ALL EXISTING AND PROPOSED STRUCTURES (DRAINAGE STRUCTURES, SANITARY STRUCTURES, GATE WELLS, CURB STOPS ETC.) WITHIN GRADED AND/OR PAVED AREAS TO FINAL GRADE SHOWN ON THE PLANS, WHETHER OR NOT SAID STRUCTURE IS IDENTIFIED FOR ADJUSTMENT. ALL SUCH STRUCTURE ADJUSTMENTS SHALL BE INCIDENTAL TO THE JOB AND WILL NOT BE PAID FOR SEPARATELY.



SCALE: 1" = 20'

VICINITY MAP NOT TO SCALE



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NOTE:
PROTECT ALL EXISTING PAVEMENT AND CONCRETE CURB ADJACENT TO THE AUTOZONE SITE. CONTRACTOR SHALL REPAIR PAVEMENT OR CURB DAMAGED FROM HIS CONSTRUCTION OPERATIONS TO THE SATISFACTION OF THE PROPERTY OWNER AND/OR JURISDICTIONAL AUTHORITY. MATCH EXISTING PAVEMENT CROSS SECTIONS IF REPAIRS ARE REQUIRED. MATERIALS AND CONSTRUCTION PRACTICES SHALL CONFORM TO MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE CONTRACT DOCUMENTS. ALL ASSOCIATED WORK FOR REPAIR OF PAVEMENT OR CURB DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE AT THE SOLE COST OF THE CONTRACTOR.

KEYNOTES

BUILDING AND PAVING:

1. ON-SITE CONCRETE CURB – SEE DETAIL 1 / C1.A
1A. CROSS ACCESS DRIVE CONCRETE CURB – SEE DETAIL 2 / C1.A
2. CONCRETE PAVING – SEE DETAIL 4/C1.A. EXPANSION AND CONTROL JOINTS – SEE DETAILS 21 & 22/C1.A. MAXIMUM SPACING FOR CONTROL JOINTS IS 15'-0" O.C. EACH WAY.
3. TIE INTO AND MATCH EXISTING ADJACENT CURB. PROVIDE DRILLED DOWELED EXPANSION JOINT AT ALL INTERFACES WITH EXISTING CURB.
4. ADA PARKING AREA, 2% MAX. SLOPE ANY DIRECTION (TYP.) – SEE DETAILS 6 & 7/C1.A
5. ADA PARKING SIGN – SEE DETAIL 12/C1.A. INCLUDE 'VAN ACCESSIBLE' SIGN FOR EACH.
6. PIPE GUARD–SEE DETAILS 8, 14, 15, & 16/C1.A.
7. LIGHT POLE WITH CONCRETE BASE. AIM FIXTURE IN DIRECTION INDICATED. SEE DETAIL 13/C1.A.
8. 6" HT. INTEGRAL CONCRETE CURB AND WALK. SEE DETAIL 19 & 20/C1.A FOR SIDEWALK AROUND BUILDING
9. DUMPSTER ENCLOSURE – 6' HIGH ENCLOSURE WITH SWING GATE. WALL MATERIALS AND COLORS TO MATCH BUILDING. SEE DETAILS 8,9,10,11/C1.A.
10. 6'-0" LONG CONCRETE WHEEL STOP, PINNED TO PAVEMENT – SEE DETAIL 17/C1.A. LOCATE 2'-0" FROM FACE OF CURB OR SIDEWALK.
11. PYLON SIGN 4'-4.75" x 16'-9", 20' OVERALL HEIGHT. SEE SIGNAGE PLANS (UNDER SEPARATE PERMIT).
12. 4" WIDE PARKING STRIPE PAINTED WHITE (TYP.)
13. 4" WIDE DIAGONAL STRIPES AT 2 FT. O.C. SEE C1.A FOR ADA PARKING STRIPING. PAINT WHITE ELSEWHERE
14. CONCRETE ADA RAMP PER MDOT AND ADA REQUIREMENTS. OMIT INTEGRAL CURB FOR MDOT TYPE 'P' RAMP(S) AT BUILDING. MAXIMUM SLOPE 1:12 (8.33%) (PER A.D.A. REQUIREMENTS). MAXIMUM CROSS SLOPE 1:50 (2.00%). DETECTABLE WARNING SURFACES SHALL BE INSTALLED, CONTRASTING IN COLOR, PER ADA REQUIREMENTS.
15. NEW LANDSCAPE AREA – PROVIDE SOD AND 3" TOPSOIL TO ALL NEW AND/OR DISTURBED LAWN AREAS ON SITE UNLESS OTHERWISE SHOWN. ALL SOD LAWN AREAS SHALL RECEIVE PERMANENT UNDERGROUND IRRIGATION SYSTEM PER OWNER SPECIFICATIONS UNLESS OTHERWISE SHOWN OR DIRECTED. SEE C1.1A FOR COMPLETE RESTORATION REQUIREMENTS.
16. SLOPE GRADE IN LANDSCAPE AREA PER GRADING PLANS. PROVIDE POSITIVE SURFACE DRAINAGE FOR ALL AREAS.
17. APPROXIMATE LOCATION FOR BUILDING DOWNSPOUT. PROVIDE CONCRETE SPLASH BLOCK WITH RIP RAP AT EACH DOWNSPOUT OUTLET. SEE DETAIL 3/C1.A, AND RELATED DETAILS ON C1.C. COORDINATE WITH ROOF PLAN FOR EXACT LOCATIONS OF DOWNSPOUTS.
18. LOADING AREA. SLOPE AWAY FROM BUILDING PER GRADING PLAN SHEET C1.1.
19. EXISTING DRIVE APPROACH TO REMAIN. PROTECT ALL CURB AND PAVING DURING CONSTRUCTION.
20. STOP SIGN – SEE DETAIL 26/C1.A
21. PAVEMENT MARKINGS – SEE DETAIL 24 & 25/C1.A
22. FREEZELESS YARD HYDRANT. PROVIDE APPROPRIATE BACK FLOW PREVENTION AS REQUIRED BY MUNICIPALITY. SEE DETAIL 4/SHEET M2.
23. SERVICE DOOR PLAN – SEE DETAIL 15/C1.A
24. BOLLARD PLAN FOR STOREFRONT – SEE DETAIL 14/C1.A.
25. ELEVATED CONCRETE LOADING DOCK. SEE DETAILS ON C1.B, AND STRUCTURAL PLANS.
26. CONCRETE STEPS WITH HAND RAILING. SEE DETAIL ON C1.B. SEE C1.1 FOR PROPOSED GRADING INFORMATION.
27. CONCRETE RAMP WITH ADJACENT POURED CONCRETE WALL AND HAND RAILING. SEE DETAILS ON C1.B. SEE C1.1 FOR PROPOSED GRADING INFORMATION. SEE STRUCTURAL FOR RETAINING WALL INFORMATION.

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN
WESLEY R. BERLIN
ENGINEER
No. 55143
LICENSED PROFESSIONAL ENGINEER

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103

PROJECT: AUTOZONE #6278
W. POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: SITE PLAN

C:\PROJECTS\2020-010_AUTOZONE_HART_MI\278\DWG\CONSTRUCTION\C04-C1.0-MI278-2020.DWG

SCALE: 1" = 20'

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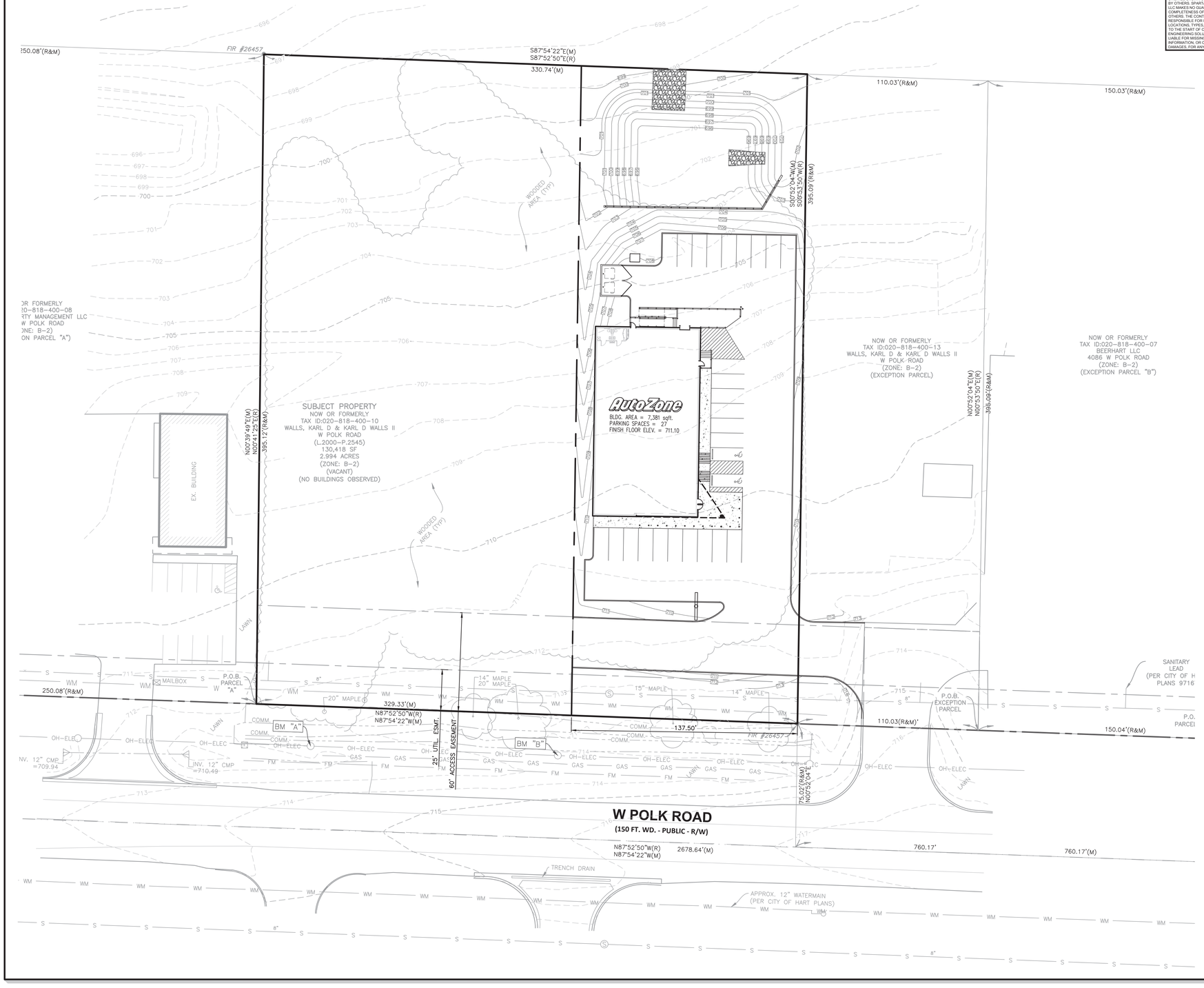
REVISED:

P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020
SHEET NO.	C1.0

BENCHMARKS: (NAVD88 DATUM)
(PER ALTA/NSPS LAND TITLE SURVEY)

BM A:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH FROM CENTERLINE W POLK ROAD & 33'± EAST FROM SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEV = 713.71

BM B:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH FROM CENTERLINE W POLK ROAD & 145'± WEST FROM SUBJECT'S SOUTHEAST PROPERTY CORNER.
ELEV = 714.98



SCALE: 1" = 30'
0' 15' 30' 60'

VICINITY MAP NOT TO SCALE



PLAN NORTH

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PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103

PROJECT: AUTOZONE HART MI#278
W POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: OVERALL SITE LAYOUT

G:\PROJECTS\2020-010 AUTOZONE HART MI#278\DWG\CONSTRUCTION\2064-(C1.0A)-MI278-20010.DWG

SCALE: 1" = 30'

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BENCHMARKS: (NAVD88 DATUM)
(PER ALTA/NSPS LAND TITLE SURVEY)

BM A:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH
FROM CENTERLINE W POLK ROAD & 33'± EAST
FROM SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEV = 713.71

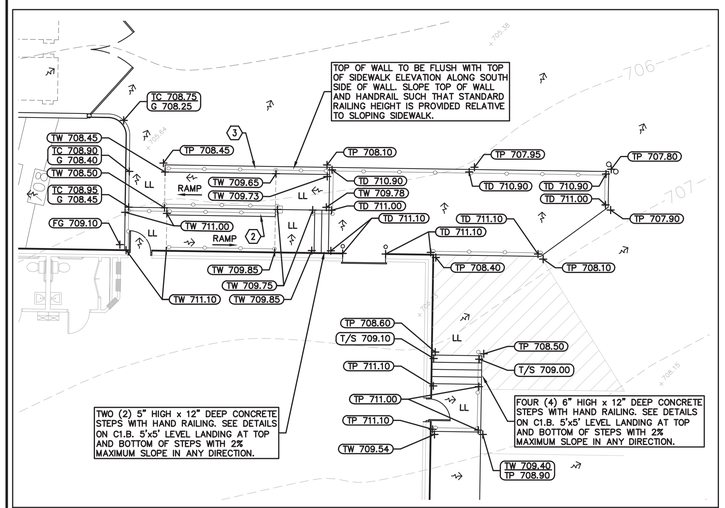
BM B:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH
FROM CENTERLINE W POLK ROAD & 145'± WEST
FROM SUBJECT'S SOUTHEAST PROPERTY CORNER.
ELEV = 714.98

EARTHWORK BALANCING NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPORTING OR EXPORTING ALL MATERIALS AS REQUIRED TO PROPERLY GRADE THIS PROJECT TO THE FINISHED ELEVATIONS SHOWN ON THE APPROVED PLANS. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF CUT AND FILL QUANTITIES AND ALLOW FOR REMOVAL OF EXCESS OR IMPORTATION OF ADDITIONAL MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

RESTORATION NOTE:

THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY HIS CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER, AND TO THE SATISFACTION OF THE OWNER. LANDSCAPE AREAS REQUIRING RESTORATION SHALL INCLUDE MIN. 3" TOPSOIL AND SOD, UNLESS OTHERWISE SPECIFICALLY DESIGNATED FOR SEED RESTORATION. PAVEMENT AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, WITH THE APPLICABLE CROSS-SECTION TO MATCH EXISTING.



NOTES:

1. SEE C1.0 SITE PLAN, AND DETAILS ON C1.B FOR RELATED INFORMATION.
2. LEVEL LANDING WITH 2% MAXIMUM SLOPE IN ANY DIRECTION SHALL BE PROVIDED AT THE TOP AND BOTTOM OF ALL RAMPS AND STEPS AS SHOWN. LEVEL LANDINGS AREAS ARE SHOWN ABOVE WITH THE LABEL 'LL'.

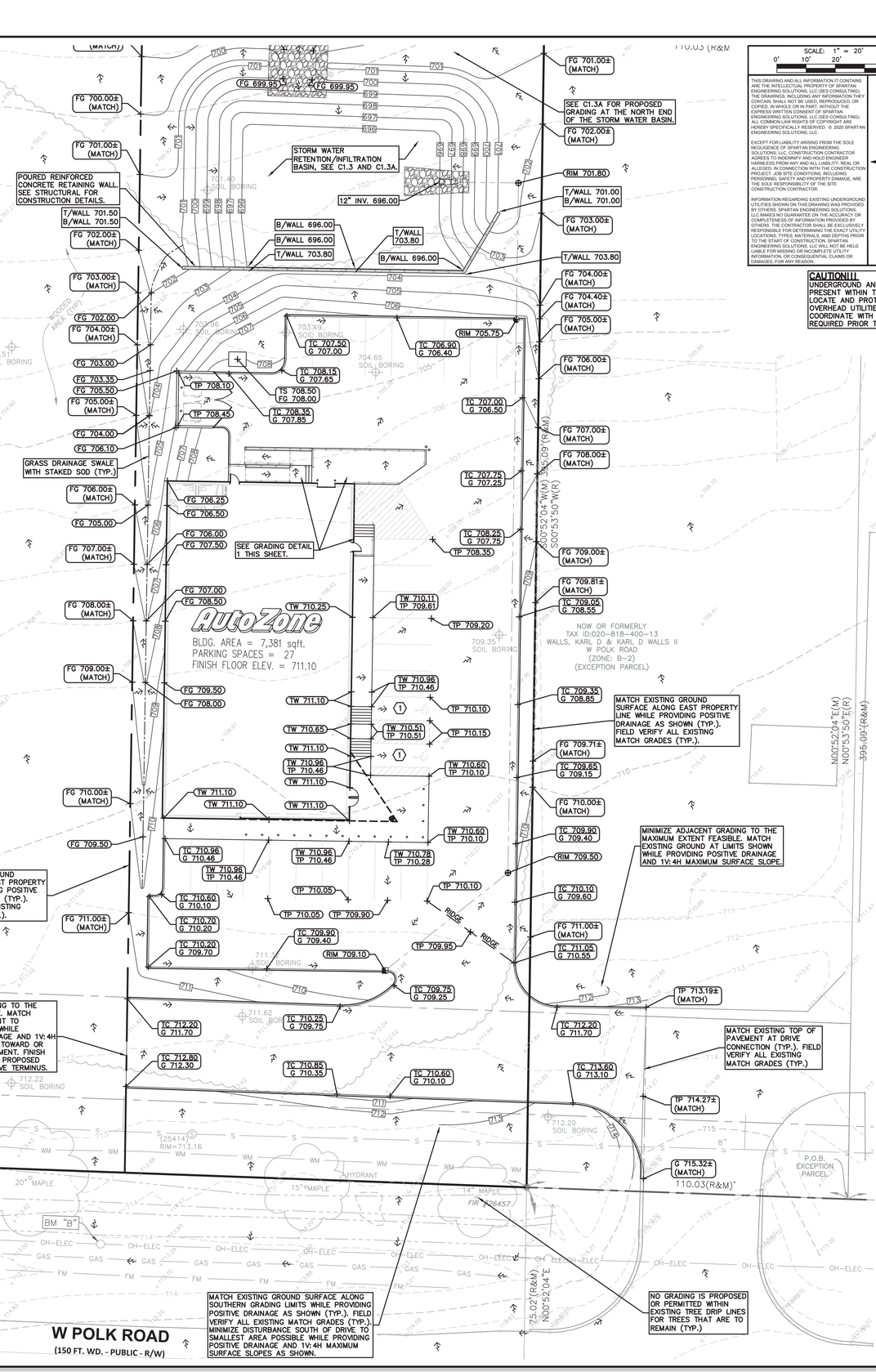
KEYNOTES

(2) TOP OF WALL TO BE FLUSH WITH TOP OF SIDEWALK ELEVATION ON UPPER (SOUTH) RAMP. SLOPE TOP OF WALL AND HANDRAIL SUCH THAT WALL REMAINS FLUSH AND STANDARD RAILING HEIGHT IS PROVIDED DOWN RAMP SLOPE.

(3) TOP OF WALL TO BE FLUSH WITH TOP OF SIDEWALK ELEVATION ON LOWER (NORTH) RAMP. SLOPE TOP OF WALL AND HANDRAIL SUCH THAT WALL REMAINS FLUSH AND STANDARD RAILING HEIGHT IS PROVIDED DOWN RAMP SLOPE.

GRADING DETAIL 1: LOADING DOCK AREA

SCALE:1" = 10'



PROPOSED FEATURES LEGEND

WATER MAIN	
WATER SERVICE	
FIRE HYDRANT	
WATER SERVICE SHUTOFF	GATE VALVE AND BOX
WATER WELL	W
STORM SEWER	
STORM MANHOLE	
STORM INLET	
STORM CATCH BASIN	
FLARED END SECTION	
NYLOPLAST YARD DRAIN	
STORM STRUCTURE ID	MH 4
SANITARY SEWER	
SANITARY MANHOLE	
SANITARY STRUCTURE ID	MH A
CLEANOUT (SAN. OR ST.)	
SIGN	
GRASS DRAINAGE SWALE	

KEYNOTES

GRADING AND DRAINAGE:

(1) 2% MAX. SLOPE IN ANY DIRECTION IS REQUIRED WITHIN ADA PARKING AREA PER GRADES INDICATED.

GRADING AND DRAINAGE LEGEND:

710.00 PROPOSED SPOT GRADE ELEVATION

TP = TOP OF PAVEMENT
TW = TOP OF WALK
TC = TOP OF CURB
G = GUTTER
FG = FINISH GRADE
FF = FINISH FLOOR
TS = TOP OF TRANSFORMER SLAB
T/S = TOP OF CONCRETE STEP
TD = TOP OF ELEVATED DOCK PAVEMENT
T/WALL = FINISH GRADE AT TOP OF RETAINING WALL
B/WALL = FINISH GRADE AT BOTTOM OF RETAINING WALL
--> = OVERLAND FLOW DIRECTION

EXISTING FEATURES LEGEND

DECIDUOUS TREE, CONIFEROUS TREE, SHRUB
TREE LINE/ CANOPY
DITCH/ DRAINING COURSE
UG TELE, MH, TELE PED, CABLE PED
UG FIBER, PED, LINE MARKER, VAULT
UG ELEC, MH, TRANSFORMER, AC UNIT, METER
OH ELEC, UTIL POLE, GUY WIRE
GROUND LIGHT, POLE, POLE W/ ARM LT
LIGHT MH, LT CTRL BOX, PH, BOOTH, PARK. METER
ELEC HAND HOLE, OUTLET, SIGNAL MH, SIGNAL BOX
UG GAS, MH, VALVE, LINE MARKER
GAS WELL, METER, VENT
WATER MAIN, MH, VALVE IN BOX, HYDRANT, FDC
WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
IRRIGATION CONTROL VALVE, SPRINKLER HEAD
STORM SEWER, MH, CB, INLET, YARD DRAIN
CULVERT/ END SECTION
SANITARY SEWER, MH, CLEAN OUT
COMBINED SEWER, MH
STEAM LINE, MH
MISC. MANHOLE, HAND HOLE, HAND BOX
SIGN, FLAG POLE, GUARD POST, ROCK
SECTION LINE, SECTION CORNER
FOUND IRON ROD (FIR), FD MON, FD PK
SET IRON ROD (SIR), SET PK, MAG NAIL
SPOT ELEVATION
CONTOUR
FENCE
GUARD RAIL
RAILROAD SIGNAL, SIGNAL BOX
ROW MARKER
SOIL BORING

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

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VICINITY MAP NOT TO SCALE



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GENERAL GRADING AND EARTHWORK NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT:

1. THE STAGING OF CONSTRUCTION ACTIVITIES SHALL OCCUR ONLY WITHIN THE SITE BOUNDARIES OR EASEMENTS AS SHOWN UNLESS OTHERWISE APPROVED BY THE GOVERNING AUTHORITY. ANY CONSTRUCTION ACTIVITIES OUTSIDE OF THE SCOPE OF THESE DRAWINGS SHALL BE AT THE SOLE RESPONSIBILITY AND RISK OF THE CONTRACTOR. ANY WORK BEYOND THE SCOPE OF THESE DRAWINGS ARE SUBJECT TO THE APPROVAL OF AUTOZONE, AND THE APPROPRIATE GOVERNING AUTHORITY.
2. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL MEET THE REQUIREMENTS OF THE OCEANA COUNTY DRAIN COMMISSIONER. AN EROSION CONTROL PERMIT (OR PERMIT WAIVER) MUST BE SECURED FROM THE OCEANA COUNTY DRAIN COMMISSIONER PRIOR TO THE ONSET OF CONSTRUCTION. REFER TO C1.1A FOR INFORMATION.
3. THE CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL ENGINEERING REPORT FROM THE OWNER. ALL EARTHWORK AND GRADING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED THEREIN.
4. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SODDED IN ACCORDANCE WITH THE PLANS AND CONTRACT DOCUMENTS. PROVIDE A MINIMUM OF 3" OF TOPSOIL IN THESE AREAS UNLESS OTHERWISE NOTED OR APPROVED. ALL AREAS SHALL BE SOD UNLESS OTHERWISE INDICATED.
5. BACKFILL FOR EXISTING AND PROPOSED UTILITY TRENCHES SHALL BE THOROUGHLY EXAMINED BY THE CONTRACTOR. ANY TRENCH FOUND TO HAVE SOFT, UNSTABLE OR UNSUITABLE BACKFILL MATERIAL, IN THE OPINION OF THE GEOTECHNICAL ENGINEER, THAT ARE TO BE WITHIN THE ZONE OF INFLUENCE OF PROPOSED BUILDINGS OR PAVEMENT SHALL BE COMPLETELY EXCAVATED AND BACKFILLED WITH GRANULAR BACKFILL PER MDOT AND GEOTECHNICAL REPORT REQUIREMENTS.
6. IF SUITABLE AND APPROVED BY AUTOZONE, TOPSOIL MAY BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING.
7. ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS SHALL CONFORM TO THE CONTRACT DOCUMENTS AND APPLICABLE SECTIONS OF AUTOZONE INC. SPECIFICATIONS, MDOT STANDARDS AND SPECIFICATIONS, AND THE GEOTECHNICAL ENGINEERING REPORT. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL MEET THE REQUIREMENTS OF THE GEOTECHNICAL REPORT AND SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF SAID REPORT UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. COMPACTION SHALL BE 95% MAXIMUM MODIFIED PROCTOR DENSITY PER ASTM D 1557 WITHIN 3 PERCENT OF OPTIMUM MOISTURE CONTENT, UNLESS OTHERWISE NOTED OR APPROVED.
8. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND 3" OF TOPSOIL APPLIED. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON THE SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. ALL DISTURBED AREAS SHALL BE FERTILIZED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH AND PERMANENT STABILIZATION ARE ESTABLISHED IN ALL AREAS PER THE PROJECT CONTRACT DOCUMENTS. ANY AREAS DISTURBED OR NOT SUFFICIENTLY GROWING TURF FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
9. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL BE PROVIDED A COPY OF THESE PLANS AND STRICTLY ADHERE TO THEIR REQUIREMENTS.
10. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES AND OFFICE TRAILERS (AS APPLICABLE TO THIS PROJECT). THE EXACT LOCATIONS SHALL BE COORDINATED WITH THE OWNER'S CONSTRUCTION MANAGER.
11. ALL WASH WATER FROM CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC. SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT BETWEEN THESE MATERIALS AND STORM WATER THAT IS DISCHARGED FROM THE SITE.
12. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS TO CONTAIN AND CLEAN UP FUEL OR CHEMICAL SPILLS AND LEAKS.
13. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE BURIED OR DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
14. TEMPORARY AND FINAL STABILIZATION MUST OCCUR IN A MANNER TO PREVENT EROSION AND SEDIMENT TRANSPORT. REFER TO C1.1A FOR TIMING REQUIREMENTS.
15. DISTURBED AREAS THAT WILL BE IDLE OVER THE WINTER MUST BE PERMANENTLY STABILIZED WITH SOD, OR TEMPORARILY STABILIZED IN ACCORDANCE WITH MDOT, CITY OF HART, AND OCEANA COUNTY REQUIREMENTS.
16. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY WILL CEASE FOR AT LEAST 14 DAYS SHALL BE TEMPORARILY SEEDED. THESE AREAS SHALL BE SEEDED NO LATER THAN 5 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS, OR SOONER IF SUSCEPTIBLE TO EROSION OR SEDIMENT TRANSPORT DUE TO WEATHER OR SOIL CONDITIONS. IF EROSION OR SEDIMENT TRANSPORT OCCUR, IMMEDIATE STABILIZATION AND CLEANUP ARE REQUIRED.
17. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY SEEDED OR SODDED IN ACCORDANCE WITH THE PLANS. THESE AREAS SHALL BE RESTORED NO LATER THAN 5 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS, OR SOONER IF CONDITIONS AND WEATHER DEMAND. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING EROSION AND SEDIMENT TRANSPORT FOR THE DURATION OF THIS PROJECT.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITE WORK OR EARTHWORK OPERATIONS, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND PERMANENT GROUND COVER IS ESTABLISHED. REFER TO SHEET C1.1A FOR REQUIREMENTS.
20. TOPS OF STOCKPILES SHALL BE COVERED IN SUCH A MANNER THAT STORMWATER DOES NOT INFILTRATE THE MATERIALS AND THEREBY RENDER THE MATERIALS UNSUITABLE FOR THEIR INTENDED USE.
21. DISPOSAL OF ALL DEMOLITION MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR. MATERIALS MUST BE TAKEN OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL MUNICIPAL REQUIREMENTS.

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PROJECT: AUTOZONE HART MI11278
W POLK ROAD (WEST OF N. 72nd AVE.)
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: GRADING PLAN

C:\PROJECTS\2020-010 AUTOZONE HART MI\27PLOTS\CONSTRUCTION\2020-010-GP-C1-1-GRADING PLAN.DWG

SCALE: 1" = 20'

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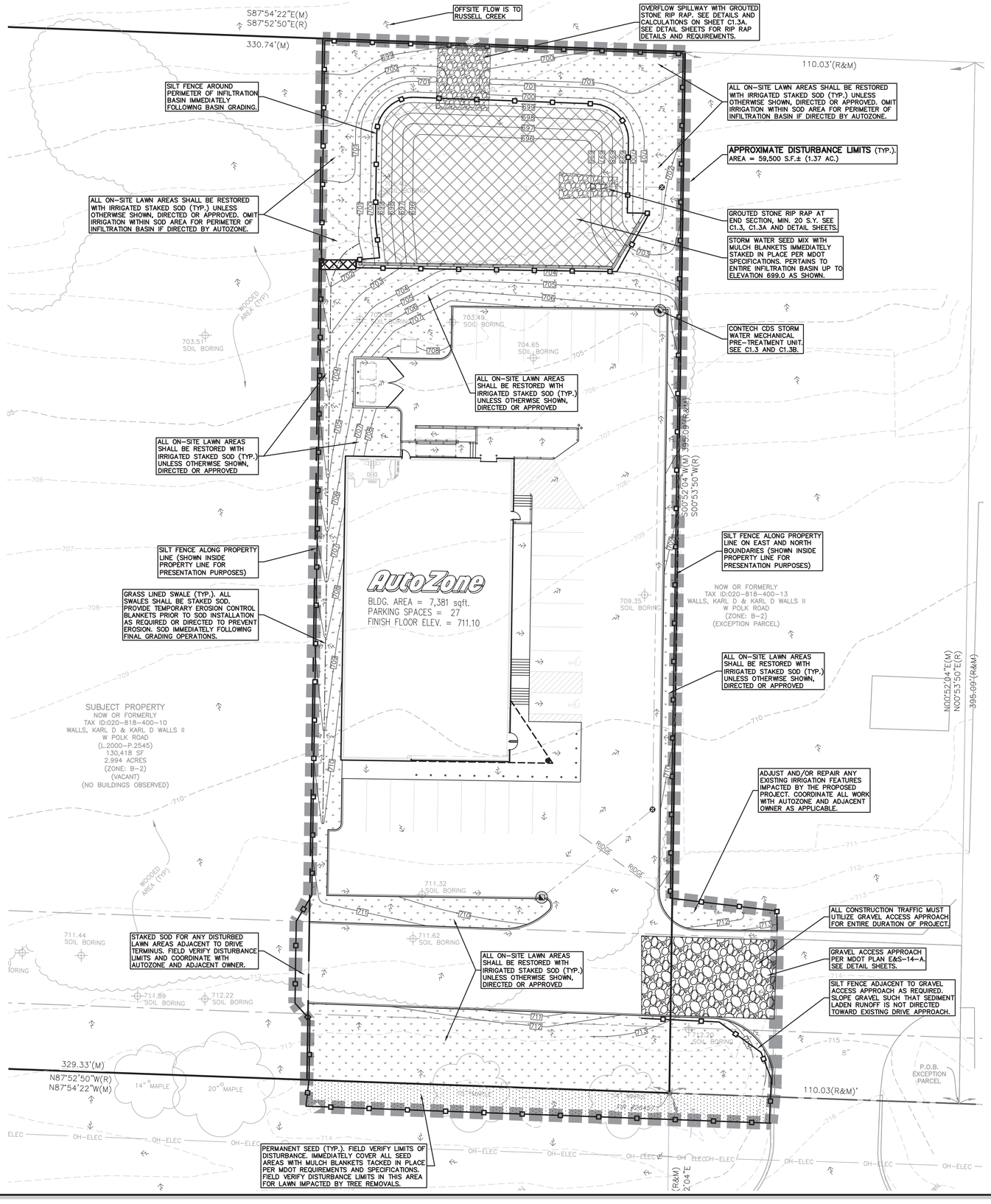

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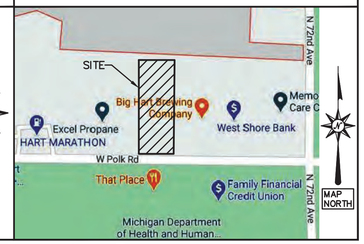
PLAN NORTH

VICINITY MAP NOT TO SCALE



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CLEANING SCHEDULE:
(MINIMUM FREQUENCY, OR AS CONDITIONS DEMAND)

	DAILY	WEEKLY
SCRAPE, CLEAN OR SWEEP PAVEMENT	X	
CLEAN STORM SYSTEM STRUCTURES AND PIPING, DRAINAGE SWALES		X

EROSION CONTROL LEGEND:

- SILT FENCE — MICHIGAN DMB KEY S51
- INLET PROTECTION FABRIC DROP SILTSACK® OR EQUIVALENT — MICHIGAN DMB KEY S58
- TEMPORARY DITCH SEDIMENT TRAP — MICHIGAN DMB KEY S56
- GROUTED STONE RIP RAP (GROUTED UNLESS OTHERWISE NOTED) — MICHIGAN DMB KEY E12
- GRAVEL ACCESS APPROACH — MICHIGAN DMB KEY S53

NOTE: SEE DETAIL SHEETS FOR ALL CONSTRUCTION DETAILS.

PERMANENT GROUND COVER RESTORATION:

- PERMANENT SEED — MICHIGAN DMB KEY E8 (SEEDING); MICHIGAN DMB KEY E9 (MULCH BLANKETS); CONSTRUCT PER MDOT SECTION 816; ALL MATERIALS PER MDOT SECTION 917
- STAKED SOD, IRRIGATED UNLESS OTHERWISE NOTED OR DIRECTED BY AUTOZONE — MICHIGAN DMB KEY E10; CONSTRUCT PER MDOT SECTION 816; ALL MATERIALS PER MDOT SECTION 917
- MDOT APPROVED STORM WATER SEED MIX — MICHIGAN DMB KEY E8 (SEEDING); MICHIGAN DMB KEY E9 (MULCH BLANKETS); CONSTRUCT PER MDOT SECTION 816; ALL MATERIALS PER MDOT SECTION 917

NOTE: INCLUDE MIN. 3" TOPSOIL FOR ALL LAWN RESTORATION AREAS PER MDOT SECTIONS 816 AND 917.

QCDC SOIL EROSION AND INFILTRATION BASIN NOTES:

1. REFER TO THE OCEANA COUNTY DRAIN COMMISSIONER SUBDIVISION DRAINAGE RULES AND STORM WATER DESIGN CRITERIA PUBLICATION, LATEST EDITION, FOR ADDITIONAL REQUIREMENTS AND INFORMATION.
2. REFER TO THE OCEANA COUNTY DRAIN COMMISSIONER SOIL EROSION AND SEDIMENT CONTROL ORDINANCE NO. 2003-04, LATEST EDITION AS AMENDED, FOR ADDITIONAL REQUIREMENTS AND INFORMATION.
3. ABOVE REFERENCED PUBLICATIONS ARE INCLUDED AND HEREBY MADE PART OF THE CONSTRUCTION CONTRACT DOCUMENTS FOR THIS PROJECT.
4. PER OCDC DRAINAGE RULES AND STORM WATER CRITERIA PUBLICATION, PERMEABILITY TESTING IS NOT REQUIRED FOR SOILS CLASSIFIED BY THE GEOTECHNICAL CONSULTANT AS 'SP'. SOILS CLASSIFIED AS 'SP' ARE CONTAINED ON THIS SITE PER THE GEOTECHNICAL ENGINEERING INVESTIGATION REPORT PREPARED FOR THIS PROJECT. SEE 'SOIL TYPES' NOTE THIS SHEET FOR ADDITIONAL INFORMATION.
5. THE PROPOSED INFILTRATION BASIN HAS GREATER THAN 4' VERTICAL SEPARATION FROM THE BOTTOM OF THE BASIN TO HIGHEST KNOWN WATER TABLE. PER SOIL BORINGS PERFORMED FOR THIS PROJECT AS PART OF THE GEOTECHNICAL ENGINEERING INVESTIGATION REPORT, WATER WAS NOT ENCOUNTERED AT ANY BORING FOR THE EXPLORATORY DEPTHS (10' OR 15' BELOW EXISTING GROUND SURFACE),
6. UPLAND CONSTRUCTION AREAS SHALL BE COMPLETELY STABILIZED PRIOR TO FINAL INFILTRATION BASIN CONSTRUCTION. NO SEDIMENT LADEN RUNOFF IS PERMITTED TO ENTER THE INFILTRATION BASIN.
7. INFILTRATION BASIN SHALL NOT BE USED AS A SEDIMENT BASIN DURING CONSTRUCTION.
8. THE FLOOR OF THE BASIN SHALL BE FLAT TO ENCOURAGE UNIFORM PONDING AND INFILTRATION.
9. THE FLOOR OF THE BASIN SHALL BE SCARIFIED TO A DEPTH OF 4 TO 6 INCHES AFTER FINAL GRADING HAS BEEN ESTABLISHED.

NOTE:
SEE C1.1B AND DETAIL SHEETS FOR ADDITIONAL REQUIREMENTS PERTAINING TO SOIL EROSION AND SEDIMENT CONTROL FOR THIS PROJECT.

SOIL TYPES

PER SOIL BORINGS PERFORMED AS PART OF THE GEOTECHNICAL ENGINEERING REPORT, SITE SOILS GENERALLY CONSIST OF A VEGETATIVE TOPSOIL SURFACE UNDERLAIN BY SAND DOWN TO THE EXPLORATORY DEPTHS (10' TO 15' BELOW EXISTING SURFACE ELEVATION). PER THE NRCS WEB SOIL SURVEY FOR OCEANA COUNTY, SITE SOILS CONSIST OF 59B – BENONA SAND WHICH IS DESIGNATED AS HYDROLOGIC SOIL GROUP 'A' SOIL WITH AN ESTIMATED Ksat OF 5.95 TO 19.98 IN/HR.

SOIL EROSION PERMIT NOTE:

THE SOIL EROSION PERMIT MUST BE POSTED ON SITE AND CLEARLY VISIBLE FROM THE ROAD. THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLANS MUST BE KEPT ON SITE AND AVAILABLE FOR INSPECTION AT ALL TIMES BY THE PERMIT AGENT.

SOIL EROSION NOTICE OF COMPLETION:

UPON SATISFACTORY EXECUTION OF THE APPROVED PLANS AND PERMIT CONDITIONS, AND OTHER REQUIREMENTS IMPOSED BY THE OCEANA COUNTY DRAIN COMMISSIONER (OCDC), THE CONTRACTOR SHALL FILE A NOTICE OF COMPLETION WITH THE OCDC SOIL EROSION CONTROL PERMIT AGENT. THE SOIL EROSION CONTROL AGENT SHALL MAKE A FINAL INSPECTION AFTER RECEIVING THE NOTICE. THE CONTRACTOR SHALL MAKE ANY NECESSARY CORRECTIVE ACTION AS DIRECTED BY OCDC IN ORDER TO CLOSE OUT THE PERMIT AND OBTAIN RELEASE OF THE BOND.

NOTE:

ALL SOD SHALL BE IMMEDIATELY PEGGED IN PLACE. PROVIDE TEMPORARY EROSION CONTROL BLANKETS ON ALL DISTURBED AREAS AS CONDITIONS DEMAND TO PREVENT EROSION PRIOR TO SOD APPLICATION. ALL AREAS TO BE SEEDED SHALL BE SEEDED AND IMMEDIATELY COVERED WITH PEGGED MULCH BLANKETS IN ACCORDANCE WITH MDOT CRITERIA. SEE MDOT SECTION 816 FOR R.O.W. SEEDING REQUIREMENTS. ALL DISTURBED AREAS AS PART OF THIS PROJECT SHALL RECEIVE STAKED SOD UNLESS OTHERWISE SPECIFICALLY DESIGNATED FOR SEED RESTORATION.

RESTORATION NOTE:

THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY HIS CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER, AND TO THE SATISFACTION OF THE OWNER. LANDSCAPE AREAS REQUIRING RESTORATION SHALL INCLUDE MIN. 3" TOPSOIL AND SOD, OR 3" TOPSOIL, SEED AND MULCH WITH MULCH BLANKETS AS IDENTIFIED (ALL DISTURBED AREAS SHALL BE RESTORED WITH SOD UNLESS OTHERWISE SPECIFICALLY SHOWN OR APPROVED). PAVEMENT AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, WITH THE APPLICABLE CROSS-SECTION TO MATCH EXISTING.

GENERAL SEQUENCE OF CONSTRUCTION

1. INSTALL TEMPORARY EROSION CONTROL MEASURES AS INDICATED ON THESE PLANS AND AS DIRECTED BY THE OCEANA COUNTY DRAIN COMMISSIONER'S EROSION CONTROL PERMIT AGENT.
2. PERFORM SITE DEMOLITION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. ROUGH GRADE TO APPROXIMATE SUBGRADE ELEVATIONS.
4. CONSTRUCT RETENTION/INFILTRATION BASIN AND ESTABLISH PERMANENT VEGETATION. ALL PORTIONS OF BASIN MUST BE COMPLETED STABILIZED WITH PERMANENT TURF PRIOR TO STORM WATER BEING DIRECTED TO THE BASIN.
5. BEGIN CONSTRUCTION OF THE BUILDING; STABILIZE DISTURBED AREAS WITH EROSION CONTROL BLANKETS AS REQUIRED OR DIRECTED TO PREVENT EROSION PRIOR TO FINAL GROUND COVER CONSTRUCTION.
6. CONSTRUCT UTILITIES AND STORM SEWER. IMMEDIATELY INSTALL DROP INLET FILTER DEVICES AT ALL PROPOSED STRUCTURES.
7. IMMEDIATELY CONSTRUCT GROUTED STONE RIP RAP AT STORM SEWER OUTFALLS. CONSTRUCT RIP RAP AND FINAL GROUND COVER ADJACENT TO AND DOWNSTREAM OF RIP RAP PRIOR TO ANY STORM WATER DISCHARGE.
8. PERFORM FINE GRADING AND PREPARE SUBGRADE FOR SITE PAVING AND CURBING.
9. CONSTRUCT ON SITE CONCRETE CURB AND GUTTER.
10. PAVE SITE.
11. MONITOR AND MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION SEQUENCE.
12. COMPLETE FINAL GRADING AND ESTABLISH TURF FOR ALL DISTURBED AREAS PER PLANS AND CONTRACT DOCUMENTS.
13. CLEAN STORM SEWER, STORM WATER STORAGE BASIN AND ALL PAVEMENT AREAS OF ALL SEDIMENT AND DEBRIS.
14. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES WHEN THE SITE IS COMPLETELY STABILIZED PER THESE PLANS, AND A CERTIFICATE OF COMPLETION IS SECURED FROM THE SOIL EROSION CONTROL AGENT.

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
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STATE OF MICHIGAN — LICENSED PROFESSIONAL ENGINEER — WESLEY R. BERLIN — ENGINEER — No. 55143

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN. 38103

PROJECT: AUTOZONE HART MI11278
W. POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: SOIL EROSION & SEDIMENT CONTROL PLAN

C:\PROJECTS\2020-010 AUTOZONE HART MI1278\CONSTRUCTION\000_GC\11A-MI1278-200010.DWG

SCALE: 1" = 20'

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REVISED:

P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020
SHEET NO.	C1.1A

CONTECH ENGINEERED SOLUTIONS

CDS® Inspection and Maintenance Guide



CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y^3	m^3
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.3	3.0	0.9	1.3	1.0
CDS2020	5	1.3	3.5	1.1	1.3	1.0
CDS2025	5	1.3	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities



Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; 7,517,450 related foreign patents or other patents pending.

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800.925.5240
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CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**
2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

SOIL EROSION CONTROL NOTES:

1. SOIL EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION PRACTICES SHALL CONFORM TO THE REQUIREMENTS OF THE OCEANA COUNTY DRAIN COMMISSIONER, MDOT AND THESE CONTRACT DOCUMENTS.
2. THIS PLAN SHOULD BE CONSIDERED MINIMUM STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL. GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
3. NO CONSTRUCTION OPERATIONS SHALL BEGIN PRIOR TO INSTALLATION OF PROPER SOIL EROSION AND SEDIMENT CONTROL MEASURES AS OUTLINED IN THE PLANS AND AS DIRECTED BY THE OCEANA COUNTY DRAIN COMMISSIONER SOIL EROSION AGENT.
4. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO PART 91, SOIL EROSION AND SEDIMENT CONTROL, PUBLIC ACT 451 OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT OF 1994 AS AMENDED. AN EROSION CONTROL PERMIT SHALL BE SECURED FROM THE OCEANA COUNTY DRAIN COMMISSIONER PRIOR TO ANY EARTH DISTURBANCE.
5. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO ENSURE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES. ANY REQUIRED REPAIRS OR ADJUSTMENTS SHALL BE PERFORMED IMMEDIATELY TO RESTORE EFFECTIVENESS OF THE CONTROL MEASURE.
6. SEDIMENT FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES, WETLANDS AND PONDS.
7. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WHEN REQUIRED, AND AS DIRECTED ON THESE PLANS OR BY THE OCEANA COUNTY DRAIN COMMISSIONER SOIL EROSION AGENT. MAINTAIN ALL TEMPORARY SESC MEASURES THROUGHOUT THE CONSTRUCTION DURATION, AND REPAIR/REPLACE IMMEDIATELY TO MAINTAIN EFFESUIVENESS. REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGES ARE COMPLETED AND APPROVED BY THE OCEANA COUNTY DRAIN COMMISSIONER SOIL EROSION AGENT.
8. CONSTRUCTION STAGING SHALL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH, AND TO MINIMIZE THE DURATION OF EXPOSED DENUDED SURFACES. MINIMIZE THE AMOUNT OF TIME BETWEEN STRIPPING EXISTING GROUND COVER AND PROVIDING PERMANENT VEGETATION. DO NOT LEAVE BARE SLOPES OPEN AND EXPOSED TO POTENTIAL EROSION.
9. SOIL EROSION CONTROL BEST MANAGEMENT PRACTICES SHALL BE ESTABLISHED IN EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES SHALL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
10. IF SOIL STOCKPILING IS TO OCCUR ON THE SITE, SILT FENCE SHALL BE PLACED AROUND THE PERIMETER OF THE STOCKPILE IMMEDIATELY.
11. UNSTABLE SOILS PRONE TO SLIPPING OR LANDSLIDING SHALL NOT BE GRADED, EXCAVATED, FILLED OR HAVE LOADS IMPOSED UPON THEM UNLESS PROPER MEASURES ARE TAKEN TO ENSURE SURFACE DAMAGE AND SUBSEQUENT EROSION AND SEDIMENT TRANSPORT DO NOT OCCUR.
12. CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION AND SEDIMENT TRANSPORT. CONSIDERATION SHALL BE GIVEN TO THE LENGTH AND STEEPNESS OF THE SLOPE, SOIL TYPE, UPSLOPE DRAINAGE AREA, GROUNDWATER CONDITIONS, AND SLOPE STABILIZATION. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZING ALL SLOPES, BOTH DURING TEMPORARY AND FINAL STABILIZATION STAGES, PER THESE PLANS AND AS REQUIRED TO ELIMINATE OR RECTIFY EROSION AND/OR SEDIMENT TRANSPORT.
13. IF DEWATERING IS REQUIRED DURING CONSTRUCTION, THE SEDIMENT-LADEN EFFLUENT MUST BE DIRECTED TO A SETTLING BASIN OR TREATED THROUGH A "DANDY BAG", OR OTHER APPROVED METHOD. UNDER NO CIRCUMSTANCES SHALL NON-TREATED DEWATERING EFFLUENT BE ALLOWED TO EXIT THE SITE WITHOUT PROPER TREATMENT FOR SEDIMENT REMOVAL.
14. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
15. DISTURBED AREAS THAT WILL SIT DORMANT FOR 14 DAYS OR LONGER SHALL BE TEMPORARILY STABILIZED WITHIN 5 DAYS OF MOST RECENT DISTURBANCE, OR SOONER IF SUSCEPTIBLE TO EROSION OR SEDIMENT TRANSPORT.
16. FINAL STABILIZATION IS REQUIRED WITHIN 5 DAYS OF REACHING FINAL GRADE WITHIN THE AREA, OR SOONER AS DIRECTED BY OCEANA COUNTY AND/OR MDOT. IF CONDITIONS DEMAND, FINAL OR TEMPORARY STABILIZATION SHALL OCCUR IMMEDIATELY TO PREVENT EROSION AND SEDIMENT TRANSPORT.
17. TEMPORARY EROSION CONTROL BLANKETS STAKED IN PLACE ARE REQUIRED FOR ALL AREAS AS NEEDED TO PREVENT OR CORRECT EROSION PRIOR TO FINAL STABILIZATION.
18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION OR SOONER AS DIRECTED. FINAL STABILIZATION HAS OCCURRED WHEN PERMANENT HARDSCAPE (I.E., PAVEMENT AND BUILDING AREAS) HAVE BEEN CONSTRUCTED, AND PERMANENT VEGETATION MATURE ENOUGH TO CONTROL SOIL EROSION AND SURVIVE ADVERSE WEATHER IS ESTABLISHED WITHIN ALL NON BUILDING AND PAVING AREAS. LAWN AREAS MUST BE COMPLETELY STABILIZED AND ROOTED IN PLACE WITH NO SUSCEPTIBILITY OF SLIDING OR DISPLACING.
19. SOD TO BE APPLIED TO ALL LANDSCAPE AREAS AS PART OF FINAL STABILIZATION, UNLESS OTHERWISE INDICATED AND APPROVED. STAKE SOD PER PLANS AND AS CONDITIONS DEMAND TO ENSURE SOD "TAKES". MULCH BLANKETS ARE REQUIRED FOR ALL SEED AREAS.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING AND MAINTAINING THE EROSION CONTROL MEASURES AS REQUIRED DURING THE DURATION OF THE CONSTRUCTION PROJECT.
21. DUST GENERATED BY CONSTRUCTION ACTIVITIES SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

SOIL EROSION MAINTENANCE SCHEDULE AND NOTES:

1. ALL LAWN AREAS SHALL BE CHECKED REGULARLY TO ENSURE PROGRESSIVE AND HEALTHY GROWTH OF VEGETATION. AREAS SHALL BE FERTILIZED AND MAINTAINED AS NEEDED.
2. CONTRACTOR IS RESPONSIBLE FOR WATERING AND MAINTAINING ALL INSTALLED SOD OR SEED SURFACES UNTIL HARDY GRASS GROWTH IS ESTABLISHED. ALL AREAS SHALL BE MAINTAINED UNTIL GRASS IS COMPLETELY ROOTED IN PLACE AND NO LONGER SUSCEPTIBLE TO EROSION OR DISPLACEMENT.
3. THE CONTRACTOR SHALL INSPECT THE SOIL EROSION AND SEDIMENT CONTROL DEVICES ONCE EACH WEEK AND/OR WITHIN 24 HOURS OF ANY RAINFALL EVENT. THE FOLLOWING STEPS SHALL BE IMPLEMENTED IF ANY DAMAGE HAS OCCURRED.
4. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING EROSION ALONG ALL DISTURBED AREAS PRIOR TO PERMANENT TURF ESTABLISHMENT. INSTALL STAKED MULCH BLANKETS AS NEEDED OR DIRECTED.
5. ANY DEBRIS OR DIRT ON ANY PAVED AREA RESULTING FROM CONSTRUCTION TRAFFIC SHALL BE CLEANED IN A PROMPT MANNER BY THE CONTRACTOR. THE CONSTRUCTION DRIVE SHALL BE CLEANED AT THE END OF EACH DAY.
6. ALL ACCUMULATED SEDIMENT OR SILT REMOVED FROM SESC DEVICES AND MEASURES MUST BE DISPOSED OF OFF SITE. DO NOT SPREAD OR DEPOSIT MATERIALS ON OR ADJACENT TO SITE.
7. SILT FENCE MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY BUILT UP SEDIMENT WHEN THE SEDIMENT HEIGHT ACCUMULATES TO 1/3 THE HEIGHT OF THE FENCE FABRIC. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMMEDIATELY REMOVE AND REPLACE ALL SILT FENCE THAT IS DAMAGED DURING CONSTRUCTION OR NOT FUNCTIONING PROPERLY.
8. MAINTAIN STONE AS REQUIRED FOR TEMPORARY DITCH AND CULVERT SEDIMENT TRAPS. CLEAN AND REFRESH STONE AS REQUIRED, OR REPLACE AS NEEDED, TO MAINTAIN EFFECTIVENESS. CLEAN PIT AREAS OF ALL ACCUMULATED SEDIMENT PERIODICALLY OR AS CONDITIONS DEMAND TO ENSURE EFFECTIVENESS OF CONTROL MEASURE.
9. A WATER TRUCK SHALL BE AVAILABLE TO WATER DOWN THE SITE ON A DAILY BASIS AS REQUIRED TO MAINTAIN DUST CONTROL.
10. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY OR ADJACENT SITE PAVEMENTS. THIS MAY REQUIRE FREQUENT CLEANING OR PERIODIC STONE TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
11. CHECK RIP RAP AREAS REGULARLY TO ENSURE ADJACENT GROUND COVER IS STABILIZED AND TIGHTLY ABUTTING THE RIP RAP. REPAIR ANY NON-STABILIZED AREAS IMMEDIATELY.
12. CLEAN PAVEMENT, RETENTION BASIN AND STORM SEWER SYSTEM AS REQUIRED TO REMOVE ACCUMULATED SEDIMENT, AND IMMEDIATELY PRIOR TO PROJECT COMPLETION.
13. MAINTAIN DRAINAGE STRUCTURE DROP INLET PROTECTION DEVICES PER MANUFACTURER SPECIFICATIONS.
14. IF THE ACTION OF VEHICLES TRAVELING OVER CONSTRUCTION ENTRANCE IS NOT SUFFICIENTLY REMOVING THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE. THE EXACT LOCATIONS SHALL BE COORDINATED WITH THE OWNER'S CONSTRUCTION MANAGER AND APPROVED BY THE OCEANA COUNTY DRAIN COMMISSIONER.

LONG TERM MAINTENANCE RESPONSIBILITY:

AUTOZONE DEVELOPMENT, LLC, WILL BE RESPONSIBLE FOR THE CONTINUED MAINTENANCE OF ALL PERMANENT SOIL EROSION CONTROL MEASURES THAT WILL REMAIN AFTER CONSTRUCTION COMPLETION. THE STORE MANAGER (TO BE DETERMINED) WILL IMPLEMENT THE MAINTENANCE PROGRAM AND COORDINATE NECESSARY FUNDING AND ACTION ITEMS WITH AUTOZONE CORPORATE HEADQUARTERS LOCATED AT 123 S. FRONT STREET, MEMPHIS TN 38103.

MAINTENANCE TASKS AND SCHEDULE FOR: PERMANENT SOIL EROSION & SEDIMENTATION CONTROL, POST CONSTRUCTION

TASKS	COMPONENTS: STORM SEWER SYSTEM	DRAINAGE STRUCTURES	SWALES, DRAINAGE WAYS AND RIP RAP	RETENTION BASIN	MECHANICAL STORM WATER PRE-TREATMENT UNIT	PAVEMENT AREAS	LAWN AREAS	FREQUENCY
INSPECT FOR ACCUMULATED SEDIMENT	X	X	X	X	X	X		ANNUALLY
REMOVAL OF ACCUMULATED SEDIMENT	X	X	X	X	X	X		2 YEARS OR AS REQUIRED
INSPECTION FOR EROSION			X	X			X	EVERY 6 MONTHS
REESTABLISH PERMANENT CONTROLS, ERODED AREAS			X	X			X	IMMEDIATELY, AS REQUIRED
INSPECT FOR FLOATABLES AND DEBRIS	X	X	X	X	X			MINIMUM ANNUALLY, AND AFTER MAJOR RAIN EVENTS
REMOVE FLOATABLES AND DEBRIS	X	X	X	X	X			MIN. ANNUALLY OR AS NEEDED TO MAINTAIN FUNCTIONALITY
MOWING			X				X	WEEKLY OR AS REQUIRED
WEED, RODENT AND PEST CONTROL	X	X	X	X	X		X	MIN. ANNUALLY, OR AS REQUIRED
CLEAN PAVEMENT SURFACES (DRIVES AND PARKING AREA)						X		AS REQUIRED
MAKE ADJUSTMENTS OR REPLACEMENTS AS REQUIRED TO MAINTAIN SYSTEM FUNCTIONALITY AND DESIGN INTENT	X	X	X	X	X	X	X	IMMEDIATELY, AS REQUIRED
STRUCTURAL REPAIRS OR REPLACEMENT IN KIND (FAILURE REMEDIATION)	X	X	X	X	X	X	X	IMMEDIATELY, AS NEEDED
OIL OR GAS SPILLS						X		IMMEDIATELY
KEEP RECORDS OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES	X	X	X	X	X	X	X	ANNUALLY

TURF ESTABLISHMENT NOTES:

1. ALL DISTURBED ON-SITE LAWN AREAS SHALL BE STAKED IRRIGATED SOD LAWN UNLESS OTHERWISE INDICATED OR APPROVED. ALL DISTURBED OFF-SITE LAWN AREAS (EXCLUDING R.O.W.'S) SHALL BE STAKED SOD. SEE C1.1A FOR COMPLETE REQUIREMENTS.
2. ALL DISTURBED LAWN AREAS WITHIN THE POLK ROAD RIGHT-OF-WAY SHALL BE RESTORED PER MDOT REQUIREMENTS AND SPECIFICATIONS. PROVIDE 3" TOPSOIL, SEED AND MULCH WITH STAKED MULCH BLANKETS IN ACCORDANCE WITH MDOT CRITERIA UNLESS OTHERWISE DIRECTED BY MDOT. ALL MATERIALS AND CONSTRUCTION PRACTICES SHALL CONFORM TO MDOT REQUIREMENTS AND SPECIFICATIONS.

GENERAL LANDSCAPE NOTES:

1. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO THE REGION EXCEPT WHERE OTHER PLANT MATERIAL IS CALLED FOR.
2. ANY LANDSCAPE AREA DISTURBED BY CONSTRUCTION SHALL BE SCARIFIED TO A DEPTH OF 2" AND GRADED SMOOTH TO ALLOW FOR POSITIVE DRAINAGE. FOR ANY LANDSCAPE AREA SO DESIGNED TO REMAIN WHETHER ON OR OFF SITE, REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS ETC., SCARIFY AREA, RE-SEED AND FERTILIZE OR APPLY SOD PER PLANS.
3. ALL R.O.W. CURB AND GUTTERS, OR DITCHES, SHALL BE CLEANED OF DEBRIS ALONG PROJECT FRONTAGE.
4. THE CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED UTILITY LOCATIONS PRIOR TO BEGINNING THEIR PHASE OF THE WORK. CONTACT MISS DIG AS REQUIRED FOR UTILITY LOCATING. ANY DAMAGE OR INTERRUPTION OF UTILITY SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. NO MACHINERY IS TO BE USED WITHIN THE DRIP LINE OF EXISTING TREES THAT WILL REMAIN. ELIMINATE OR MINIMIZE ALL GRADING WITHIN TREE DRIP LINES FOR TREES THAT WILL NOT BE REMOVED. ALL REQUIRED GRADING WITHIN SUCH AREAS SHALL BE COMPLETED USING HAND TOOLS.
6. ALL LANDSCAPE AREAS SHALL RECEIVE 3" MINIMUM COMPACTED TOPSOIL UNLESS OTHERWISE APPROVED.
7. ALL LANDSCAPE AREAS SHALL BE MAINTAINED IN A HEALTHY, NEAT AND ORDERLY APPEARANCE FREE FROM REFUSE OR DEBRIS. ANY UNHEALTHY OR DEAD LAWN MATERIAL SHALL BE REPLACED IMMEDIATELY.
8. FINISH GRADE IN LANDSCAPE ISLANDS SHALL BE INSTALLED TO 1" LOWER THAN THE TOP OF SURROUNDING ADJACENT CURB (WHERE DRAINAGE IS AWAY FROM CURB)
9. NO IRRIGATION IS PROPOSED OR ALLOWED WITHIN THE PUBLIC R.O.W.
10. SELECT LOW MAINTENANCE HYBRID TURF FROM A LOCAL GROWER. TEST SOIL FOR PROPER pH FOR SELECT SOD. AMEND SOIL WITH ORGANIC MATERIAL, FERTILIZER AND FINISH GRADE. STAGGER ALL SOD SEAMS AND INSTALL ALL SOD WITH STAKES. CONTRACTOR SHALL REPLACE ALL DEAD SOD WITHIN ONE GROWING SEASON.
11. STAKE ALL SOD. CONTRACTOR TO REPAIR AREAS OF EROSION WITHIN ONE YEAR TO SATISFACTION OF OWNER AS REQUIRED FOR PROPER TURF ESTABLISHMENT.
12. CONTRACTOR SHALL WATER AND MAINTAIN ALL LAWN AREAS UNTIL HARDY GRASS GROWTH IS ESTABLISHED, OR SOD IS COMPLETELY ROOTED IN PLACE.

SPARTAN ENGINEERING SOLUTIONS, LLC
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STATE OF MICHIGAN
WESLEY R. BERLIN
ENGINEER
No. 55143
LICENSED PROFESSIONAL ENGINEER

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103

PROJECT: AUTOZONE HART MI11278
W. POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: SESC PLAN NOTES AND REQUIREMENTS

C:\PROJECTS\2020-010 AUTOZONE HART MI11278\DWG\CONSTRUCTION\DWG\A-C0-1B1-MI1278-2020-010.DWG

SCALE:

3 WORKING DAYS BEFORE YOU DIG
811
Know what's below. Call before you dig.
DIAL 811 OR 1-800-482-7171

REVISED:

P.E./P.M. WRB/WRB
DRAFTED: WRB
CHECKED: WRB
JOB NO. 2020-010
ORIGINAL ISSUE DATE NOVEMBER 27, 2020
SHEET NO.
C1.1B

BENCHMARKS: (NAVD88 DATUM)
(PER ALTA/NSPS LAND TITLE SURVEY)

BM A:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH
FROM CENTERLINE W POLK ROAD & 33'± EAST
FROM SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEV = 713.71

BM B:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH
FROM CENTERLINE W POLK ROAD & 145'± WEST
FROM SUBJECT'S SOUTHEAST PROPERTY CORNER.
ELEV = 714.98

SITE UTILITY LEGEND

UNDERGROUND ELECTRIC	ELECTRIC
UNDERGROUND GAS SERVICE	GAS
ELECTRIC METER	
GAS METER	
YARD HYDRANT	YH

SAND BACKFILL NOTE:

ALL UTILITIES UNDER PAVEMENT OR WITHIN 3' OF THE EDGE OF PAVEMENT OR BUILDING (OR WITHIN THE 45° LINE OF INFLUENCE) SHALL HAVE M.D.O.T. CLASS II (MIN.) GRANULAR BACKFILL COMPACTED TO 95% MAX. DRY DENSITY (ASTM D-1557) PER MDOT REQUIREMENTS.

UTILITY SERVICE NOTES:

WATER SERVICE
GENERAL CONTRACTOR TO TAP EXISTING WATER MAIN, INSTALL 1" COPPER WATER SERVICE FROM TAP TO BUILDING, AND PROVIDE AND INSTALL CURB STOP AND BOX IN ACCORDANCE WITH CITY OF HART REQUIREMENTS AND SPECIFICATIONS. SITE CONTRACTOR TO PERFORM ALL EXCAVATION AND BACKFILL FOR ALL WORK RELATED TO THE WATER SERVICE INSTALLATION AS DIRECTED BY CITY. AS REQUIRED BY CITY OF HART, SITE CONTRACTOR TO PROVIDE AND INSTALL BACKFLOW PREVENTOR IN ACCORDANCE WITH AWWA AND STATE PLUMBING CODE REQUIREMENTS.
CONTACT: BRAD WHITNEY, CITY OF HART PUBLIC WORKS SUPERINTENDENT
TELEPHONE: (231) 873-3100

SANITARY SERVICE
GENERAL CONTRACTOR TO PROVIDE AND INSTALL LEAD FROM EXISTING SANITARY MAIN UP TO 5' OUTSIDE BUILDING. PROVIDE CLEANOUTS AS SHOWN. COORDINATE WITH PLUMBING PLAN. CONNECT TO EXISTING SANITARY MAIN IN ACCORDANCE WITH CITY OF HART SPECIFICATIONS AND REQUIREMENTS.
CONTACT: BRAD WHITNEY, CITY OF HART PUBLIC WORKS SUPERINTENDENT
TELEPHONE: (231) 873-3100

ELECTRIC SERVICE:
CITY OF HART ENERGY DEPARTMENT TO PROVIDE UNDERGROUND 120/208/3 PHASE 400-AMP SERVICE. GENERAL CONTRACTOR TO PROVIDE AND INSTALL TWO 4" DIA. CONDUIT W/ PULL WIRE TO UTILITY COMPANY POINT OF CONNECTION. GENERAL CONTRACTOR TO COORDINATE CONNECTION TO BUILDING WITH SERVICE PROVIDER.
CONTACT: MIKE SCHILLER
TELEPHONE: (231) 873-5367

TELEPHONE SERVICE
CHARTER TO PROVIDE NEW UNDERGROUND SERVICE. GENERAL CONTRACTOR TO PROVIDE AND INSTALL A 4" DIA. PVC CONDUIT W/ PULL WIRE FROM PHONE PANEL BOARD TO UTILITY COMPANY POINT OF CONNECTION.
CONTACT: PATRICK DELISI
TELEPHONE: (810) 247-3899

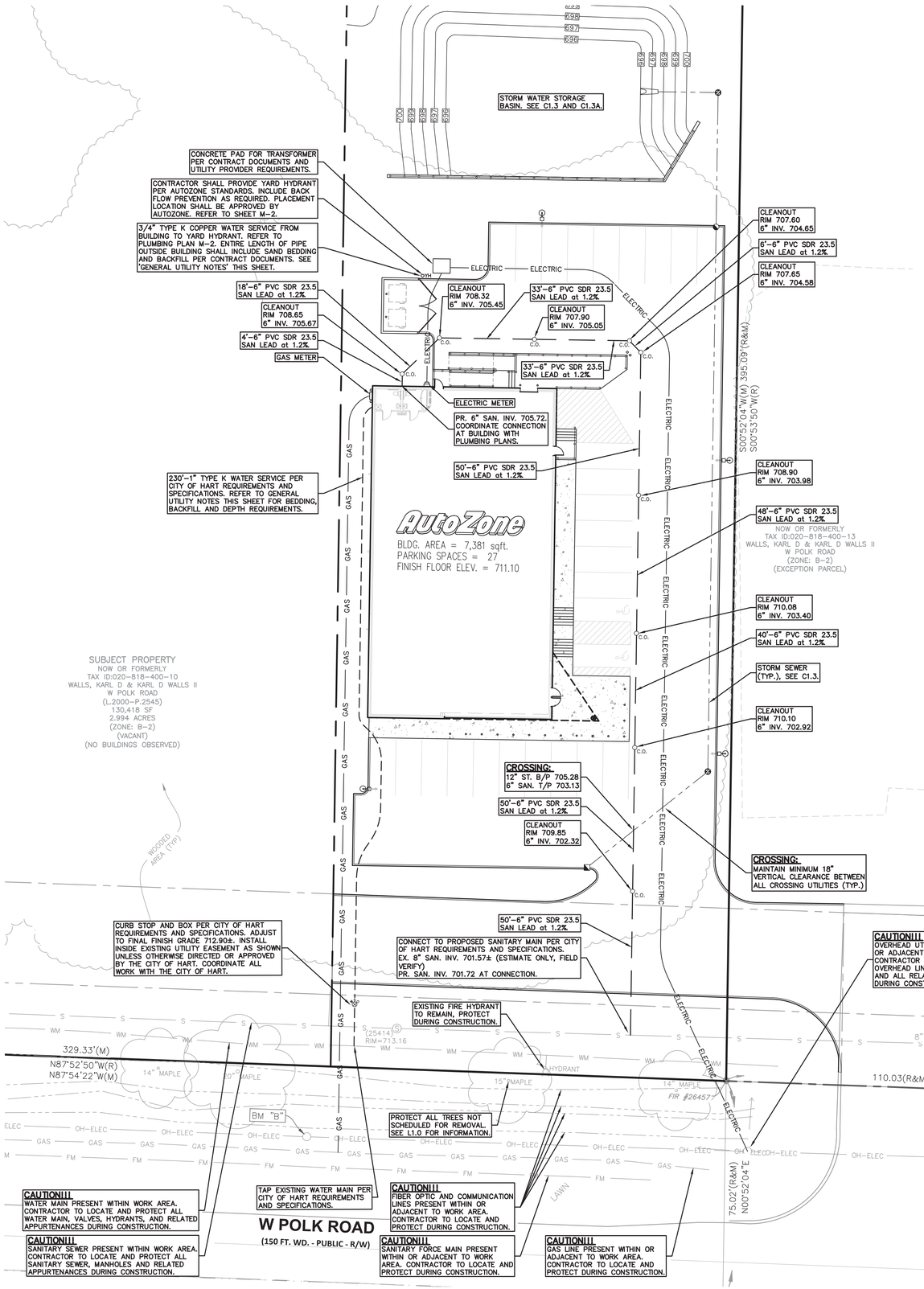
GAS SERVICE
DTE TO PROVIDE GAS LEAD AND CONNECTION TO GAS METER.
CONTACT: BARBARA SAUNDERS
TELEPHONE: (313) 235-5111

PROPOSED FEATURES LEGEND

WATER MAIN	
WATER SERVICE	
FIRE HYDRANT	
WATER SERVICE SHUTOFF	GATE VALVE AND BOX
WATER WELL	W
STORM SEWER	
STORM MANHOLE	
STORM INLET	
STORM CATCH BASIN	
FLARED END SECTION	
NYLOPLAST YARD DRAIN	YD
STORM STRUCTURE ID	MH 4
SANITARY SEWER	
SANITARY MANHOLE	
SANITARY STRUCTURE ID	MH A
CLEANOUT (SAN. OR ST.)	
SIGN	
GRASS DRAINAGE SWALE	

EXISTING FEATURES LEGEND

	DECIDUOUS TREE, CONIFEROUS TREE, SHRUB
	TREE LINE/ CANOPY
	DITCH/ DRAINING COURSE
UG-ELEC	UG TELE, MH, TELE PED, CABLE PED
FOM	UG FIBER, PED, LINE MARKER, VAULT
UG-ELEC	UG ELEC, MH, TRANSFORMER, AC UNIT, METER
OH-ELEC	OH ELEC, UTIL POLE, GUY WIRE
	GROUND LIGHT, POLE, POLE W/ ARM LT
	LIGHT MH, LT CTRL BOX, PH. BOOTH, PARK. METER
	ELEC HAND HOLE, OUTLET, SIGNAL MH, SIGNAL BOX
GAS	UG GAS, MH, VALVE, LINE MARKER
	GAS WELL, METER, VENT
WM	WATER MAIN, MH, VALVE IN BOX, HYDRANT, FDC
	WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
	IRRIGATION CONTROL VALVE, SPRINKLER HEAD
ST	STORM SEWER, MH, CB, INLET, YARD DRAIN
	CULVERT/ END SECTION
S	SANITARY SEWER, MH, CLEAN OUT
	COMBINED SEWER, MH
	STEAM LINE, MH
	MISC. MANHOLE, HAND HOLE, HAND BOX
	SIGN, FLAG POLE, GUARD POST, ROCK
	SECTION LINE, SECTION CORNER
	FOUND IRON ROD (FIR), FD MON, FD PK
	SET IRON ROD (SIR), SET PK, MAG NAIL
	SPOT ELEVATION
900	CONTOUR
	FENCE
	GUARD RAIL
RR	RAILROAD SIGNAL, SIGNAL BOX
ROW	ROW MARKER
	SOIL BORING



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

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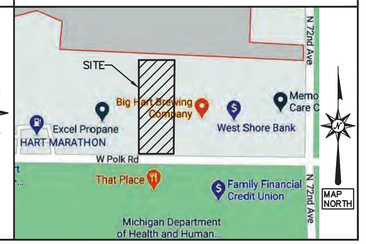
INFORMATION REGARDING EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING WAS PROVIDED BY OTHERS. SPARTAN ENGINEERING SOLUTIONS, LLC MAKES NO GUARANTEE ON THE ACCURACY OR COMPLETENESS OF INFORMATION PROVIDED BY OTHERS. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS, TYPES, MATERIALS, AND DEPTHS PRIOR TO THE START OF CONSTRUCTION. SPARTAN ENGINEERING SOLUTIONS, LLC SHALL NOT BE HELD LIABLE FOR MISSING OR INCOMPLETE UTILITY INFORMATION, OR CONSEQUENTIAL CLAIMS OR DAMAGES, FOR ANY REASON.

PLAN NORTH

VICINITY MAP NOT TO SCALE



CAUTION!!!
UNDERGROUND AND OVERHEAD UTILITIES ARE PRESENT WITHIN THE WORK AREA. CONTRACTOR TO LOCATE AND PROTECT ALL UNDERGROUND AND OVERHEAD UTILITIES DURING CONSTRUCTION. COORDINATE WITH RESPECTIVE UTILITY PROVIDERS AS REQUIRED PRIOR TO THE ONSET OF CONSTRUCTION.

THE CONSTRUCTION SPECIFIED WITHIN THESE PLANS SHALL BE PERFORMED IN COMPLETE COMPLIANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF HART, OCEANA COUNTY, MDOT, ALL APPLICABLE REFERENCE SPECIFICATIONS, INDEPENDENT UTILITY OWNERS, AND AUTOZONE PROJECT SPECIFICATIONS AS APPLICABLE.

GENERAL UTILITY NOTES:

1. ALL UTILITY LINES, STRUCTURES AND TRENCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND REQUIREMENTS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION, CITY OF HART, OCEANA COUNTY AND THE CONTRACT DOCUMENTS.
2. ALL WATER MAIN AND WATER SERVICE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HART REQUIREMENTS AND SPECIFICATIONS.
3. ALL SANITARY SEWER IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HART REQUIREMENTS AND SPECIFICATIONS.
4. ALL TRENCHES UNDER OR WITHIN THREE (3) FEET OR THE FORTY-FIVE (45) DEGREE ZONE OF INFLUENCE LINE OF EXISTING AND/OR PROPOSED PAVEMENT, BUILDING PAD OR DRIVE APPROACH ETC. SHALL BE BACKFILLED WITH MDOT CL.II SAND COMPACTED TO AT LEAST NINETY-FIVE (95) PERCENT OF MAXIMUM UNIT WEIGHT (ASTM D-1557). ALL OTHER TRENCHES TO BE COMPACTED PER MDOT AND GEOTECHNICAL ENGINEERING REPORT REQUIREMENTS.
5. PHYSICAL CONNECTIONS SHALL NOT BE MADE TO WATER OR SANITARY LINES WITHOUT MEETING THE REQUIREMENTS OF THE CITY OF HART FOR TESTING, INSPECTION, OBSERVATION ETC. CONTRACTOR MUST COORDINATE ALL RELATED WORK WITH THE CITY OF HART PRIOR TO AND DURING CONSTRUCTION.
6. WATER SERVICE LEADS SHALL BE TYPE 'K' ANNEALED SEAMLESS COPPER WITH COMPRESSION STYLE FITTINGS PER CITY OF HART REQUIREMENTS. PROVIDE MDOT CL. II SAND BEDDING (4" MIN. THICKNESS) AND COMPACTED SAND BACKFILL PER CITY OF HART REQUIREMENTS AND CONTRACT DOCUMENTS.
7. ALL WATER SERVICE FITTINGS SHALL BE COMPRESSION TYPE PER CITY OF HART REQUIREMENTS AND SPECIFICATIONS UNLESS OTHERWISE DIRECTED BY CITY.
8. CORPORATION STOPS, CURB STOPS, AND FITTINGS SHALL BE FABRICATED OF BRASS PER CITY OF HART SPECIFICATIONS.
9. COPPER WATER SERVICE PIPE SHALL CONFORM TO ASTM B-88 AND B-251 PER CITY SPECIFICATIONS. THE MANUFACTURER AND PIPE TYPE SHALL BE MARKED ON THE OUTSIDE OF THE PIPE. WEIGHT PER FOOT OF COPPER PIPE SHALL MEET OR EXCEED THAT SPECIFIED BY ASTM B-251, TABLE 11.
10. WATER SERVICE SHALL BE INSTALLED WITH 5' OF COVER UNLESS OTHERWISE DIRECTED OR APPROVED BY THE CITY OF HART.
11. WATER SERVICE CURB STOP BOX SHALL BE LOCATED PER CITY REQUIREMENTS, COORDINATE WITH CITY OF HART.
12. COPPER PIPE SHALL BE CONNECTED TO THE WATER MAIN THROUGH A BRASS CORPORATION STOP. THE WATER MAIN SHALL BE DRILLED AND TAPPED UNDER PRESSURE BY USE OF A TAPPING MACHINE APPROVED BY THE CITY OF HART (APPLIES TO ANY NEW TAPS).
13. ALL SANITARY SEWER LEADS SHALL BE 6" POLYVINYL CHLORIDE (PVC) SDR 23.5 PIPE AND FITTINGS PER CITY OF HART REQUIREMENTS AND INSTALLED AT MINIMUM 1.2% AS SHOWN. ALL JOINTS TO BE ELASTOMERIC GASKET JOINTS PER ASTM D3212 UNLESS OTHERWISE NOTED.
14. DOWNSPOUTS, WEEP TILE, FOOTING DRAINS OR ANY CONDUIT THAT CARRIES STORM OR GROUND WATER SHALL NOT BE ALLOWED TO DISCHARGE INTO A SANITARY SEWER.
15. BACKFILL AND BEDDING FOR ALL SEWER LEADS SHALL BE IN ACCORDANCE WITH CITY OF HART STANDARDS AND SPECIFICATIONS, ALONG WITH THE CONTRACT DOCUMENTS. SEE DETAIL SHEETS FOR PIPE TRENCH REQUIREMENTS.
16. SANITARY LEADS SHALL BE PROVIDED WITH CLEANOUTS AT EVERY BEND AND ALONG PIPE RUNS AS SHOWN. ALL CLEANOUTS TO BE PROVIDED WITH DEETER #1839 BOX OR EQUAL. SEE DETAIL SHEETS.
17. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS ONLY AND HAVE BEEN COMPILED FROM THE LATEST AVAILABLE MAPPING. THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
18. GENERAL CONTRACTOR TO COORDINATE WITH THE LOCAL UTILITY COMPANIES FOR ALL LOCATIONS AND CONNECTIONS. A PRECONSTRUCTION MEETING WITH THE VARIOUS UTILITY COMPANIES IS REQUIRED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.
19. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE SEWERS CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT AUTOZONE IN THE EVENT OF ANY UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
20. THE CONTRACTOR SHALL INSURE THAT ALL UTILITY COMPANIES AND MUNICIPALITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY COMPANY. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY COMPANIES AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTION, RELOCATIONS, INSPECTIONS, AND DEMOLITION. (AUTOZONE TO REIMBURSE GENERAL CONTRACTOR FOR ALL SANITARY SEWER AND WATER TAP FEES).
21. ALL VALVE BOXES AND CURB BOXES SHALL BE ADJUSTED TO THE FINAL GRADES. ALL CURB BOXES SHALL BE LOCATED IN GRASSED AREAS UNLESS INDICATED OTHERWISE ON THE PLANS.
22. MAINTAIN ADEQUATE SEPARATION BETWEEN SANITARY AND WATER SERVICES IN ACCORDANCE WITH CITY OF HART REQUIREMENTS. UNLESS OTHERWISE APPROVED OR DIRECTED, MAINTAIN 18" VERTICAL SEPARATION BETWEEN ALL UTILITIES.
23. THIS PLAN DETAILS PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO THE BUILDING DRAWINGS FOR BUILDING CONNECTIONS. SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY.
24. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT AND REPLACED IN ACCORDANCE WITH THE PAVEMENT REPAIR REQUIREMENTS OF THE GOVERNING AUTHORITY.
25. RESTORE ALL DISTURBED GREENBELT AREAS TO PRE-CONSTRUCTION CONDITION IN ACCORDANCE WITH THE REQUIREMENTS OF THE GOVERNING AUTHORITY. UNLESS OTHERWISE INDICATED BY THE GOVERNING AUTHORITY, DISTURBED GREENBELT AREAS SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AND A MINIMUM OF 3" TOPSOIL, SEED AND MULCH OR SOD APPLIED PER PLANS AND CONTRACT DOCUMENTS.

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STATE OF MICHIGAN
WESLEY R. BERLIN
ENGINEER
No. 55143
PROFESSIONAL ENGINEER
Wesley R. Berlin

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103

PROJECT: AUTOZONE HART M#1278
W. POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: UTILITY PLAN

C:\PROJECTS\2020-010_AUTOZONE HART M#1278\CIVIL\CONSTRUCTION\2020-010-01-M1278-20010.DWG

SCALE: 1" = 20'

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REVISED:	
P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020
SHEET NO.	C1.2

BENCHMARKS: (NAVD88 DATUM)
(PER ALTA/NSPS LAND TITLE SURVEY)

BM A:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH FROM CENTERLINE W POLK ROAD & 33'± EAST FROM SUBJECT'S SOUTHWEST PROPERTY CORNER.
ELEV = 713.71

BM B:
BENCH TIE E/SIDE UTILITY POLE, 50'± NORTH FROM CENTERLINE W POLK ROAD & 145'± WEST FROM SUBJECT'S SOUTHEAST PROPERTY CORNER.
ELEV = 714.98

STORM SEWER DESIGN CALCULATIONS:

Project: AutoZone Hart MI1278
Project # 20-010
Design Storm 10-year, 15 Minute Tc

15 Tc

	FROM STR TO STR	AREA A	RUNOFF C	A x C	AREA TOTAL	A x C TOTAL	TIME Tc	INT. I	FLOW Q	PIPE CAP.	PIPE LENGTH	PIPE DIA.	PIPE SLOPE	VEL. FULL	INVERT ELEV. UP STREAM	INVERT ELEV. DOWN STREAM	RIM ELEV. UP STREAM	RIM ELEV. DOWN STREAM
		AC.			AC.		MIN.	IN/HR	CFS	CFS	FT	IN	%	FT/SEC				
MAIN RUN	5-4	0.407	0.677	0.276	0.407	0.276	15.00	3.86	1.06	5.03	54	12	2.00	6.41	705.90	704.82	709.10	709.50
	4-3	0.000	0.000	0.000	0.407	0.276	15.14	3.86	1.06	5.03	189	12	2.00	6.41	704.70	700.92	709.50	705.75
	3-2	0.344	0.893	0.307	0.751	0.583	15.63	3.86	2.25	6.16	47	12	3.00	7.85	700.00	698.59	705.75	701.80
	2-1	0.000	0.000	0.000	0.751	0.583	15.73	3.86	2.25	6.16	27	12	3.00	7.85	696.81	696.00	701.80	698.50

11/25/2020 Precipitation Frequency Data Server

NOAA Atlas 14, Volume 8, Version 2
Location name: Hart, Michigan, USA*
Latitude: 43.7023°, Longitude: -86.3636°
Elevation: 648.11 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

10-YEAR RAINFALL INTENSITY 3.86 IN/HR FOR STORM SEWER DESIGN. SEE CALCULATIONS THIS SHEET

100-YEAR RAINFALL INTENSITY 6.37 IN/HR FOR STORM WATER STORAGE BASIN OVERFLOW SPILLWAY DESIGN, SEE C1.3A.

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

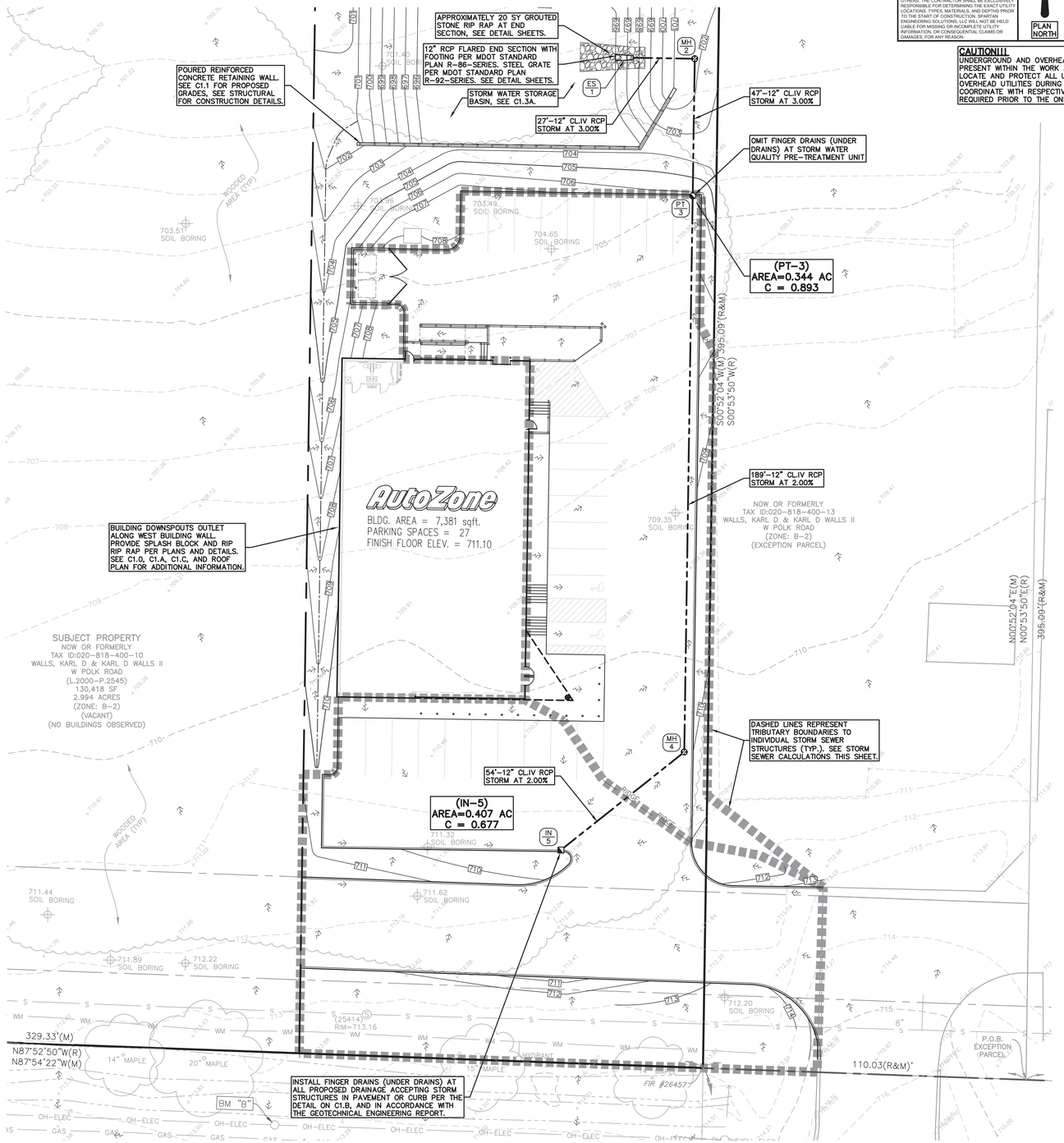
Duration	Average recurrence interval (years) 1	2	5	10	25	50	100	200	500	1000
5-min	3.61 (2.94-4.64)	4.27 (3.36-5.50)	5.44 (4.26-7.01)	6.48 (5.05-8.40)	8.04 (6.10-10.9)	9.34 (6.89-12.8)	10.7 (7.61-15.1)	12.2 (8.29-17.6)	14.3 (9.31-21.2)	15.9 (10.1-23.9)
10-min	2.65 (2.09-3.40)	3.13 (2.46-4.03)	3.98 (3.12-5.14)	4.75 (3.70-6.15)	5.89 (4.46-7.99)	6.83 (5.04-9.37)	7.84 (5.57-11.0)	8.92 (6.07-12.9)	10.4 (6.82-15.5)	11.7 (7.39-17.5)
15-min	2.15 (1.70-2.76)	2.54 (2.00-3.27)	3.24 (2.54-4.17)	3.86 (3.01-5.00)	4.78 (3.63-6.49)	5.56 (4.10-7.62)	6.37 (4.53-8.96)	7.25 (4.94-10.5)	8.49 (5.54-12.5)	9.49 (6.01-14.2)
30-min	1.50 (1.18-1.92)	1.77 (1.39-2.28)	2.26 (1.77-2.91)	2.70 (2.10-3.49)	3.35 (2.54-4.55)	3.89 (2.87-5.34)	4.47 (3.18-6.28)	5.09 (3.46-7.35)	5.96 (3.89-8.85)	6.66 (4.22-9.99)
60-min	0.982 (0.774-1.26)	1.15 (0.906-1.48)	1.46 (1.14-1.88)	1.75 (1.36-2.26)	2.18 (1.66-2.98)	2.56 (1.89-3.52)	2.96 (2.11-4.18)	3.40 (2.32-4.93)	4.04 (2.64-6.01)	4.55 (2.88-6.82)

PROPOSED FEATURES LEGEND

- WATER MAIN
- WATER SERVICE
- FIRE HYDRANT
- WATER SERVICE SHUTOFF — GATE VALVE AND BOX
- WATER WELL (W)
- STORM SEWER
- STORM MANHOLE
- STORM INLET
- STORM CATCH BASIN
- FLARED END SECTION
- NYLOPLAST YARD DRAIN 18"
- STORM STRUCTURE ID (MH 4)
- SANITARY SEWER
- SANITARY MANHOLE
- SANITARY STRUCTURE ID (MH A)
- CLEANOUT (SAN. OR ST.)
- SIGN
- GRASS DRAINAGE SWALE

EXISTING FEATURES LEGEND

- DECIDUOUS TREE, CONIFEROUS TREE, SHRUB
- TREE LINE/ CANOPY
- DITCH/ DRAINING COURSE
- UG TELE, MH, TELE PED, CABLE PED
- UG FIBER, PED, LINE MARKER, VAULT
- UG ELEC, MH, TRANSFORMER, AC UNIT, METER
- OH ELEC, UTIL POLE, GUY WIRE
- GROUND LIGHT, POLE, POLE W/ ARM LT
- LIGHT MH, LT CTRL BOX, PH. BOOTH, PARK. METER
- ELEC HAND HOLE, OUTLET, SIGNAL MH, SIGNAL BOX
- UG GAS, MH, VALVE, LINE MARKER
- GAS WELL, METER, VENT
- WATER MAIN, MH, VALVE IN BOX, HYDRANT, FDC
- WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
- IRRIGATION CONTROL VALVE, SPRINKLER HEAD
- STORM SEWER, MH, CB, INLET, YARD DRAIN
- CULVERT/ END SECTION
- SANITARY SEWER, MH, CLEAN OUT
- COMBINED SEWER, MH
- STEAM LINE, MH
- MISC. MANHOLE, HAND HOLE, HAND BOX
- SIGN, FLAG POLE, GUARD POST, ROCK
- SECTION LINE, SECTION CORNER
- FOUND IRON ROD (FIR), FD MON, FD PK
- SET IRON ROD (SIR), SET PK, MAG NAIL
- SPOT ELEVATION
- CONTOUR
- FENCE
- GUARD RAIL
- RAILROAD SIGNAL, SIGNAL BOX
- ROW MARKER
- SOIL BORING



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

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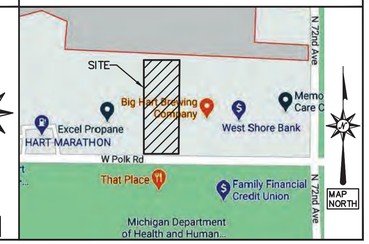
INFORMATION REGARDING EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING WAS PROVIDED BY OTHERS. SPARTAN ENGINEERING SOLUTIONS, LLC MAKES NO GUARANTEE ON THE ACCURACY OR COMPLETENESS OF INFORMATION PROVIDED BY OTHERS. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS, TYPES, MATERIALS, AND DEPTHS PRIOR TO THE START OF CONSTRUCTION. SPARTAN ENGINEERING SOLUTIONS, LLC SHALL BE HELD LIABLE FOR MISSING OR INCORRECTLY UTILITY INFORMATION, OR CONSEQUENTIAL CLAIMS OR DAMAGES, FOR ANY REASON.

VICINITY MAP NOT TO SCALE



CAUTION!!!
UNDERGROUND AND OVERHEAD UTILITIES ARE PRESENT WITHIN THE WORK AREA. CONTRACTOR TO LOCATE AND PROTECT ALL UNDERGROUND AND OVERHEAD UTILITIES DURING CONSTRUCTION. COORDINATE WITH RESPECTIVE UTILITY PROVIDERS AS REQUIRED PRIOR TO THE ONSET OF CONSTRUCTION.

THE CONSTRUCTION SPECIFIED WITHIN THESE PLANS SHALL BE PERFORMED IN COMPLETE COMPLIANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF HART, OCEANA COUNTY, MDOT, ALL APPLICABLE REFERENCE SPECIFICATIONS, INDEPENDENT UTILITY OWNERS, AND AUTOZONE PROJECT SPECIFICATIONS AS APPLICABLE.

STORM SEWER STRUCTURE TABLE

ES 1	12" RCP FLARED END SECTION WITH STEEL GRATE AND FOOTING 12" INV. 696.00
MH 2	4' DIA. MANHOLE EJIW #1040 W/ TYPE A COVER RIM 701.80 12" INV. W. 696.81 12" INV. S. 698.59
PT 3	MECHANICAL STORMWATER SEDIMENT PRE-TREATMENT UNIT, CONTECH MODEL CDS 2015-4-C. SEE SHEET C1.3B. RIM 705.75 12" INV. N. 700.00 12" INV. S. 700.92
MH 4	4' DIA. MANHOLE EJIW #1040 W/ TYPE A COVER RIM 709.50 12" INV. N. 704.70 12" INV. SW. 704.82
IN 5	2' DIA. INLET W/ 2' SUMP EJIW #7085 W/ TYPE M1 GRATE RIM 709.10 12" INV. NE. 705.90

DRAINAGE STRUCTURE CASTING NOTE:

UNLESS OTHERWISE REQUIRED BY THE CITY OF HART, CASTINGS SHALL BE:
MANHOLE = EJIW #1040 WITH TYPE B COVER
CATCH BASIN/INLET IN PAVEMENT = EJIW #5080 WITH TYPE M1 GRATE
CATCH BASIN/INLET IN CURB = EJIW #7085 WITH TYPE M1 GRATE

STORM SEWER NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT:

1. REFER TO SHEET NO. C1.3A FOR DETENTION BASIN DESIGN INFORMATION.
2. ALL STORM WATER MANAGEMENT IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF HART, OCEANA COUNTY DRAIN COMMISSIONER, AND MDOT AS APPLICABLE.
3. STORM SEWER PIPE SHALL BE REINFORCED CONCRETE ASTM C76, CLASS IV (MINIMUM) UNLESS OTHERWISE NOTED.
4. PVC STORM SEWER FOR THE ROOF DRAINAGE SYSTEM SHALL BE PVC SDR 35 WITH JOINTS MEETING ASTM D-3212.
5. JOINTS FOR RCP STORM SEWER SHALL BE TONGUE AND GROOVE WITH RUBBER "O" RING GASKETS UNLESS OTHERWISE INDICATED. JOINTS TO MEET ASTM C443 REQUIREMENTS.
6. PROVIDE LOW HEAD FLAT TOP DRAINAGE STRUCTURES WHERE REQUIRED BASED ON PROPOSED PIPE COVER. REFER TO DETAIL SHEETS FOR DRAINAGE STRUCTURE DETAILS.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND/OR OBTAIN ANY INFORMATION NECESSARY REGARDING THE PRESENCE OF UNDERGROUND UTILITIES ON THE PROJECT SITE.
8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY NOTIFY THE CITY ENGINEER AND/OR APPROPRIATE MUNICIPAL DEPARTMENT PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THEIR REQUIREMENTS.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SIZING ALL DRAINAGE STRUCTURES, INCLUDING PIPE ANGLES AND PENETRATIONS, AND SUBMITTING SHOP DRAWINGS AS REQUIRED BY AUTOZONE.

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER
WESLEY R. BERLIN
ENGINEER
No. 55143

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103

PROJECT: AUTOZONE HART MI1278
W POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: STORM WATER MANAGEMENT PLAN

C:\PROJECTS\2020-010_AUTOZONE HART MI1278\CAD\CONSTRUCTION\DGN-C01.3-MI1278-20010.DWG

SCALE: 1" = 20'

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811 Know what's below. Call before you dig.
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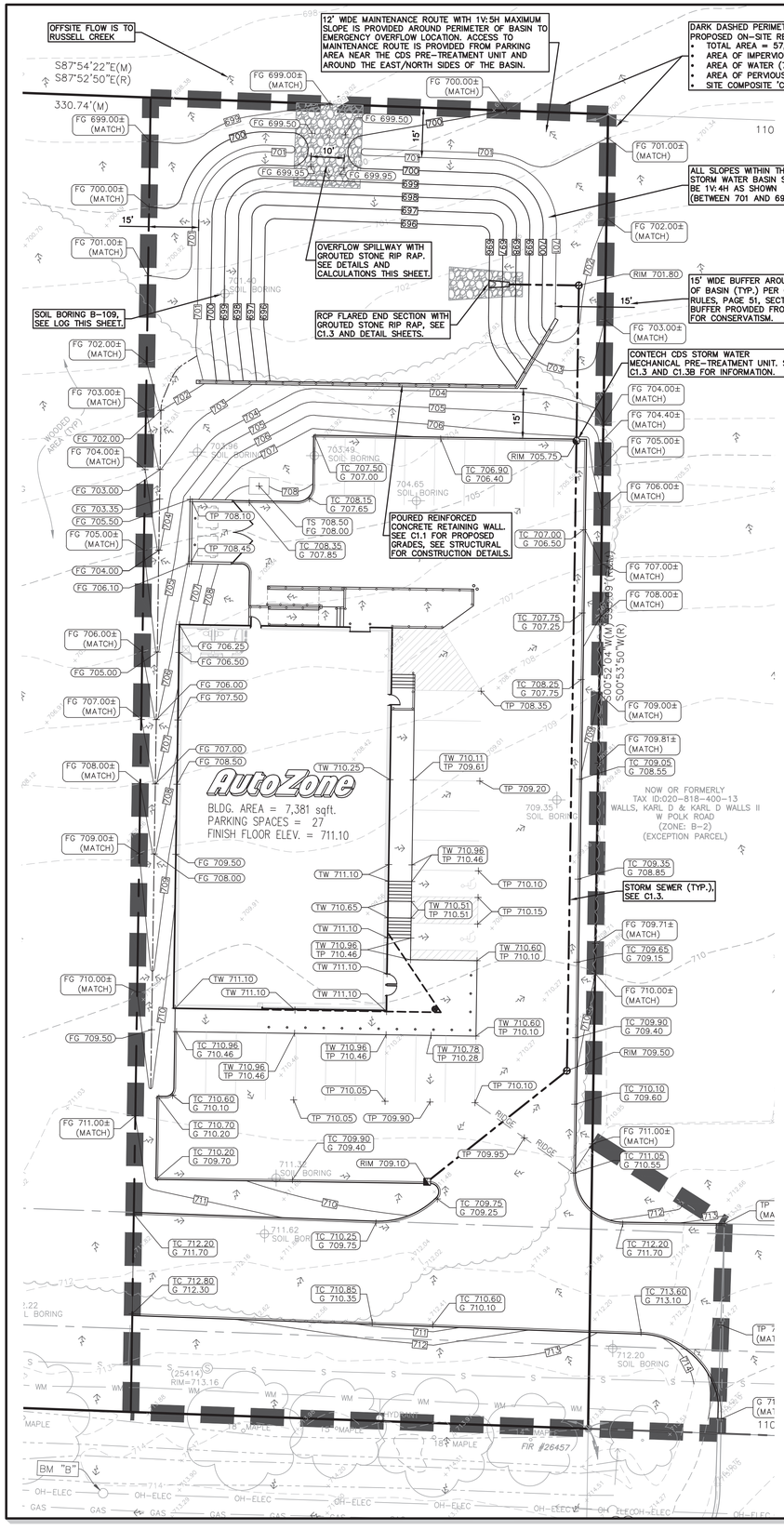
REVISED:	
P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020

SHEET NO.
C1.3



INFILTRATION BASIN DESIGN INFORMATION:

SPARTAN ENGINEERING SOLUTIONS, LLC

Design Regulations:	OCDC		Project Name:	AutoZone Hart MI1278	
Project No:	2020-010	By: WRB	Ck:WRB	Date:	11/23/2020
				Rev.	

STORMWATER POND: ON SITE RETENTION/INFILTRATION
DESIGN STORM EVENT: 25 YEAR STORM
DESIGN INFIL. RATE 0.52 IN/HR — ASSUMED INFILTRATION RATE PER PAGE 47 OF OCDC DRAINAGE RULES

Tributary Area Runoff Coefficient 'C' Data

	TOTAL DRAINAGE AREA:	57,284	SF
	BUILDING & PVMT AREAS:	32,479	at 'C' = 0.95
	STORMWATER STORAGE AREA:	6,224	at 'C' = 1.00
	GREEN (PERVIOUS) AREA:	18,581	at 'C' = 0.20
C	COMPOUND C:	0.712	

Total Tributary Data

	TOTAL DRAINAGE AREA:	57284	SF
A	TOTAL DRAINAGE AREA:	1.315	AC
C	COMPOSITE RUNOFF COEFF.	0.71	

TOTAL STORAGE VOLUME REQUIRED
C x A x Pa x 3630 — Pa = 3.55 INCHES — 12,069 CF — FLOOD CONTROL VOLUME PER PAGE 48 OF OCDC DRAINAGE RULES

BASIN SIZING — CONTOUR INTERPOLATION CALCS.

	CONTOUR ELEV	CONTOUR AREA	INCR. VOLUME	CUMUL. VOLUME	25-YR HWL
					12069
FREEBOARD	700	6,224	5,835	N/A	FREEBOARD
	699	5,445	5,072	13,057	698.81
	698	4,699	4,342	7,985	-
	697	3,985	3,643	3,643	-
	696	3,301	0	0	-

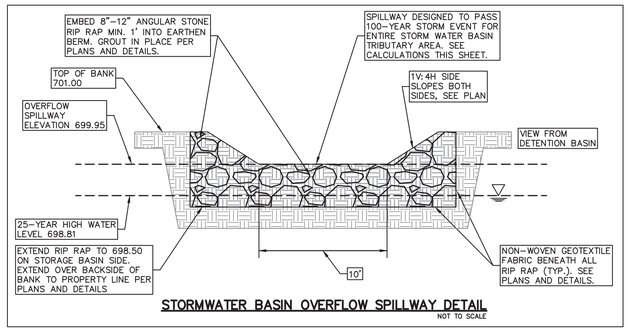
FREEBOARD ELEVATION 700.00
EMERGENCY OVERFLOW ELEVATION 699.95
TOP OF BASIN BANK ELEVATION 701.00

STORM WATER STORAGE BETWEEN 696 AND 699. 3' STORAGE DEPTH IS IN COMPLIANCE WITH MAXIMUM STORAGE DEPTH PER PAGE 49 OF THE OCDC DRAINAGE RULES (MAXIMUM DEPTH PERMITTED = 3.12' FOR ASSUMED INFILTRATION RATE)

PROPOSED BOTTOM OF BASIN 696.00. BOTTOM OF BASIN SHALL BE FLAT TO PROMOTE UNIFORM INFILTRATION

PROVIDED STORAGE VOLUME TO ELEVATION 699

25-YEAR HIGH WATER LEVEL ELEVATION FOR REQUIRED STORAGE VOLUME



STORMWATER BASIN OVERFLOW SPILLWAY DETAIL
NOT TO SCALE

Channel Report

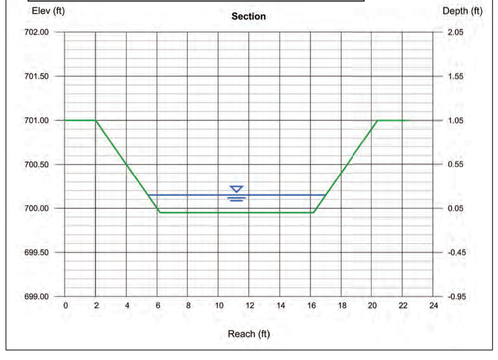
Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. — Wednesday, Nov 25 2020

2020-010 AZ Hart Overflow Spillway

DEPTH OF FLOW FOR 100-YEAR FLOW RATE FOR ENTIRE BASIN TRIBUTARY AREA.

Trapezoidal		Highlighted	
Bottom Width (ft)	= 10.00	Depth (ft)	= 0.20
Side Slopes (z:1)	= 4.00, 4.00	Q (cfs)	= 5.960
Total Depth (ft)	= 1.05	Area (sqft)	= 2.16
Invert Elev (ft)	= 699.95	Velocity (ft/s)	= 2.76
Slope (%)	= 4.50	Wetted Perim (ft)	= 11.65
N-Value	= 0.035	Crit Depth, Yc (ft)	= 0.22
		Top Width (ft)	= 11.60
Calculations		EGL (ft)	= 0.32
Compute by:	Known Q		
Known Q (cfs)	= 5.96		

100-YEAR FLOW RATE CALCULATION FOR SPILLWAY DESIGN:
- TOTAL AREA = 57,284 S.F. = 1.315 ACRES
- SITE COMPOSITE 'C' = 0.712
- 100-YEAR INTENSITY, 15 MINUTE Tc = 6.37 IN/HR (PER NOAA ATLAS 14, VOLUME 8, VERSION 2 FOR CITY OF HART MICHIGAN)
- Q100 = (0.712) x (6.37) x (1.315) = 5.96 CFS



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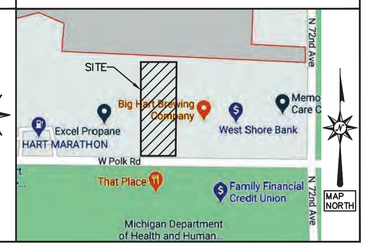
PLAN NORTH

VICINITY MAP — NOT TO SCALE



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GEOTILL — 7732 Loma Ct, Fishers, IN 46038, 317 449 0033, Fax 317 285 0609

TEST BORING LOG

CLIENT: Sweetgum Environmental — BORING #: B-102
PROJECT NAME: Proposed Autozone #1278 - Revised — JOB #: 112001272
PROJECT LOCATION: Near W Polk Rd & N 72nd Ave, Hart Michigan — Latitude, Longitude: 43.689904, -86.381024

DRILLING AND SAMPLING INFORMATION

Date Started	10/31/20	Hammer Wt.	140 lbs.
Date Completed	10/31/20	Hammer Drop	30 in.
Drill Foreman		Spoon Sampler OD	2.25 in.
Inspector	J Brodowski	Rock Core Dia	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Remarks
Topsoil 3"	0.3				
Brown, dry, loose to medium dense, fine Sand (SP)		1	SS	4-3-4	
		2	SS	4-4-4	
		5	SS	3-5-5	
		3	SS	5-5-5	
		4	SS	6-7-8	
	15.0	10			
End of boring 15'		15			

REPRESENTATIVE SOIL BORING LOG PER PROJECT GEOTECHNICAL ENGINEERING INVESTIGATION BY GEOTILL INC., DATED NOV. 18 2020

Sample Type: SS - Driven Split Spoon; ST - Pressed Shelby Tube; CA - Continuous Flight Auger; RC - Rock Core; CU - Cuttings; CT - Continuous Tube
Depth to Groundwater: Noted on Drilling Tools ____ ft.; At Completion ____ ft.; After ____ hours ____ ft.; Cave Depth ____ ft.
Boring Method: HSA - Hollow Stem Augers; CFA - Continuous Flight Augers; CA - Casing Advancer; MD - Mud Drilling; HA - Hand Auger
Page 1 of 1

GEOTILL — 7732 Loma Ct, Fishers, IN 46038, 317 449 0033, Fax 317 285 0609

TEST BORING LOG

CLIENT: Sweetgum Environmental — BORING #: B-109
PROJECT NAME: Proposed Autozone #1278 - Revised — JOB #: 112001272
PROJECT LOCATION: Near W Polk Rd & N 72nd Ave, Hart Michigan — Latitude, Longitude: 43.689125, -86.381125

DRILLING AND SAMPLING INFORMATION

Date Started	10/31/20	Hammer Wt.	140 lbs.
Date Completed	10/31/20	Hammer Drop	30 in.
Drill Foreman		Spoon Sampler OD	2.25 in.
Inspector	J Brodowski	Rock Core Dia	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Remarks
Topsoil 4"	0.3				
Brown, dry, loose to medium dense, fine Sand (SP)		1	SS	5-4-4	
		2	SS	7-4-8	
		5	SS	4-5-6	
		3	SS	4-4-5	
		4	SS		
	10.0	10			
End of boring 10'					

BORING B-109 WITHIN PROPOSED STORM WATER STORAGE BASIN, SEE PLAN

Sample Type: SS - Driven Split Spoon; ST - Pressed Shelby Tube; CA - Continuous Flight Auger; RC - Rock Core; CU - Cuttings; CT - Continuous Tube
Depth to Groundwater: Noted on Drilling Tools ____ ft.; At Completion ____ ft.; After ____ hours ____ ft.; Cave Depth ____ ft.
Boring Method: HSA - Hollow Stem Augers; CFA - Continuous Flight Augers; CA - Casing Advancer; MD - Mud Drilling; HA - Hand Auger
Page 1 of 1

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN — WESLEY R. BERLIN — ENGINEER — No. 55143 — LICENSED PROFESSIONAL ENGINEER

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103

PROJECT: AUTOZONE HART MI1278
W POLK ROAD (WEST OF N. 72nd AVE.)
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: INFILTRATION BASIN DESIGN PLAN

C:\PROJECTS\2020-010 AUTOZONE HART MI1278\CIVIL\CONSTRUCTION\C1.3A-INFILTRATION BASIN DESIGN PLAN.dwg

SCALE: 1" = 20'

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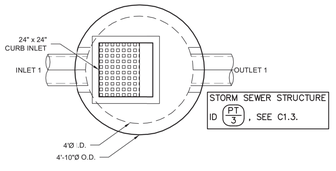
DIAL 811 OR 1-800-482-7171

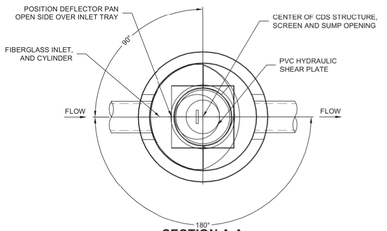
REVISED:

P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020

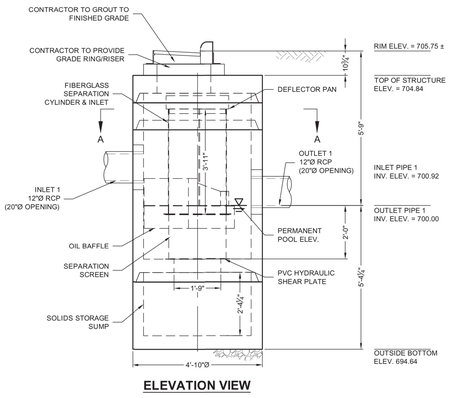
SHEET NO.
C1.3A



PLAN VIEW



SECTION A-A



ELEVATION VIEW

MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	FIBERGLASS INLET AND CYLINDER	CONTECH
1	2400 micron, 2' O.D. x 1.67' SEP. SCREEN	CONTECH
1	DEFLECTOR PAN	CONTRACTOR
1	3/16 INCH PVC HYDRAULIC SHEAR PLATE *	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	24" x 24" CURB INLET, EJI07191131C01, OR EQUIV.	CONTRACTOR

* SEE HYDRAULIC SHEAR PLATE DETAIL

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 6000 LBS.
STRUCTURE IS DELIVERED IN 4 PIECES

MAX FOOTPRINT = Ø4'-10"

CONTECH
CONTRACT
DRAWING

NCI
LAYOUT 1A
2015-4-FGIS
5824 / 453502

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MARK	DATE	REVISION DESCRIPTION	BY

CDS2015-4-C - 664290-10
AUTOZONE - HART MI CDS
HART, MI
for SYSTEM: PT3

CONTECH ENGINEERED SOLUTIONS LLC
9000 Cleveland Ave. NW · North Canton, OHIO

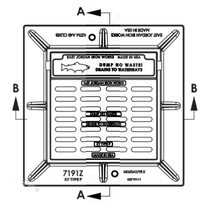
CDS
CONTECH STORMWATER SOLUTIONS

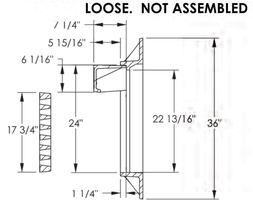
DATE: 11/24/20	SCALE: 3/8" = 1'-0"
DESIGNED: MSB	DRAWN: MSB
CHECKED: ###	APPROVED: ###
PROJECT No.: 664290	SEQUENCE No.: 10
SHEET: 1 OF 1	

I:\MEDIA\PROJECTS\ACTIVE\664290\664290SHEETS\CDS\664290-10-CDS2015MWS2SHEETS.DWG 11/24/2020 3:08 PM

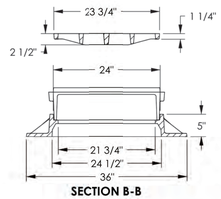
7191Z/7191M/7191T COMBINATION

NOTE: COMPONENTS ARE SHIPPED LOOSE. NOT ASSEMBLED





SECTION A-A



SECTION B-B

PRODUCT NUMBER
00719131C01

DESIGN FEATURES
MATERIALS
FRAME-GRAY IRON
ASTM A48 CL35B
GRATE-GRAY IRON
ASTM A48 CL35B
HOOD-GRAY IRON
ASTM A48 CL55B
DESIGN LOAD
HEAVY DUTY
COATING
UNDIPPED
OPEN AREA
123 SQ INCHES
√ **DESIGNATES MACHINE SURFACE**

REFERENCE INFORMATION
00719111
00719131
00719161
DRAWING DETAILS
ORIGINAL DRAWING: DEF 2/10/2010
REVISED BY:

Corporate
Headquarters
301 Spring Street
PO Box 459
East Jordan, MI
49727-0459
800.874.4100
EJ GROUP

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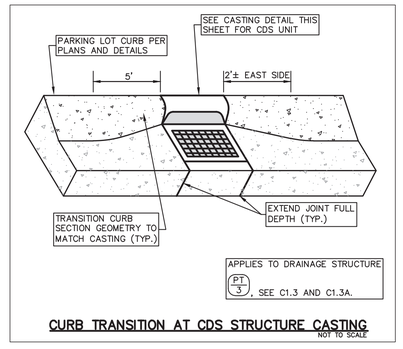


CURB TRANSITION AT CDS STRUCTURE CASTING
NOT TO SCALE

Project: AutoZone Hart MI
Location: *Hart, MI*
Prepared For: Spartan Engineering Solutions, LLC

CONTECH ENGINEERED SOLUTIONS

Purpose: To calculate the first flush runoff flow rate (WQF) over a given site area. In this situation the WQV to be analyzed is the runoff produced by the first 0.5" of rainfall.

Reference: United States Department of Agriculture Natural Resources Conservation Service TR-55 Manual

Given:

Structure Name	A (acres)	A (miles²)	Runoff Coefficient	Percent Imp. (%)*	t_c (min)	t_c (hr)
PT3	0.75	0.00117	0.78	80.00	15.0	0.250
		0.00000		-50.00		0.000
		0.00000		-50.00		0.000

* Assumes runoff coefficient of 0.3 for pervious areas and 0.9 for impervious areas.

Procedure:

The Water Quality Flow (WQF) is calculated using the Water Quality Volume (WQV). This WQV, converted to watershed inches, is substituted for the runoff depth (Q) in the Natural Resources Conservation Service (formerly Soil Conservation Service), TR-55 Gr

1. Compute WQV in watershed inches using the following equation:

$$WQV = P * R$$

where: WQV = water quality volume (watershed inches)
P = design precipitation (inches)
R = volumetric runoff coefficient = 0.05 + 0.009(I)
I = percent impervious cover

Structure Name	Percent Imp. (%)	R	P (in)	WQV (in)	WQV (CF)
PT3	80.00	0.770	0.5	0.385	1,048.16
0	-50.00	-0.400		0.000	-
0	-50.00	-0.400		0.000	-

2. Compute the NRCS Runoff Curve Number (CN) using the following equation, or graphically using Figure 2-1 from TR-55 (USDA, 1986):

$$CN = 1000 / [10+5P+10Q-10(Q^2+1.25QP)^{1/2}]$$

where: CN = Runoff Curve Number
P = design precipitation (inches)
Q = runoff depth (watershed inches)

Structure Name	Q (in)	CN
PT3	0.385	98.87
0	0.000	100.00
0	0.000	100.00

3. Using computed CN, read initial abstraction (I_a) from Table 4-1 in Chapter 4 of TR-55; compute I_a/P, interpolating when appropriate.

Structure Name	I_a (in)	I_a/P
PT3	0.041	0.082
0		#DIV/0!
0		#DIV/0!

4. Compute the time of concentration (t_c) in hours and the drainage area in square miles. A minimum t_c of 0.167 hours (10 minutes) should be used.

Structure Name	t_c (hr)	A (miles²)
PT3	0.250	0.00117
0	0.167	0.00000
0	0.167	0.00000

5. Read the unit peak discharge (q_u) from Exhibit 4-II in Chapter 4 of TR-55 for appropriate t_c for type II rainfall distribution.

Structure Name	t_c (hr)	I_a/P	q_u (csm/in)
PT3	0.250	0.082	731
0	0.167	#DIV/0!	
0	0.167	#DIV/0!	

6. Substituting WQV (watershed inches) for runoff depth (Q), compute the water quality flow (WQF) from the following equation:

$$WQF = (q_u)*(A)*(Q)$$

where: WQF = water quality flow (cfs)
q_u = unit peak discharge (cfs/mi²/inch)
A = drainage area (mi²)
Q = runoff depth (watershed inches)

Structure Name	q_u (csm/in)	A (miles²)	Q (in)	WQF (cfs)
PT3	731	0.00117	0.385	0.33
0	0	0.00000	0.000	0.00
0	0	0.00000	0.000	0.00

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON AN AVERAGE PARTICLE SIZE OF 110 MICRONS
AutoZone Hart MI
Hart, MI
for SYSTEM:

CONTECH ENGINEERED SOLUTIONS — CDS

Area	0.75	acres	CDS Model	2015-4	
Weighted C	0.78		Particle size	110	microns
Tc	25	minutes			

Rainfall Intensity[1] (in/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (cfs)	Removal Efficiency (%)	Incremental Removal (%)
0.02	12.53%	12.53%	0.01	100.00	12.53
0.04	11.32%	23.85%	0.02	100.00	11.32
0.06	10.08%	33.93%	0.04	100.00	10.08
0.08	7.49%	41.42%	0.05	99.79	7.47
0.10	7.44%	48.86%	0.06	99.39	7.39
0.12	5.31%	54.17%	0.07	99.00	5.26
0.14	4.18%	58.35%	0.08	98.60	4.12
0.16	4.82%	63.17%	0.09	98.20	4.73
0.18	3.40%	66.57%	0.11	97.81	3.33
0.20	2.89%	69.46%	0.12	97.41	2.82
0.25	6.22%	75.68%	0.15	96.42	6.00
0.30	4.12%	79.80%	0.18	95.42	3.93
0.35	3.37%	83.17%	0.20	94.43	3.18
0.40	2.90%	86.07%	0.23	93.4	2.7
0.45	2.65%	88.72%	0.26	92.4	2.4
0.50	1.68%	90.40%	0.29	91.5	1.5
0.75	5.11%	95.51%	0.44	86.5	4.4
1.00	2.18%	97.69%	0.59	81.5	1.8
1.50	1.50%	99.19%	0.88	61.9	0.9
2.00	0.50%	99.69%	1.17	46.4	0.2
2.10	0.31%	100.00%	1.23	44.2	0.1
					96.35
				Removal Efficiency Adjustment[2] =	6.5%
				Predicted % Annual Rainfall Treated =	92.9%
				Predicted Net Annual Load Removal Efficiency =	**89.9%**

1 - Based on 26 Years of Rainfall Data from NCDC Station Ann Arbor University of Michigan
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN
WESLEY R. BERLIN
ENGINEER
No. 55143
LICENSED PROFESSIONAL ENGINEER

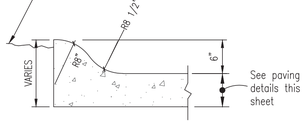
PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103
PROJECT: AUTOZONE HART MI11278
W. POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN
SHEET TITLE: STORM WATER QUALITY INFORMATION
C:\PROJECTS\2020-010 AUTOZONE HART MI\728\DWG\CONSTRUCTION\00SHEETS.DWG

SCALE: 1" = 20'

3 WORKING DAYS BEFORE YOU DIG
811 Know what's below. Call before you dig.
DIAL 811 OR 1-800-482-7171

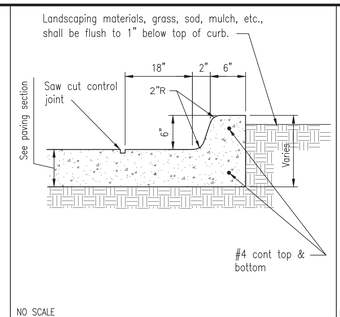
REVISED:

P.E./P.M. WRB/WRB
DRAFTED: WRB
CHECKED: WRB
JOB NO. 2020-010
ORIGINAL ISSUE DATE
NOVEMBER 27, 2020
SHEET NO.
C1.3B



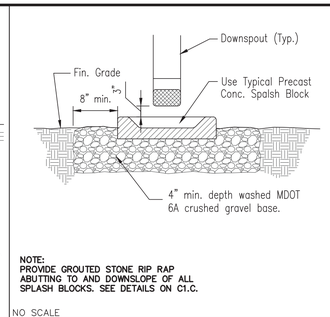
NO SCALE

1 ON-SITE CONCRETE CURB



NO SCALE

2 CROSS ACCESS DRIVE CONC. CURB



NOTE:
PROVIDE GROUTED STONE RIP RAP ABUTTING TO AND DOWNSLOPE OF ALL SPLASH BLOCKS. SEE DETAILS ON C1.C.

NO SCALE

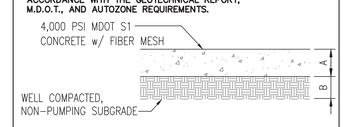
3 CONCRETE SPLASH BLOCK

DIMENSION & TYPE		
Concrete Section	A	B
Parking Stalls (standard duty)	5"	see below
Loading/Dumpster/Drives (heavy duty)	8"	see below

NOTE: SEE C1.0 SITE PLAN FOR ADDITIONAL REQUIREMENTS AND INFORMATION.

NOTE: COMPACTED SUBGRADE SHALL BE AS SPECIFIED IN SOILS REPORT.

ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT, M.D.O.T., AND AUTOZONE REQUIREMENTS.

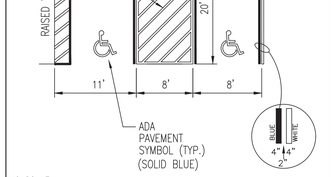


NOTE: PAVEMENT THICKNESS PER GEOTECHNICAL REPORT AND AUTOZONE DESIGN CRITERIA FOR SITE LOADING AND TRAFFIC CONDITIONS.

NO SCALE SEC-C04

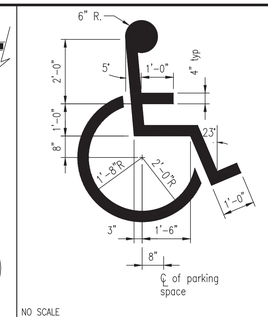
4 CONCRETE PAVING SECTION

5 (NOT USED)



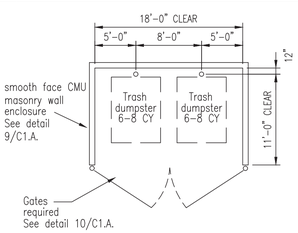
NO SCALE

6 ADA PARKING DETAIL



NO SCALE

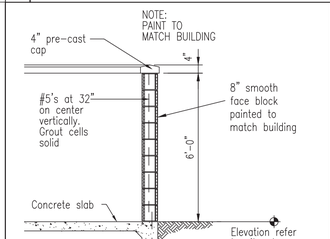
7 INT'L BARRIER FREE SYMBOL



NOTE: Bollards behind the dumpsters shall be 6'-0" tall above the pavement surface and extend 3'-6" into the ground.

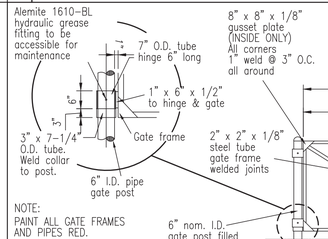
NO SCALE SEC-C17M

8 DUMPSTER LAYOUT



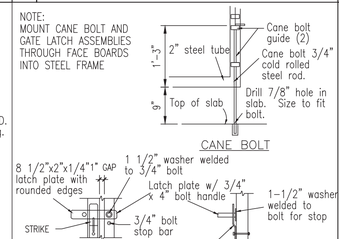
NO SCALE MDUMPSEC

9 DUMPSTER SECTION



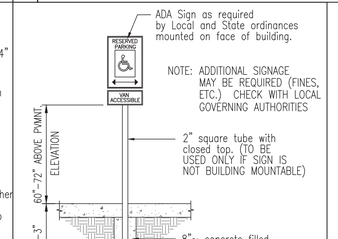
NO SCALE SEC-C18

10 GATE DETAIL FOR DUMPSTER ENCLOSURE



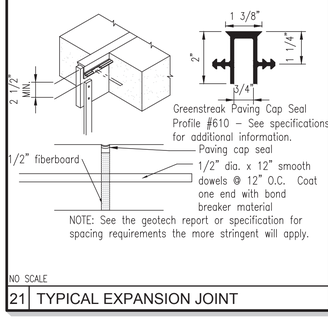
NO SCALE SEC-C19

11 GATE LATCH / BOLT DETAILS



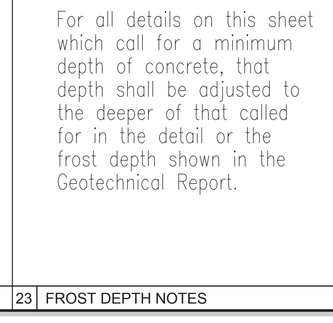
NO SCALE SEC-C06

12 TYPICAL ADA SIGN



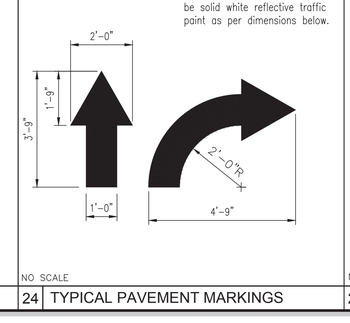
NO SCALE

14 BOLLARD LAYOUT PLAN



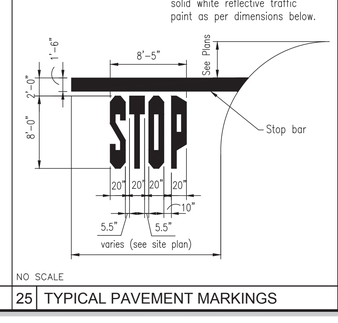
NO SCALE

15 PIPE GUARD @ ROLL-UP DOOR



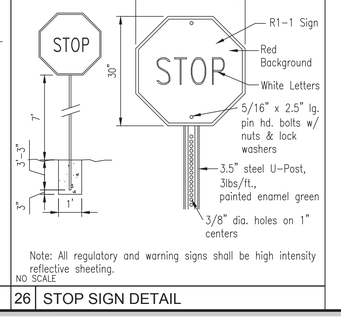
NO SCALE SEC-C07

16 TYPICAL PIPE GUARD SECTION



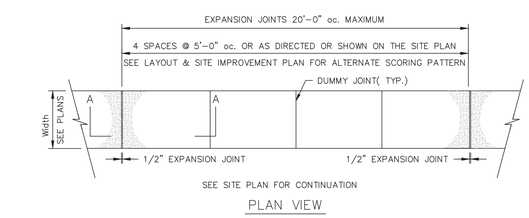
NO SCALE SEC-C18

17 WHEEL STOP DETAIL



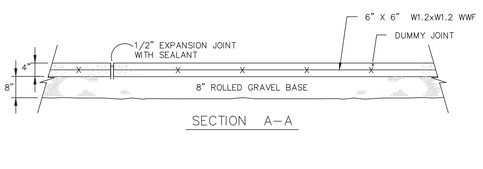
NO SCALE SEC-C13

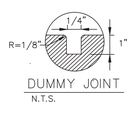
13 TYPICAL LIGHT POLE

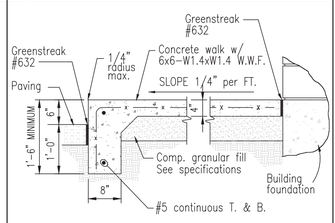


NO SCALE

19 CONCRETE SIDEWALK







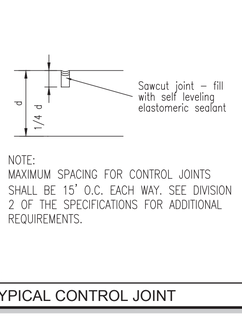
3/4" = 1'-0" SEC-C30

20 TYPICAL WALK SECTION

NOTE: See the geotech report or specification for spacing requirements the more stringent will apply.

NO SCALE

21 TYPICAL EXPANSION JOINT



NOTE:
MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 15' O.C. EACH WAY. SEE DIVISION 2 OF THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

NO SCALE

22 TYPICAL CONTROL JOINT

For all details on this sheet which call for a minimum depth of concrete, that depth shall be adjusted to the deeper of that called for in the detail or the frost depth shown in the Geotechnical Report.

23 FROST DEPTH NOTES

NO SCALE

24 TYPICAL PAVEMENT MARKINGS

NO SCALE

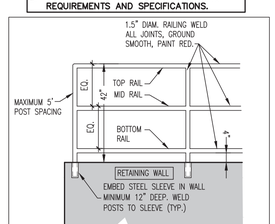
25 TYPICAL PAVEMENT MARKINGS

Note: All regulatory and warning signs shall be high intensity reflective sheeting.

NO SCALE

26 STOP SIGN DETAIL

NOTES:
1. **DETAIL APPLIES ONLY TO RETAINING WALL NORTH OF PARKING AREA, ADJACENT TO STORM WATER STORAGE BASIN. SEE PLANS.**
2. **RAILING SYSTEM TO MEET STATE OSHA REQUIREMENTS AND SPECIFICATIONS.**



RETAINING WALL SAFETY RAIL

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER
WESLEY R. BERLIN
ENGINEER
No. 55143
Wesley R. Berlin

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN 38103

PROJECT: AUTOZONE HART MI12278
W. POLK ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: SITE DETAILS

C:\PROJECTS\2020-010_AUTOZONE_HART_MI12278\DWG\CONSTRUCTION\2020-010-C1.A_MI12278-2020.DWG

SCALE: 1" = 20'

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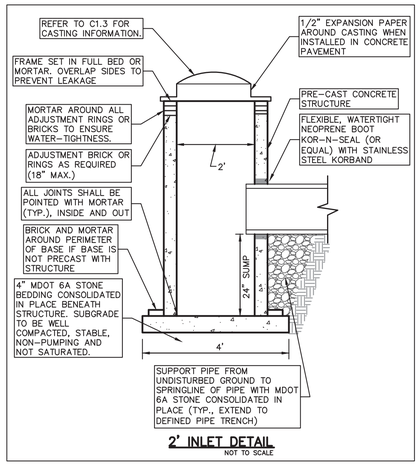
811
Know what's below. Call before you dig.
DIAL 811 OR 1-800-482-7171

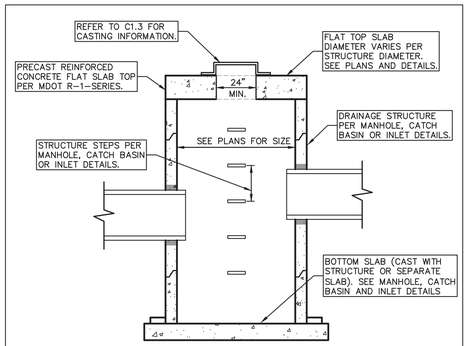
REVISED:
2/5/19 CITY REVIEW 1 2/1/19

P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020

SHEET NO.
C1.A



2' INLET DETAIL
NOT TO SCALE



FLAT TOP DRAINAGE STRUCTURE DETAIL
NOT TO SCALE

NOTE:
APPLY THIS DETAIL WHERE REQUIRED BASED ON PROPOSED PIPE COVER. SEE PLANS AND DETAILS. SEE MANHOLE, CATCH BASIN AND INLET DETAILS FOR DRAINAGE STRUCTURE REQUIREMENTS.

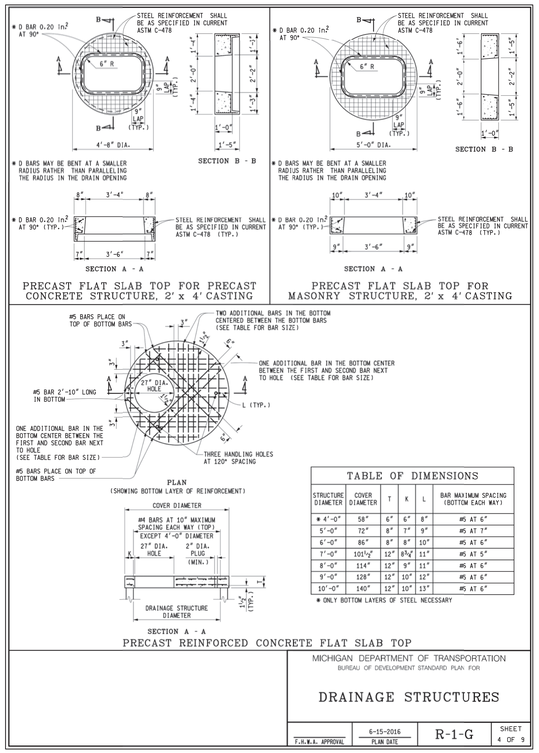


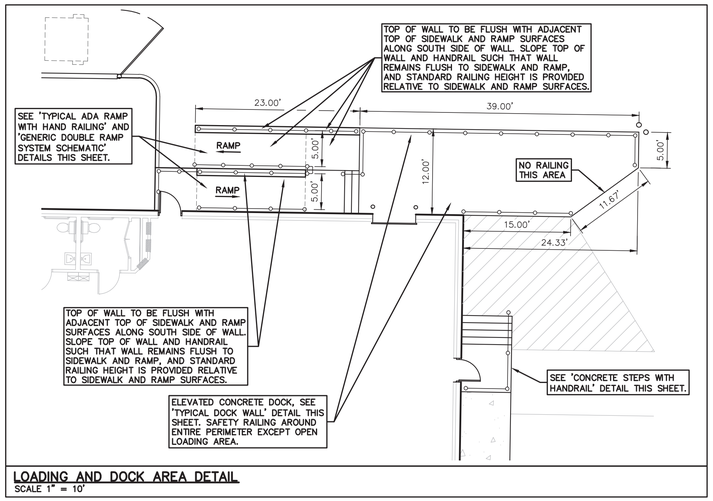
TABLE OF DIMENSIONS					
STRUCTURE DIAMETER	COVER DIAMETER	T	K	L	BAR MAXIMUM SPACING (BOTTOM EACH WAY)
* 4'-0"	58"	6"	6"	8"	#5 AT 6"
5'-0"	72"	8"	7"	9"	#5 AT 7"
6'-0"	86"	8"	8"	10"	#5 AT 6"
7'-0"	101½"	12"	8¾"	11"	#5 AT 5"
8'-0"	114"	12"	9"	11"	#6 AT 6"
9'-0"	128"	12"	10"	12"	#5 AT 6"
10'-0"	140"	12"	10"	13"	#5 AT 6"

* ONLY BOTTOM LAYERS OF STEEL NECESSARY

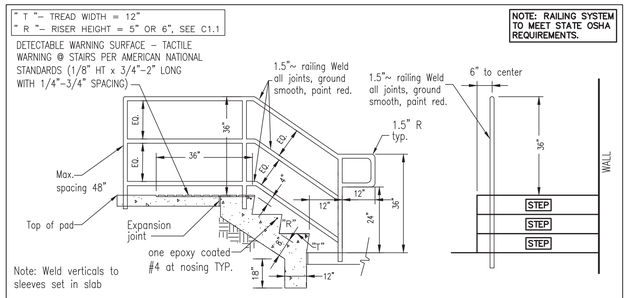
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

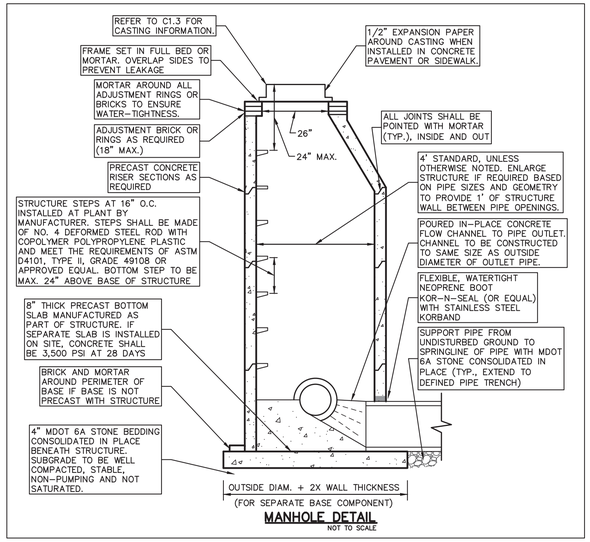
F.H.W.A. APPROVAL	6-15-2016 PLAN DATE	R-1-G	SHEET 4 OF 9



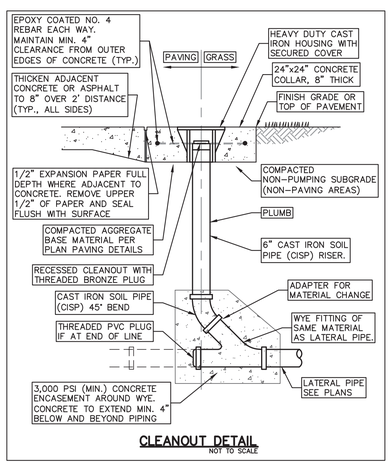
LOADING AND DOCK AREA DETAIL
SCALE 1" = 10'



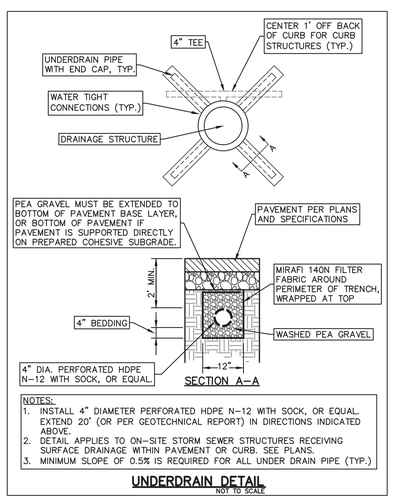
CONCRETE STEPS WITH HANDRAIL



MANHOLE DETAIL
NOT TO SCALE

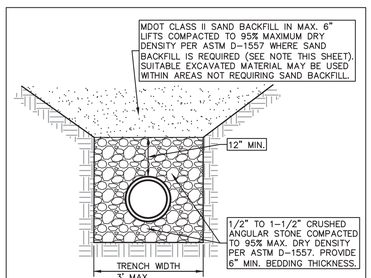


CLEANOUT DETAIL
NOT TO SCALE



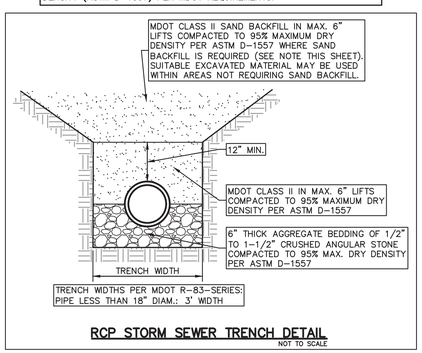
NOTES:
1. INSTALL 4" DIAMETER PERFORATED HDPE N-12 WITH SOCK, OR EQUAL. EXTEND 20' (OR PER GEOTECHNICAL REPORT) IN DIRECTIONS INDICATED ABOVE.
2. DETAIL APPLIES TO ON-SITE STORM SEWER STRUCTURES RECEIVING SURFACE DRAINAGE WITHIN PAVEMENT OR CURB. SEE PLANS.
3. MINIMUM SLOPE OF 0.5% IS REQUIRED FOR ALL UNDER DRAIN PIPE (TYP.)

UNDERDRAIN DETAIL
NOT TO SCALE

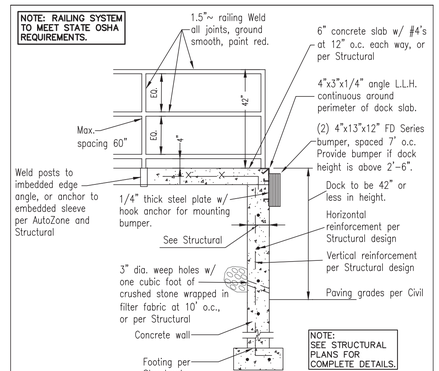


PVC PIPE TRENCH DETAIL
NOT TO SCALE

SAND BACKFILL NOTE:
ALL UTILITIES UNDER PAVEMENT OR WITHIN 3' OF THE EDGE OF PAVEMENT OR BUILDING (OR WITHIN THE 45° LINE OF INFLUENCE) SHALL HAVE MDOT CLASS II (MIN.) GRANULAR BACKFILL COMPACTED TO 95% MAX. DRY DENSITY (ASTM D-1557) PER MDOT REQUIREMENTS.

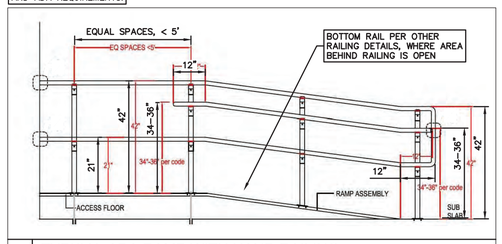


RCP STORM SEWER TRENCH DETAIL
NOT TO SCALE

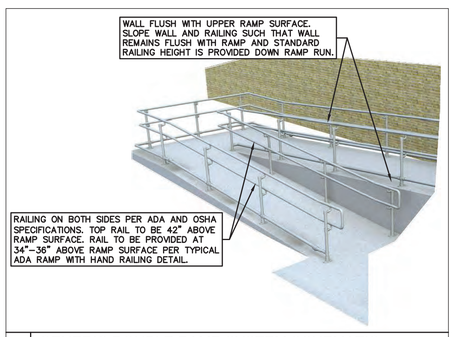


TYPICAL DOCK WALL

NOTE: RAILING SYSTEM TO MEET STATE OSHA AND ADA REQUIREMENTS.



TYPICAL ADA RAMP WITH HAND RAILING



GENERIC DOUBLE RAMP SYSTEM SCHEMATIC

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN
LICENSED PROFESSIONAL ENGINEER
WESLEY R. BERLIN
ENGINEER
No. 55143

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN. 38103

PROJECT: AUTOZONE #6278 HART
W/ P.K. ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: CONSTRUCTION DETAILS

G:\PROJECTS\2020-010 AUTOZONE HART #6278\DWG\CONSTRUCTION\011-CD-B1-#6278-2020.DWG

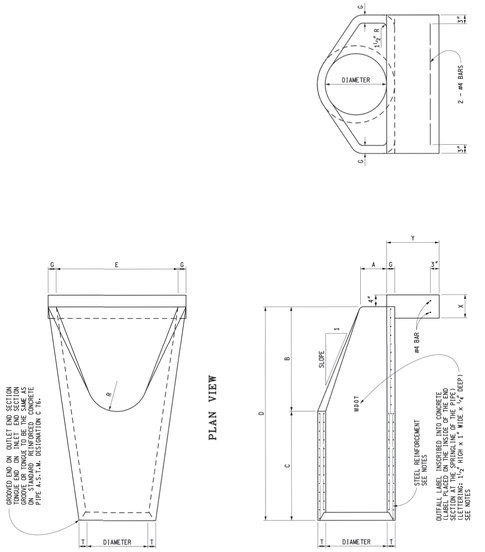
SCALE:

3 WORKING DAYS BEFORE YOU DIG
811
Know what's below. Call before you dig.
DIAL 811 OR 1-800-482-7171

REVISED:

P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020

SHEET NO.
C1.B



DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES

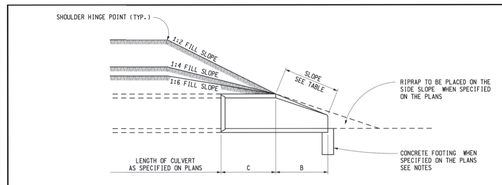
APPROVED BY: DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT

PREPARED BY DESIGN DIVISION
DRAWN BY: R.L.T.
CHECKED BY: K.K.P.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

PRECAST CONCRETE END SECTION FOR PIPE CULVERT

1-27-2015 F.H.W.A. APPROVAL	10-22-2014 PLAN DATE	R-86-E	SHEET 1 OF 2



SLOPE DETAIL

TABLE OF DIMENSIONS

PIPE DIAMETER (INCHES)	APPROX. SLOPE	T (INCHES)	A (INCHES)	B (INCHES)	C (INCHES)	D (INCHES)	E (INCHES)	G (INCHES)	R (INCHES)	X (INCHES)	Y (INCHES)
12	2.4 to 1	2	4	24	49	73	24	2	9	8	18
15	2.4 to 1	$2^1/_4$	6	27	46	73	30	$2^1/_4$	11	8	18
18	2.3 to 1	$2^1/_2$	9	27	46	73	36	$2^1/_2$	12	8	18
21	2.4 to 1	$2^3/_4$	9	36	$37^1/_2$	$73^1/_2$	42	$2^3/_4$	13	8	18
24	2.5 to 1	3	$9^1/_2$	$43^1/_4$	$30^1/_2$	$73^3/_4$	48	3	14	8	18
27	2.5 to 1	$3^1/_4$	$10^1/_2$	$49^1/_4$	$24^1/_2$	$73^3/_4$	54	$3^1/_4$	$14^1/_2$	8	18
30	2.5 to 1	$3^1/_2$	12	54	$18^3/_4$	$73^3/_4$	60	$3^1/_2$	15	8	18
36	2.5 to 1	4	15	63	$34^3/_4$	$97^3/_4$	72	4	20	8	18
42	2.5 to 1	$4^1/_2$	21	63	35	98	78	$4^1/_2$	22	10	24
48	2.5 to 1	5	24	72	26	98	84	5	22	10	24
54	2.0 to 1	$5^1/_2$	27	65	$33^1/_4$	$98^1/_4$	90	$5^1/_2$	24	10	24
60	1.9 to 1	6	35	60	39	99	96	5	*	12	24
66	1.7 to 1	$6^1/_2$	30	72	27	99	102	$5^1/_2$	*	12	24
72	1.8 to 1	7	36	78	21	99	108	6	*	12	24
78	1.8 to 1	$7^1/_2$	36	90	21	111	114	$6^1/_2$	*	12	24
84	1.6 to 1	8	36	$90^1/_2$	21	$111^1/_2$	120	$6^1/_2$	*	12	24

NOTES:

CONCRETE IN THESE END SECTIONS SHALL BE THE SAME GRADE AND STRENGTH AS SPECIFIED FOR REINFORCED CONCRETE PIPE. A.S.T.M. DESIGNATION C 76 CLASS II. EXCEPT AS MODIFIED BY THE STANDARD SPECIFICATION.

REINFORCEMENT IN THE "C" PORTION SHALL BE THE SAME AS SPECIFIED FOR REINFORCED CONCRETE, A.S.T.M. DESIGNATION C 76 CLASS II FOR THE SIZE OF CONNECTING PIPE.

REINFORCEMENT IN THE "B" PORTION SHALL HAVE A CROSS-SECTIONAL AREA EQUAL TO THAT OF ONE LAYER OF STEEL IN THE "C" PORTION.

THE END OF THE PIPE CULVERT SHALL BE PLACED IN THE CONCRETE END SECTION SO THAT THE FLOW LINES ARE FLUSH. THE JOINT SHALL BE COMPLETELY FILLED WITH MORTAR.

TO CHANGE THE FILL SLOPE TO THE SLOPE OF THE END SECTION USE A TRANSITION SLOPE OF APPROXIMATELY 10' IN LENGTH TO PROVIDE A PLEASING APPEARANCE.

VARIATIONS IN DIMENSIONS – THE THICKNESS OF CONCRETE, THE POSITION OF STEEL, AND THE INTERNAL DIAMETER OF THE PIPE SHALL CONFORM WITH THE VARIATIONS IN DIMENSIONS AS PROVIDED IN THE SPECIFICATIONS FOR REINFORCED CONCRETE CULVERT, STORM DRAINS, AND SEWER PIPE, A.S.T.M. DESIGNATION C 76.

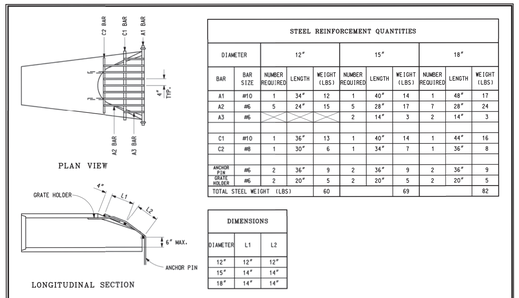
PLACE CONCRETE FOOTING WHEN CULVERT GRADE IS 4% OR MORE. OR WHEN SPECIFIED ON THE ROAD PLANS.

OUTFALL LABEL TO BE USED ONLY WHERE STORMWATER WILL DISCHARGE DIRECTLY TO THE WATERS OF THE STATE.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

PRECAST CONCRETE END SECTION FOR PIPE CULVERT

1-27-2015 F.H.W.A. APPROVAL	10-22-2014 PLAN DATE	R-86-E	SHEET 2 OF 2



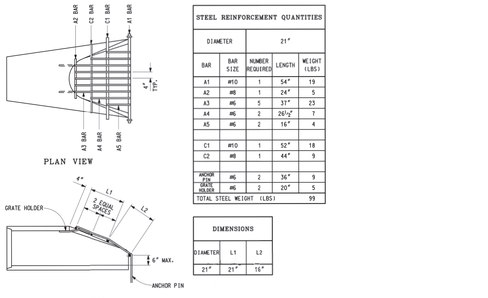
STEEL REINFORCEMENT QUANTITIES

DIAMETER		12"			15"			18"	
BAR	BAR SIZE	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)
A1	#10	1	34"	12	1	40"	14	1	48"	17
A2	#6	5	24"	15	5	28"	17	7	28"	24
A3	#6				2	14"	3	2	14"	3
C1	#10	1	36"	13	1	40"	14	1	44"	16
C2	#8	1	30"	6	1	34"	7	1	36"	8
ANCHOR PIN GRATE HOLDER	#6	2	36"	9	2	36"	9	2	36"	9
	#6	2	20"	5	2	20"	5	2	20"	5
TOTAL STEEL WEIGHT (LBS)				60			69			82

DIMENSIONS

DIAMETER	L1	L2
12"	12"	12"
15"	14"	14"
18"	14"	14"

GRATE FOR 12" THROUGH 18" DIAMETER PIPE WITH CONCRETE END SECTION



STEEL REINFORCEMENT QUANTITIES

DIAMETER		21"		
BAR	BAR SIZE	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)
A1	#10	1	54"	19
A2	#8	1	24"	5
A3	#6	5	37"	23
A4	#6	2	26½"	7
A5	#6	2	16"	4
C1	#10	1	52"	18
C2	#8	1	44"	9
ANCHOR PIN GRATE HOLDER	#6	2	36"	9
	#6	2	20"	5
TOTAL STEEL WEIGHT (LBS)				99

DIMENSIONS

DIAMETER	L1	L2
21"	21"	16"

GRATE FOR 21" DIAMETER PIPE WITH CONCRETE END SECTION

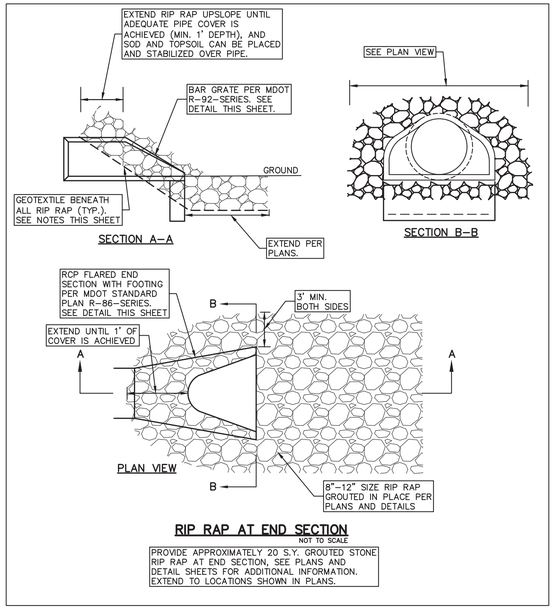
PREPARED BY DESIGN DIVISION
DRAWN BY: R.L.T.
CHECKED BY: K.K.P.

ENGINEER OF CONSTRUCTION & TECHNOLOGY
ENGINEER OF MAINTENANCE
ENGINEER OF TRAFFIC AND SAFETY
ENGINEER - ROAD DESIGN
ENGINEER OF DESIGN
DEPARTMENT DIRECTOR Gregory J. Rostine
BY: CHIEF ENGINEER/DEPUTY DIRECTOR, BUREAU OF HIGHWAY TECHNICAL SERVICES

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

STEEL GRATES FOR END SECTIONS

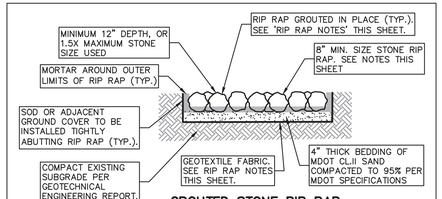
9-14-2001 F.H.W.A. APPROVAL	2-26-2001 PLAN DATE	R-92-C	SHEET 1 OF 6



RIP RAP AT END SECTION

NOT TO SCALE

PROVIDE APPROXIMATELY 20 S.Y. GROUTED STONE RIP RAP AT END SECTION, SEE PLANS AND DETAIL SHEETS FOR ADDITIONAL INFORMATION. EXTEND TO LOCATIONS SHOWN IN PLANS.



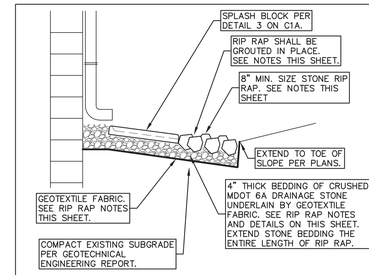
GROUTED STONE RIP RAP

NOT TO SCALE

NOTES:
1. SEE PLANS FOR ALL RIP RAP LOCATIONS.
2. ANCHOR GEOTEXTILE IN A KEY TRENCH IN ACCORDANCE WITH MDOT AND MANUFACTURER SPECIFICATIONS.
3. CONFORM RIP RAP TO SURROUNDING GROUND SLOPES. CONSTRUCT RIP RAP FLUSH WITH SURROUNDING SURFACES UNLESS OTHERWISE DIRECTED IN RELATED DETAIL.

RIP RAP NOTES: (APPLIES TO ALL DETAILS WITH RIP RAP)

1. ALL RIP RAP CONSTRUCTION INCLUDING GEOTEXTILE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MDOT 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 813.
2. UNLESS OTHERWISE INDICATED, MINIMUM RIP RAP DEPTH SHALL BE 12".
3. RIP RAP SHALL BE NATURAL STONE PER MDOT SECTION 916.01C. FRACTURED CONCRETE AND ROUNDED STONES ARE NOT ACCEPTABLE.
4. STONE SHALL BE TOUGH, SOUND, DURABLE FRACTURED ROCK FREE OF CRACKING AND BRITTLENESS.
5. ALL RIP RAP SHALL BE PLACED ON NON-WOVEN GEOTEXTILE PER MDOT SPECIFICATIONS. ALL GEOTEXTILE MUST BE ANCHORED IN A KEY TRENCH PER MDOT AND MANUFACTURER SPECIFICATIONS.
6. GEOTEXTILE LINER SHALL BE PER MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION SECTION 910, AND MEET THE REQUIREMENTS FOR 'GEOTEXTILE LINER' AS SPECIFIED WITHIN TABLE 910-1.
7. MAIN INDIVIDUAL STONE SIZE SHALL BE 8"-10" MINIMUM. THESE STONES SHALL BE EMBEDDED AND INTERLOCKED AGAINST SURROUNDING STONES OF THIS SIZE. SMALLER STONE (4" TO 6") MAY ONLY BE USED TO FILL VOIDS BETWEEN THE LARGER MAIN STONES.
8. RIP RAP SHALL BE GROUTED IN PLACE WITH TYPE R-3 MORTAR PER MDOT SECTION 813.03.
9. CONSTRUCT RIP RAP FLUSH WITH SOD OR ADJACENT GROUND COVER AT RIP RAP LIMITS (TYP.).



GROUTED STONE RIP RAP AT BUILDING DOWNSPOUT

NOT TO SCALE

NOTES:
1. SEE DETAIL 3 'CONCRETE SPLASH BLOCK' ON C1.A FOR ADDITIONAL INFORMATION.
2. REFER TO 'RIP RAP NOTES' THIS SHEET.
3. SEE PLANS FOR ALL RIP RAP LOCATIONS.
4. INCLUDE MINIMUM 5 S.Y. GROUTED STONE RIP RAP AT ALL SPLASH BLOCKS UNLESS OTHERWISE INDICATED.
5. ANCHOR GEOTEXTILE IN A KEY TRENCH IN ACCORDANCE WITH MDOT AND MANUFACTURER SPECIFICATIONS.
6. CONFORM RIP RAP TO SURROUNDING GROUND SLOPES. CONSTRUCT RIP RAP FLUSH WITH SURROUNDING SURFACES UNLESS OTHERWISE DIRECTED.

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN
LICENSED PROFESSIONAL ENGINEER
WESLEY R. BERLIN
ENGINEER
No. 55143
Wesley R. Berlin

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN. 38103

PROJECT: AUTOZONE HART MI11278
W. POLK ROAD, WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: CONSTRUCTION DETAILS

C:\PROJECTS\2020-010 AUTOZONE HART MI11278\PWO\CONSTRUCTION\2012-GD-01-MI11278-20201012.DWG

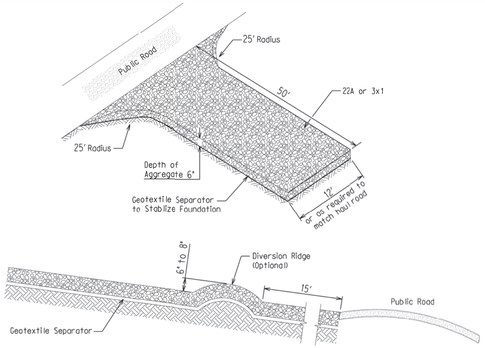
SCALE:

3 WORKING DAYS BEFORE YOU DIG
811
Know what's below. Call before you dig.
DIAL 811 OR 1-800-482-7171

REVISED:

P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020

SHEET NO.
C1.C



Use:
Providing a stable Gravel Access Approach, minimizes the tracking of loose materials from the construction site onto public roadways. Coarser aggregate is more effective in reducing tracking. Any materials tracked onto public roadways shall be removed as specified in the Standard Specifications for Construction, or as directed by the Engineer.

Installation and maintenance of Gravel Access Approach is effective in reducing sediment loading to inlet protection devices.

Installation and Maintenance:
The Gravel Access Approach should be located in accordance with the plans or as directed by the Engineer. All vegetation and other objectionable material shall be removed from the foundation area. Geotextile Separator must be placed beneath the aggregate to stabilize the foundation.

Replace or replenish aggregate if it is no longer preventing tracking.

Optional Measures:
A Gravel Access with Diversion Ridge is recommended where access grade exceeds 2%. This will also aid in dislodging soil or debris from tires.

Related SESC Measures:

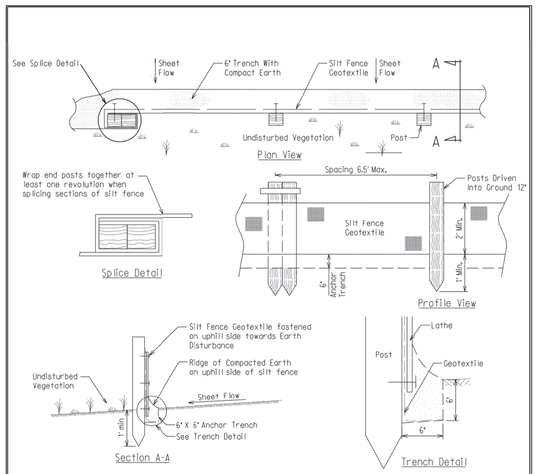
Measurement and Payment:
Optional work shown, when installed and maintained as directed by the Engineer, will be included in the item Gravel Access Approach.

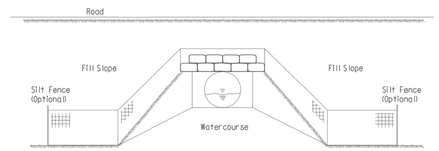
Contract Item (Pay Item)	Pay Unit
Erosion Control, Gravel Access Approach	Each

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

Gravel Access Approach

MDOT	04-07-2006 PLAN DATE	E&S-14-A	SHEET 1 OF 1





MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

Silt Fence

MDOT	09-30-2005 PLAN DATE	E&S-26-A	SHEET 1 OF 2

Use:
A Silt Fence is a permeable barrier erected adjacent to disturbed areas to capture sediment from sheet flow. It is made of woven geotextile fabric which is stretched and supported by wooden posts and trenched in at the bottom.

The Silt Fence retards the movement of sediment-laden water allowing the deposition and retention of sediment.

Do not install Silt Fence across streams or ditches where flows are concentrated.

The use of a Silt Fence should never be substituted for the application of permanent or temporary vegetative cover.

Installation and Maintenance:
It is critical to thoroughly trench in the bottom of Silt Fence as shown to maximize its performance and to prevent failure from undercutting, overtopping or collapsing. Geotextile should extend along side and bottom of trench.

Ensure that stable overflow outlets are available.

Remove all sediment from behind Silt Fence when it reaches approximately 50 percent of its capacity and make repairs promptly.

Silt Fence shall remain in place and properly maintained until the disturbed area is completely stabilized.

Optional Measures:
As an extra precautionary measure when there is a steep disturbed area adjacent to a watercourse, two rows of Silt Fence may be placed.

Sand and Stone Bags (E & S-241) may be used to provide additional support for Silt Fence, installed at culvert extensions as shown in the detail above.

Related SESC Measures:
E & S-2 Grubbing Omitted
E & S-6 Vegetative Buffer Strips
E & S-9 Benches
E & S-24 Sand and Stone Bags
E & S-28 Mulching and Mulch Anchoring
E & S-32 Surface Roughening and Scarification
E & S-33 Mulch Blankets and High Velocity Mulch Blankets.

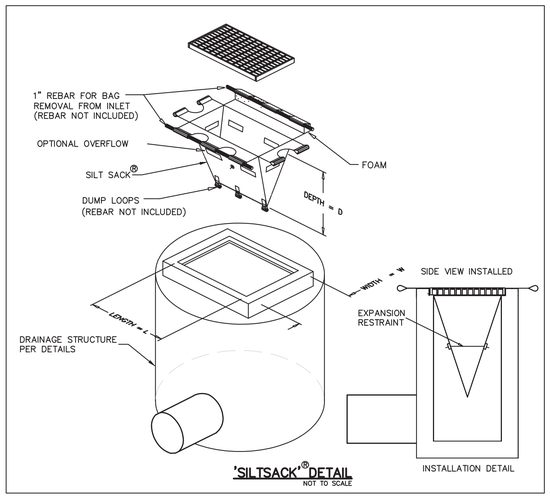
Measurement and Payment:
Optional work shown, when installed and maintained as directed by the Engineer, will be paid using the associated contract item listed here.

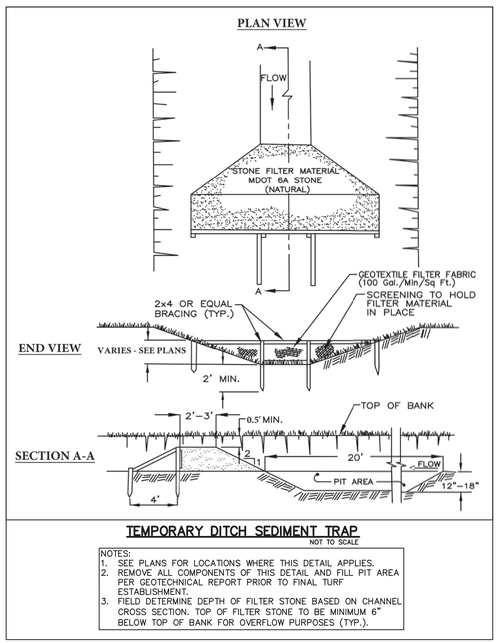
Contract Item (Pay Item)	Pay Unit
Erosion Control, Silt Fence	Foot
Erosion Control, Maintenance, Sediment Removal	Cubic Yard
Erosion Control, Sand Bag	Each
Erosion Control, Stone Bag	Each

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT SESC DETAIL FOR

Silt Fence

MDOT	04-07-2006 PLAN DATE	E&S-26-A	SHEET 2 OF 2



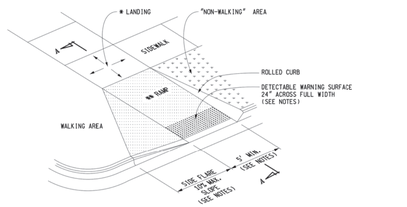


TEMPORARY DITCH SEDIMENT TRAP
NOT TO SCALE

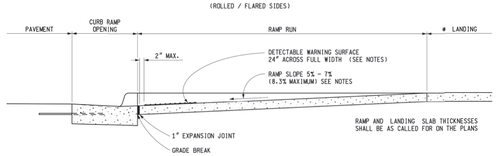
NOTES:
1. SEE PLANS FOR LOCATIONS WHERE THIS DETAIL APPLIES.
2. REMOVE ALL COMPONENTS OF THIS DETAIL AND FILL PIT AREA PER GEOTECHNICAL REPORT PRIOR TO FINAL TURF ESTABLISHMENT.
3. FIELD DETERMINE DEPTH OF FILTER STONE BASED ON CHANNEL CROSS SECTION. TOP OF FILTER STONE TO BE MINIMUM 6" BELOW TOP OF BANK FOR OVERFLOW PURPOSES (TYP.).

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



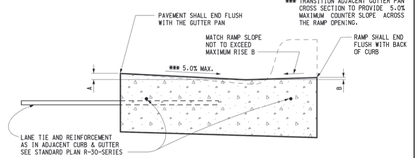
SIDEWALK RAMP TYPE RF
(ROLLED / FLARED SIDES)



SECTION A-A

CURB TYPE	MAXIMUM RISE (INCHES) A	B
B1	3/8	1
B2	3/8	1
B3	3/8	1
D1	3/8	1
D2	3/8	1
D3	3/8	1
C1	1/2	1/2
C2	1/2	1/2
C3	3/8	1/2
C4	3/8	1/2
C5	1	1/2
C6	1	1/2
F1	1/2	1/2
F2	1/2	1/2
F3	3/4	1/2
F4	3/4	1/2
F5	1	1/2
F6	1	1/2

FOR CURB TYPES SEE STANDARD PLAN R-30-SERIES



SECTION THROUGH CURB RAMP OPENING
(TYPICAL ALL RAMP TYPES)

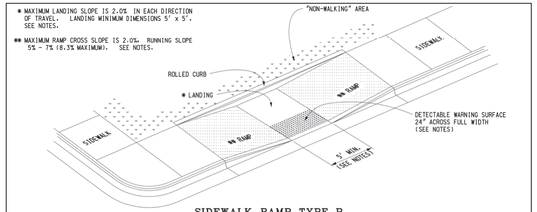
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

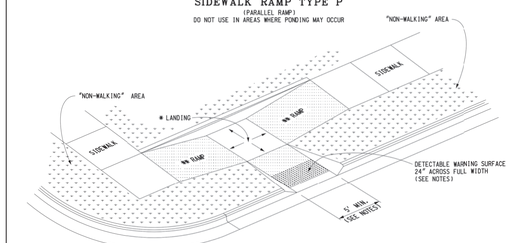
F.H.W.A. APPROVAL	7-26-2019 PLAN DATE	R-28-J	SHEET 2 OF 7

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

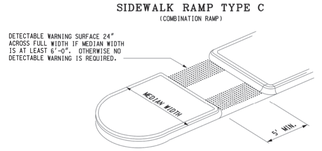
** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE P
(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



SIDEWALK RAMP TYPE C
(COMBINATION RAMP)

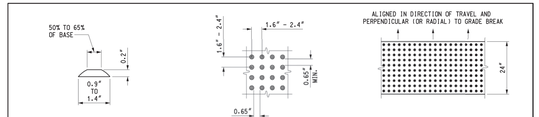


SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	7-26-2019 PLAN DATE	R-28-J	SHEET 3 OF 7



DOME SECTION | DOME SPACING | DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOTES:

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

SIDEWALK RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, WHERE CONDITIONS PERMIT. IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

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

WHEN 5' MINIMUM WIDTHS ARE NOT PRACTICABLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4'.

CURB RAMPS WITH A RUNNING SLOPE ≤5% DO NOT REQUIRE A TOP LANDING. HOWEVER, ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP MUST INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE; HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH NOT INCLUDING LANDINGS OR TRANSITIONS.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN ½". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	7-26-2019 PLAN DATE	R-28-J	SHEET 7 OF 7

SPARTAN ENGINEERING SOLUTIONS, LLC
2583 PINE BLUFFS COURT
HIGHLAND, MICHIGAN 48357
PHONE: 810-746-9928
WEB: WWW.SPARTAN-ES.COM

STATE OF MICHIGAN
LICENSED PROFESSIONAL ENGINEER
WESLEY R. BERLIN
ENGINEER
No. 55143
PROFESSIONAL ENGINEER
Wesley R. Berlin

PREPARED FOR: AUTOZONE DEVELOPMENT, LLC
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TN. 38103

PROJECT: AUTOZONE #6278
NW POLAR ROAD WEST OF N. 72nd AVE.
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE: CONSTRUCTION DETAILS

C:\PROJECTS\2020-010 AUTOZONE HART MI\PZN\CIVIL\CONSTRUCTION\01-GI\01-MI1278-20010.DWG

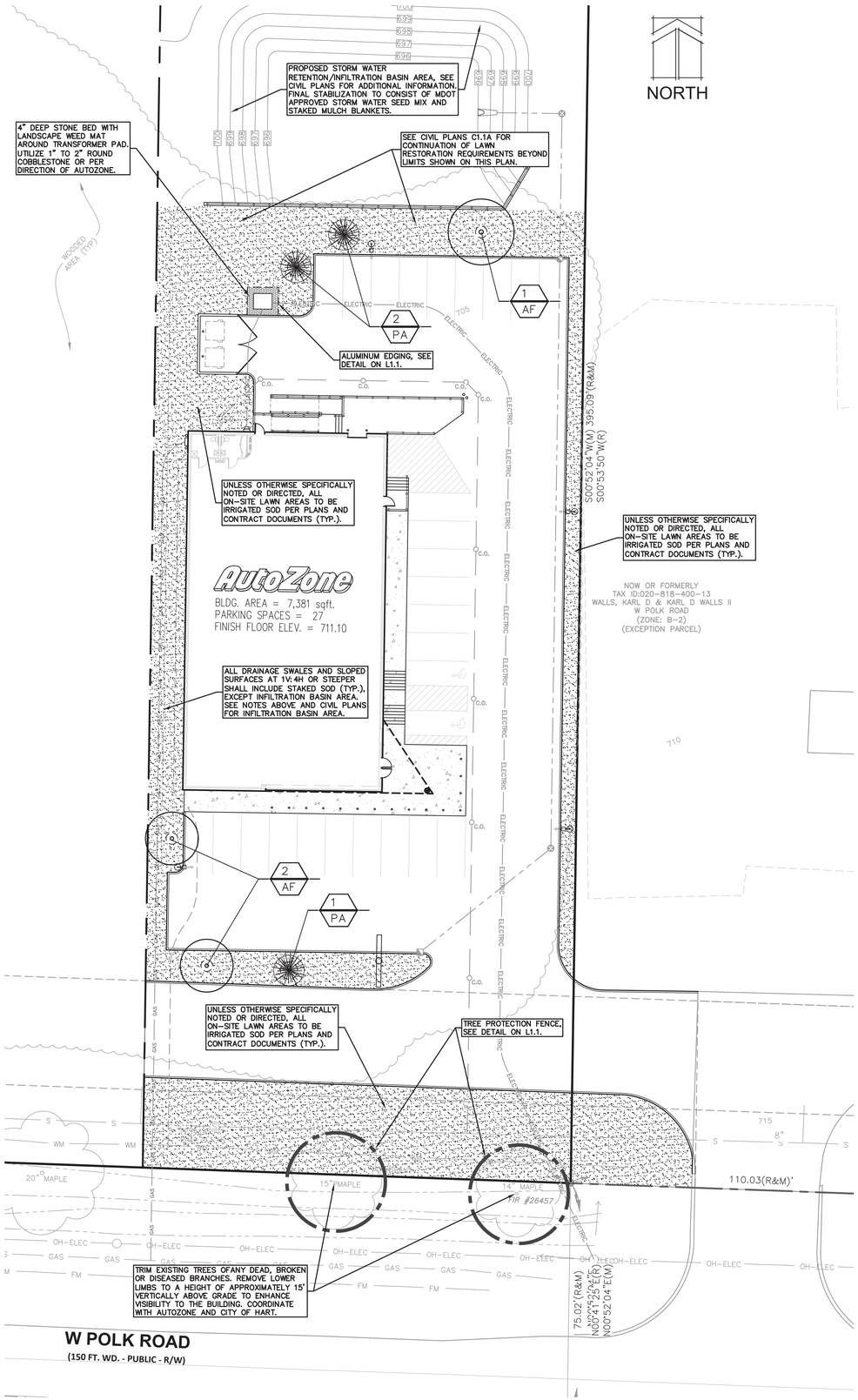
SCALE:

3 WORKING DAYS BEFORE YOU DIG
Know what's Below. Call before you dig.
DIAL 811 OR 1-800-482-7171

REVISED:

P.E./P.M.	WRB/WRB
DRAFTED:	WRB
CHECKED:	WRB
JOB NO.	2020-010
ORIGINAL ISSUE DATE	NOVEMBER 27, 2020

SHEET NO.
C1.D



General Landscape Notes:

1. Base information provided by Spartan Engineering Solutions LLC.

2. The contractor(s) shall verify the location of all underground utilities prior to construction.

3. All existing vegetation shown is to be saved and protected during the demolition and construction process.

4. All landscape areas to be grass common to region except where other plant material is called for.

5. A spade bed edge is required around individual trees.

6. Any landscape areas disturbed by construction shall be scarified to a depth of 2", graded smooth to allow for positive drainage. For any landscape area so designated to remain whether on or off site, remove weeds, rocks construction items, etc., scarify area, re-seed and fertilize. All R.O.W. curb and gutters are to be cleaned of debris.

7. All disturbed areas within the R.O.W.(s) shall be seeded with MDOT TUF (turf urban freeway) seed mix. Mulch with a straw mulch blanket staked in place or hydroseeded.

8. Finish grade in landscape islands shall be installed so that they are 1" lower than the top of the surrounding curbs.

9. The Contractor shall provide a WATER PERMEABLE WEED MAT for all planting beds and areas of stone mulch!!

10. All plant materials and sod (within property lines) to receive permanent underground automatic irrigation system designed by an irrigation contractor licensed by the State. The Contractor shall provide drawings for approval by the municipality prior to installation.

11. Install pipe sleeves where irrigation lines cross or are under pavement. All sleeves to be twice the diameter of the pipe(s) it houses.

12. Plants shall conform to the sizes as shown on the drawings and shall be of sound health. All measurements such as spread, ball size, height, caliper and quality designations shall be in conformance to the latest edition of the American Standards for Nursery Stock. All plant material shall be hardy to the project area, be free of disease and insects, and conform to the American Standard for Nursery Stock of the American Nurserymen.

13. All evergreen tree species are to be full, dense plants branched fully to the ground.

14. Prune all dead and broken branches from all plants immediately after installation.

15. Planting soil mixture shall be prepared on-site by mixing 3 parts topsoil to 1 part existing site soils to 1 part peat, adding phosphate free all purpose fertilizer at manufacturer's recommended rate to the mixture.

16. Organic mulch requirements: shade trees, ornamental trees and evergreen trees – 6" of shredded bark.

17. Sod areas as shown on plan, within the property line.

18. Turf Notes: Select low maintenance hybrid turf from local grower. Test soil for proper pH for select sod. Amend soil with organic material, terilizer and finish grade. Stagger all sod seams, fill any gaps with sand, water and roll smooth. Contractor shall replace any dead sod within one growing season.

19. Slope Stabilization: After seeding, overlay turf mats on all slopes greater than 3:1. If sod can not be staked properly, use Pyramat by Synthetic Industries or equal. Contractor to repair all areas of erosion to satisfaction of Owner/municipality to establish proper turf within one year.

20. All Landscaping shall be maintained in a healthy, neat and orderly state following installation. Any and all plant material that dies or becomes diseased, shall be replaced within six months.

21. See Sheet L1.1 for Planting Details.

Landscape Requirements:

1. LANDSCAPING REGULATIONS: TITLE FOUR ZONING SECTION 1243.22
   REQUIRED:
   ALL PARKING AREAS MORE THAN 5,000 SQUARE FEET IN AREA, EXCEPT THOSE PARKING AREAS FOR INDUSTRIAL USES WHICH ARE LOCATED IN THE REAR YARD, SHALL BE LANDSCAPED WITH ONE CANOPY AND ONE EVERGREEN TREE FOR EVERY TEN PARKING SPACES, WITH A MINIMUM OF TWO TREES SHALL BE PLANTED, ADJACENT TO THE PARKING AREA.

   27 PARKING SPACES DIVIDED BY 10 = 2.7 OR 3 CANOPY TREES AND 3 EVERGREEN TREES.

   THIS HAS BEEN PROVIDED.

Legend

- EXISTING TREE TO REMAIN
- CANOPY TREE
- EVERGREEN TREE
- SPADE BED EDGE
- IRRIGATED STAKED SOD
- STONE MULCH
- PLANTKEY (QTY. / SPECIES)
- TREE PROTECTION FENCE

Plant List

Qty.	Key	Botanical Name	Common Name	Size				Root
				Caliper	Height	Spread	Other	
Trees								
3	AF	ACER x FREEMANII 'ARMSTRONG'	ARMSTRONG RED MAPLE	2 1/2"				B&B
3	PA	PICEA ABIES 'CUPRESSINA'	COLUMNAR NORWAY SPRUCE		6'			B&B

0 5 10 20 50 100

SCALE: 1" = 20'

811 Know what's below. Call before you dig.
3 working days
BEFORE YOU DIG CALL MISS DIG

Design Solutions LLC
Landscape Architects & Planners
2580 Dustin RD
Okemos, MI 48864
517 333-7026

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STATE OF MICHIGAN
SUSAN L. SHAFER
LANDSCAPE ARCHITECT
No. 1038
REGISTERED LANDSCAPE ARCHITECT

SHEET TITLE: LANDSCAPE PLAN
PROJECT FOR: AutoZone Hart MI1278
W. POLK ROAD WEST OF N. 72nd STREET
CITY OF HART, OCEANA COUNTY, MICHIGAN

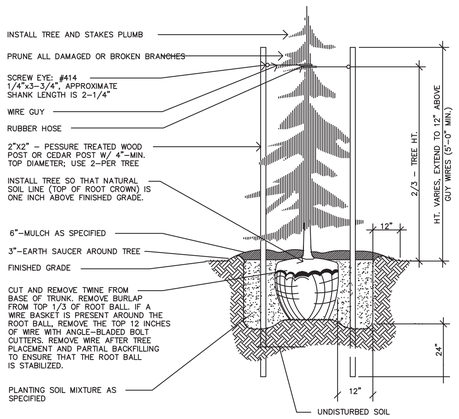
DATE: NOVEMBER 27, 2020

REVISIONS:

SCALE: 1" = 20'

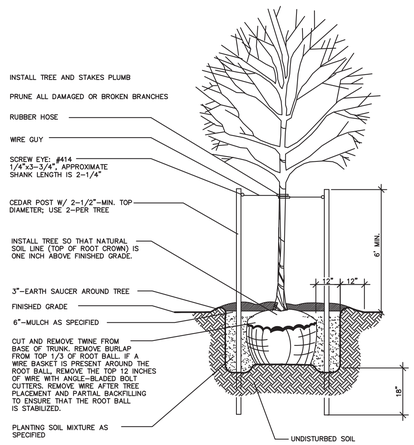
PROJECT NO.: 20-010 (SES)

SHEET NO.: L1.0



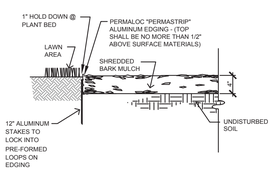
Evergreen Tree Planting/Staking

6' IN HEIGHT AND ABOVE



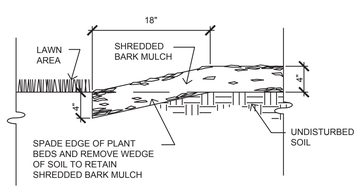
Deciduous Tree Planting/Staking

UNDER 3" IN CALIPER



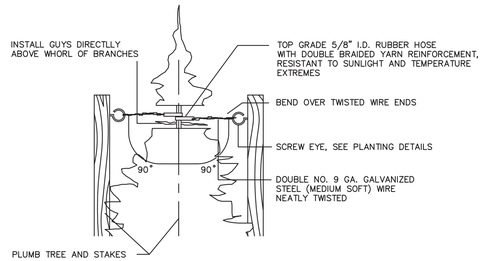
Plant Bed - Aluminum Edging

SCALE: NO SCALE



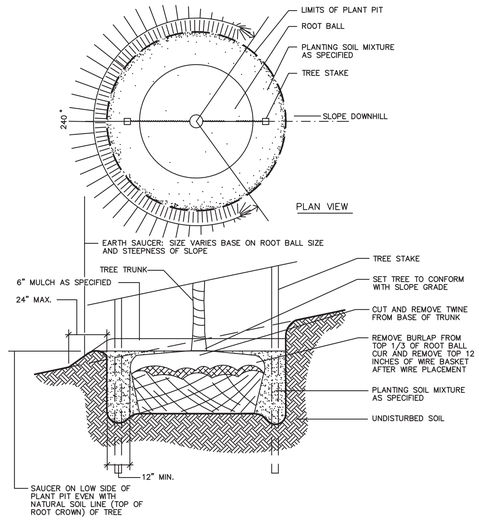
Spade Edge Plant Bed

SCALE: NO SCALE



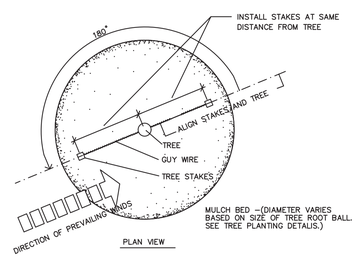
Guy Installation

FOR EVERGREEN AND DECIDUOUS TREES



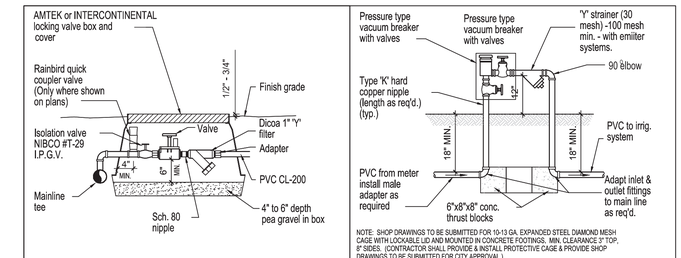
Deciduous Tree Planting/Staking

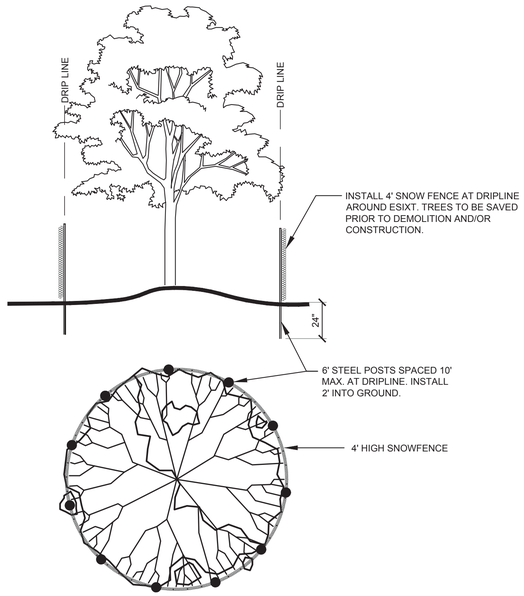
FOR SLOPE OR BERM INSTALLATION



Stake Placement

FOR EVERGREEN AND DECIDUOUS TREES





TREE PROTECTION DETAIL

SCALE: NO SCALE

Design Solutions LLC
Landscape Architects & Planners
2580 Dustin RD
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517 333-7026

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STATE OF MICHIGAN
SUSAN E. SHAFER
LANDSCAPE ARCHITECT
No. 1038
REGISTERED LANDSCAPE ARCHITECT

LANDSCAPE DETAILS
AutoZone Hart MI1278
W. POLK ROAD WEST OF N. 72nd STREET
CITY OF HART, OCEANA COUNTY, MICHIGAN

SHEET TITLE:
PROJECT FOR:

DATE:
NOVEMBER 27, 2020

REVISIONS:

SCALE:
1" = 20'

PROJECT NO.:
20-010 (SES)

SHEET NO.:
L1.1

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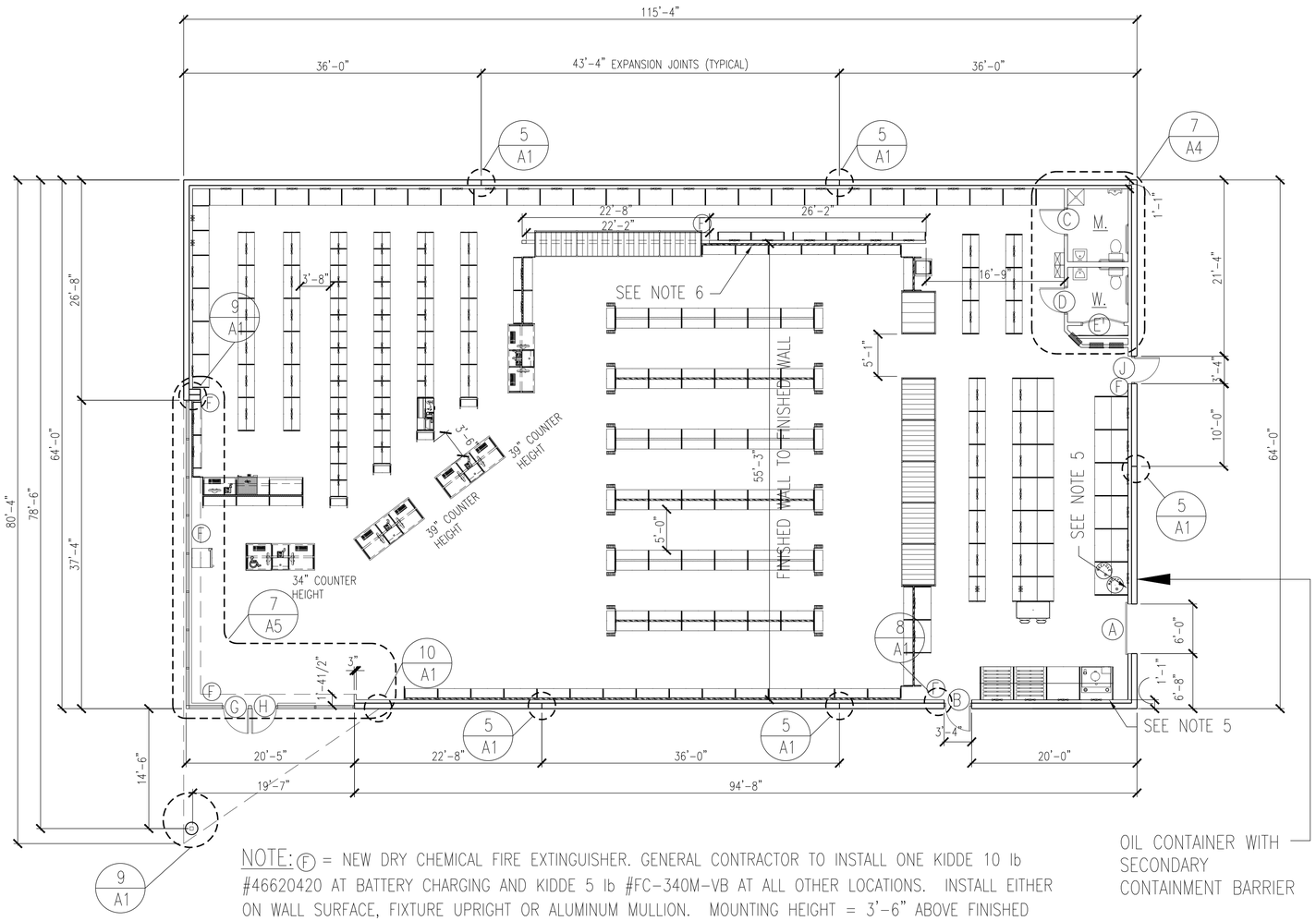


NOTE: (F) = NEW DRY CHEMICAL FIRE EXTINGUISHER. GENERAL CONTRACTOR TO INSTALL ONE KIDDE 10 lb #46620420 AT BATTERY CHARGING AND KIDDE 5 lb #FC-340M-VB AT ALL OTHER LOCATIONS. INSTALL EITHER ON WALL SURFACE, FIXTURE UPRIGHT OR ALUMINUM MULLION. MOUNTING HEIGHT = 3'-6" ABOVE FINISHED FLOOR TO TOP OF EXTINGUISHER.

OIL CONTAINER WITH SECONDARY CONTAINMENT BARRIER

1/8" = 1'-0"

1 FLOOR PLAN

1. REFER TO STRUCTURAL DRAWINGS FOR ALL DETAILS AND REQUIREMENTS REGARDING FOUNDATIONS, WALL REINFORCING, BOND BEAMS, LINTELS, AND ROOF FRAMING.
2. REFER TO CIVIL DRAWINGS FOR LOCATIONS AND DETAILS OF SIDEWALKS, PIPE GUARDS, ETC., AS WELL AS FINISH FLOOR ELEVATION AND EXTERIOR FINISHED GRADES AROUND THE BUILDING.
3. INSTALL 6" WIDE, 20 GAUGE GALVANIZED SHEET METAL STRIP BETWEEN THE BACK OF THE GYPSUM BOARD AND THE FACE OF THE METAL STUD AROUND THE ENTIRE PERIMETER OF THE BUILDING, AS WELL AS BOTH SIDES OF THE CURTAIN WALL. TOP OF STRIP TO BE 93" ABOVE FINISHED FLOOR. REFER TO SHEET A-4 FOR DETAILS OF CURTAIN WALL.
4. SEE SHEET M-2 FOR LOCATION OF NON FREEZE YARD HYDRANT AND INSTALLATION REQUIREMENTS.
5. INSTALL 1/2" X 4'-0" X 8'-0" AC PLYWOOD HORIZONTALLY WITH THE LONG EDGE ON THE FLOOR AND THE END JOINT CENTERING ON A STUD. APPLY PLYWOOD TO THE FACE OF GYPSUM BOARD WITH SCREWS TO FACILITATE FUTURE REPLACEMENT. SEE INTERIOR ELEVATIONS SEE 3/A4 DETAIL.
6. SEE SPECIFICATIONS FOR INFORMATION ON ITEMS NOT COMPLETELY DELINEATED ON THE DRAWINGS.

1/8" = 1'-0" AFN01

2 FLOOR PLAN NOTES

LOCATION	FLOOR		BASE		WALLS		CLG.		REM.
	SEALED CONCRETE	VINYL TILE	VINYL	QUARRY TILE	GYPSUM BOARD	FIBER REINFORCED PANELS	METAL DECK	GYPSUM BOARD	
SALES AREA		●	●		●		●		
REST ROOMS	●		●			●		●	

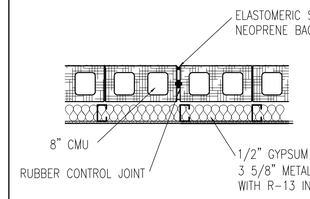
3/16" = 1'-0" AFC01

3 ROOM FINISH SCHEDULE

MK	SIZE	TYPE	FRAME	JAMB DETAIL	HEAD DETAIL	ADA / EXIT HARDWARE (SEE SECTION 08700 OF THE SPECIFICATIONS)
A	6'-0" x 8'-0"	STEEL OVERHEAD ROLL-UP	STEEL ANGLE	6;7&8/A1	6&7/A1	
B	3'-0" x 7'-0" x 1-3/4"	HOLLOW METAL	HOLLOW METAL	8/A1	8/A1	PUSH BAR EXIT DEVICE WILL HAVE AN INTEGRAL SOUNDER
C	3'-0" x 6'-8" x 1-3/4"	SOLID CORE WOOD UNDERCUT DOOR 1"	HOLLOW METAL	8/A1	8/A1	LEVER HANDLE PRIVACY SETS
D	3'-0" x 6'-8" x 1-3/4"	SOLID CORE WOOD UNDERCUT DOOR 1"	HOLLOW METAL	8/A1	8/A1	LEVER HANDLE PRIVACY SETS
E	2'-6" x 6'-8" x 1-3/4"	SOLID CORE WOOD PAIR REQUIRED	HOLLOW METAL	8/A1	8/A1	UNDERCUT DOOR 1" (PAIR REQUIRED)
G	3'-0" x 7'-0" x 1-3/4"	GLASS & ALUMINUM SEE SHEET A-5	ALUMINUM	SEE MANUFACTURER'S SHOP DRAWINGS		
H	3'-0" x 7'-0" x 1-3/4"	GLASS & ALUMINUM SEE SHEET A-5	ALUMINUM	SEE MANUFACTURER'S SHOP DRAWINGS		
J	3'-0" x 7'-0" x 1-3/4"	HOLLOW METAL	HOLLOW METAL	8/A1	8/A1	PUSH BAR EXIT DEVICE

3/32" = 1'-0" ADC01

4 DOOR SCHEDULE – HOLLOW METAL DOORS & FRAMES

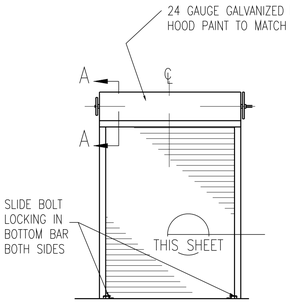


NOTE: SEE STRUCTURAL DRAWINGS FOR REINFORCING REQUIREMENTS

3/4" = 1'-0" AFS01

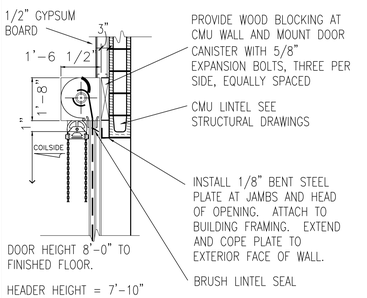
5 EXPANSION JOINT DETAIL

CHAIN OPERATED INSULATED DOOR SURFACE MOUNTED



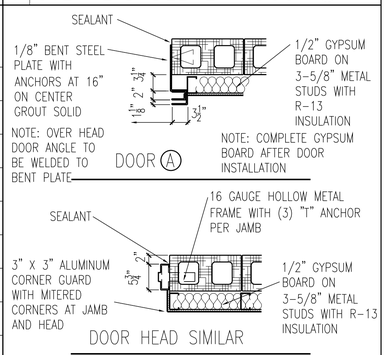
6 OVERHEAD DOOR ELEVATION

NOTE: GENERAL CONTRACTOR TO INSTALL 6" X 8'-0" ALUMINUM CHAIN GUARD ON WALL AT OPERATING SIDE



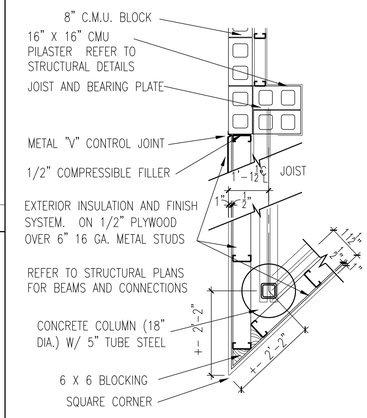
5/16" = 1'-0" ADS01

7 OVERHEAD DELIVERY DOOR (A)



3/4" = 1'-0" ADS02

8 JAMB DETAILS



1/2" = 1'-0" ACS01NL

9 SECTION AT CANOPY

1/2" = 1'-0" ACS02NL

10 SECTION AT CANOPY

REVISIONS		
1	2	3
4	5	6

AutoZone Store No. 1278
W. POLK ROAD
HART, MI 48026

FLOOR PLAN / DOOR SCHEDULE / WALL DETAILS

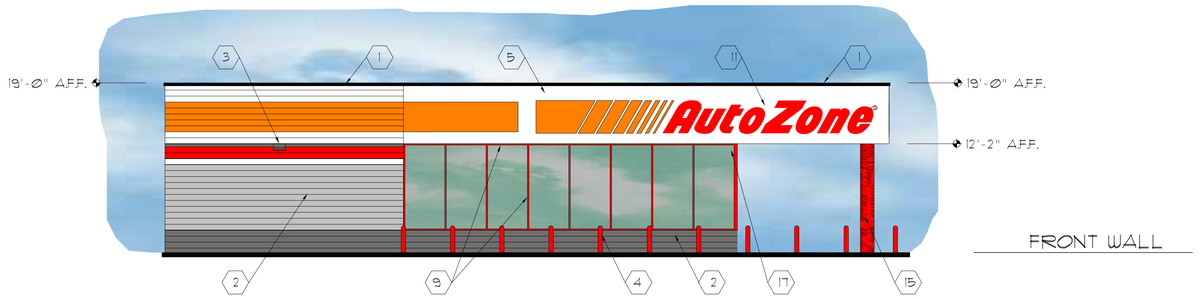
Architect: Lew Ellis
123 South Front Street
Memphis, Tennessee 38103
TEL: 901-495-8707 FAX: (901) 495-8969

For Bidding & Contractor Information Contact:
Dodge Data & Analytics, Tel. 413-930-4215
Cindy.searcy@construction.com

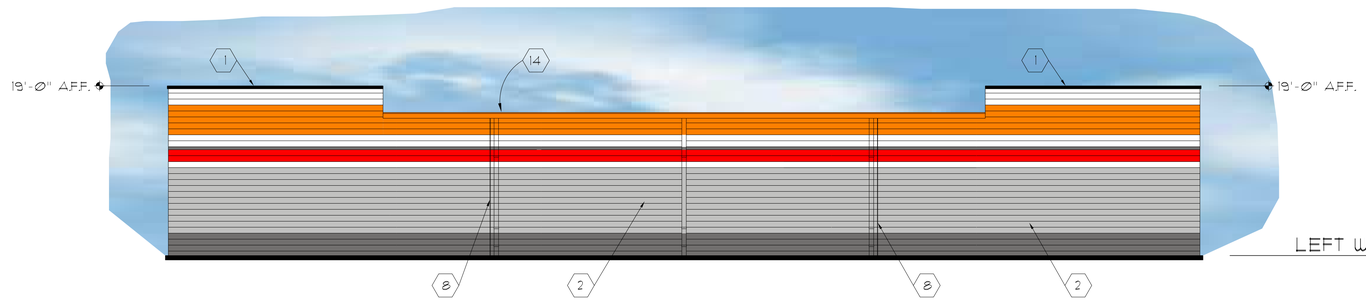
12/01/20

7N2-L

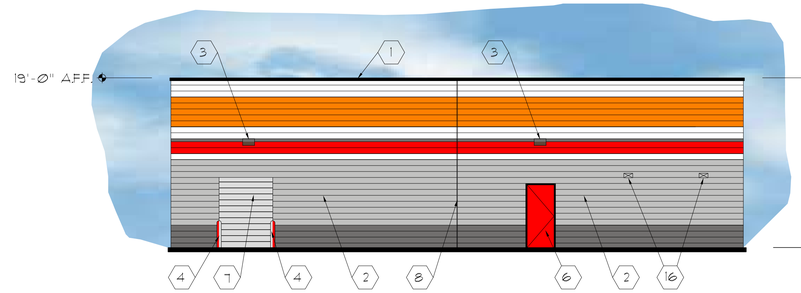
A-1



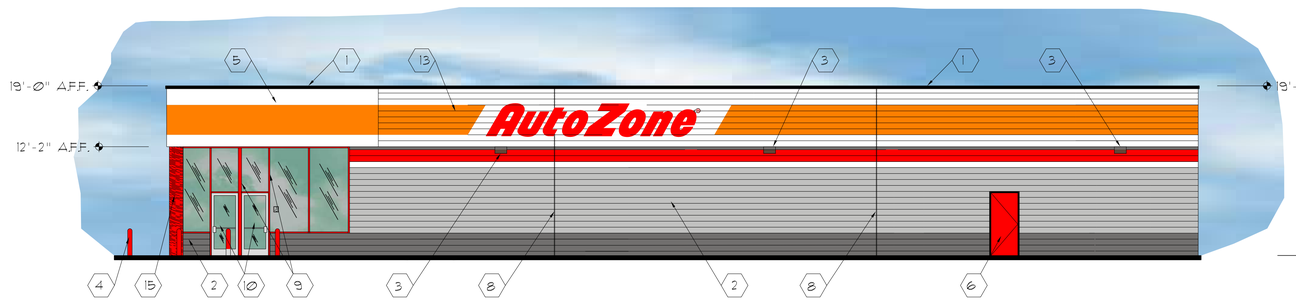
FRONT WALL



LEFT WALL



REAR WALL



RIGHT WALL

1. TWO PIECE COMPRESSION TRIM
2. SMOOTH FACE CONCRETE MASONRY UNITS
3. WALL MOUNTED LIGHT FIXTURE
4. PIPE GUARD WITH RED SLEEVE
5. MFG. WHITE EXTERIOR INSULATED FINISH - PAINT WHITE
6. PAINT MAN DOOR RED & METAL FRAMES BLACK
7. DO NOT PAINT OVERHEAD DOOR PAINT ANGLES BLACK
8. EXPANSION JOINT
9. ALUMINUM STOREFRONT - RED KYNAR FINISH
10. GLASS AND ALUMINUM DOORS - CLEAR ANODIZED FINISH
11. FRONT WALL SIGN - 44" CHANNEL LSTRP
12. RIGHT WALL SIGN - NOT USED
13. LEFT WALL SIGN - 44" AZO CHANNEL LETTERS
14. PAINT GUTTER AND DOWNSPOUTS TO MATCH BACKGROUND WALL COLOR.
15. CORRUGATED COLUMN PAINT RED
16. TOILET WALL VENTS PAINT TO MATCH WALL
17. STORE ADDRESS - 6" WHITE REFLECTIVE NUMBERS

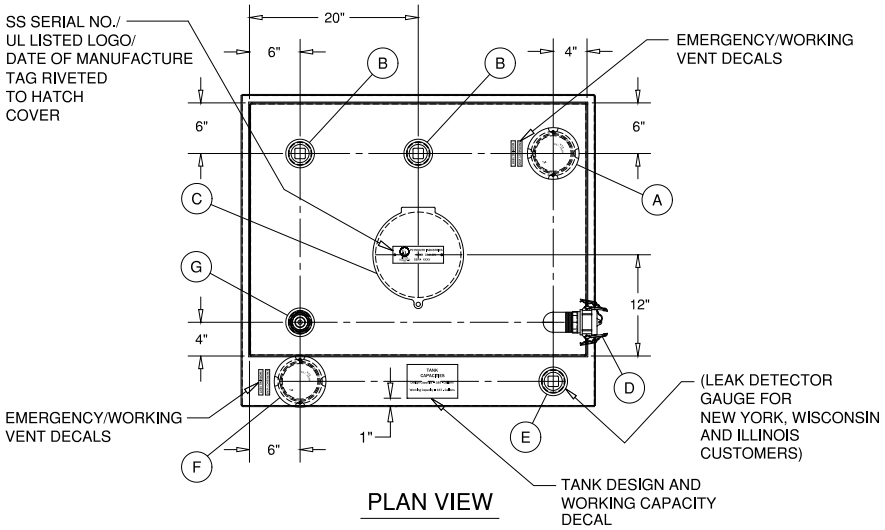
Color Elevation
AutoZone Store #1278
HART, MI

AutoZone

December 1, 2020

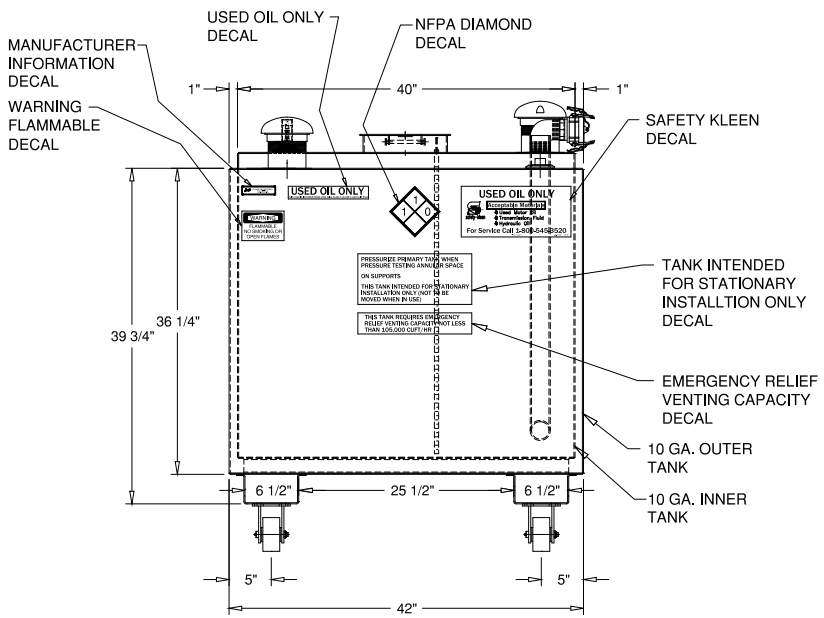
LUBE TANK FITTINGS

LETTER	FUNCTION OF FITTING	FITTING SIZE
A	EMERGENCY/WORKING VENT FOR PRIMARY TANK	4"
B	FUSIBLE PVC PLUG FOR PRIMARY TANK	2"
C	HATCH OPENING W/HINGED LID AND EXP. METAL CATCH SCREEN	10"
D	DROP PIPE W/QUICK DISCONNECT (90°) FOR PRIMARY TANK	2"
E	FUSIBLE PVC PLUG FOR SECONDARY TANK	2"
F	EMERGENCY/WORKING VENT FOR SECONDARY TANK	4"
G	LEVEL GAUGE - 2" NPT	2"

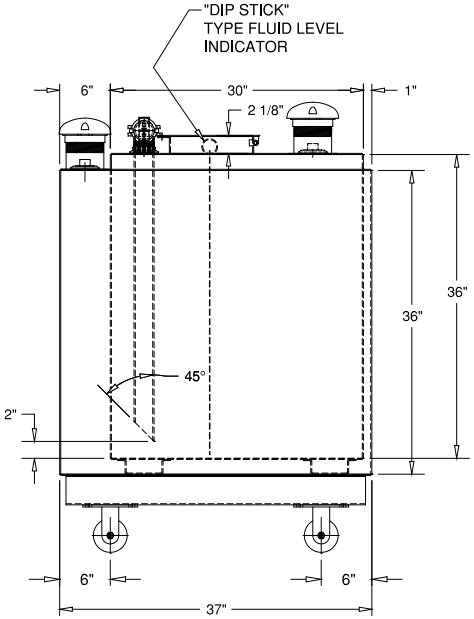


PLAN VIEW

NOTE: TANK IS LOCATED WITHIN BUILDING, IS ONLY ACCESSIBLE TO STORE EMPLOYEES, AND IS STORED WITHIN A SECONDARY CONTAINMENT AREA.



FRONT VIEW



SIDE VIEW

⚠ PLYMOUTH INDUSTRIES

UL 142 PRODUCTION TANK TEST REQUIREMENTS

PRIMARY CONTAINMENT TANK AIR TEST

1. Apply air pressure (3 to 5 PSI) and soap test welds for leaks.

SECONDARY CONTAINMENT TANK AIR TEST

1. After welding the primary tank to the secondary tank, the primary tank is to be air tested again for leaks by HOLDING AIR PRESSURE FOR 1 HOUR TO CHECK FOR LEAKAGE. A continuous drop in pressure will be considered evidence of leakage.

2. While maintaining pressure on the primary tank, the secondary tank is to be air tested at 3 to 5 PSI and soap test welds for leaks.

NOTES:

1. DRAWING IS NOT TO BE USED FOR FABRICATION PURPOSES.
⚠ 2. 10 GA HR A569 SHEET
3. POWDER COAT DIAMOND VOGEL-"BLUE STREAK" OR SHERWIN WILLIAMS-"CNH BLUE" DEPENDING ON AVAILABILITY.
4. ALL WELDS CONTINUOUS UNLESS OTHERWISE NOTED.
5. SECONDARY CONTAINMENT WASTE OIL TANK ON CASTERS UL142 CERTIFIED FOR FLAMMABLE AND COMBUSTABLE CLASS III B LIQUIDS.
⚠ 6. OUTER TANK VOLUME IS 110 PERCENT (MINIMUM) OF THE INNER TANK VOLUME, WITH THE INNER TANK BEING INCLUSIVE OF THE OUTER TANK.
⚠ 7. HYDROSTATIC TEST TO 25 PSI WAS PERFORMED ON THIS TANK DESIGN, PRIMARY AND SECONDARY TANK, PER UL SPECS.

REV.	DESCRIPTION OF CHANGE	DATE	BY
A	ADD NOTES	9/07/05	JDM

PLYMOUTH INDUSTRIES
615 EAST MAIN - P.O. BOX 188
PLYMOUTH, NEBRASKA 68424
(402) 656-5585

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SCALE:	APPROVED BY:	DRAWN BY	JDM
DATE: 5/30/05		REVISED	

TITLE: 185 GALLON TANK FOR OIL STORAGE-10 GA

MATERIAL: ⚠ 10 GA HR A569 SHEET

DRAWING NUMBER: 500012

Memorandum

To:	**City of Hart Planning Commission**
Date:	**December 31, 2020 (January 7 meeting)**
From:	**David M. Jirousek, AICP – Horizon Community Planning**
RE:	**Auto Zone, West Polk Road: Site Plan Review**
Parcel:	**64-020-818-400-12**
Plan Dates:	**November 27, 2020, by Spartan Engineering Solutions**

Overview

The applicant requests approval of an AutoZone retail building along Polk Road. The subject area is zoned B-2 General Business District. Retail stores are permitted by right in the B-2 zoning district, and development of the site is subject to the site plan review process conducted by the City of Hart Planning Commission.



Proposal: Approval of this application would authorize the following site improvements:

- 7,381 square foot retail building
- 27 parking spaces
- Rear loading dock
- Landscaping, lighting, stormwater management, and utilities

Existing Conditions: The project area is undeveloped and will be split off from parcel 64-020-818-400-12. Adjacent properties are undeveloped.

Completeness Review

Site plans shall contain the information required in Section 1258.05 of the Zoning Ordinance, Site Plan Review. The Planning Commission may waive requirements for a site plan if it is determined they do not apply to the property or use in question. The application is considered complete, except for a lighting plan and fixture specifications.

Site Plan Review

1. ***1243.21 FENCES AND WALLS.*** Fences and walls are not proposed.

2. ***1243.22 LANDSCAPE REGULATIONS.*** Landscape buffers are not required during the site development of the subject property. Since the parking area exceeds 5,000 square feet, parking lot landscaping is required, and the proposed tree installation plan is compliant.

3. ***1250.04 DISTRICT REGULATIONS.*** The proposal complies with the dimensional requirements applicable to the B-2 zoning district.

    a. *Minimum lot area and width - None required.*

    b. *Minimum required building setbacks.*

        i. *Front yard - 25 feet for local street and 20 feet on any major City street or State Highway.* The setback approximately 120 feet.

        ii. *Side yard and rear yard - None required except where a lot abuts a residential zone or use, a 10 foot side and rear yard shall be provided.* The property does not abut a residential zoning district.

    c. *Maximum building height - 35 feet.* The proposed building height is 19 feet.

    d. *Dumpsters shall not be located within the front yard and shall be screened as required by Section 1258.07(l).* The dumpster is proposed to be screened and is located behind the building.

4. ***1258.07 LIGHTING.*** A photometric plan and light fixture specification sheets should be provided. Lighting fixtures should be cut-off, and LED "B.U.G." ratings should indicate zero up-light.

    Exterior lighting shall be arranged so that illumination is deflected away from adjacent properties and so that it does not interfere with the vision of the motorist along adjacent streets.

5. ***1258.12 ACCESS CONTROL STANDARDS.*** Access is planned to be shared with the existing driveway leading to the Big Hart Brewing Company. A frontage road is shown on the site plan, and the road is planned to serve additional parcels on each side of the proposed AutoZone site. This approach is a recommended access management strategy.

    If not already established, an easement and maintenance agreement for the shared frontage road access should be provided for administrative/legal review and approval, and the materials should be recorded. The easement should include a statement regarding the responsibility for private maintenance, snow plowing, and the apportionment of costs. Additionally, a provision should indicate that the owners and tenants of any property using the shared roadway shall refrain from restricting access of any other owner, tenant, customer, or guest of any of the properties having the right to use the shared roadway easement.

6. ***CHAPTER 1259 SIGNS.*** A pole sign is proposed between the parking area and the shared driveway. However, a site plan note indicates that the sign area will exceed the 64 square-foot maximum. All signs are approved administratively outside of the formal site plan review process, but the site plan note should be corrected.

7. ***CHAPTER 1260 OFF-STREET PARKING AND LOADING.*** The proposed site plan demonstrates compliance with all parking and loading requirements, including dimensional requirements, minimum count, and loading area specifications.

Recommendation

I recommend approval of the site plan with the following conditions:

1. Provide a photometric plan and light fixture specifications for review and approval.
2. Update site notes to reflect a pole sign maximum size of 64 square feet.
3. Provide an easement and maintenance agreement for review and approval, and record the documents prior to construction.
4. Satisfy all recommendations by the City Engineer.

From: Juan Salazar
To: Lynne Ladner
Subject: Re: Site plan review
Date: Thursday, December 3, 2020 10:01:00 AM

Lynne,

I reviewed all the attachments,

Looks good on my end,

Juan

Chief J. Salazar
Hart Police Department
407 S. State Street
Hart, MI 49420
Office: (231) 873-2488
Fax: (231) 301-8113
jsalazar@cityofhart.org

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From: Lynne Ladner
Sent: Thursday, December 3, 2020 9:41 AM
To: Juan Salazar; Paul Cutter; DPW CityofHart; Mike Schiller; Marczak, Barbara
Subject: Site plan review

Gentlemen and Barbara

Below is a link to files on Dropbox for the proposed site plan for a new business located on Polk Rd. This project will be going in front of the Planning Commission for their January 7th meeting. I need you to review the plans and see if there are any issues that you have with the proposed plans in terms of utility availability, safety, drainage, access etc., I need a written report with those concerns or your approval **no later than Dec. 16th**. Thank you.

https://www.dropbox.com/sh/dhjcp267wchgxiz/AABntkCTyD7Y9TmOvKErJqPza?dl=0

Lynne Ladner MPA (she/her)
City Manager
City of Hart, MI
231-873-2488
www.cityofhart.org



LinkedIn | Twitter | Facebook

Prein&Newhof
Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory

December 14, 2020
2200794

Lynne Ladner, City Manager
City of Hart
407 State Street
Hart, MI 49420

RE: AutoZone MI1278 Site Plan Review

Dear Lynne:

We have reviewed the submitted site plans dated November 27, 2020 for the above site and have the following comments.

- Demolition Sheet D1.0 General Demolition Notes
  - Note 7 should be updated, refers to a Meijer store
  - Note 18 mentions Macomb County, this should be revised to Oceana County.
- Storm sewer design appears to be in accordance with the City of Hart BMPs, with all runoff being directed to an onsite infiltration basin. Sizing calculations were not reviewed. It does appear that the 100 yr storm would overflow to an adjacent property, and flows overland approximately 325 ft to Russell Creek. We recommend that the property owner obtain an easement allowing this flow providing access for future maintenance. Oceana County Drain Commission historically reviews onsite storm sewer design within the City.
- We have no concerns with the proposed water and sanitary sewer services as they are shown on the drawings.

If you have any questions regarding any of the above, please do not hesitate to contact our office.

Sincerely,

Prein&Newhof

Matthew R. Hulst, P.E.

ENGINEERS & SURVEYORS

2121 3 Mile Rd. NW
Walker, MI 49544
Ph: 616-301-7888
www.LREMI.com

December 29, 2020

Ms. Michelle Martin
Oceana County Deputy Drain Commissioner
100 S State Street, Suite M-11
Hart, MI 49420

Re: AutoZone Storm Water Design Review
City of Hart, Michigan

Dear Michelle,

We received a 19 page revised development plan set dated December, 20, 2020 for the proposed AutoZone in the City of Hart, Michigan on December 21, 2020. The plans were prepared by Spartan Engineering Solutions, LLC. The plans and supporting stormwater calculations were reviewed for conformance with the Oceana County Drain Commissioner's *Subdivision Drainage Rules and Storm Water Design Criteria* (Criteria).

The applicant has addressed all the comments from the previous review letter and has indicated that the following will be provided upon this recommendation of approval.

1. A "Certification of No Net Increase of Storm Water" shall be provided with supporting calculations of the existing discharge from the site. A sample certification can be found in Appendix 3.7 of the Criteria.
2. A "Maintenance Plan and Budget" shall be provided. A sample is provided in Appendix 3.11 of the Criteria.
3. A "Maintenance Agreement" shall be provided. A sample is provided in Appendix 3.12 of the Criteria.

We recommend approval of the plans upon receiving the three items listed above. Please review and contact our office if you have any questions.

Sincerely,

Land & Resource Engineering

Kyle Visker, P.E.
Vice President / Project Manager

Store Safety Manual



Table of Contents

Store Safety Manual 1
Overview 1
1 Safety Equipment 2
Overview 2
Personal Protective Equipment (PPE) 3
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3 Injury Prevention 8
Overview 8
Back Injury Prevention 9
Ladder Safety 11
Slip, Trip and Fall Injury Prevention 12
Safety Cutter Safety 13
Housekeeping Safety 16
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Used Oil 18
Orphan Fluids 22
Used Oil Tanks 23

Store Safety Manual

Overview

Purpose

The purpose of this document is to provide store AutoZoners with safety policies, guidelines and procedures.

Note: This document may also be used as a study guide to help AutoZoners complete Safety Training.

Policy

Store AutoZoners are required to complete safety training on an annual basis.

Noncompliance

Noncompliance with any safety policy or procedure is subject to corrective action up to and including termination.

Safety Hotline

Phone the Safety Hotline at **1-800-270-6819** to confidentially report unsafe conditions, safety policy/procedure violations, or to submit a safety-related suggestion. **Note:** Safety concerns may also be reported through Policy Center incident reports.

Responsibilities

Roles and responsibilities for educating AutoZoners on injury prevention in the store are listed in the table below.

Role	Responsibilities
Management	• Establish a "Safe Store Expectation." • Lead by example, work safely and talk about safety **daily.** • Address unsafe acts and unsafe conditions immediately. • Utilize the safety tip on the weekly MAP.
AutoZoners	• Read Shop Talk Board for latest safety topic each period. • Work safely every day. • Report unsafe acts or conditions to your manager.
RM, DM, RHRM, RLPM	• Call the DC or SSC safety managers for ideas. • Review the Regional Injury Analysis Report. • Use safety managers to conduct training sessions.

Questions?

Direct safety questions to your store manager. Ask any questions to ensure a thorough understanding of AutoZone's safety policies and procedures.

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1 Safety Equipment

Overview

Purpose

The purpose of this chapter is to provide mandatory requirements for the use of

- Personal Protective Equipment (PPE), and
- fire extinguishers.

Noncompliance

Noncompliance with any safety policy or procedure is subject to corrective action up to and including termination.

Contents

This chapter contains the following topics:

Topic	See Page
Personal Protective Equipment	3
Fire Extinguisher	4

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Personal Protective Equipment (PPE)

Acid-resistant gloves



Requirements for using acid-resistant gloves are listed below.

- Use acid-resistant gloves when handling batteries to protect your hands from sulfuric acid.
- Acid resistant gloves need to cover your hands at least up to your wrists.
- Select gloves that fit. **Note:** There are two sizes of gloves.
- Tell a member of management if gloves have holes or tears, so a new pair can be ordered.

Acid-resistant apron



Requirements for using the acid-resistant apron are listed below.

- Use the apron when working with batteries to protect your body and clothes from sulfuric acid.
- Wear the apron snugly around your body. Use the two Velcro ties, around your neck and waist, to fasten the apron.
- Tell a member of management if the apron has holes or tears, so a new one can be ordered.

Splash goggles



Requirements for using splash goggles are listed below.

- Use splash goggles when adding water to batteries or when checking a customer's battery at the car.
- If goggles do not securely fit, then ask management for another pair.
- Clean splash goggles regularly with window cleaner and paper towels.
- Tell a member of management if goggles are broken or cracked, so a new pair can be ordered. **Note:** North Carolina requires the use of a face shield and headgear when adding water to batteries or when working at the battery charging station.

Safety glasses



Requirements for using safety glasses are listed below.

- Use safety glasses when working in an area with the potential of flying debris, such as when working under the hood of a car.
- If glasses do not securely fit, then ask management for another pair.
- Clean safety glasses regularly with window cleaner and paper towels.
- Tell a member of management if glasses are broken or cracked, so a new pair can be ordered.

Reminder: Wear splash goggles – not safety glasses – when adding water to batteries.

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Fire Extinguisher

Fire extinguishers



AutoZone stores have multiple ABC-rated fire extinguishers.

ABC-rated fire extinguishers can put out the classes of fires described in the table below.

Class	Description	Examples
A	ordinary combustibles	• wood • cloth • rubber • some plastics
B	flammable or combustible liquids	• gasoline • oil • grease • paint • paint thinner
C	electrical equipment	• panel boxes • power tools

Operating an extinguisher

Follow the steps below to operate a portable fire extinguisher.

Remember the acronym **P.A.S.S.** when using a fire extinguisher.

Step	Action
1	**P**ull the pin.
2	**A**im the extinguisher nozzle at the base of the fire.
3	**S**queeze the trigger while holding the extinguisher upright.
4	**S**weep the extinguisher from side to side, covering the fire with the extinguisher powder.

Warning!



Do **not** attempt to fight a fire if

- you are endangering your safety
- your path of escape is blocked
- the extinguisher runs out of powder, or
- the extinguisher is ineffective.

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2 Hazard Awareness

Overview

Purpose

The purpose of this chapter is to provide information about and guidelines for

- hazard communication, and
- emergency action plans.

Noncompliance

Noncompliance with any safety policy or procedure is subject to corrective action up to and including termination.

Contents

This chapter contains the following topics:

Topic	See Page
Hazard Communication	6
Emergency Action Plans	7

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Hazard Communication

Introduction

This information covers three (3) sources of information related to hazardous materials.

Written hazard communication

Written hazard communication

- is located in the Hazardous Materials Binder in the store's office, and
- explains the various responsibilities of AutoZoners.

Material Safety Data Sheets (MSDS)



Material Safety Data Sheets (MSDS) for chemicals used in the store

- are kept in the Hazardous Materials Binder
- should be reviewed before using the chemical
- explain how to use and store the chemicals safely, and
- provide emergency contacts in the event of a chemical emergency.

Important! Contact the 24-hour 3E Hot-Line at **1-800-360-3220** for information on how to safely handle a chemical emergency.

Container labels

Container labels contain important information on how to safely use a product.

If the manufacturer's label comes off of a container, or if a chemical is transferred to another container, use an in-house label on the container.

In-house labels are kept in the store office and can be printed from the WITTJR (ZAPMail / Safety / Safety Sign Kit).

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Emergency Action Plans

Policy

Store management reviews emergency action plans annually with store AutoZoners.

Note: The plan is posted on the overhead file cabinet in the manager's office.

Fire

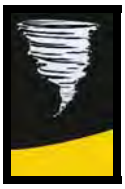


In case of fire

- sound the alarm
- get everyone out of the store, and
- go to the designated assembly area.

Note: Management is in charge.

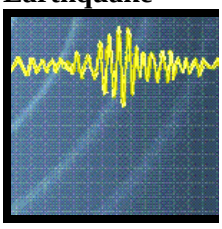
Tornado



In case of tornado

- go to the sales floor aisle farthest from the doors and windows, and
- wait until management gives the "all clear."

Earthquake



In case of earthquake

- get everyone in the middle of the store
- stay away from the hard parts racking, and
- wait until management gives the "all clear."

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3 Injury Prevention

Overview

Purpose

The purpose of this chapter is to provide store AutoZoners with safety tips on how to

- lift properly
- prevent slip, trip and falls
- use a safety cutter, and
- apply general housekeeping safety practices.

Noncompliance

Noncompliance with any safety policy or procedure is subject to corrective action up to and including termination.

Contents

This chapter contains the following topics:

Topic	See Page
Back Injury Prevention	9
Ladder Safety	11
Slip, Trip and Fall Injury Prevention	12
Safety Cutter Safety	14
Housekeeping Safety	17

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Back Injury Prevention

Introduction

Many injuries, especially back injuries, are related primarily to improper lifting techniques. This information provides policy, guidelines and procedures to prevent lifting injuries from occurring.

Background



Lifting injuries account for a significant amount of store injuries and occur more frequently than some other injury types.

Lifting techniques

Good lifting techniques include

- lifting with your legs (bend at the knees),
- keeping the object close to your body, and
- using your feet to turn your body instead of twisting.

Guidelines: Lifting heavy objects



Guidelines for lifting heavy objects are listed below.

- If possible, divide heavy loads into smaller ones.
- Never carry items that block your vision.
- Watch for product packaging with loose or torn box ends which might permit merchandise to slide out of the box.
- Lower the sides of core baskets to make it easier to load or unload.
- Use carts and two-wheelers when lifting heavy objects.
- Clear path of movement and ask for help with a heavy or odd-shaped load.
- Ask for assistance with items that are wedged or stuck.
- Remain as close as possible to a neutral body position (standing up straight with your arms at your sides) when lifting. Avoid bending or twisting motions outside of that neutral position. Use your feet to turn your body. **Warning!** Twisting while carrying a load can injure your back.
- Use a ladder, or ask for assistance, when a load is out-of-reach. Never reach or strain to lift a load.
- Bend at the knees, get a good grip and lift smoothly and slowly with your legs and not with your back.

Continued on next page

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Wearing back belts

Using a back belt does not make you stronger, but it will help prevent injuries if you use it correctly. The back belt supports your abdominal and back muscles, which reduces stress on your lower back.

Policy

AutoZoners **must** use a back belt when putting up a truck and whenever lifting heavy items such as fluid cases, batteries, etc.

Procedure

Follow the steps below to use a back belt.

Step	Action
1	Position the belt just above your hips and fasten the belt firmly by overlapping the Velcro straps.
2	Stretch the elastic side straps forward to tighten the belt. **Note:** The side straps should meet in front or be within a few inches of meeting.
3	Press the side straps to the Velcro.
4	Tighten your belt before lifting objects.

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Ladder Safety

Background

Ladder injuries account for a significant amount of store injuries and occur more frequently than some other injury types.

Purpose

The purpose of this information is to provide store AutoZoners with tips and information to prevent ladder injuries from occurring.

Ladder safety tips

Tips for using a ladder safely and for preventing injuries while using a ladder are listed below.

- Face the steps while climbing or descending a ladder.
- Use the right ladder for the job.
- Use the ladder handrails and take one step at a time.
- When finished using ladders on the sales floor, place them in hard parts.
- Always get off a ladder to move it.
- Position a ladder so you do not have to turn around to reach.
- Keep ladder steps clean and dry to provide good footing.
- Keep merchandise, trash and other items away from the base of a ladder.
- Keep the ladder's rubber stops in good condition to reduce the risk of the ladder tipping over.

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Slip, Trip and Fall Injury Prevention

Background

Slip, trip and fall injuries account for a significant amount of store injuries and occur more frequently than some other injury types.

Purpose

The purpose of this information is to provide store AutoZoners with tips and information to prevent injuries occurring through slips, trips and falls.

Big 5 injury prevention topics and tips



The table below lists the **Big 5** injury prevention topics and AutoZoner's tips for preventing injuries caused by slips, trips and falls in the store.

Topic	Tip
Ladder safety	• Face the steps while climbing / descending a ladder. • Use the right ladder for the job. • Use the ladder handrails and take one step at a time.
Exits and aisles	• Keep exits and aisles clear of trip hazards.
Battery area	• Keep batteries off of the floor. • Keep eye wash stations stocked and current.
Slip / trip hazards	• Keep totes and batteries off of the floor. • Keep floors dry.
Proper lifting	• Ask for help when needed. • Use carts and two-wheelers whenever possible. • Use the proper lifting technique. • Use a back belt when putting up a truck or lifting heavy items.

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Safety Cutter Safety

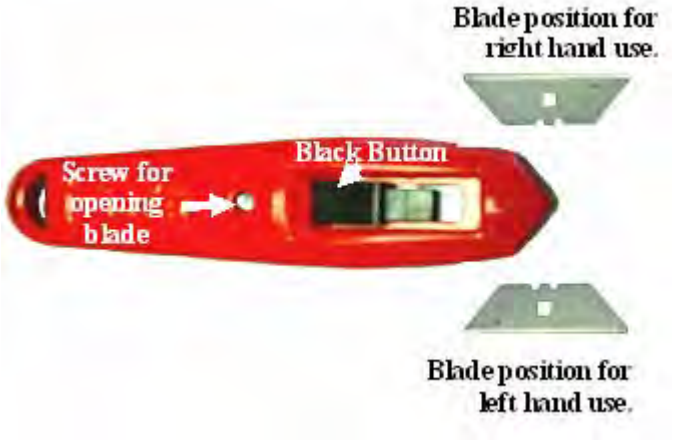
Purpose

The purpose of this information is to provide AutoZoners with policy and procedures for proper safety cutter

- use
- blade changing
- care, and
- storage.

Front view of the safety cutter

Safety cutter parts are shown in the photo below.



Important!

Blades are sharp!

You can be harmed if you do not follow these policies and procedures.

Policies

Safety policies for using the safety cutter are listed below.

- The orange safety cutter is the only cutting device authorized for use in AutoZone stores.

Rationale: This safety cutter has a special feature that makes it safer to use than other cutting devices.

- Users of this safety cutter **must not**
  – tape the blade open, or
  – manipulate the safety cutter so that the blade remains exposed.

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Safety Cutter Safety, Continued

Using the cutter

Follow the steps below to use the orange safety cutter.

Step	Action
1	Hold the safety cutter in your dominant hand.
2	With the thumb of your dominant hand, push the black button forward to expose the blade. See the photo below. **Note:** The blade of the orange safety cutter is exposed only when the black button is pressed forward. 
3	Insert the blade into the material you are cutting.
4	While pulling the safety cutter to make the cut, release your thumb from the black button.
5	Finish your cut. **Results:** The blade retracts automatically when it is pulled away from the cutting surface.

Changing the blade

Follow the steps below to change the blade of the safety cutter.

Step	Action
1	Lay the safety cutter on a flat surface face down with the black button facing away from you.
2	Using a flat head screwdriver, remove the screw that is facing you.
3	Lift the section of the safety cutter facing you. **Result:** The inside of the cutter is exposed.
4	Use your index fingers to carefully tilt the top of the blade upward.
5	Flip the blade upside down so that the used end is at the rear of the safety cutter.
6	When the blade is positioned properly, replace the cover, insert the screw and tighten.

Continued on next page

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Safety Cutter Safety, Continued

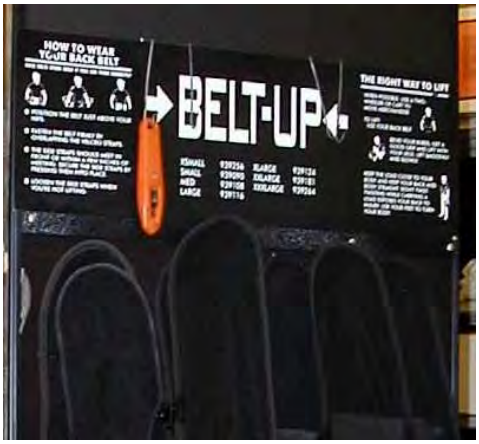
Proper care

Provide proper care to keep your safety cutter in good working condition.

- Change the blades frequently.
- Keep the safety cutter dry.
- Test that the safety cutter operates properly if it is dropped on a hard surface.

Proper storage

When not in use, store safety cutters on the **BELT-UP** board as shown in the photo below.



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Housekeeping Safety

Background

Keeping our stores clean and organized

- gives our customers a pleasant shopping experience, and
- helps to prevent injuries.

Injuries, involving poor housekeeping, can cause harm to AutoZoners and customers.

Purpose

The purpose of this information is to provide store AutoZoners with tips and information needed to prevent injuries occurring from poor housekeeping.

Parking lot tips

Tips for preventing injuries in the parking lot are listed below.

- Keep trash and debris picked up.
- Clean up and dispose of oil and chemical spills properly.

Exit and aisle tips



Tips for preventing injuries in aisle ways and at an exit are listed below.

- Use carts to stage and move merchandise around the store. **Do not** leave merchandise lying on the floor where it is a dangerous trip hazard.
- Put merchandise that has fallen on the floor back where it belongs.
- Clean up spills immediately.
- Stage totes on the sales floor at least three (3) high to prevent a trip hazard.
- Move ladders off the sales floor when they are not in use.
- Always maintain a clear walkway at all aisles and exits.

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4 Used Oil Management

Overview

Purpose

The purpose of this chapter is to provide store AutoZoners with policy and procedures for used oil management.

Rationale

AutoZone implements this policy to assure the proper handling of used oil.

Responsibility: Policy posting

The store manager is responsible for printing this chapter and attaching it to the store's used oil tank.

Noncompliance

Noncompliance with any safety policy or procedure is subject to corrective action up to and including termination.

Contents

This chapter covers the following topics.

Topic	See Page
Used Oil	18
Orphan Fluids	22
Used Oil Tanks	23

Contacts

Used oil management contacts are listed below.

Contact	Issue	Telephone Number
Your store manager	General questions	--
Safety-Kleen	Used oil pickup	**1-800-545-3520**
3-E Company	Chemical emergency or large spill	**1-800-360-3220**
AutoZone environmental specialist	Don't know who to call or unsure what to do	**1-700-777-3030, ext. 7217**

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Used Oil

Definition: Used Oil

Used oil is defined in this document as

- motor oil
- transmission fluid, and
- gear oil.

Examples of what is NOT used oil

The following are examples of fluids that must **not** be poured into the used oil tank.

- paint
- gasoline
- antifreeze
- carburetor cleaner
- insecticide
- solvents
- household chemicals

Policies

- During business hours, customers may drop off (inside the store) up to five (5) gallons of used oil per visit.
- Customers are permitted multiple visits per day.
- Customers are **not** permitted to pour their used oil into the used oil tank.
- Only Safety-Kleen is permitted to provide used oil tank service.
- All used oil service documents must be filed at the store in the **Used Oil Manifest** file and kept for at least three (3) years.
  Reminder: Obtain a signed service document from the Safety-Kleen driver each time used oil is picked up.
- AutoZoners are responsible for preventing used oil from entering any drainage/sewer system.

Continued on next page

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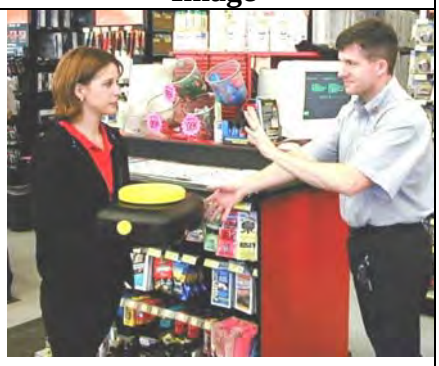
Used Oil, Continued

Procedure Follow the steps below to inspect, accept and deposit used fluids.

Step	Action	Image
1 	Greet the customer and offer assistance with the customer's used oil. **Policy reminder:** Do **not** allow customers to pour used oil into the used oil tank. **Rationale:** Complying with this policy reduces the risk of having anything other than used oil in the used oil tank as well as reducing the likelihood of spills.	
2	Inspect the contents of the container. Do not accept the fluid if it • is discolored • is separated into layers, or • has an odor. **Rationale:** The fluid may be contaminated and therefore is unacceptable for disposal in the used oil tank.	

Continued on next page

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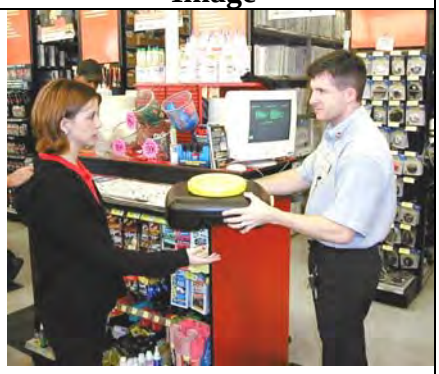
Procedure (continued)

<table>
<tr><th>Step</th><th>Action</th><th>Image</th></tr>
<tr><td>3</td><td>Use the table below to determine acceptability of the fluid.

<table><tr><th>If the…</th><th>Then…</th></tr><tr><td>fluid appears to contain anything other than used oil</td><td>• explain to the customer that the fluid may contain more than used oil and therefore cannot be accepted
• return the fluid to the customer, and
• refer the customer to 1-800-CLEAN UP (1-800-253-2687) or http://earth911.org for information on proper disposal.</td></tr><tr><td>fluid appears to meet the definition of used oil</td><td>go to step 4.</td></tr><tr><td>container restricts visual inspection</td><td>Ask the customer what is in the container.

If the customer indicates that there is
• only used oil in the container, then go to step 4
• anything other than used oil in the container, return the fluid to the customer. (See step 3 above.)</td></tr></table></td><td></td></tr>
</table>

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Procedure (continued)

Step	Action	Image
4	Enter the information in WITT-JR as follows: 1. Select **Back Counter** key. 2. Select **Option #6** for the Used Oil Log. 3. Enter customer ▪ phone ▪ last name ▪ first name ▪ address and zip, and ▪ oil quantity (quarts or gallons). 4. Select **F7** to approve.	
5	• Take the used oil to the used oil tank. • Slowly pour the used oil into the used oil tank. • Visually confirm that the container only contains used oil. **Important!** • Never allow customers to pour used oil into the used oil tank. • If the visual inspection indicates that anything other than used oil is present, immediately stop pouring the fluid into the used oil tank and return the fluid to the customer (see step 3). • If something other than used oil is poured into the used oil tank, follow the procedure entitled **Used Oil Tanks.**	
6	Close the lid on the used oil tank.	
7	• Place the lid back on the empty container and return to the customer. • If the customer does not want the empty container, then return to the used oil tank and ensure that all free flowing oil (no drops if held upside down for 15 seconds) is drained from the container into the used oil tank. • Deposit the empty container into the trash.	
8	Wash hands with soap and water after handling any fluids.	

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Orphan Fluids

Introduction

On occasion, you may find you "inherited" a container of fluid left on store property.

Definition

Orphan fluid is any fluid a customer or other person leaves on AutoZone property without registering the fluid as used oil with an AutoZoner.

Procedure: 5 gallons or less

Follow the steps below if the container holds five (5) gallons or less of orphan fluid.

Step	Action
1	Perform the sight inspection for contaminates described in the procedure entitled **Used Oil**, Step 2.
2	Does the container contain used oil? If *yes*, transfer the used oil into the used oil tank and go to step 3. If *no*, or if you are unsure, secure the container and contact the AutoZone environmental specialist at **1-700-777-3030, ext. 7217.**
3	Log the fluid as "orphan" on the WITT-JR in the Used Oil Log and enter the date.
4	Slowly pour the used oil from the container into the used oil tank until all free flowing oil (no drops if held upside down for 15 seconds) is drained and then deposit the empty container into the trash.
5	Wash hands with soap and water after handling any fluid.

Procedure: More than 5 gallons

Follow the steps below if a container holds more than five (5) gallons of orphan fluid.

Important! Do **not** pour the fluid into the tank.

Step	Action
1	Perform the sight inspection for contaminates described in the procedure entitled **Used Oil,** Step 2.
2	Does the content appear to contain used oil? If *yes*, secure the container and go to step 3. If *no*, or if you are unsure, secure the container and contact the AutoZone environmental specialist at **1-700-777-3030, ext. 7217.**
3	Contact Safety-Kleen at **1-800-545-3520** to schedule pick up and disposal of the orphan fluid.

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Used Oil Tanks

Purpose

The purpose of this information is to provide AutoZoners with policy and procedures regarding used oil tanks.

Policies

AutoZoners must follow the policies below related to used oil tanks.

- Only trained AutoZoners, **not customers**, are permitted to transfer used oil into the used oil tank.
- Used oil tank lids **must** remain closed when the tank is not in use.
- Used oil service documents **must** be kept at the store in the Used Oil Manifest file for at least three (3) years.

Risk and impact

The table below outlines risks associated with allowing anything other than used oil in the used oil tanks.

Risk	Impact
Safety	Risks may include • chemical reactions • toxic fumes • flammable or explosive characteristics, and • slip and fall hazards from spilled oil.
Financial	Costs may include • expensive cleaning of tanks containing fluids other than used oil • hiring special waste handling companies to address the contamination, and • evacuating / closing the store to protect AutoZoners and customers.
Regulatory	Regulatory enforcement may include • failure to pass governmental inspections • reclassification of a store as a generator of hazardous waste, which may require more / tougher procedures and more expensive disposal, and • possible legal action, fines and penalties.

Emptying the tank

Telephone Safety-Kleen at **1-800-545-3520** when the used oil tank is almost full and needs to be emptied / replaced.

Contaminated tank

If the tank becomes contaminated with fluids other than used oil, immediately telephone the AutoZone environmental specialist at **1-700-777-3030, ext. 7217.**

Reminder: Used oil is defined as motor oil, transmission fluid and gear oil.

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D I Y
PROCEDURES
MANUAL



Do-It-Yourself (DIY)
Used Oil
Collection Program

This procedure manual applies to used oil collected as part of the Safety-Kleen DIY Collection Program. Non-DIY Oil is subject to additional regulatory management standards based upon guidelines set forth by the Environmental Protection Agency (EPA).

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MATERIALS CHECKLIST 3

GETTING STARTED 4

PLACEMENT OF EQUIPMENT 4

ACCEPTING USED OIL: STEP-BY-STEP INSTRUCTIONS 5

PICK-UP SERVICE 7

SPILL PROCEDURES 7

ABANDONED USED OIL PROCEDURES 8

INTRODUCTION

Congratulations! Your company has partnered with Safety-Kleen to provide an environmentally friendly disposal solution for your customers who change their own oil. The DIY (Do-It-Yourself) Oil Program has proven to be extremely successful in collecting used motor oil that may have previously been disposed of in an environmentally unfriendly manner.

In addition to providing a disposal outlet for your customers' used oil, this program is a marketing tool to improve your environmental image, increase store traffic, increase sales, and establish a competitive advantage. Identified below are three key areas that are essential to ensure the success of your used oil collection program.

1. **Placing Used-Oil Collection Tank Inside versus Outside**
   To provide proper monitoring of the program and to increase store traffic and sales, the customer should be required to enter your establishment to dispose of their used oil.

2. **Accompanying Customer to Used-Oil Collection Tank for Deposit**
   Accompanying your customer to deposit the used oil creates valuable face-to-face time for soliciting additional sales. Additionally, you limit the risk of potentially unacceptable materials being disposed of in the used-oil collection tank.

3. **Utilization of the Program Materials (Signage and Log)**
   The program signs and materials provided have been designed to increase consumer awareness that it is illegal to dispose of used-oil at an unattended location.

MATERIALS CHECKLIST

The following materials accompany the delivery of each DIY used-oil collection tank. Please check to ensure you have received all materials. If you are missing any items, please contact Safety-Kleen at 1-800-545-3520. All materials should be reviewed prior to training your store employees on the program.

- DIY Procedures Manual
- Supply of Log Sheets
- Two Notice Signs (English and Spanish versions)
- Static Window Sign "We Protect the Environment by Recycling your Oil"

GETTING STARTED

Before starting your collection program, it is important to review and understand the procedures manual for setting up and managing your program. Additionally, it is important to display the merchandising material provided to increase your customers' awareness of the program.

Procedures Manual
Review the procedures outlined in this manual and share with store employees.

Display Signage
It is recommended you display the "Notice" sign in a conspicuous place – one that will be seen by those customers who may attempt to drop off their used oil after hours. The static window sign, "Don't Pollute – Used Oil Accepted Here" should be placed at the entrance of your store.

PLACEMENT OF EQUIPMENT

All tanks are custom designed for **INDOOR USE ONLY.** Each unit should be placed within 25 feet of the rear entrance of your store to allow for easy access for collection service. Tanks should not be placed in a location that allows direct customer access.

The following list includes the most common mobile tank sizes utilized in the DIY program:

- 120-gallon tank
- 185-gallon tank
- 220-gallon tank

The standard features of all DIY collection tanks include:

- 10-gauge steel construction
- Double-walls
- 10-inch screen fill hatch with lid
- Quick-connect coupler
- Casters
- Two fluid level gauges

ACCEPTING USED OIL: Step-by-Step Instructions

1. Customer arrives with used oil.

Each customer is limited to depositing no more than five-gallons of used oil per visit - no exceptions. Do-it-yourself motor oil changes should not result in the accumulation of more than five-gallons.

2. Ask Customer if used oil contains unacceptable materials and visually examine the oil.

Unacceptable materials include:

- Carburetor Cleaner
- Solvents/Thinners
- Paint or Varnish
- Antifreeze
- Gasoline
- Bleach
- Insecticides
- Household Chemicals
- Anything except used motor oil, hydraulic oil, or transmission fluid

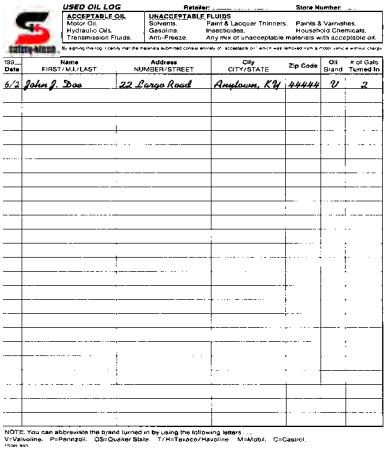
Things to look for in the visible inspection:

- Water
- Any color other than black, which could indicate the presence of paints or other unacceptable materials
- Viscosity of the oil should not be too thin
- Separation into more than one layer - oil doesn't separate.

DO NOT sniff the used oil: however, if you suspect the used oil may contain something other than used motor oil, hydraulic oil, or transmission fluid, return the material and politely explain the material is unacceptable. Most communities have a household hazardous waste program to refer your customers to for disposal.

REMEMBER: Unacceptable materials may pose fire hazards within the store and/or contaminate the entire used-oil storage tank; thus, requiring you to handle that material as a HAZARDOUS WASTE with an increased disposal cost. If unacceptable materials are placed in the DIY tank, the ensuing costs will be charged directly to your store.

3. Customer Signs the Log Sheet



USED OIL LOG — Retailer: — Store Number:

ACCEPTABLE OIL: Motor Oil; Hydraulic Oils; Transmission Fluids.
UNACCEPTABLE FLUIDS: Solvents; Gasoline; Anti-Freeze; Paint & Lacquer Thinners; Insecticides; Any mix of unacceptable materials with acceptable oil; Paints & Varnishes; Household Chemicals.

199_ Date	Name FIRST/ MI./ LAST	Address NUMBER/ STREET	City CITY/ STATE	Zip Code	Oil Brand	# of Gals. Turned In
6/2	John J. Doe	22 Large Road	Anytown, KY	44444	V	2

NOTE: You can abbreviate the brand turned in by using the following letters: V=Valvoline, P=Pennzoil, QS=Quaker State, T/H=Texaco/Havoline, M=Mobil, C=Castrol, Other etc.

Customers are required to complete the log sheet with their Name, Address, and Amount of oil deposited. If they refuse to complete the log sheet, do not accept the oil.

The log sheet provides the necessary proof that your store is accepting ONLY DIY used oil. To reorder log sheets, contact the DIY Coordinator in your corporate office. ***Remember: It is required that log sheets are completed or oil cannot be collected.***



4. Transfer Oil to Collection Tank

When depositing used oil into the tank, allow the customer to walk with you to ensure the material is "acceptable." If you notice any unusual odors -- including gasoline, chlorine, etc. -- **do not** pour the material into the storage tank. Return material to the customer and explain which materials are acceptable.

IMPORTANT! If you allow the customer to pour their DIY used oil Into the tank, a store employee must accompany the customer to ensure The DIY used oil does not contain unacceptable materials.

CAUTION:

- You should avoid prolonged or repeated skin contact with used motor oil. Used motor oil has been shown to cause skin cancer in laboratory animals. Thoroughly wash exposed areas with soap and water. Additionally, avoid smelling the oil, as fumes may be present.

- Used oil typically has a flash point between 93°C (200°) and 149°C (300°F), and is usually not considered ignitable; however, hydrocarbon vapors can still develop from the used oil. For this reason, smoking is never allowed around the used oil collection tank. In addition, any form of open flame or ignition source must not be applied in or near the tank.

5. Return Empty Container(s) To Your Customer.

All empty used-oil containers should be returned to your customers. The containers should never be disposed of in the DIY tank.

PICK-UP SERVICE



1. Check Oil Level Daily

Your tank is equipped with a site gauge and dipstick for checking levels of your used oil collection tank.

IMPORTANT! To prevent spills, it is important to check your tank on a **daily** basis.

2. Servicing the DIY Tank



Once the first pick-up is completed, the Safety-Kleen Representative will determine the appropriate service interval in which to service your tank.

If the tank nears capacity prior to a scheduled pick-up, contact Safety-Kleen by calling the toll-free number listed below. Safety-Kleen will respond promptly to all emergency calls.

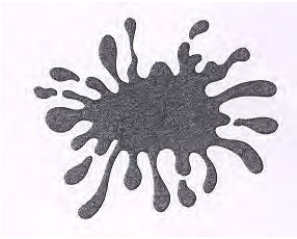
Emergency Service Calls: 1-800-545-3520

3. Testing

If the Safety-Kleen Representative believes the tank may have been contaminated with hazardous waste, the contents of your tank may be tested for unacceptable materials.

IMPORTANT! If the used oil has been mixed with unacceptable materials, Safety-Kleen reserves the right to decline the pick-up.

SPILL PROCEDURES



1. Small Spill (less than one-gallon)

Absorb all of the oil, using paper, vermiculite, floor absorbent, cat box litter, or other absorbent materials. Any material still containing free liquids should not be disposed of in your store's trash. Contact your DIY Coordinator in your corporate office for proper disposal procedures.

2. Larger Spill (one-gallon or greater)

Prevent run-off of the oil to sewers, streams, or other bodies of water. If run-off occurs, notify the proper authorities that a spill has occurred. Apply absorbent materials, sand, clay, or earth, soaking up as much liquid as possible. Any material still containing free liquids should not be disposed of in your store's trash. Contact your DIY Coordinator in your corporate office for proper disposal procedures.

3. If Oil is Spilled into Water

If oil or petroleum products are spilled into water, the Clean Water Act requires that the person in charge of the facility report the spill immediately to:

National Response Center: 800-424-8802

Water includes storm sewers, drains, rivers, streams, creeks, and lakes or ponds, which overflow into streams, creeks, etc. Water also includes seasonally dry creeks when there is water standing or flowing in them. Any spill that results in a sheen on surface waters must be reported.

Important! The spill procedures noted above are based upon guidelines set forth by the Federal EPA. Contact your state and/or local agencies for additional regulations regarding spills.

ABANDONED USED OIL PROCEDURES

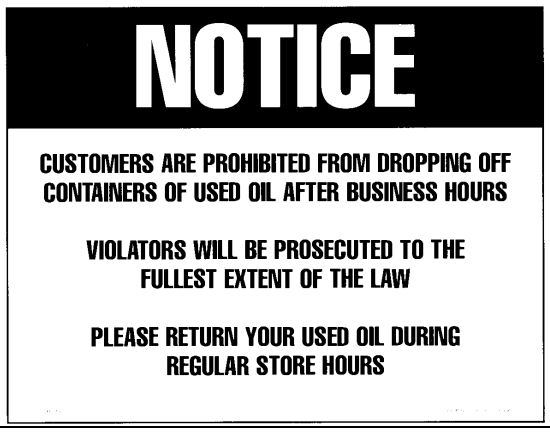
On occasion, customers may drop off containers of used oil after business hours. Should this circumstance occur, Safety-Kleen requests that you follow the procedures outlined below for managing the abandoned used oil:

1. Inspect each abandoned container to determine the approximate volume of used oil.

2. Visually inspect the contents of the container. If the container appears to contain used motor oil, and otherwise meets the Safety-Kleen program acceptance criteria, transfer the used oil into the collection tank according to standard procedures. Log the volume of used oil on the Log Sheet, by completing the volume, date, and indicating, "abandoned oil" under the customer name.

3. If the abandoned waste contains some material that is obviously not used oil (gasoline, paint waste, etc.) immediately contact your DIY Coordinator in your corporate office.

Post the **NOTICE SIGNS** (see below) in an area that is conspicuous and likely to be seen by those customers who may attempt to drop off their used oil after hours. This sign, provided in both English and Spanish, is used as a warning that such activity is strictly prohibited.





AutoZone®

PROTOTYPICAL STORE INVENTORY

RETAIL STORE ADDRESS ☐ SPRINKLERED ☒ NON-SPRINKLERED

2006 INTERNATIONAL FIRE CODE
Exempt Amounts of Hazardous Materials in a Retail Occupancy[1,2]

HAZARD CLASSIFICATION		ACTUAL INVENTORY QUANTITY lbs (gal)	MAXIMUM ALLOWABLE QUANTITIES lbs (gal)[3]			
			General Storage or Display		Special Exceptions[4]	
Material	Class		Without Sprinklers[5]	With Sprinklers[5,6]	Without Sprinklers[5]	With Sprinklers[5,6]
Aerosols[7]	Level 1[8]	(51.047)	N.L.	N.L.		
	Level 2	(4.641)	2,500[9,10]	10,000[9,10,11]		
	Level 3	(72.495)				
Carcinogens		(541.765)	N.R.	N.R.		
Combustible and Flammable Liquids[12]	IA	(3.047)	(30)	(60)[11]		
	IB	(27.764)	(1,600)	(7,500)[10,11]		
	IC	(44.297)				
	II	(26.327)				
	IIIA	(89.074)				
	IIIB	(1653.624)	(13,200)	N.L.		
Corrosive		(2.131)	(500)	(1,000)	(975)	(1950)
Flammable Gas – Liq.		(4.86)	(30)	(60)		
Highly Toxics[13]		(0.0)	10	20	20	40
Irritants		(1075.237)	N.R.	N.R.		
Other Health Hazards		(1.624)	N.R.	N.R.		
Organic Peroxide	III	0.0058	125	250		
Oxidizers	1	26.344	4,000	N.L.	18,000	N.L.
	2	2.0	250	500	2,250[14]	4,500[14]
	3	0.0058	10	20	1,150[14]	2,300[14]
Toxics[13]		(1.914)	500	1,000	1,000	2,000
Unstable Reactive	2	0.0058	50	100	1,150	2,300

N.L. – No Limit
N.R. – Not Regulated

References: 2003 IFC Chapters 27, 28, and 34

1 This table is a summary of information found in the 2006 International Fire Code. Local Authorities Having Jurisdiction (AHJ) may amend or modify this code. The suitability of this information to each store location should be verified by the local AHJ.

2 The quantities of products containing not more than 50% by volume of water miscible liquids and with the remainder of the solutions not being flammable are unlimited when individually packaged in containers not exceeding 1.3 gal (5 L).

3 When exempt amounts are listed in pounds or gallons, and a density is not provided, of conversion of 10 lbs/gal should be assumed.

4 The following criteria are required to utilize the Special Exceptions (**Ref: IFC Section 2703.11**):
- The storage and display of solids should not exceed a product density of 200 lbs/sqft of floor area for solids or 20 gal/sqft for liquids.
- Display height should not exceed 6 ft above the finished floor. Storage Height should not exceed 8 ft. above finished floor.
- Individual containers less than 5 gal or 25 lbs should be kept on pallets, racks or shelves. Containers should not exceed 10 gal or 100 lbs.
- Aisles 4 feet in width should be maintained on three sides of the storage or display area.

5 With exception of aerosols and combustible/ flammable liquids, Maximum Allowable Quantities may be doubled when stored in an approved storage cabinet.

6 A wet-pipe automatic fire sprinkler system designed for an Ordinary Hazard Group 2 occupancy (per NFPA 13) is required throughout the store.

7 Values given for all aerosols are per 25,000 sqft of retail display area. Additional quantities are permitted in adjacent storage areas.

8 Level 1 Aerosols are not regulated as a hazardous material in and of themselves; however, if the *product* is a hazardous material, other restrictions may apply.

9 Total quantity should not exceed 1,000 lbs in any 100 sq. ft. area.

10 Values are the maximum aggregate quantities permitted for any combination of the reference materials (e.g., the combined quantities of Level 2 and Level 3 aerosols cannot exceed the values given in the table). **Ref: IFC Tables 3404.3.4.1 and 2806.2**

11 The increase in the exempt amount applies to the provision of automatic sprinklers only. No allowance is given when the material is stored in an approved storage cabinet.

12 Containers for Class I flammable liquids should be metal, except that an aggregate quantity of 120 gallons of water-miscible Class IB and IC liquids is allowed in nonmetallic containers with an individual capacity of no more than 16 ounces. Containers for Class I flammable liquids should not exceed 5 gallons. Combustible commodities should not be stored above flammable or combustible liquids. Storage on shelves should not exceed 6 feet in height and shelving should be metal. When retail sales areas exceed 50,000 sqft, exempt amounts are allowed to be increased by 2% for each additional 1,000 sqft, up to a maximum of 100% of the table amounts. **Ref: IFC Section 3404.3.6**

13 These values apply to solid and liquid Highly Toxic or Toxic materials only. Highly Toxic or Toxic compressed gases are generally not permitted in the store without special protection.

14 Maximum Allowable Quantities may be doubled when individual packages are in the original sealed containers from the manufacturer and do not exceed 10 pounds each.