The City of Howard Lake strives to build upon its good neighbor traditions –
A welcoming community for all, supported by vibrant and engaged businesses and community organizations, involved citizens, and diverse amenities that provide a well-rounded quality of life.

Parks and Planning Commission
Howard Lake Library
Community Room

TENTATIVE AGENDA
May 14, 2025 – 6:00 pm

A. CALL TO ORDER
B. APPROVAL OF AGENDA
Any additions, deletions, modifications to the agenda will be done at this time.
C. CONSIDER APPROVAL OF MINUTES
   a. Consider Approval of Parks and Planning Minutes from the meeting on March 12, 2025.
D. PRESENTATIONS, PUBLIC HEARINGS & RELATED APPROVALS
   a. Public Hearing Related to Consider Preliminary Plat, Rezoning & Variance for 603 13th Avenue
E. NEW BUSINESS
   a. Consider Recommendation of Action Related to Pre Plat, Rezoning & Variance for 603 13th Ave.
      - Development Application
      - Preliminary Plat
      - Site Plan Review
      - Elevation Drawings
      - Civil
      - Photmetric
   b. Discuss – Howard Lake Farmers Market 2025 Season
   c. Discuss – Music in the Park Series

F. OLD BUSINESS
G. ADJOURN

CITY OF HOWARD LAKE

625 8TH Avenue - PO Box 736 - Howard Lake, MN 55349
Phone: 320-543-3670 | cityadmin@howard-lake.mn.us | www.howard-lake.mn.us

HOWARD LAKE PARKS AND PLANNING COMMISSION
Howard Lake City Hall
817 8th Ave
March 12, 2025 – 6:00 pm

MEETING MINUTES

MEMBERS PRESENT	**MEMEBERS ABSENT**
	April Debner

Molly Hibbard
Jason Deiter
Gene Gilbert
Vern Kleve
Barb Guenigsman
Neil Weber

OTHERS PRESENT
Nick Haggenmiller, City Administrator
Meagan Theisen, Assistant City Administrator
Nate Sparks, City Planner

A. CALL TO ORDER
Vice Chair Deiter called the meeting to order at 6:00 pm.

B. APPROVAL OF AGENDA
The agenda was approved as presented. Commissioner Hibbard moved to approve the agenda. The motion was seconded by Commissioner Guenigsman and passed unanimously.

C. APPROVAL OF MEETING MINUTES
Commissioner Hibbard moved to approve the Minutes from the Parks and Planning Meeting on February 12, 2025. The motion was seconded by Commissioner Weber and passed unanimously.

D. PRESENTATIONS, PUBLIC HEARINGS & RELATED APPROVALS

a. Public Hearing for Short Term Rental Application at 5536 & 5540 County Road 6 SW
Continued public hearing from the February Parks and Planning Meeting.
Haggenmiller shared that the selected property manager has to have a background check completed and parking requirements need to be reviewed by the City.

Colleen Cole, property owner of 5536 & 5540 County Road 6 SW, addressed the Commission. She stated she feels like the process and issues have changed over the time.

Commissioner Hibbard stated the Commission and the City are not trying to prevent the short term rental of their property, we are just following the Ordinance.

Joe Cole, property owner of 5536 & 5540 County Road 6 SW, stated he was told at City Hall that the City does not have any regulations regarding Short Term Rentals.

Allen Scheper, owner of 5538 County Road 6 SW, lives in the middle of the two units on the application and just moved in in December 2024. He shared he found out about the Short-term Rentals from a phone call from Joe Cole on January 10th, at which point he told Joe he was not happy about this arrangement. He stated that it is easy to hear movement from the units.

Joe and Colleen Cole stated they had disclosed their plans to transition their units into Short Term Rental properties to the realtors.

Scheper stated that the HOA bylaws state "no rentals less than 6 months."

Commissioner Guenigsman requested a copy of the HOA documents.

C.Cole stated if the sound is the issue, she would be happy to work on additional sound proofing.

Commissioners shared that they understand both sides of the situation.

Commissioner Weber shared that he sees there are two issues, but the City's side is just one issue and that if/when they meet our ordinance we could approve.

Public Hearing to be continued.

b. Public Hearing Comprehensive Plan & Zoning Amendment/Conditional Use Permit – Assembly Uses in Downtown District/CUP for Gene Yocum

Vice Chair Deiter closed the regular meeting and opened the public hearing at 6:28 pm.

Sparks reviewed the staff report and the process we need to go through to accommodate a religious organization. Staff feels that, this particular group seeking to purchase the building, would not be detrimental to the downtown.

Gene Yocum address the Commission. He shared that they sold their original building just before the start of COVID and they have been operating online or renting space since. They have about 12 people in their congregation. They meeting on Saturdays from 9-1.

Neil Wickoff, 128 Dutch Lake & Owner of The Vintage Exchange, shared concerns over losing retail space.

Sparks shared Federal acts that require the wording of "assembly space" in situations like this.

Commissioner Weber wondered if there is a site plan of planned building changes and why we are requiring the CUP, due to the small size of the occupancy. He also questioned the future of liquor licenses, as liquor licenses are not issued within 500 feet of a church.

Haggenmiller stated that zoning could be altered to allow liquor licenses within this zone or change the proximity.

Clinton Wallace, shared that he has lived in Montrose for 15 years and worked in Howard Lake many years ago. He doesn't see the congregation growing drastically. He understands the concerns stated by The Vintage Exchange.

Gene Yocum hopes he will bring new people to the community and wants to become part of the community.

Neil Wickoff, clarified that he has nothing against the church or its members, he I just concerned about losing retail space.

Commissioner Gilbert stated that there are already several vacant buildings along HWY 12. She finds it hard to turn down someone who wants to occupy a building rather than it sitting empty.

Gene Yocum stated the would not be bothered by community events happening in the back parking lot.

Vice Chair Commissioner Deiter closed the Public Hearing at 7:34 pm

E. NEW BUSINESS

a. Consider Recommendation to Approve/Deny Short Term Rental Application.
Tabled.

b. Approve Amendments Allowing Assembly Uses in the Downtown District/Conditional Use Permit for Gene Yocum.
Commissioner Hibbard moved to recommend the Comprehensive Plan Amendments for allowing Assembly Uses in the Downtown District. The motion was seconded by Commissioner Guenigsman. Kleve opposed the motion.

c. Consider Concept Plan for Lake Golf Estates III.
Sparks reviewed the staff report.

Lucinda Spainer with J.P. Brooks presented to the Commission the project plan.

Staff shared that the developer would be required to contribute "Park Dedication" fees to an existing park.

F. OLD BUSINESS

None

G. ADJOURN

Commissioner Hibbard moved to adjourn The Parks and Planning Commission meeting at 8:23pm. The motion was seconded by Commissioner Kleve and passed unanimously.

_____
Chair, April Debner

_____
Secretary, Meagan Theisen

PLANNING REPORT

TO: Howard Lake Planning Commission

FROM: Nate Sparks, City Planner

DATE: May 8, 2025

RE: Crawford Addition Preliminary & Final Plat
Abdo Market House Rezoning
Abdo Market House Site Plan Review

BACKGROUND

Joe Crawford has made an application for a preliminary and final plat of property located at 603 13th Avenue. The division is to separate the property into two lots, one that Mr. Crawford will retain for his residence and another that Abdo Market House is intending to develop. Abdo Market House would then seek a rezoning from Urban Reserve to B-1, General Commercial to develop their portion of the site for a retail commercial store, Dollar General Market.

DEVELOPMENT DETAILS

The property in question is about 10 acres in size and is currently used as Mr. Crawford's residence. The property was recently annexed into City limits. The property has US12 frontage, commercial development abuts three sides of the property; residential abuts the final south side. The property is immediately adjacent to city street and utilities.



Zoning. The property is currently zoned UR, Urban Reserve due to it being recently annexed by the City. After annexation and during the land use approval phase of any proposed development, the City is tasked with applying the appropriate zoning consistent with the Comprehensive Plan.

Land Use. The City's Comprehensive Plan Land Use Map guides the subject site for Medium Density Residential, which allows for 4-9 residential dwelling units per acre. This type of development is typically duplexes, townhomes, and small apartment buildings. The Comprehensive Plan also states that property along Highway 12 west of 13th Avenue is intended to be Commercial or Industrial and not residential as Highway 12 frontage is most suitable for commercial/industrial development.

To that end, it is proposed to maintain the current homestead as Urban Reserve until a change in zoning, use, or development request is made by the property owner. The portion adjacent to Highway 12 (Lot 2) into B1 General Business.

Development Proposal. The applicant is seeking a preliminary plat to divide the property into two lots with a dedicated right-of-way. Lot 1, Block 1 is proposed to be about 7 acres in size and will contain the Crawford residence. Lot 2, Block 1 is proposed to be about 1.75 acres and is proposed to be the property developed by Abdo Market House. A right-of-way is proposed to be platted south of Lot 2 to access Lot 1.

Proposed Rezoning. The applicant is seeking to rezone Lot 2 as B-1, General Business. Rezonings of property are intended, but not necessarily required to be, consistent with the Comprehensive Plan. The Comprehensive Plan guides the property as Medium Density Residential but also states that property with frontage on Highway 12 should be Commercial or Industrial based on the vicinity. This would indicate that it would be appropriate to rezone the proposed Lot 2 as B-1, General Business, as the properties in the area also adjacent to Highway 12 are commercial in nature.

The remainder of the Crawford property, Lot 1, could be rezoned to R-3, Single and Two Family Residential; R-5, Manufactured Home Park; R-6, Medium Density Residential; and possibly R-7, High Density Residential and be consistent with the Comprehensive Plan. The applicant could argue that the City is compelled to rezone the property in this manner.

City Staff finds that it would be more appropriate to keep the remaining property as UR, Urban Reserve, however. This is due to the City's past practice of requiring rezonings to accommodate development plans. The minimum lot size in the UR, Urban Reserve District is 20 acres. Section 05-07-04-A of the Subdivision Ordinance states that all newly platted lots must meet the minimum lot area requirements of the Zoning Ordinance. Therefore, the approval of the plat would be conditioned on approval of a variance from this Subdivision Ordinance provision.

A Subdivision Ordinance variance is a relaxation of the terms of the Ordinance where such deviation will not be contrary to the spirit and intent of the Comprehensive Plan and this Ordinance, the public interest and where, owing to physical conditions unique to the individual property under consideration and not the result of the actions of the applicant, a literal enforcement of the ordinance would result in unnecessary and undue hardship.

City Staff finds that keeping the remainder of the Crawford property as Urban Reserve is in the public interest in order to preserve greater scrutiny of any further development proposals on the site.

Otherwise, the applicant could simply request a rezoning to one of the districts consistent with the Comprehensive Plan.

Streets. The applicant is proposing to dedicate right-of-way on the south side of Lot 2 which terminates at a cul-de-sac adjacent to Lot 1. The street and road design are subject to review and approval by the City Engineer.

Upon annexation, the applicant indicated that they were intending to pursue a waiver of immediate installation of the improvements within this right-of-way. This may be accommodated by the City Council if the applicant enters into an agreement, drafted by the City Attorney, to guarantee the installation of improvements in a manner acceptable to the City.

SITE PLAN REVIEW

Development Plan. As stated above, the development plan is to build a 140' x 76' retail store on the site.

Parking & Loading. The City's parking requirements state that a building of this size and uses would require 40 parking stalls. The applicant is depicting 34 stalls in the main parking lot adjacent to the building and 6 stalls located south of the driveway entering the site. They state that they wish to enter into a parking deferment agreement and only place these six stalls if determined to be needed. City Staff can approve parking deferments under code with a contract guaranteeing that the deferred stalls get installed at the time it is determined to be needed by City Staff.

There is a loading area proposed on the south side of the building for deliveries.

Landscaping. The City requires landscaping between parking and loading areas to neighboring residentially zoned properties. The applicant has provided a landscape planting plan depicting trees to be planted in these areas. Staff would recommend that the plan be modified slightly to place understory plantings on the south side of the property and that the applicant ensures that no plantings are in the public right-of-way.

Architecture. The applicant has provided building plans that generally meet City Ordinances. The building is primarily metal panels on three sides with the front (facing 13th Avenue) being part masonry and part architectural metal panels. The City's building materials ordinance does permit "metal siding" on commercial structures.

Grading, Drainage and Utilities. The City Engineer reviewed the submittals meet standards for site plan and civil requirements. The applicant must provide supporting materials for the stormwater calculation as well as approved plumbing utility plans prior to the start of construction. This is a typical submittal process handled at the time of building permit issuance.

Signage. The applicant, Abdo MarketHouse serves as a commercial landlord to the tenant, Dollar General Market. Per their own agreement, the final retail signage is managed through the tenant. Therefore, signage is not part of this review.

However, in transparency, the City's sign ordinance states that signs in business districts can be up to 40 square feet in area for both the free standing and wall signs. The free standing sign can be up to 15 feet in height. In industrial districts the wall sign could be up to 3 square feet per lineal foot of building

frontage and the free standing sign could be up to 150 square feet in area. Free standing signs cannot be closer than 5 feet to any property line. It appears that the City Ordinance is written as though "business districts" are the Downtown and "industrial districts" are the Industrial and General Business Districts, as the City's standards for highway commercial development are far more restrictive than other communities. The applicant will need an ordinance amendment or will have to adjust their plans to meet the code requirements prior to the installation of the signs. The signs they propose are in excess of the size requirements for the downtown district, but in

Lighting. The applicant provided a lighting plan. The City's Zoning Ordinance requires that light cast onto neighboring properties not exceed 0.4 foot candles nor shall light cast onto adjacent public irghts-of-way exceed 1.0 foot candles at the centerline. These standards are being met.

Development Agreement. As a condition of final plat approval, the applicant will be required to enter into a development agreement with the City and post all the necessary securities required by it. This issue should be subject to further comment by the City Attorney.

RECOMMEDATION

The Planning Commission should hold a public hearing on the preliminary plat (with variance) and rezoning and provide a recommendation to the City Council. Staff recommends approval of both with the following conditions:

1. The proposed variance on the lot size for Lot 1 is preferred to the rezoning of Lot 1 to another zoning district. No rezoning should take place until a plan for development is proposed.
2. All comments from the City Engineer shall be addressed, specifically submittal of stormwater calculations.
3. The applicant shall adjust the landscaping plan to address the comments from the City Planner.
4. No parking deferment will be accepted without the requisite contract guaranteeing installation upon Staff requirement.
5. Signage shall be adjusted to meet code requirements prior to the time of permitting.
6. The applicant shall enter into a road installation deferment agreement as written by the City Attorney if not installing the infrastructure at this time.

Attachments

1. Development Application
2. Preliminary Plat
3. Site Plan
4. Elevation Drawing
5. Civil
6. Photometric

DEVELOPMENT APPLICATION

Date Filed:		Date Completed:	
Received By:		Base Fee:	
Escrow			

Instructions: Please read carefully and answer all questions thoroughly. Only complete applications will be accepted after validation by the City Administrator, and prior to acceptance of required processing fees and escrows.

Property Information:

Property Identification Number (PID#)/Zoning District	RP219-000-041300
Street Address	603 13th Ave, Howard Lake, MN

Applicant Information:

Name:	Paul Abdo	Business Name:	AMH Howard Lake, LLC
Address:	601 Marquette Ave	City/State/Zip:	Mpls/MN/55402
Telephone:	612.382.0066	Email:	paul@abdomarkethouse.com

Request:

Comprehensive Plan Amendment	____	Site and Building Plan Review	X
Ordinance Amendment (text or map)	____	Subdivision Sketch Review	____
Conditional or Interim Use Permit	____	Preliminary Plat	X
Administrative Permit	____	Final Plat	X
Variance /Appeal	X	Minor Subdivision	____
PUD (concept plan/development plan)	____	Curb/sidewalk Construction	____
Fence Construction	____	Construction, placement (ROW)	____
Other: _____	____	Sign Construction/Placement	____

Description of Request:

Applicant is requesting pre-plat, final plat, siteplan review, parking variance and rezone from R-1 to Hwy commercial

Please attach any additional information pertaining to the above requests.

Doc ID: 6fd974742159cb8bd084444c47db0e3274d76fe8

APPLICATION FEES AND EXPENSES: The undersigned agree that all fees and expenses incurred by the City for the processing of this application, including costs for professional services, are responsibility of the applicant and property owner to be paid immediately upon receipt or the City may approve a special assessment for which the property owner specifically agrees to be assessed for 100 percent per annum and waives any and all appeals under Minnesota Statues 429.81. All fees and expenses are due whether the application is approved or denied.

Applicant: _____ Date: 04 / 10 / 2025

Property Owner _____ Date: 04 / 10 / 2025

I, the undersigned, hereby apply for the considerations described above and declare that the information and materials submitted in support of this application are in compliance with adopted City policy and ordinance requirements and are complete to the best of my knowledge.

I understand that this application will be processed accordance with established City review procedures and Minnesota Statues 15.99 at such time as it is determined to be complete. Pursuant to Minnesota 15.99, the City will notify the applicant within fifteen (15) days from the filing date of any incomplete or other information necessary to complete the application. Failure on my part to supply all necessary information as requested by the City may be cause for denying this application.

Applicant: _____ Date: 4-8-25

Property Owner _____ Date: 04 / 10 / 2025

For Office Use only:

Proposed Planning Commission Date: _____ Proposed Council Date: _____

Approval: Planning Commission Approval Date: _____ City Council Approval Date: _____

Doc ID: 6fd974742159cb8bd084444c47db0e3274d76fe8

Title	Howard Lake Development Application
File name	development_appli..._fillable1_v1.pdf
Document ID	6fd974742159cb8bd084444c47db0e3274d76fe8
Audit trail date format	MM / DD / YYYY
Status	Signed

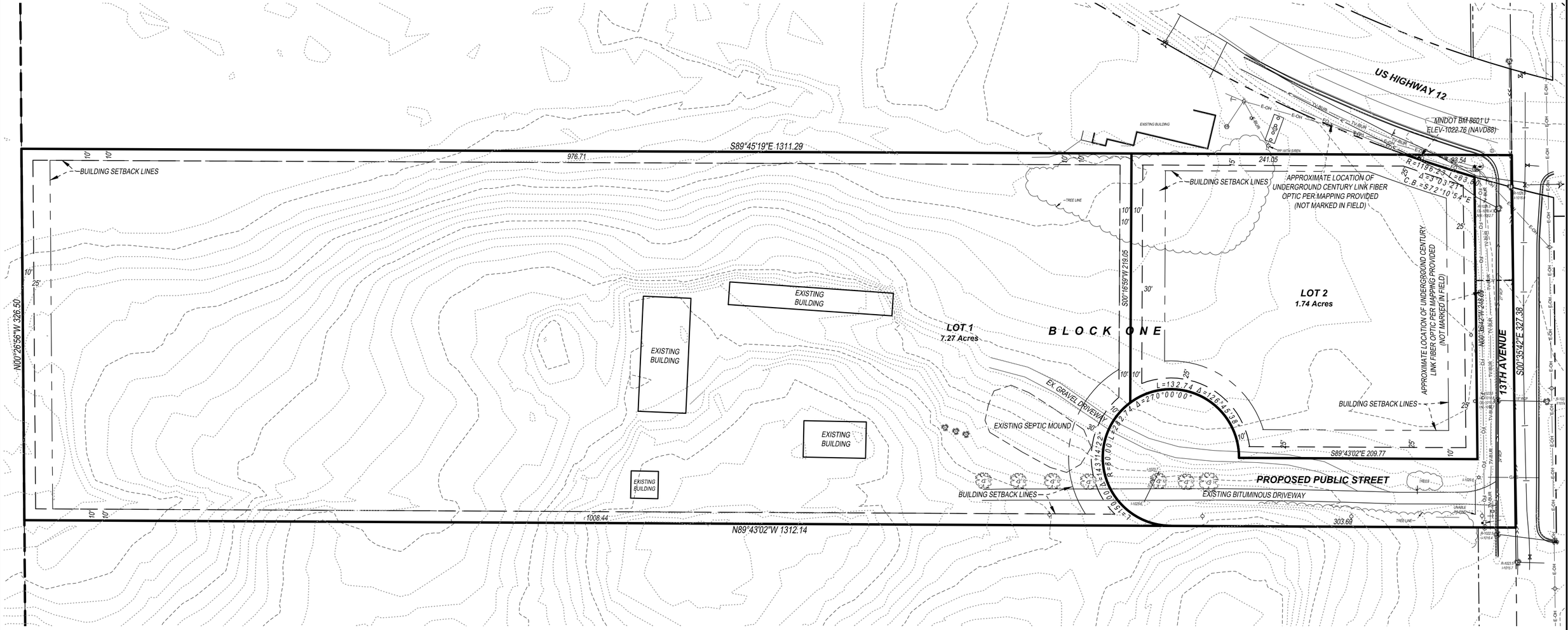
Document History

SENT	**04 / 10 / 2025** 14:19:29 UTC	Sent for signature to Lawrence Abdo (larry@abdomarkethouse.com) and Joe Crawford (joecrawford99@yahoo.com) from bill@abdomarkethouse.com IP: 74.95.142.54
VIEWED	**04 / 10 / 2025** 14:19:55 UTC	Viewed by Lawrence Abdo (larry@abdomarkethouse.com) IP: 74.95.142.54
SIGNED	**04 / 10 / 2025** 14:20:28 UTC	Signed by Lawrence Abdo (larry@abdomarkethouse.com) IP: 74.95.142.54
VIEWED	**04 / 10 / 2025** 14:20:29 UTC	Viewed by Joe Crawford (joecrawford99@yahoo.com) IP: 172.56.10.106
SIGNED	**04 / 10 / 2025** 14:44:51 UTC	Signed by Joe Crawford (joecrawford99@yahoo.com) IP: 172.56.10.106
COMPLETED	**04 / 10 / 2025** 14:44:51 UTC	The document has been completed.

PRELIMNARY PLAT OF:

CRAWFORD ADDITION

COUNTY OF WRIGHT
CITY OF HOWARD LAKE
SEC. 4, TWP. 118, RNG. 27



PROPERTY OWNERS

Joseph and Amber Crawford
603 13th Ave
Howard Lake, MN 55349
PID 219000041300

PROPERTY DESCRIPTION

The South Half of the North Half of the Southwest Quarter of the Northeast Quarter of Section 4, Township 118, Range 27, Wright County, Minnesota.

Subject to easements, restrictions, or reservations of record, if any.

0 30 60
(SCALE IN FEET)

ZONING INFORMATION - Lot 1

Zoning District: R-3, Single and Two-Family Residential

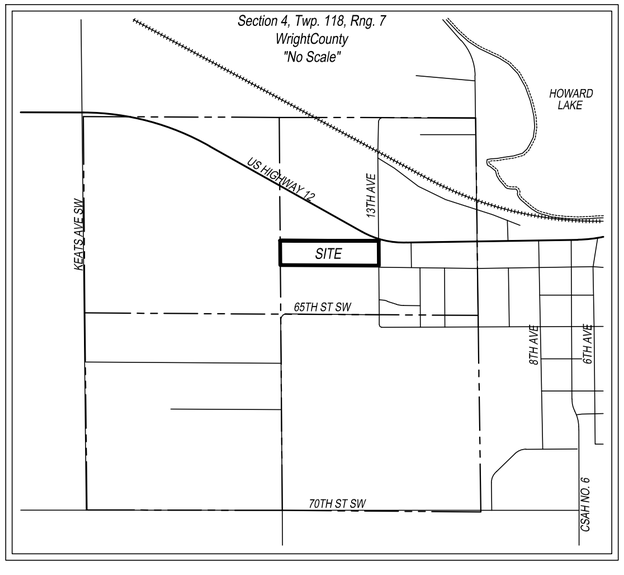
Building Setback Requirements:
- *Front - 30 feet*
- *Rear - 25 feet*
- *Side - 10' feet*

ZONING INFORMATION - Lot 2

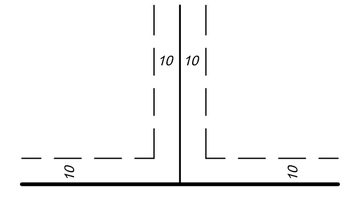
Zoning District: B-1, General Business

Building Setback Requirements:
- *Front - 25 feet*
- *Rear - 20 feet*
- *Rear - 30 feet (abutting residential zoned property)*
- *Side - 15' feet*
  - *25 feet (abutting street or residential zoned property)*

VICINITY MAP



DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



BEING 10 FEET IN WIDTH AND ADJOINING ALL LOT LINES UNLESS OTHERWISE SHOWN ON THE PLAT.

NOTES

1) THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION OF EXISTING SUBSURFACE UTILITY DATA". THE MARKINGS SHOWN ON THE FACE OF THIS SURVEY ARE PER GOPHER STATE ONE CALL TICKET NUMBERS 250280976 AND 250280989.

2) EXISTING BUILDINGS LOCATIONS SHOWN ON LOT 1, BLOCK 1 ARE APPROXIMATE AND BASED ON AN AERIAL PHOTO

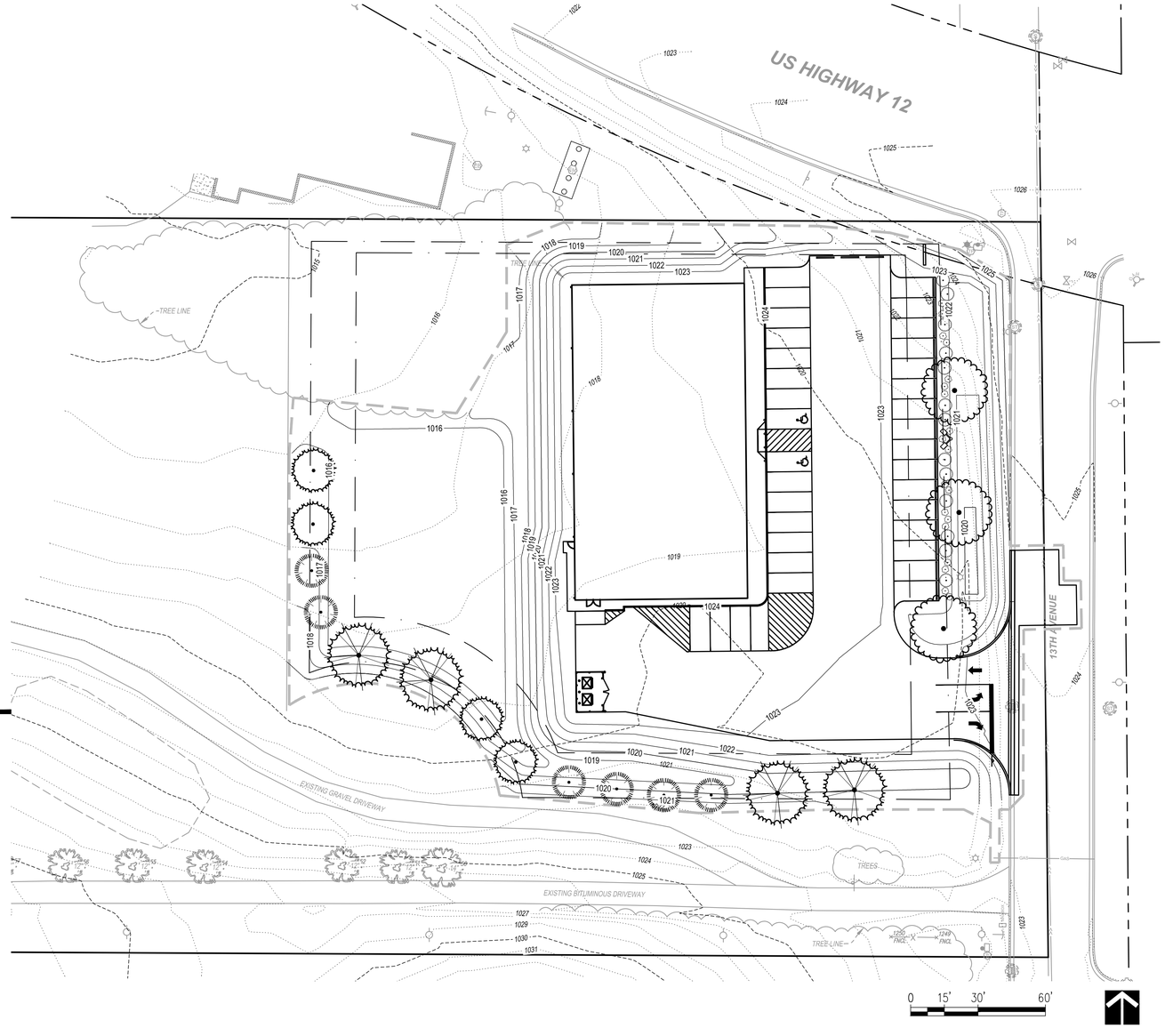
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Kyle J. Roddy , MN PLS 42627

Signature: *Date: 04/16/2025*

LHB
324 Garfield St. South | Cambridge, MN 55008
763.219.1235 | LHBcorp.com

DOLLAR GENERAL
HOWARD LAKE, MN



DRAWING INDEX

GENERAL
G001 TITLE SHEET

SURVEY
ALTA SURVEY

CIVIL
C001 NOTES & LEGEND
C002 STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE
C011-013 SPECIFICATIONS
C101 REMOVALS & INITIAL EROSION CONTROL PLAN
C102 PROPOSED EROSION CONTROL PLAN
C201 UTILITY PLAN
C301 GRADING PLAN
C401 SURFACING & LAYOUT PLAN
C402 STRIPING & SIGNAGE PLAN
C501-504 CIVIL DETAILS
C505 LANDSCAPE DETAILS

WARNING

LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.
CALL BEFORE DIGGING

MINNESOTA
ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY
MN STATUTE 216D

CONTACT INFORMATION

PROPERTY OWNER
AMH MALMO, LLC

ABDO MARKETHOUSE, LLC.
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402
PROJECT MANAGER
PAUL ABDO
C:612-382-0066
PAUL@ABDOMARKETHOUSE.COM

DESIGNER
LHB INC.
701 WASHINGTON AVE N, SUITE 200
MINNEAPOLIS MN 55401
CIVIL ENGINEER
JORDAN CABAK
O: 612-752-6948
JORDAN.CABAK@LHBCORP.COM

File Path: J:\240668\2 Howard Lake MN\500 Drawings\Civil\240668.02 G001 TITLE SHEET.dwg
Plot Date: 2025\4\24 6:49 PM

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

PRELIMINARY
NOT FOR CONSTRUCTION
04/24/2025

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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
TITLE SHEET

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: **G001**

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THIS PLAN SET.
2. OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PAY ALL PERMIT AND OTHER ASSOCIATED FEES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES.
3. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY WARNING SIGNS AND BARRICADES. COST SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. BARRICADES SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
4. ALL DEBRIS AND REFUSE RESULTING FROM CONSTRUCTION OPERATIONS SHALL BE HAULED OFF-SITE AND DISPOSED OF PROPERLY AT THE CONTRACTOR'S EXPENSE.
5. CONTRACTOR SHALL PROTECT FROM DAMAGE ALL EXISTING FEATURES DESIGNATED TO REMAIN. ANY FEATURES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
6. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL UNDERGROUND UTILITIES. UTILIZE THE ONE CALL EXCAVATION NOTICE SYSTEM OF "GOPHER ONE CALL" CALL 1-800-252-1166.

REMOVAL NOTES

1. PROTECT ALL FENCES, SIGNS, STRUCTURES, DRIVES, SIDEWALKS, STREETS, BUSHES, TREES, ETC. WHICH ARE NOT DESIGNATED FOR REMOVAL, OR OUTSIDE THE LIMITS OF CONSTRUCTION.
2. THE CONTRACTOR (GENERAL CONTRACTOR) IS RESPONSIBLE FOR REPAIRING ALL DAMAGE INCURRED DURING CONSTRUCTION. THIS INCLUDES, BUT NOT LIMITED TO, DAMAGE CAUSED BY SUBCONTRACTORS TO THE GENERAL CONTRACTOR. REPAIRS SHALL EQUAL OR EXCEED THE QUALITY OF EXISTING CONDITIONS.

GRADING NOTES

1. GRADES SHOWN ARE FINISH SURFACE ELEVATIONS UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL MAKE APPROPRIATE DEDUCTIONS FOR VARYING SURFACING TYPES (E.G., PAVEMENT, TOPSOIL) TO DETERMINE SUBGRADE ELEVATIONS.
2. SPOT ELEVATIONS ALONG CURB LINES REPRESENT THE TOP-BACK-OF-CURB UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL STOP WORK IMMEDIATELY IN THE AFFECTED AREA AND NOTIFY THE OWNER IF CONTAMINANTS ARE FOUND IN THE EXISTING SOILS BASED ON VISUAL OR OLFACTORY (SMELL) OBSERVATION.
4. SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 2.0%.
5. PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREA. DO NOT ALLOW WATER TO POND IN EXCAVATION AREAS, AND MAINTAIN ALL EXISTING DRAINAGE PATTERNS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL OSHA REGULATIONS IN THE EXECUTION OF WORK UNDER THIS CONTRACT.

EROSION CONTROL NOTES

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY NPDES PERMITS AND SHALL MAINTAIN SAID PERMITS AS REQUIRED BY THE REGULATORY AGENCY.
2. THE EROSION CONTROL PLAN INCLUDED IN THE SET SHALL ACT AS THE POLLUTION PREVENTION PLAN AS REQUIRED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER PERMIT. FAILURE TO IMPLEMENT THE CONTROLS AND PRACTICES OUTLINED WOULD RESULT IN VIOLATION OF THE ENVIRONMENTAL PROTECTION ACT AND CLEAN WATER ACT AND IS GROUNDS FOR PENALTIES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES, NOTIFICATION, MAINTENANCE, MONITORING, AND RECORD KEEPING REQUIRED BY THE NPDES GENERAL PERMIT.
4. LOCATIONS OF STABILIZED CONSTRUCTION ENTRANCES INDICATED ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST LOCATION AND SIZE OF ENTRANCES TO ACCOMMODATE CONSTRUCTION VEHICLES AND ACTIVITIES.
5. THE CONTRACTOR SHALL NOT DISTURB EXISTING VEGETATION OUTSIDE THE LIMITS OF CONSTRUCTION.
6. PERIODICALLY CLEAN OUT AND DISPOSE OF ALL SEDIMENT ONCE THE STORAGE CAPACITY OF THE DRAINAGE FEATURE OR STRUCTURE RECEIVING THE SEDIMENT IS REDUCED BY ONE-HALF. CLEAN OUT AND DISPOSE OF ALL SEDIMENT AT THE COMPLETION OF THE PROJECT.
7. PROVIDE ADDITIONAL ON-SITE PROTECTION, IN ADDITION TO THAT SHOWN SO THAT SEDIMENT IS NOT PERMITTED TO LEAVE THE PROJECT CONFINES DUE TO UNFORESEEN CONDITIONS OR ACCIDENTS.
8. SCHEDULE TEMPORARY SEEDING OPERATIONS IMMEDIATELY AFTER SITE GRADING WORK IS COMPLETE.
9. TEMPORARY STOCKPILE LOCATIONS SHALL BE COORDINATED WITH THE OWNER.
10. PROVIDE SILT FENCE AROUND STOCKPILES DURING CONSTRUCTION TO PREVENT SEDIMENT IN RUNOFF FROM THE SITE.
11. ALL EROSION CONTROL FEATURES SHALL BE KEPT IN WORKING ORDER. THE CONTRACTOR SHALL REPAIR ALL DAMAGES CAUSED BY SOIL EROSION AND CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY OR AS DIRECTED BY THE INSPECTOR.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CONTAINMENT DIKES OR OTHER PROTECTIVE MEASURES AROUND ALL ON-SITE FUELING AND CHEMICAL STORAGE AREAS.
13. IN THE EVENT OF A RELEASE OF OIL OR HAZARDOUS SUBSTANCE, THE CONTRACTOR SHALL COMPLY WITH THE LOCAL, STATE AND FEDERAL REQUIREMENTS OF ENVIRONMENTAL QUALITY FOR NOTIFICATION, CONTAINMENT, INVESTIGATION, REMEDIAL ACTION AND DISPOSAL.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTAINING ERODED MATERIALS WITHIN THE SITE AND PREVENTING ERODED MATERIALS FROM ENTERING EXISTING AND NEW STORM SEWER SYSTEMS BY INSTALLING FABRIC SILT FENCES, STRAW BALE DIKES, OR OTHER APPURTENANCES AS NECESSARY IN ADDITION TO WHAT IS SHOWN ON THE DRAWINGS.

UTILITY NOTES

1. COORDINATE INSPECTION AND TESTING FOR ALL UNDERGROUND UTILITIES WITH THE APPROPRIATE AUTHORITIES PRIOR TO COVERING TRENCHES. COMPLY WITH ALL LOCAL REQUIREMENTS AND CONDUCT ALL TESTS TO THE SATISFACTION OF THE LOCAL AUTHORITIES.
2. ALL EXISTING UTILITIES AND SERVICE LINES SHALL BE KEPT IN SERVICE AT ALL TIMES DURING CONSTRUCTION OF THIS PROJECT, UNLESS OTHERWISE AUTHORIZED BY THE OWNER.
3. REPORT ANY DISCREPANCIES TO THE ENGINEER. RECONNECT ALL SERVICES NOT MARKED FOR REMOVAL OR AS DIRECTED BY THE OWNER.
4. REPAIR OF DAMAGED UTILITIES SHALL BE REPORTED THROUGH THE OWNER.
5. CONTRACTOR SHALL IDENTIFY, FIELD VERIFY AND COORDINATE ALL EXISTING AND PROPOSED UTILITY CROSSINGS AND UTILITY TIE-IN POINTS IN THE FIELD. REPORT CONFLICTS REQUIRING REDESIGN TO THE OWNER.
6. DIMENSIONS TO PROPOSED UTILITIES ARE FROM THE CENTER OF STRUCTURE OR PIPE.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING ON THE PROJECT. REFER TO THE GEOTECHNICAL REPORT FOR GROUND WATER CONDITION AND RECOMMENDATIONS FOR DEWATERING..
8. GAS SERVICE TO BE DESIGNED BY THE CONTRACTOR. IF PROPANE TANK IS NEEDED COORDINATE LOCATION WITH LHB.

GENERAL SPECIFICATION

THE CURRENT EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION SHALL GOVERN, EXCEPT AS MODIFIED BY THE PROJECT SPECIFICATIONS. (AVAILABLE AT: http://www.dot.state.mn.us/tecsup)

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MN MUTCD, INCLUDING THE MOST CURRENT FIELD MANUAL. (AVAILABLE AT: http://www.dot.state.mn.us/trafficeng)

SURVEY CONTROL NOTES

HORIZONTAL DATUM:
MINNESOTA DOT: WRIGHT COUNTY, US FOOT NAD83

ADDITIONAL SURVEY CONTROL ON SITE IS AVAILABLE CONTACT LHB SURVEY AT 763-689-4042

ABBREVIATIONS

A.I.P.	ABANDON IN PLACE	MH	MANHOLE
A.G.	ABOVE GROUND	MOD.	MODIFIED
B.G.	BELOW GROUND	O.C.	ON CENTER
CB	CATCH BASIN	P(CB/MH)	PROPOSED CATCH BASIN/MAHNOLE
DIP	DUCTILE IRON PIPE	PE	POLYETHYLENE
EXIST.	EXISTING	PIV	POST INDICATOR VALVE
ELEV.	ELEVATION	PVC	POLYVINYL CHLORIDE
E.W.	EACH WAY	PROP.	PROPOSED
EOF	EMERGENCY OVERFLOW ELEVATION	RCP	REINFORCED CONCRETE PIPE
FES	FLARED END SECTION	R.O.W.	RIGHT OF WAY
FM	FORCE MAIN	SCH.	STANDARD
HDPE	HIGH DENSITY POLYETHYLENE	STMH	STORM MANHOLE
HMA	HOT MIX ASPHALT	TEMP.	TEMPORARY
HP	HIGH POINT	(TYP.)	TYPICAL
HYD	HYDRANT	V.I.F.	VERIFY IN FIELD
IE	INVERT ELEVATION	MNDOT	MINNESOTA DEPARTMENT OF TRANSPORTATION
LP	LOW POINT		
MAX.	MAXIMUM	WWM	WELDED WIRE MESH
MIN.	MINIMUM		

EXISTING LEGEND

- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- TREE LINE
- EXISTING MAJOR CONTOUR (5' INTERVAL)
- EXISTING MINOR CONTOUR (1' INTERVAL)
- EXISTING STREET SIGN
- FOUND RIGHT OF WAY MONUMENT
- FOUND IRON PIPE
- EXISTING STORM MANHOLE
- EXISTING CATCH BASIN
- EXISTING GAS METER
- EXISTING CABLE PEDESTAL
- EXISTING TELEPHONE PEDESTAL
- EXISTING UNDERGROUND FIBER SIGN
- EXISTING POWER POLE
- EXISTING LIGHT POLE
- EXISTING HYDRANT
- EXISTING WATER VALVE
- E--BUR-- EXISTING UNDERGROUND ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND STORM SEWER
- EXISTING UNDERGROUND GAS

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

PRELIMINARY
NOT FOR CONSTRUCTION
04/24/2025

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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
NOTES & LEGEND

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240688
DRAWING NO: C001

File Path: ...\240688\02 Howard Lake MN\500 Drawings\Civil\240688.02 C001 NOTES & LEGEND.dwg
Plot Date: 2025/4/23 9:47 PM

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

1. GENERAL

   THE MINNESOTA POLLUTION CONTROL AGENCY (MPCA) REGULATES STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY DISTURBING LAND EQUAL TO OR GREATER THAN ONE ACRE THROUGH A GENERAL STORMWATER PERMIT (PERMIT NO. MN R100001) AUTHORIZING THE DISCHARGE OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY TO WATERS OF THE STATE IN COMPLIANCE WITH THE CLEAN WATER ACT AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM (NPDES/SDS) PROGRAM. THE GENERAL PERMIT (PERMIT) REQUIRES THE DEVELOPMENT AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP IS A COMBINATION OF NARRATIVE, CALCULATIONS, PLANS SHEETS, AND STANDARD DETAIL SHEETS THAT ADDRESS THE FORESEEABLE CONDITIONS AT ANY STAGE IN THE CONSTRUCTION OR POST-CONSTRUCTION ACTIVITIES.

2. GENERAL AND ADMINISTRATIVE REQUIREMENTS

   A. RESPONSIBLE PARTIES: THE OWNER AND GENERAL CONTRACTOR (OPERATOR)(CONTRACTOR) ARE CO-PERMITTEES OF THE PERMIT AND ARE JOINTLY RESPONSIBLE FOR COMPLIANCE WITH TERMS AND CONDITIONS OF THE PERMIT. OBTAIN AND REVIEW THE PERMIT AND COMPLY WITH PERMIT SECTIONS 3, 4, 6-24 (PERMIT PART 3.5). VERIFY THAT PERMIT REQUIREMENTS ARE SATISFIED AND COMPLETE THE BLANKS ON THIS SWPPP SHEET(S).

   B. PERMIT APPLICATION (PERMIT ITEM 3.2): THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE OWNER, COMPLETING THE PERMIT APPLICATION ON-LINE, AND PAYING THE APPLICATION FEE. APPLY ON-LINE AT THE MPCA CONSTRUCTION STORM WATER WEBSITE: https://www.pca.state.mn.us/water/construction-stormwater.

   C. PERMIT COVERAGE (PERMIT ITEMS 3.3, 3.4): FOR PROJECTS THAT DISTURB LESS THAN 50 ACRES OR DO NOT DISCHARGE STORMWATER WITHIN 1 MILE (AERIAL RADIUS MEASUREMENT FROM PROJECT BOUNDARIES) OF A SPECIAL OR IMPAIRED WATER, PERMIT COVERAGE TYPICALLY BECOMES EFFECTIVE UPON ON-LINE APPLICATION AND COMPLETION OF THE PAYMENT PROCESS.

   FOR PROJECTS THAT DISTURB 50 ACRES OR MORE AND DISCHARGE STORMWATER WITHIN 1 MILE OF A SPECIAL OR IMPAIRED WATER, THE COMPLETE SWPPP MUST BE SUBMITTED TO THE MPCA AT LEAST 30 DAYS BEFORE THE START OF CONSTRUCTION. CONSTRUCTION MAY BEGIN AFTER ON-LINE APPLICATION, COMPLETION OF THE PAYMENT PROCESS, AND, AFTER RECEIVING A DETERMINATION LETTER FROM THE MPCA THAT REVIEW OF THE SWPPP IS COMPLETE. IF THE MPCA FAILS TO CONTACT PERMITTEES WITHIN 30 DAYS OF APPLICATION RECEIPT, COVERAGE IS EFFECTIVE 30 DAYS AFTER COMPLETING THE PAYMENT PROCESS.

   * DOES THE PROJECT DISTURB 50 ACRES OR MORE? NO
   * DOES THE PROJECT DISCHARGE WITHIN 1-MILE OF A SPECIAL (PERMIT ITEM 23.3-23.6) OR IMPAIRED WATER (PERMIT ITEM 23.7)? YES

   IF "YES" FOR BOTH OF THE ABOVE, SUBMIT THE ONLINE APPLICATION, PAYMENT, AND THE COMPLETE SWPPP (SWPPP AND PLAN SHEETS IT REFERENCES, STORMWATER REPORT, AND SITE ASSESSMENTS FOR GROUNDWATER AND SOIL CONTAMINATION), AT LEAST 30 DAYS BEFORE THE START OF CONSTRUCTION.

   DO NOT BEGIN LAND DISTURBING CONSTRUCTION ACTIVITIES UNTIL PERMIT COVERAGE IS EFFECTIVE. THE START OF ANY LAND DISTURBING ACTIVITIES SIGNIFIES THAT THE CONTRACTOR IS ASSUMING RESPONSIBILITY FOR PERMIT COVERAGE AND HAS COMPLIED WITH PERMIT REQUIREMENTS.

   D. NOTIFICATION OF COVERAGE (PERMIT ITEM 3.6): THE CONTRACTOR WILL RECEIVE A NOTIFICATION OF COVERAGE FROM THE MPCA (E.G., VIA EMAIL). KEEP OR POST A COPY OF THE NOTIFICATION OF COVERAGE WITH THE SWPPP AT THE PROJECT SITE. PROVIDE COPIES TO THE OWNER AND LHB.

   E. CHANGE OF COVERAGE FOR NEW OWNER OR NEW OPERATOR (PERMIT ITEMS 3.7, 3.8): FOR A NEW OWNER OR OPERATOR, THE CURRENT OWNER, AND NEW OWNER OR OPERATOR, MUST SUBMIT A "NOTICE OF TERMINATION/PERMIT MODIFICATION FORM" PRIOR TO THE NEW OWNER OR OPERATOR COMMENCING CONSTRUCTION ACTIVITY, NO LATER THAN 30 DAYS AFTER PROPERTY OWNERSHIP TRANSITION. THIS FORM IS AVAILABLE AT THE ABOVE MPCA WEBSITE.

   F. TERMINATION OF COVERAGE (PERMIT SECTION 4): THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE OWNER AND TERMINATING PERMIT COVERAGE BY COMPLETING AND SUBMITTING A "NOTICE OF TERMINATION/PERMIT MODIFICATION FORM" (NOT) TO THE MPCA AFTER ALL OF THE CONDITIONS OF PERMIT ITEM 4.4 AND 4.5 ARE SATISFIED. PROVIDE, TO OWNER, PHOTOS OF THE SITE SUBMITTED TO THE MPCS WITH THE NOT.

   G. RECORD RETENTION AND AVAILABILITY (PERMIT SECTION 20): THE CONTRACTOR SHALL KEEP A COPY OF THE SWPPP, INCLUDING ALL CHANGES, AND INSPECTIONS AND MAINTENANCE RECORDS ON SITE OR ELECTRONICALLY AVAILABLE ON-SITE DURING NORMAL WORKING HOURS DURING CONSTRUCTION PER PERMIT SECTION 20. THIS DOCUMENTATION MUST BE KEPT ON FILE FOR 3 YEARS AFTER SUBMITTAL OF THE NOTICE OF TERMINATION. COORDINATE TRANSFER OF THIS DOCUMENTATION TO THE OWNER AT PROJECT COMPLETION.

   H. CHANGES (AMENDMENTS) TO SWPPP (PERMIT SECTION 6): UPDATE AND DOCUMENT CHANGES WITHIN 7 DAYS TO THE SWPPP DURING CONSTRUCTION PER PERMIT SECTION 6. KEEP DOCUMENTATION WITH THE SWPPP (E.G., "THE REASON INLET PROTECTION WAS REMOVED FROM INLET 23 WAS DUE TO STREET FLOODING/FREEZING CONCERNS, AS ALLOWED BY PERMIT ITEM 9.8.").

3. CONSTRUCTION ACTIVITY REQUIREMENTS

   A. GENERAL: COMPLY WITH THE PERMIT AND SWPPP AND THE REQUIREMENTS OF THE PERMIT. THE BEST MANAGEMENT PRACTICES (BMPS) IDENTIFIED IN THE SWPPP AND PERMIT MUST BE SELECTED, INSTALLED, AND MAINTAINED IN AN APPROPRIATE AND FUNCTIONAL MANNER IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, MANUFACTURER RECOMMENDATIONS, AND ACCEPTED ENGINEERING PRACTICES.

   B. EROSION PREVENTION PRACTICES (PERMIT SECTION 8): BEFORE WORK BEGINS, DELINEATE THE LOCATION OF AREAS NOT TO BE DISTURBED (E.G., BUFFERS).

   WHEN STEEP SLOPES MUST BE DISTURBED, USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES (E.G., SLOPE DRAINING, TERRACING).

   WHEN CONSTRUCTION ACTIVITY WILL NOT RESUME FOR A PERIOD EXCEEDING 7 CALENDAR DAYS, STABILIZE EXPOSED SOIL AREAS (INCLUDING STOCKPILES) IMMEDIATELY, AND COMPLETE THE STABILIZATION NO LATER THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY HAS CEASED. AMEND SWPPP BY INDICATING THE LOCATION OF AREAS WHERE CONSTRUCTION WILL BE PHASED TO MINIMIZE DURATION OF EXPOSED SOIL AREAS (E.G., STEEP SLOPE AREAS).

   PLAN FOR AND IMPLEMENT CONSTRUCTION PRACTICES TO SATISFY THE ABOVE AND ALL CONDITIONS OF PERMIT SECTION 8.

   C. SEDIMENT CONTROL PRACTICES & TEMPORARY SEDIMENT BASINS (PERMIT SECTIONS 9 AND 14): BEFORE ANY LAND DISTURBING ACTIVITY BEGINS, ESTABLISH SEDIMENT CONTROL BMPS ON ALL DOWNGRADIENT AREAS OF THE SITE THAT DRAIN TO ANY SURFACE WATERS, INCLUDING BUT NOT LIMITED TO, CURB AND GUTTER SYSTEMS, STORM SEWER INLETS, DITCHES. BMPS MUST BE LOCATED UPGRADIENT OF ANY BUFFER ZONES AND MUST REMAIN IN PLACE UNTIL PERMANENT COVER IS ESTABLISHED FOR THE AREA DRAINING TO IT.

   PLAN FOR AND IMPLEMENT CONSTRUCTION PRACTICES TO SATISFY THE ABOVE AND ALL CONDITIONS OF PERMIT SECTION 9 AND 14.

   D. DEWATERING AND BASIN DRAINING (PERMIT SECTION 10): COMPLY WITH SECTION 10 OF THE PERMIT.

   E. INSPECTIONS AND MAINTENANCE (PERMIT SECTION 11): COMPLY WITH SECTION 11 OF THE PERMIT.

   F. POLLUTION PREVENTION MANAGEMENT MEASURES (PERMIT SECTION 12): COMPLY WITH SECTION 12 OF THE PERMIT. AMEND SWPPP BY INDICATING THE LOCATION OF POTENTIAL POLLUTANT GENERATING ACTIVITIES ON SITE MAPS FOR THE DURATION OF CONSTRUCTION PER PERMIT SECTION 5.9.

4. SWPPP RESPONSIBILITIES/TRAINED INDIVIDUALS

   A. THE FOLLOWING PERSON PREPARED THE SWPPP AND IS TRAINED IN SWPPP DESIGN (PERMIT ITEM2 5.20, 21.2.a):

   NAME: BENHAMIN HUNINGHAKE, CIVIL DESIGNER I / LHB, INC.
   TRAINING DATE/INSTRUCTOR/ENTITY: CERTIFICATION 4/24 (EXPIRES 5/31/27)/U OF MN
   TRAINING CONTENT/HOURS: DESIGN OF CONSTRUCTION SWPPP RECERTIFICATION/ 8 HOUR

   B. THE CONTRACTOR WILL OVERSEE SWPPP IMPLEMENTATION, REVISE AND AMEND THE SWPPP, AND PERFORM INSPECTIONS. THE FOLLOWING CONTRACTOR REPRESENTATIVE IS TRAINED TO PERFORM THESE DUTIES AND WILL ASSUME THESE RESPONSIBILITIES (PERMIT ITEMS 5.20, 21.2.b):

   NAME: _____
   TRAINING DATE/INSTRUCTOR/ENTITY: _____
   TRAINING CONTENT/HOURS: _____

   C. THE CONTRACTOR WILL SUPERVISE THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPS BEFORE AND DURING CONSTRUCTION. THE FOLLOWING CONTRACTOR REPRESENTATIVE IS TRAINED TO PERFORM THESE DUTIES AND WILL ASSUME THESE RESPONSIBILITIES (PERMIT ITEMS 5.20, 21.2.c):

   NAME: _____
   TRAINING DATE/INSTRUCTOR/ENTITY: _____
   TRAINING CONTENT/HOURS: _____

   D. PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS WHO WILL COORDINATE WITH CONTRACTORS, SUBCONTRACTORS, AND OPERATORS ON-SITE TO OVERSEE IMPLEMENTATION OF THE SWPPP (PERMIT ITEM 5.21)(TYPICALLY GENERAL CONTRACTOR):

   NAME/TITLE: _____

   E. THE PERSON(S), ORGANIZATION, OR ENTITIES RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEMS (PERMIT ITEM 5.23):

   NAME/TITLE: _____
   MAINTENANCE PLAN: _____

   F. CHAIN OF RESPONSIBILITY: THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL SWPPP IMPLEMENTATION ON THE CONSTRUCTION SITE AND IS ACCOUNTABLE FOR SUBCONTRACTORS AND OTHER CONTRACTORS WORKING ON SITE AND THEIR COMPLIANCE WITH THE GENERAL STORMWATER PERMIT AND SWPPP REQUIREMENTS.

5. REGULATORY AGENCIES AND PERMITS

   A. COMPLY WITH REQUIREMENTS OF ALL REGULATORY AGENCIES AND PERMITS HAVING JURISDICTION DURING CONSTRUCTION ACTIVITIES. THE FOLLOWING ADDITIONAL REGULATORS AND PERMITS ARE KNOWN TO HAVE SITE JURISDICTION:
      1) CITY OF HOWARD LAKE (GRADING PERMIT)
      2) MNDOT (FOR ALL WORK WITHIN THE MNDOT HWY ROW)

6. DESCRIPTION OF THE CONSTRUCTION ACTIVITY / SWPPP COMPONENTS

   A. NARRATIVE/TIMING (PERMIT ITEM 5.4):
      1) PROJECT SUMMARY: THE PROJECT INVOLVES THE DEVELOPMENT OF THE DOLLAR GENERAL LOCATED ON 1.56 ACRES. SPECIFIC WORK INCLUDES:
         a. CLEAR AND GRUB OF SITE, DEMOLITION OF EXISTING SURFACES FOR CONSTRUCTION.
         b. SITE GRADING & STORM SEWER CONSTRUCTION
         c. CONSTRUCTION OF OTHER UTILITIES (E.G. DRINKING WATER AND SANITARY SEWER).
         d. DEWATERING ACTIVITIES.
         e. BUILDING CONSTRUCTION
         f. PARKING LOT CONSTRUCTION
         g. SITE FINISHES AND LANDSCAPING.

      2) TIMING FOR INSTALLATION OF EROSION & SEDIMENTATION BMPS, IN GENERAL SEQUENTIAL ORDER FROM FIRST TO LAST (PERMIT ITEM 5.4):
         a. INLET PROTECTION FOR EXISTING INLETS / SILT FENCE / DELINEATION AREAS NOT TO BE DISTURBED / ROCK CONSTRUCTION ENTRANCE: PROVIDE PRIOR TO CONSTRUCTION; MAINTAIN DURING CONSTRUCTION.
         b. SILT FENCE AROUND STOCKPILES: PROVIDE DURING CONSTRUCTION.
         c. PORTABLE SEDIMENT CONTAINMENT SYSTEMS FOR TREATING WATER FROM DEWATERING OPERATIONS : PROVIDE DURING CONSTRUCTION.
         d. HARD SURFACING (E.G., BUILDING ROOFS, PAVEMENTS)
         e. VEGETATIVE COVER / EROSION CONTROL BLANKETS: AFTER FINAL TOPSOIL PLACEMENT AND FINISH GRADING.
         f. REMOVAL OF TEMPORARY BMPS: AFTER FINAL STABILIZATION IS ESTABLISHED.

      3) IMPERVIOUS SURFACE AREAS / WATER QUALITY VOLUME:
         a. PRE-CONSTRUCTION IMPERVIOUS (PERMIT ITEM 5.8): 0.00 ACRES
         b. POST-CONSTRUCTION IMPERVIOUS (PERMIT ITEM 5.8): 0.76 ACRES
         c. NET NEW IMPERVIOUS: 0.76 ACRES
         d. WATER QUALITY VOLUME: NA, UNDER 1 ACRE ADDED IMPERVIOUS
         e. ACTUAL WATER QUALITY VOLUME RETAINED ON-SITE / METHOD OF RETENTION: NA
         f. THE REASON THE FULL WATER QUALITY VOLUME CANNOT BE INFILTRATED (PER PERMIT ITEM 5.15): NA
         g. REMAINDER OF WATER QUALITY VOLUME AND ALTERNATIVE TREATMENT METHOD: NA

      4) CHEMICALS AND CHEMICAL TREATMENT SYSTEMS USED FOR ENHANCING THE ON-SITE SEDIMENTATION PROCESS AND HOW COMPLIANCE WILL BE ACHIEVED (PERMIT ITEM 5.22): NA

      5) PER PERMIT ITEM 5.13, DOCUMENTATION OF INFEASIBILITY FOR:
         a. TEMPORARY SEDIMENT BASIN (PERMIT PART 14.10): NA
            ALTERNATIVE (PERMIT ITEM 5.14): NA
         b. OBTAINING RIGHT-OF-WAY FOR PERMANENT STORMWATER MANAGEMENT SYSTEMS OF LINEAR PROJECTS: NA
         c. BUFFER ZONES (PERMIT ITEMS 9.17 AND 23.11): NA

      6) STORMWATER MITIGATION MEASURES IDENTIFIED IN ENVIRONMENTAL REVIEW OR OTHER REQUIRED REVIEW (PERMIT ITEM 5.16): NA

   B. STORMWATER REPORT (PERMIT ITEM 5.6): PERMANENT STORMWATER TREATMENT NOT REQUIRED. THUS, NO STORMWATER REPORT IS NEEDED.

   C. SITE ASSESSMENTS FOR GROUNDWATER OR SOIL CONTAMINATION (PERMIT ITEM 5.25): NA

   D. PLAN SHEETS:
      1) SWPPP (PERMIT ITEM 5.2): THIS SHEET(S), INCLUDING DOCUMENTATION DESCRIBED AND REFERENCED HEREIN.
      2) TEMPORARY BMPS / ESTIMATED QUANTITIES (E.G., LINEAR FEET OF SILT FENCE, SQUARE FEET OF EROSION CONTROL BLANKET) / LOCATIONS OF AREAS NOT TO BE DISTURBED / SOIL TYPES (PERMIT ITEMS 5.3, 5.5, 5.7, 5.9): SEE SHEET C101-102
      3) PERMANENT BMPS (PERMIT ITEM 5.3, 5.5): SEE SHEET C301
      4) EXISTING GRADES, DRAINAGE BOUNDARIES AND FLOW DIRECTIONS, DISCHARGE POINTS WHERE STORMWATER LEAVES THE SITE OR ENTERS SURFACE WATERS, AREAS OF STEEP SLOPES (PERMIT ITEM 5.9): SEE SHEET C101-102
      5) FINAL GRADES, DRAINAGE BOUNDARIES AND FLOW DIRECTIONS, DISCHARGE POINTS WHERE STORMWATER LEAVES THE SITE OR ENTERS SURFACE WATERS, AREAS OF STEEP SLOPES (PERMIT ITEM 5.9): SEE SHEET C301
      6) IMPERVIOUS SURFACING / METHODS OF FINAL STABILIZATION (PERMANENT COVER)(PERMIT ITEM 5.17): SEE SHEET C401
      7) MAP OF SURFACE WATERS, EXISTING WETLANDS AND STORMWATER PONDS/BASINS IDENTIFIABLE ON USGS 7.5 MIN. QUAD. MAPS, NWI MAP OR EQUIVALENT WITHIN 1 MILE OF SITE (AERIAL RADIUS MEASUREMENT FROM PROJECT BOUNDARIES) THAT RECEIVE RUNOFF FROM SITE DURING OR AFTER CONSTRUCTION (IDENTIFY SPECIAL AND IMPAIRED WATERS AND ANY APPROVED TMDLS)(PERMIT ITEMS 5.10, 5.19): SEE THIS SHEET
      8) FOR THE ABOVE SPECIAL OR IMPAIRED WATERS, DOCUMENTATION OF BMPS USED TO ADDRESS TMDL OR WLA REQUIREMENTS TO COMPLY WITH PERMIT SECTION 23: NA
      9) SITE MAP OF CONSTRUCTION ACTIVITY AREAS THAT ARE ADJACENT TO AND DRAIN TO MINNESOTA DEPARTMENT OF NATURAL RESOURCES (MDNR) PUBLIC WATERS PROMULGATED AS "WORK IN WATER RESTRICTIONS" DURING SPECIFIED FISH SPAWNING TIMES (PERMIT ITEM 5.11): NA
      10) METHODS TO PRESERVE TOPSOIL AND TOPSOIL PRESERVATION AREAS (PERMIT ITEM 5.24): NA
      11) METHODS TO MINIMIZE SOIL COMPACTION AND INFILTRATION AREAS TO BE PROTECTED FROM EXCESSIVE SOIL COMPACTION AND SEDIMENTATION (PERMIT ITEM 5.24): NA
      12) AREAS WHERE CONSTRUCTION WILL BE PHASED TO MINIMIZE THE DURATION OF EXPOSED SOILS (PERMIT ITEM 5.18): TBD BY CONTRACTOR
      13) DELINEATION OF BUFFER ZONES (PERMIT ITEM 5.12): NA

   E. STANDARD DETAIL SHEETS: SEE SHEET C501-505

   F. MAINTENANCE PLAN: PERMANENT TREATMENT NOT REQUIRED. THUS, NO MAINTENCE PLAN IS NEEDED.

7. STANDARDS SPECIFICATIONS FOR CONSTRUCTION:

   UNLESS NOTED OTHERWISE IN CONTRACT DOCUMENTS, MATERIAL AND CONSTRUCTION REQUIREMENTS FOR TEMPORARY SEDIMENT CONTROL AND EROSION PREVENTION SHALL BE IN ACCORDANCE WITH THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

8. CALCULATIONS AND OTHER INFORMATION USED FOR DESIGN OF TEMPORARY SEDIMENTATION BASINS AND PERMANENT STORMWATER TREATMENT SYSTEMS (PERMIT ITEM 5.6): NA

9. PROCEDURES TO ESTABLISH ADDITIONAL TEMPORARY BMPS, AS NECESSARY, DURING CONSTRUCTION (PERMIT ITEM 5.5):

   A. IF REGULAR INSPECTIONS OR OTHER OBSERVATIONS INDICATE THE NEED FOR ADDITIONAL TEMPORARY BMPS TO PREVENT EROSION, THEN PROVIDE ADDITIONAL BMPS BEFORE THE NEXT RAIN EVENT,

   B. MAINTAIN CLEAR AND UPDATED PLANS (MAPS) OF THE CURRENT TEMPORARY BMPS.

   C. AMEND THE SWPPP WITH ALL CHANGES TO THE SWPPP WITHIN 7 DAYS.

1 NEARBY WETLANDS

0 750' 1500' 3000'

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

PRELIMINARY
NOT FOR CONSTRUCTION
04/24/2025

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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO:

C002

File Path: J:\240668\02 Howard Lake MN\50 Drawings\Civil\240668.02 C002 SWPPP.dwg
Plot Date: 2025/4/23 9:48 PM

GENERAL

1.01 GOVERNING SPECIFICATION

A. THE STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION (MNDOT), CURRENT EDITION, EXCEPT AS MODIFIED OR ALTERED IN THE DRAWINGS.

B. ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MINNESOTA MUTCD, CURRENT EDITION. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL ON THE PROJECT.

C. ALL REFERENCES TO MEASUREMENT AND PAYMENT IN THE GOVERNING SPECIFICATIONS SHALL NOT APPLY.

1.02 UTILITY PROPERTY AND SERVICE

A. CONSTRUCTION OPERATIONS IN PROXIMITY OF UTILITY PROPERTIES SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF MNDOT 1507, EXCEPT AS MODIFIED BELOW:

1. INTERFERENCE OF UNDERGROUND STRUCTURES
   a. UTILITIES ARE BASED ON RECORD INFORMATION AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENGINEER. NOTIFY THE ENGINEER IMMEDIATELY OF ANY INTERFERENCES.
   b. NO ESSENTIAL UTILITY SERVICE SHALL BE DISRUPTED WITHOUT AUTHORIZATION FROM THE ENGINEER AND UTILITY OWNER.
   c. COORDINATE WORK WITH UTILITY COMPANIES; NOTIFY BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS; OBTAIN REQUIRED PERMITS.
   d. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL IN MN, 1-800-252-1166 FOR LOCATING AND MARKING OF ALL UTILITIES WITHIN THE WORK AREA PRIOR TO ANY EXCAVATION ON THE PROJECT SITE.

1.03 CONSTRUCTION SURVEYING

A. THE OWNER WILL PROVIDE THE INITIAL HORIZONTAL AND VERTICAL CONTROL POINTS IN THE FIELD FOR THE PROJECT AS INDICATED IN THE PLANS. UPON REQUEST BY THE CONTRACTOR, THE ENGINEER WILL ALSO PROVIDE ELECTRONIC DATA IN THE FORMAT THAT WAS USED IN THE ACCOMPLISHMENT OF THE SURVEYS FOR THE CONSTRUCTION PLAN, AND IN CONSTRUCTION PLAN DEVELOPMENT ITSELF. HOWEVER, DUE TO THE MANY DIFFERENT PROCESSES THAT THE DESIGN SURVEY DATA GOES THROUGH AND THE LARGE VARIETY OF SOURCES OF INPUT IN THE FINAL PRODUCTION OF THE PLAN ITSELF, NO WARRANTEE IS MADE AS TO THE VALUE OR ADAPTABILITY OF THE ELECTRONIC DATA TO THE SURVEYOR. NO WARRANTEE IS MADE THAT THE DATA SYSTEMS USED BY THE ENGINEER, OR ANY CONSULTANTS EMPLOYED BY THE OWNER FOR SURVEYING OR CONSTRUCTION PLAN PREPARATION, WILL BE COMPATIBLE WITH THE SYSTEMS USED BY THE CONTRACTOR'S SURVEYOR. INFORMATION SHOWN ON THE PRINTED 'PLAN' SHALL ALWAYS GOVERN OVER ANY ELECTRONIC 'PLAN' DATA.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING ON THE PROJECT.

1. THE CONTRACTOR SHALL:
   a. BE RESPONSIBLE FOR THE PRESERVATION OF ALL REFERENCE POINTS, MONUMENTS, GOVERNMENT LAND CORNERS, HORIZONTAL AND VERTICAL CONTROL POINTS, STAKES, AND MARKS THAT ARE ESTABLISHED BY THE ENGINEER OR OTHERS WITHIN THE PROJECT LIMITS. IF THE CONTRACTOR OR ITS SURVEYOR FAILS TO PRESERVE THESE ITEMS, AND IF THEY MUST BE RE-ESTABLISHED BY THE OWNER, THE ENGINEER WILL DEDUCT A CHARGE FROM MONIES DUE OR BECOMING DUE THE CONTRACTOR ACCORDING TO THE OWNER'S COSTS.
   b. VERIFY THE ORIGINAL SITE CONTROL POINTS PROVIDED ON THE PLANS BY THE OWNER'S SURVEYOR. ANY SITE CONTROL POINTS SUBJECT TO DISTURBANCE BY THE PLANNED CONSTRUCTION OPERATIONS SHALL BE TRANSFERRED BY THE CONTRACTOR TO AN UNDISTURBED LOCATION ON THE SITE OR TO AN OFFSITE LOCATION. CONTRACTOR SHALL PRESERVE, PROTECT AND MAINTAIN A MINIMUM OF THREE SITE CONTROL POINTS AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION AND FOR A PERIOD OF ONE YEAR FOLLOWING SUBSTANTIAL COMPLETION OF THE PROJECT.
   c. START AND END ALL LEVEL RUNS, TRAVERSES, OR GPS CONTROL SURVEYS FROM KNOWN CONTROL.
   d. PERFORM ALL CONSTRUCTION SURVEYING.
   e. PRESENT THE ENGINEER WITH THE AS-BUILT SURVEY DATA. THE AS-BUILT SURVEY DATA SHALL INCLUDE THE FOLLOWING:
      e.1. CHANGES FROM THE PLAN:
         e.1.1. MANHOLE AND CATCH BASIN INVERTS AND TOP OF CASTINGS
         e.1.2. LOCATION OF NEW STORM SEWER AND DRAIN TILE
         e.1.3. LOCATION OF NEW BUILDING ELEMENTS
         e.1.4. CONTOURS OF CONSTRUCTED EMBANKMENTS, SWALES, AND STORMWATER PRACTICES
      e.2. LOCATIONS OF NEW UTILITIES AND UTILITIES RELOCATED OR REPLACED AS PART OF THE PROJECT.
      e.3. THE INFORMATION SHALL INCLUDE THE X, Y AND IF APPLICABLE, THE Z COORDINATES IN THE PROJECT DATUM. IF THE ORIGINAL ITEM HAD NO COORDINATE REFERENCE, THEN SHOW THE REVISED CENTERLINE STATION AND OFFSET.
   f. FURNISH SURVEY DOCUMENTATION AND AS-BUILT SURVEY DATA TO THE ENGINEER WITHIN THE TIME LIMITS INDICATED IN THE SURVEYING WORK SCHEDULE AND PRIOR TO APPLICATION FOR FINAL PAYMENT.

1.04 GEOTECHNICAL REFERENCE INFORMATION: A GEOTECHNICAL EVALUATION REPORT WAS PREPARED FOR THIS PROJECT BY KILO ENGINEERING, LLC DATED SEPTEMBER 6, 2023. THE REPORT CONTAINS INFORMATION ON SITE SOILS, GROUNDWATER, AND CONSTRUCTION RECOMMENDATIONS. THE PROJECT DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT THE REPORTS, NOT CHANGE THE RECOMMENDATIONS. CONTACT LHB TO OBTAIN COPIES OF THESE REPORTS AND FOR CLARIFICATION IF THERE IS CONFLICTING DIRECTION.

CLEARING & GRUBBING

2.01 SITE CLEARING

A. MINIMIZE PRODUCTION OF DUST DUE TO CLEARING OPERATIONS; DO NOT USE WATER IF THAT WILL RESULT IN ICE, FLOODING, SEDIMENTATION OF PUBLIC WATERWAYS OR STORM SEWERS, OR OTHER POLLUTION.

B. PROTECT ALL TREES WITHIN THE CONSTRUCTION LIMITS, EXCEPT AS NOTED ON PLANS. NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS ARISE BETWEEN EXISTING TREES AND PROPOSED SITE IMPROVEMENTS.

C. REMOVE ALL SHRUBS, BUSHES, STUMPS, AND VEGETATION AS NOTED ON PLANS. STOCKPILE TOPSOIL WITHIN THE CONSTRUCTION LIMITS. ALL REMOVAL OF VEGETATION IS INCIDENTAL TO THE WORK.

D. DO NOT REMOVE OR DAMAGE VEGETATION BEYOND THE LIMITS INDICATED ON DRAWINGS.

E. VEGETATION REMOVED: DO NOT BURN, BURY, LANDFILL, OR LEAVE ON SITE, EXCEPT AS INDICATED. ALL OTHER VEGETATION CLEARED SHALL BE REMOVED FROM THE SITE.

F. RESTORATION: IF VEGETATION OUTSIDE REMOVAL LIMITS OR WITHIN SPECIFIED PROTECTIVE FENCES IS DAMAGED OR DESTROYED DUE TO SUBSEQUENT CONSTRUCTION OPERATIONS, REPLACE AT NO COST TO OWNER.

EARTHWORK

3.01 EXCAVATION AND GRADING

A. EXCAVATE TO ACCOMMODATE NEW STRUCTURES AND CONSTRUCTION OPERATIONS.
   1. EXCAVATE TO THE SPECIFIED ELEVATIONS.
   2. EXCAVATE TO THE LENGTH AND WIDTH REQUIRED TO SAFELY INSTALL, ADJUST, AND REMOVE ANY FORMS, BRACING, OR SUPPORTS NECESSARY FOR THE INSTALLATION OF THE WORK.
   3. CUT UTILITY TRENCHES WIDE ENOUGH TO ALLOW INSPECTION OF INSTALLED UTILITIES.
   4. HAND TRIM EXCAVATIONS. REMOVE LOOSE MATTER.

B. REMOVE ALL UNSUITABLE SOILS (TOPSOIL, SOILS WITH TRACE ORGANICS, WET OR OTHERWISE DISTURBED SOILS) FROM THE BUILDING, PAVING, AND SIDEWALK AREAS.

C. REMOVE TOPSOIL FROM AREAS TO BE FURTHER EXCAVATED, RE-LANDSCAPED, OR RE-GRADED, WITHOUT MIXING WITH FOREIGN MATERIALS.

D. DO NOT REMOVE TOPSOIL WHEN WET.

E. REMOVE SUBSOIL FROM AREAS TO BE FURTHER EXCAVATED, RE-LANDSCAPED, OR RE-GRADED.

F. DO NOT REMOVE WET SUBSOIL, UNLESS IT IS SUBSEQUENTLY PROCESSED TO OBTAIN OPTIMUM MOISTURE CONTENT.

G. BENCHING SLOPES: HORIZONTALLY BENCH EXISTING SLOPES GREATER THAN 1V:4H TO KEY FILL MATERIAL TO SLOPE FOR FIRM BEARING.

H. STABILITY: REPLACE DAMAGED OR DISPLACED SUBSOIL TO SAME REQUIREMENTS AS FOR SPECIFIED FILL.

I. STOCKPILE TOPSOIL TO BE RE-USED ON SITE; REMOVE REMAINDER, IF ANY, FROM SITE. SUPPLEMENT AS NEEDED TO ACHIEVE 4 INCHES OF TOPSOIL IN ALL TURF AREAS.

J. SUBGRADE APPROVAL/PROOF ROLLING
   1. FOLLOWING EXCAVATION TO THE DESIGN SUBGRADE ELEVATIONS IN ALL BUILDINGS AND PAVEMENT AREAS AND PRIOR TO PLACEMENT OF ANY BASE COURSE OR OTHER FILL MATERIALS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S DESIGNATED CONSTRUCTION REPRESENTATIVE TO SCHEDULE INSPECTION OF THE SUBGRADE AND OBSERVE PROOF ROLLING OPERATIONS. PROVIDE A MINIMUM OF 24 HOURS CONFIRMED NOTICE. ALL PROOF ROLLING SHALL BE COMPLETED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER'S DESIGNATED CONSTRUCTION REPRESENTATIVE.
   2. TO COMPLETE PROOF ROLLING, EXPOSED SUBGRADE AREAS SHALL BE PROVIDED WITH A RELATIVELY SMOOTH SURFACE, SUITABLE FOR OBSERVING SOIL REACTION DURING PROOF ROLLING.
   3. CONTRACTOR SHALL SCHEDULE AND PROVIDE A FULLY LOADED TRI-AXLE DUMP TRUCK FOR PROOF ROLLING. LOADED TRUCK SHALL HAVE A MINIMUM GROSS OPERATING WEIGHT OF 30 TONS. TEST SHALL BE CONDUCTED WITH "TAG" OR "PUSHER" AXLES RETRACTED FROM THE GROUND.
   4. TEST ROLLING SHALL BE ACCOMPLISHED IN A SERIES OF TRAVERSE PARALLEL TO THE CENTERLINE OF THE STREET, PARKING AREA OR BUILDING AREA. THE TRUCK SHALL TRAVERSE THE LENGTH OF THE STREET OR PARKING / BUILDING AREAS ONCE FOR EACH 12 FEET OF WIDTH. ADDITIONAL PASSES ALONG THE TRAVERSE SHALL BE COMPLETED AS DIRECTED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE, TO FURTHER DEFINE UNSATISFACTORY SUBGRADE.
   5. SOFT AREAS, YIELDING AREAS, CRACKED AREAS OR AREAS WHERE ROLLING OR WAVE ACTION IS OBSERVED SHALL BE CONSIDERED INDICATIVE OF AN UNSATISFACTORY SUBGRADE. SUCH AREAS SHALL BE UNDERCUT AS OUTLINED IN SUBSEQUENT SUBSECTIONS OF THIS SPECIFICATION.
   6. ONCE THE SUBGRADE HAS BEEN PROOF ROLLED AND APPROVED, PROTECT THE SOILS FROM BECOMING SATURATED, FROZEN, OR ADVERSELY ALTERED.

3.02 FILLING

A. WHEN MORE THAN ONE TYPE OF SOIL IS AVAILABLE ON-SITE, USE THE TYPE(S) EXHIBITING THE BETTER STRUCTURAL AND DRAINAGE CHARACTERISTICS IN FILL AREAS WHERE SOME TYPE OF LOADING WILL BE SUPERIMPOSED (E.G., BUILDINGS, PAVEMENTS).

B. PLACE FILL IN A MANNER TO PREVENT STONES NESTING AND FORMING VOIDS.

C. MOISTURE CONDITION AS NECESSARY. WET SUBGRADE SOILS OR WET SOILS USED AS FILL MAY REQUIRE CONSIDERABLE DRYING IN ORDER TO ACHIEVE SPECIFIED COMPACTIONS, ESPECIALLY FOR COHESIVE SOILS.

D. DO NOT PLACE FILL IN STANDING WATER, OVER SOFTENED SOILS, OR ON FROZEN GROUND WHERE FROST HAS PENETRATED GREATER THAN 2 INCHES.

E. DO NOT PLACE, SPREAD, OR ROLL FROZEN FILL. DO NOT PLACE FILL ON FROZEN GROUND OR DURING UNFAVORABLE WEATHER.

F. COMPACTION WITH NON SELF-PROPELLED COMPACTION EQUIPMENT IS LIMITED TO MAXIMUM LIFTS OF 6 INCHES.

G. IF SOIL ANALYSIS, COMPACTION TESTS, OR INSPECTIONS INDICATE THAT THE MATERIALS SPECIFIED HAVE NOT BEEN FURNISHED, PLACED, AND COMPACTED IN COMPLIANCE WITH THESE SPECIFICATIONS, REMOVE THE MATERIAL, REPLACE, RECOMPACT, AND RETEST.

3.03 FILL MATERIALS

A. GENERAL FILL: NON-ORGANIC SELECT COMPACTABLE SALVAGED SUBSOIL EXCAVATED ON-SITE CONFORMING TO MNDOT 2106.2B COMMON EMBANKMENT, WHEN ON-SITE SOILS ARE EXHAUSTED THE CONTRACTOR SHALL PROVIDE IMPORTED MNDOT 2106.2B COMMON EMBANKMENT AS NECESSARY TO COMPLETE THE WORK. GENERAL FILL EXCAVATED FROM ON-SITE SHALL MEET THE FOLLOWING REQUIREMENTS:
   1. GRADED.
   2. FREE OF LUMPS LARGER THAN 3 INCHES, ROCKS LARGER THAN 2 INCHES, AND DEBRIS.
   3. GENERAL FILL SALVAGED FROM ON-SITE SHALL BE SELECTED, SEPARATED AND PROTECTED TO MANAGE THE SOILS MOISTURE CONTENT. THE CONTRACTOR SHALL DRY OR MOISTURE CONDITION THE SOIL AS NECESSARY IN ORDER TO ACHIEVE THE REQUIRED COMPACTION DENSITIES. IF DRYING THE SOILS IS NOT FEASIBLE DUE TO WEATHER OR THE SEASON, THE CONTRACTOR SHALL PROVIDE COMMON EMBANKMENT TO BALANCE THE SITE AT NO ADDITIONAL COST TO THE OWNER.
   4. IF SALVAGED SUBSOIL FROM ON-SITE IS NOT COMPACTABLE DUE TO MOISTURE CONTENT, OR FOR OTHER REASONS, THE CONTRACTOR SHALL REMOVE THE UNCOMPACTABLE SOILS AND REPLACE WITH MNDOT 2106.2B COMMON EMBANKMENT.

B. STRUCTURAL FILL (NFS): IMPORTED BORROW.
   1. GRADED IN ACCORDANCE WITH ASTM C136, WITHIN THE FOLLOWING LIMITS:
      a. 1 INCH SIEVE: 100 PERCENT PASSING.
      b. No. 4 SIEVE: 60 TO 100 PERCENT PASSING.
      c. No. 40 SIEVE: 0 TO 40 PERCENT PASSING.
      d. No. 200 SIEVE: 0 TO 5 PERCENT PASSING.

C. ENGINEERED FILL: SUBSOIL EXCAVATED ON-SITE (NON-ORGANIC, DEBRIS-FREE SANDY SOILS) OR IMPORTED BORROW (NON-ORGANIC GRANULAR SOIL).
   1. MAXIMUM PARTICLE SIZE: 2 INCHES
   2. GRADED IN ACCORDANCE WITH ASTM C136, WITHIN THE FOLLOWING LIMITS:
      a. 3 INCH SIEVE: 100 PERCENT PASSING.
      b. No. 200 SIEVE: 0 TO 12 PERCENT PASSING.

D. CHOKER COURSE: CONFORMING TO AASHTO NO. 8, 78, OR 89 STONE, WASHED; NO LIMESTONE.

E. DRAINAGE FILL: CONFORMING TO AASHTO NO. 57 STONE, WASHED; NO LIMESTONE.

F. GRANULAR BEDDING
   1. CONFORMING TO MNDOT 3149.2F GRANULAR BEDDING.

G. TOPSOIL: TOPSOIL SHALL CONFORM TO MNDOT 3877.2A COMMON TOPSOIL BORROW.
   1. TOPSOIL SOURCE: IMPORTED OR SALVAGED ON-SITE. REUSE SURFACE SOIL STOCKPILED ON-SITE WHEN POSSIBLE AND WHEN APPROVED IN WRITING BY LANDSCAPE ARCHITECT. VERIFY SUITABILITY OF STOCKPILED SURFACE SOIL THROUGH TESTING AND AMEND STOCKPILED SOIL TO MEET MNDOT 3877.2A COMMON TOPSOIL BORROW.
   2. CLEAN SURFACE SOIL OF ROOTS, PLANTS, SOD, STONES GREATER THAN 3/4-INCH, CLAY CLUMPS, AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH.
   3. MAXIMUM PARTICLE SIZE OF 3/4-INCH.

H. PLANTING SOIL: PLANTING SOIL FOR PERENNIAL BEDS, TREE AND SHRUB BACKFILL AREAS, AND AS INDICATED IN THE DRAWINGS.
   1. PLANTING SOIL SOURCE FOR TREES AND BOULEVARD RESTORATION SHALL CONFORM TO MNDOT 3877.2B LOAM TOPSOIL BORROW. IMPORTED OR SALVAGED ON-SITE. REUSE SURFACE SOIL STOCKPILED ON-SITE WHEN POSSIBLE AND WHEN APPROVED BY LANDSCAPE ARCHITECT. VERIFY SUITABILITY OF STOCKPILED SURFACE SOIL THROUGH TESTING AND AMEND STOCKPILED SOIL TO MEET MNDOT 3877.2B LOAM TOPSOIL BORROW.
   2. PLANTING SOIL SOURCE FOR PERENNIAL AND SHRUB BEDS: REUSE SURFACE SOIL STOCKPILED ON-SITE WHEN POSSIBLE. DISC IN A MINIMUM OF 12 INCHES OF COMPOST THAT SHALL CONFORM TO MNDOT TYPE 2 COMPOST. VERIFY SUITABILITY OF STOCKPILED SURFACE SOIL THROUGH TESTING AND AMEND STOCKPILED SOIL TO MEET MNDOT 3877.2B LOAM TOPSOIL BORROW.
   3. CLEAN SURFACE SOIL OF ROOTS, PLANTS, SOD, STONES GREATER THAN 3/4-INCH, CLAY CLUMPS, AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH. SALVAGED TOPSOIL STOCKPILED FOR REUSE AS PLANTING SOIL IN PERENNIAL BEDS SHALL BE FREE FROM NOXIOUS WEEDS, RHIZOMES, AND SEEDS DELETERIOUS TO PLANT GROWTH.
   4. MAXIMUM PARTICLE SIZE OF 3/4-INCH.

I. BIOFILTRATION FILL: CONFORMING TO MNDOT 3877.2F FILTER TOPSOIL BORROW (80% SAND, 20% COMPOST).

J. AGGREGATE BASE: CONFORMING TO MNDOT 3138 AGGREGATE BASE, CLASS 5.

3.04 GEOTEXTILE SOIL STABILIZATION AND LAYER SEPARATION

A. GEOTEXTILE FABRIC:
   1. BELOW PAVING OR SIMILAR CONSTRUCTION: CATEGORY 2 SEPARATOR/STRENGTHENING GEOTEXTILE FABRIC MEETING THE REQUIREMENTS OF MNDOT 3733 TYPE 9.

3.05 COMPACTION AND FIELD QUALITY CONTROL

A. MAXIMUM DENSITY SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D698 "STANDARD TEST METHODS FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT."

B. COMPACTION REQUIREMENTS AT SPECIFIC LOCATIONS, AND TESTING FREQUENCY SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
   1. USE GENERAL FILL UNLESS OTHERWISE SPECIFIED OR INDICATED.
   2. UNDER ALL FOOTINGS:
      a. USE ENGINEERED FILL.
      b. FILL TO BOTTOM OF FOOTING ELEVATION.
      c. COMPACTION TO 98 PERCENT OF MAXIMUM DRY DENSITY.
   3. UNDER INTERIOR SLABS ON GRADE
      a. USE ENGINEERED FILL.
      b. COMPACT TO 95 PERCENT OF MAXIMUM DRY DENSITY.
      c. COVER WITH STRUCTURAL FILL (NFS).
      d. COMPACT TO 95 PERCENT OF MAXIMUM DRY DENSITY.
   4. AGAINST FOUNDATION WALLS AND FOOTINGS
      a. USE ENGINEERED FILL.
      b. COMPACT EACH LIFT TO 95 PERCENT OF MAXIMUM DRY DENSITY.
      c. DO NOT BACKFILL AGAINST UNSUPPORTED FOUNDATION WALLS.
      d. COVER WITH 8 INCHES MINIMUM OF GENERAL FILL, COMPACTED TO 90 PERCENT OF MAXIMUM DRY DENSITY.
   5. UTILITY PIPING, CONDUITS, AND DUCT BANKS
      a. CONFORM TO THE DETAILS IN THE DRAWINGS.
      b. BEDDING: USE FILL TYPE GRANULAR BEDDING.
   6. UNDER EXTERIOR PAVING OR SIMILAR CONSTRUCTION
      a. USE ENGINEERED FILL.
      b. FILL UP TO SUBGRADE ELEVATION, REFER TO THE FINISH SURFACE SECTIONS ON THE DRAWINGS FOR SUBSEQUENT FILL LAYERS.
      c. FILL LAYERS WITHIN THE UPPER 3 FEET OF EXTERIOR PAVEMENT SUBGRADE ELEVATION OR SIMILAR CONSTRUCTION SHALL BE COMPACTED TO 100 PERCENT OF MAXIMUM DRY DENSITY AND TO 95 PERCENT OF MAXIMUM DRY DENSITY BELOW 3 FEET OF EXTERIOR PAVEMENT SUBGRADE ELEVATION.
   7. AT VEGETATED AREAS
      g. USE GENERAL FILL.
      h. COMPACT TO 92 PERCENT OF MAXIMUM DRY DENSITY.

C. PERFORM GRADATION TESTING ON FILL MATERIALS IN ACCORDANCE WITH ASTM C 136.
   1. IF TESTS INDICATE MATERIAL DOES NOT MEET SPECIFIED REQUIREMENTS, REMOVE, REPLACE AND RETEST.
   2. FREQUENCY OF TESTS: PROVIDE THE MINIMUM NUMBER OF TESTS AS FOLLOWS, ONE TEST MINIMUM.
      a. GENERAL FILL: ONE TEST AT/OF FILL SOURCE AND ONE TEST FOR EVERY 1000 CU. YDS. OF FILL PLACED ON SITE.
      b. STRUCTURAL FILL, ENGINEERED FILL, DRAINAGE FILL, GRANULAR BEDDING: ONE TEST AT/OF FILL SOURCE AND ONE TEST FOR EVERY 500 CU. YDS. OF FILL PLACED ON SITE.

D. BIOFILTRATION FILL: PROVIDE GRADATION, CHEMICAL, AND pH TESTING ANALYSIS OF THE COMPOST MATERIALS AND GRADATION ANALYSIS FOR THE FINE AGGREGATE.

E. PERFORM COMPACTION DENSITY TESTING ON COMPACTED FILL IN ACCORDANCE WITH ASTM D6938.
   1. EVALUATE TEST RESULTS IN RELATION TO COMPACTION CURB DETERMINED BY TESTING UNCOMPACTED MATERIAL IN ACCORDANCE WITH ASTM D698 ("STANDARD PROCTOR").
   2. IF TESTS INDICATE WORK DOES NOT MEET SPECIFIED REQUIREMENTS, REMOVE WORK, REPLACE AND RETEST.
   3. FREQUENCY OF TESTS: PROVIDE THE MINIMUM NUMBER OF TESTS AS FOLLOWS, ONE TEST MINIMUM.
      a. SLABS-ON-GRADE: ONE TEST FOR EVERY 1000 SQ. FT. PER 1 FOOT DEPTH OF MATERIAL PLACED OR FRACTION THEREOF.
      b. FOUNDATION WALLS AND FOOTINGS: ONE TEST FOR EVERY 25 LIN. FT. OF WALL/FOOTING LENGTH AND ONE TEST UNDER EACH COLUMN FOOTING.
      c. EXTERIOR PAVING OR SIMILAR CONSTRUCTION: ONE TEST FOR EVERY 2500 SQ. FT. PER 1 FOOT OF DEPTH OF MATERIAL PLACED OR FRACTION THEREOF.
      d. OVER BURIED UTILITY PIPING AND CONDUITS IN TRENCHES: 1 TEST FOR EVERY 200 LIN. FT. OF TRENCH PER 3 FEET OF DEPTH.
      e. VEGETATED AREAS: ONE TEST FOR EVERY 10,000 SQ. FT. PER 1 FOOT OF DEPTH OF MATERIAL PLACED OR FRACTION THEREOF.

G. TOPSOIL AND PLANTING SOIL: FURNISH SOIL ANALYSIS AND A WRITTEN REPORT BY A QUALIFIED SOIL TESTING LABORATORY STATING PERCENTAGES OF ORGANIC MATTER; GRADATION OF SAND, SILT, AND CLAY CONTENT; CATION EXCHANGE CAPACITY; SOLUBLE SALTS; DELETERIOUS MATERIAL; pH; AND MINERAL AND PLANT-NUTRIENT CONTENT OF THE SOIL.
   1. BASED UPON THE TEST RESULTS, DETERMINE SOIL TREATMENTS AND SOIL AMENDMENTS TO BE INCORPORATED. DETERMINE WEIGHT PER 1000 SQ. FT. OR VOLUME PER CU. YD. FOR NITROGEN, PHOSPHORUS, AND POTASH NUTRIENTS AND SOIL AMENDMENTS TO BE ADDED TO PRODUCE SATISFACTORY PLANTING SOIL SUITABLE FOR HEALTHY, VIABLE PLANTS.

H. PROOF ROLL COMPACTED FILL AT SURFACES THAT WILL BE UNDER SLAB-ON-GRADE AND EXTERIOR PAVING.

PORTLAND CEMENT CONCRETE

4.01 QUALITY ASSURANCE

A. CONCRETE PAVEMENT SHALL CONFORM TO MNDOT 2301.

B. CONCRETE SIDEWALKS SHALL CONFORM TO MNDOT 2521.

C. CONCRETE CURB AND GUTTER SHALL CONFORM TO MNDOT 2531.

D. EXCEPT AS MODIFIED BELOW.

4.02 MATERIALS

A. CONCRETE MATERIALS: CONFORMING TO MNDOT 2461.

B. JOINT FILLER: PREFORMED, NON-EXTRUDING BITUMINOUS TYPE (ASTM D1751) OR SPONGE RUBBER OR CORK (ASTM D1752); THICKNESS: 1/2 INCH.

C. CURING COMPOUND: MNDOT 3754 POLY-ALPHA METHYL STYRENE MEMBRANE CURING COMPOUND (AMS).

D. CONCRETE MIX:
   D.1. CONCRETE PAVEMENT CONFORMING TO MNDOT 2461, MIX NO. 3F32.
   D.2. CONCRETE SIDEWALKS CONFORMING TO MNDOT 2461, MIX NO. 3F32.
   D.3. CONCRETE CURB AND GUTTER CONFORMING TO MNDOT 2461, MIX. NO. 3F52 FOR MANUAL PLACEMENT AND MIX NO. 3F32 FOR SLIP-FORM PLACEMENT.

4.03 PREPARATION

A. MOISTEN BASE TO MINIMIZE ABSORPTION OF WATER FROM FRESH CONCRETE.

B. COAT SURFACES OF MANHOLE FRAMES WITH OIL TO PREVENT BOND WITH CONCRETE PAVEMENT.

C. PLACE AND SECURE FORMS TO CORRECT LOCATION, DIMENSION, PROFILE, AND GRADIENT.

D. ASSEMBLE FORMWORK TO PERMIT EASY STRIPPING AND DISMANTLING WITHOUT DAMAGING CONCRETE.

E. PLACE JOINT FILLER VERTICAL IN POSITION, IN STRAIGHT LINES. SECURE TO FORMWORK DURING CONCRETE PLACEMENT.

4.04 PLACING CONCRETE

A. PLACE CONCRETE PAVEMENT IN ACCORDANCE WITH MNDOT 2301.

B. PLACE CONCRETE SIDEWALKS IN ACCORDANCE WITH MNDOT 2521.3.

C. PLACE CONCRETE CURB AND GUTTER IN ACCORDANCE WITH MNDOT 2531.3E.

D. DO NOT PLACE CONCRETE WHEN BASE SURFACE IS WET.

4.05 JOINTS

A. CONCRETE PAVEMENT JOINTS AND JOINT SEALANT SHALL CONFORM TO MNDOT 2301.

B. JOINT CONCRETE SIDEWALKS IN ACCORDANCE WITH MNDOT 2521.3D.

C. JOINT CONCRETE CURB AND GUTTER IN ACCORDANCE WITH MNDOT 2531.3E.

D. ALIGN CURB, GUTTER, AND SIDEWALK JOINTS.

E. PLACE 3/8 INCH WIDE EXPANSION JOINTS AT 50 FOOT INTERVALS TO SEPARATE PAVING FROM VERTICAL SURFACES AND OTHER COMPONENTS AND IN PATTERN INDICATED.
   1. FORM JOINTS WITH JOINT FILLER EXTENDING FROM BOTTOM OF PAVEMENT TO WITHIN 1/2 INCH OF FINISHED SURFACE.
   2. SECURE TO RESIST MOVEMENT BY WET CONCRETE.

F. SAW CUT CONTRACTION JOINTS 1/8 INCH WIDE AT OPTIMUM TIME AFTER FINISHING. CUT 1/4 INTO DEPTH OF SLAB.

4.06 FINISHING

A. FINISH CONCRETE PAVEMENT IN ACCORDANCE WITH MNDOT 2301 (METAL-TINE-TEXTURING IS NOT REQUIRED).

B. FINISH CONCRETE SIDEWALKS IN ACCORDANCE WITH MNDOT 2521.D.

C. FINISH CONCRETE CURB AND GUTTER IN ACCORDANCE WITH MNDOT 2531.3C, F, G.

D. PLACE CURING COMPOUND ON EXPOSED CONCRETE SURFACES IMMEDIATELY AFTER FINISHING. APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

4.07 FIELD QUALITY CONTROL

A. COMPRESSIVE STRENGTH TESTS: ASTM C39/C39M; FOR EACH TEST, MOLD AND CURE THREE CONCRETE TEST CYLINDERS. OBTAIN TEST SAMPLES FOR EVERY 50 CU YD OR LESS OF EACH CLASS OF CONCRETE PLACED EACH DAY.

B. PERFORM ONE SLUMP AND AIR TEST AT THE POINT OF DISCHARGE FOR EACH AND EVERY CONCRETE TRUCK DELIVERY TO THE SITE.

4.08 PROTECTION

A. IMMEDIATELY AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING, EXCESSIVE HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY.

BITUMINOUS PAVING

5.01 QUALITY ASSURANCE

A. EQUIPMENT: UTILIZE EQUIPMENT OF PROPER SIZE AND IN GOOD WORKING CONDITION TO PROSECUTE THE WORK TO FULL COMPLETION IN A SATISFACTORY MANNER.

B. DELIVERY, STORAGE, AND HANDLING: PROTECT MOISTURE SENSITIVE MATERIALS AGAINST WETTING BY RAIN, SNOW, OR GROUND MOISTURE, AND AGAINST INTERMIXTURE WITH EARTH OR OTHER TYPES OF MATERIALS.

C. PROTECT HOT MIX ASPHALT FROM COLD TEMPERATURES AND ENSURE ADEQUATE TEMPERATURE IS MAINTAINED DURING PLACEMENT AND COMPACTION.

5.02 MATERIALS

A. AGGREGATE BASE: MNDOT STANDARD SPECIFICATION SECTION 3138, CLASS 5 OR CLASS 7(SALVAGED/RECYCLED ASPHALT OR CONCRETE), 100 PERCENT CRUSHED.

B. TACK COAT: MNDOT STANDARD SPECIFICATION SECTION 2357.

C. HOT MIX ASPHALT:
   1. BITUMINOUS WEAR COURSE: MNDOT STANDARD SPECIFICATION SECTION 2360, MIXTURE DESIGNATION AS SEEN IN DRAWINGS EXCEPT AS AMENDED IN THE "MODIFICATIONS" BELOW. ASPHALT CONTENT OF MIXTURE PER RESULT OF JOB MIX FORMULA. DESIGN ASPHALT CONTENT IN ACCORDANCE WITH CURRENT MNDOT STANDARD.
   2. RECYCLED MATERIAL MAY BE USED IN THE HMA ACCORDING TO MNDOT STANDARD SPECIFICATION 2360.

5.03 EXECUTION

A. ESTABLISHMENT OF GRADES: GRADE PAVED AREAS UNIFORMLY TO MATCH SURROUNDING EXISTING PAVEMENT WITHOUT AWKWARD OR ABRUPT TRANSITIONS AND TO PROVIDE POSITIVE DRAINAGE FREE OF PUDDLING. UNLESS SPECIFIED OTHERWISE, GRADE AT A CONTINUOUS POSITIVE SLOPE OF 2 PERCENT (MINIMUM) AND 5 PERCENT (MAXIMUM) TO DRAINAGE PROVISIONS (E.G., CURBS, CATCH BASINS, SWALES) TO PREVENT PUDDLES IMMEDIATELY AFTER RAIN EVENTS. ADDITIONALLY, DO NOT ALLOW STANDING WATER AT PAVEMENT EDGES IMMEDIATELY AFTER RAIN EVENTS FOR FINISHED CONDITION.

B. AGGREGATE BASE:
   1. THICKNESS FOR NEW PAVING: REFERENCE DRAWINGS.
   2. PLACE IN MAXIMUM 4 INCH LOOSE LIFTS AND COMPACT TO 100% STANDARD PROCTOR DENSITY.
   3. EXTEND AGGREGATE BASE COURSE A MINIMUM OF 1 FOOT BEYOND OUTSIDE EDGE OF NEW PAVEMENT AND CURB, UNLESS NOTED OTHERWISE IN THE DRAWINGS.
   4. PROOF ROLL SUBGRADE AND CORRECT AS NECESSARY PRIOR TO PAVEMENT INSTALLATION.

C. HOT MIX ASPHALT PAVING
   1. THICKNESS FOR NEW PAVING: REFERENCE DRAWINGS.
   2. PLACE THE BITUMINOUS PAVEMENT IN ACCORDANCE WITH MNDOT STANDARD SPECIFICATION SECTION 2360.
   3. PROVIDE A TACK COAT BETWEEN LIFTS AS SPECIFIED HEREIN.
   4. MINIMUM LIFTS: 1.5 INCHES
   5. COMPACTION FOR NEW PAVING: COMPACT T

PAVEMENT MARKINGS

6.01 QUALITY ASSURANCE

A. CONTRACTOR: SPECIALIZED OR EXPERIENCED IN PAVEMENT MARKING REQUIRED FOR THE PROJECT, FOR NOT LESS THAN 3 YEARS, AND WHICH IS ACCEPTABLE TO PAINT MANUFACTURER.

B. DELIVERY, STORAGE, AND HANDLING
1. PROVIDE PAINT IN MINIMUM 5 GALLON CONTAINERS ACCOMPANIED BY BATCH CERTIFICATE.
2. STORE PRODUCTS IN MANUFACTURER'S UNOPENED PACKAGING UNTIL READY FOR INSTALLATION.

C. EQUIPMENT:
1. EQUIPMENT MUST HAVE PROVISIONS FOR CONSTANT AGITATION OF PAINT, CONTROLLED TRAVEL SPEEDS WITH ONE OR MORE PAINT GUNS SYNCHRONIZED TO BEGIN AND CUT OFF PAINT FLOW AUTOMATICALLY IN CASE OF SKIP LINES, AND SUBJECT TO MANUAL CONTROL IN CASE OF CONTINUOUS AREAS OF VARYING SIZES.
2. PNEUMATIC SPRAY GUNS FOR HAND APPLICATION OF PAINT IN AREAS WHERE MOBILE PAINT APPLICATOR CANNOT BE USED.

6.02 PRODUCTS

A. PAINTED PAVEMENT MARKINGS: COLOR AS INDICATED ON DRAWINGS.
1. LINE AND ZONE MARKING PAINT: IN ACCORDANCE WITH MPI (APL) NO. 97 LATEX TRAFFIC MARKING PAINT.

B. OBLITERATING PAINT: IN ACCORDANCE WITH FS TT-P-1952.
1. BITUMINOUS PAVEMENT: BLACK.
2. CONCRETE PAVEMENT: GRAY.

6.03 EXECUTION

A. PREPARATION:
1. CLEAN SURFACES TO RECEIVE PAINT APPLICATIONS AS REQUIRED BY PAINT MANUFACTURER'S INSTRUCTIONS TO ENSURE GOOD ADHESION.
2. NEW PAVEMENT SURFACES: ALLOW SURFACES TO CURE FOR A PERIOD OF NOT LESS THAN 14 DAYS BEFORE APPLICATION OF MARKING MATERIALS. CLEAN SURFACES BEFORE APPLICATION OF PAINT. REMOVE DUST, DIRT, AND OTHER GRANULAR SURFACE DEPOSITS BY SWEEPING, BLOWING WITH COMPRESSED AIR, RINSING WITH WATER, OR A COMBINATION OF THESE METHODS AS REQUIRED.

B. INSTALLATION:
1. APPLY PAVEMENT MARKINGS IN ACCORDANCE WITH THE PAINT MANUFACTURER'S PRINTED INSTRUCTIONS TO UNIFORM, TRUE, AND SHARP LINE. APPLY PAINT ON PROPERLY CURED, PREPARED, AND DRIED SURFACES AS INDICATED TO ESTABLISHED CONTROL POINTS.
2. OBLITERATING PAINT: APPLY AS NECESSARY TO COVER EXISTING MARKINGS COMPLETELY.
3. MARKING PAINT: APPLY PAINT AT WET FILM THICKNESS OF 0.015 INCH MINIMUM. APPLY PAINT IN ONE COAT. APPLY ADDITIONAL COATS TO LIGHT SPOTS. STRICTLY ADHERE TO MAXIMUM DRYING TIME REQUIREMENTS. REMOVE AND REPLACE PAINT MARKINGS APPLIED DEVIATING FROM TRUE ALIGNMENT, EXCEEDING STIPULATED LENGTH AND WIDTH TOLERANCES, OR SHOWING LIGHT SPOTS, SMEARS, OR OTHER IRREGULARITIES.
4. STALL PAINTING: FOR 4 INCH WIDE STRIPE 300 LINEAL FEET/GALLON (MINIMUM).
5. TOLERANCES: LENGTH AND WIDTH OF LINES WITHIN 3 INCHES AND 1/8 INCH, RESPECTIVELY.
6. TEMPERATURE OF SURFACE: GREATER THAN 50 DEGREES F AND LESS THAN 95 DEGREES F.

C. PROTECTION:
1. PROTECT PAINTED AREAS IN SUCH A MANNER THAT NECESSARY TRAFFIC CAN MOVE WITHOUT UNDUE HINDRANCE.
2. REMOVE AND REPLACE DAMAGED PORTIONS OF MARKINGS AT NO ADDITIONAL COST TO THE OWNER.
3. KEEP PAINTED AREAS FREE OF TRAFFIC FOR A MINIMUM OF 4 HOURS OR UNTIL THOROUGHLY DRY.
4. PROTECT FEATURES ADJACENT TO WORK AREAS FROM DAMAGE DO TO OVERSPRAY.

SITE WATER UTILITY

7.01 QUALITY ASSURANCE

A. ALL MATERIALS, WORK, AND TESTING IN ACCORDANCE WITH MUNICIPALITY AND MINNESOTA PLUMBING CODE REQUIREMENTS.

7.02 PIPE

A. COPPER TUBING: ASTM B88, TYPE K, ANNEALED:
1. FITTINGS: ASME B16.18, CAST COPPER, OR ASME B16.22, WROUGHT COPPER.
2. JOINTS: COMPRESSION CONNECTION OR AWS A5.8M/A5.8, BCUP SILVER BRAZE.

B. POLYETHYLENE PIPE, 4 INCH AND SMALLER: ASTM D3035, FOR 160 PSIG PRESSURE RATING:
1. FITTINGS: AWWA C901, MOLDED OR FABRICATED.
2. JOINTS: BUTT FUSION ACCORDING TO ASTM D3261.

D. PVC PIPE: AWWA C900, CLASS 150.
1. FITTINGS: AWWA C111/A21.11, SCHEDULE 40 PER ASTM D2466 OR SCHEDULE 80 PER ASTM D2467.
2. JOINTS: ASTM D3139 COMPRESSION GASKET RING.

E. TRACE WIRE: MAGNETIC DETECTABLE CONDUCTOR, CLEAR PLASTIC COVERING, IMPRINTED WITH "WATER SERVICE" IN LARGE LETTERS.

7.03 VALVES

A. GATE VALVES 3 INCHES AND OVER:
1. AWWA C509, IRON BODY, BRONZE TRIM, NON-RISING STEM WITH SQUARE NUT, SINGLE WEDGE, RESILIENT SEAT, FLANGED ENDS, CONTROL ROD, POST INDICATOR, VALVE KEY, AND EXTENSION BOX.

B. BALL VALVES UP TO 2 INCHES:
1. BRASS BODY, TEFLON COATED BRASS BALL, RUBBER SEATS AND STEM SEALS, TEE STEM PRE-DRILLED FOR CONTROL ROD, AWWA INLET END, COMPRESSION OUTLET WITH ELECTRICAL GROUND CONNECTOR, WITH CONTROL ROD, VALVE KEY, AND EXTENSION BOX.

C. CORPORATION STOPS UP TO 2 INCHES:
1. INLET CONNECTION SHALL BE MALE TAP END, AWWA STANDARD THREADS. OUTLET CONNECTION SHALL BE A COPPER SERVICE THREAD STRAIGHT COUPLING CONNECTION SUITABLE FOR USE WITH ASTM B88 TYPE K COPPER SERVICE TUBING AND SHALL BE PROVIDED WITH A COPPER TUBE FLARE NUT.

7.04 INSTALLATION - PIPE

A. MAINTAIN SEPARATION OF WATER MAIN FROM SEWER PIPING IN ACCORDANCE WITH MINNESOTA PLUMBING CODE, CURRENT EDITION.

B. ESTABLISH ELEVATIONS OF BURIED PIPING TO ENSURE NOT LESS THAN 8 FEET OF COVER.

C. INSTALL PIPE TO INDICATED ELEVATIONS TO WITHIN TOLERANCE OF 1/2 INCHES.

D. INSTALL DUCTILE IRON PIPING AND FITTINGS TO AWWA C600.

E. INSTALL PIPE TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE OR JOINTS.

F. ALL PLUGS, CAPS, TEES, BENDS, AND OTHER THRUST POINTS SHALL BE PROVIDED WITH THRUST BLOCKING ACCORDING TO DETAILS ON THE DRAWINGS.

7.05 INSTALLATION - VALVES

A. SET VALVES ON SOLID BEARING.

B. CENTER AND PLUMB VALVE BOX OVER VALVE. SET BOX COVER FLUSH WITH FINISHED GRADE.

SITE SANITARY SEWER UTILITY

8.01 QUALITY ASSURANCE

1. ALL MATERIALS, WORK, AND TESTING IN ACCORDANCE WITH MUNICIPALITY AND MINNESOTA PLUMBING CODE REQUIREMENTS.

8.02 MANHOLES AND STRUCTURES

A. MANHOLES
1. ALL SANITARY SEWER MANHOLES SHALL MEET THE REQUIREMENTS OF MNDOT 3622 AND MNDOT STANDARD PLATE 4007C. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING OPENINGS IN THE MANHOLE SECTION AT PROPER LOCATIONS ACCORDING TO THE DRAWINGS. NO STEPS WILL BE ALLOWED IN THE MANHOLES. ALL MANHOLES MUST HAVE AN INTEGRAL CONCRETE BASE.
2. MANHOLE SECTIONS SHALL BE REINFORCED PRECAST CONCRETE IN ACCORDANCE WITH ASTM C478 WITH RESILIENT CONNECTORS COMPLYING WITH ASTM C932.
3. MANHOLE CASTINGS SHALL BE NO. 700-7, CONFORMING TO MNDOT STANDARD PLATE 4101D WITH COVER CASTING NO. 716, CONFORMING TO MNDOT STANDARD PLATE 4110F.
4. SANITARY SEWER MANHOLE COVERS SHALL BE WATER TIGHT.
5. ALL MANHOLES, ASSOCIATED COVERS AND CASTINGS SHALL CONFORM TO THE MINNESOTA PLUMBING CODE.

B. NON-SHRINK GROUT OR CEMENT-BASE POLYMER MODIFIED PATCHING MORTAR
2. NON-SHRINK GROUT SHALL BE A NON-METALLIC TYPE GROUT WHICH IS DURABLE IN WETTING AND DRYING, FREEZING AND THAWING CONDITIONS AND SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN ASTM C 1107-91. CEMENT-BASED POLYMER MODIFIED PATCHING MORTAR SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN ASTM C 109, ASTM C 490-77, AND ASTM C 807-83 (MODIFIED).

C. ADJUSTING RINGS: HIGH DENSITY POLYETHYLENE (HDPE) RECYCLED ADJUSTING RINGS AD DEFINED IN ASTM D-1248.

D. WATER TIGHT SEAL: WATER TIGHT SEAL AT PIPE PENETRATION INCLUDING AN INTERNAL EXPANDING LOCKING BAND CREATING A POSITIVE MECHANICAL SEAL, FLEXIBLE SLEEVE, AND A STAINLESS STEEL EXTERIOR CLAMP. SEAL SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SHALL CONFORM TO THE REQUIREMENTS OF THE MINNESOTA PLUMBING CODE, CURRENT EDITION.

8.03 PIPE

A. PROVIDE PRODUCTS THAT COMPLY WITH THE MINNESOTA PLUMBING CODE.

B. PLASTIC PIPE: ASTM D1785, SCHEDULE 40, POLYVINYL CHLORIDE (PVC) MATERIAL; SIZE AS INDICATED ON DRAWINGS; BELL AND SPIGOT STYLE SOLVENT SEALED END JOINT.

C. FITTINGS: SAME MATERIAL AS PIPE MOLDED OR FORMED TO SUIT PIPE SIZE AND END DESIGN, IN REQUIRED TEE, WYES, BENDS, ELBOWS, CLEANOUTS, REDUCERS, TRAPS, AND OTHER CONFIGURATIONS REQUIRED.

D. FORCE MAIN: POLYETHYLENE (PE) PIPE: ASTM D3350 AND ASTM D3035, POLYETHYLENE (PE) MATERIAL (DR-PR), MINIMUM PRESSURE RATING OF 100 PSI, AT 73.4 DEGREES F. THERMAL BUTT FUSION JOINTS AND FITTINGS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS; PIPE AND FITTINGS SAME MATERIAL UTILIZING TRANSITION FITTINGS WHEN CONNECTING TO EXISTING PIPING.

E. TRACER WIRE: #12 SOLID COPPER WITH "HMWPE" 30 MIL INSULATION. INSULATION FOR SANITARY APPLICATIONS SHALL BE GREEN; CONFORM TO THE REQUIREMENTS OF THE MINNESOTA PLUMBING CODE 604.10.1.

8.04 PIPE INSTALLATION

A. INSTALL PIPE, FITTINGS, AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SEAL WATERTIGHT. FOR PLASTIC PIPE, ALSO COMPLY WITH ASTM D2321.

B. INSTALL TRACER WIRE 6 INCHES ABOVE TOP OF PIPE.

SITE STORMWATER UTILITY

9.01 QUALITY ASSURANCE

1. ALL MATERIALS, WORK, AND TESTING IN ACCORDANCE WITH MUNICIPALITY AND MINNESOTA PLUMBING CODE REQUIREMENTS.

9.02 MANHOLES AND STRUCTURES

A. MANHOLES
1. STORM SEWER MANHOLES SHALL MEET THE REQUIREMENTS OF MNDOT 3622 AND MNDOT STANDARD PLATE 4005M, DESIGN F AND/OR MNDOT STANDARD PLATE 4020J OR 4006L. "O" RING GASKETS SHALL BE USED IN THE JOINTS IN THE BARREL SECTIONS. THE CONE SECTIONS SHALL BE CONCENTRIC (TYPE A).
2. UNLESS SPECIFIED OTHERWISE, MANHOLE CASTINGS SHALL BE NO. 700-7, CONFORMING TO MNDOT STANDARD PLATE 4101D WITH COVER CASTING NO. 716, CONFORMING TO MNDOT STANDARD PLATE 4110F.
3. MANHOLE SECTIONS SHALL BE REINFORCED PRECAST CONCRETE IN ACCORDANCE WITH ASTM C478 WITH RESILIENT CONNECTORS COMPLYING WITH ASTM C932.

B. CATCH BASINS
1. ALL STORM SEWER CATCH BASINS SHALL MEET THE REQUIREMENTS OF MNDOT 3622 AND MNDOT STANDARD PLATE 4020J OR 4006L. "O" RING GASKETS SHALL BE USED IN THE JOINTS IN THE BARREL SECTIONS. THE CONE SECTIONS SHALL BE CONCENTRIC (TYPE A).
2. UNLESS SPECIFIED OTHERWISE, CATCH BASIN CASTINGS SHALL BE NO. 802A, CONFORMING TO MNDOT STANDARD PLATE 4129G WITH CURB BOX CASTING NO. 825, CONFORMING TO MNDOT STANDARD PLATE 4134A AND GRATE NO. 816, CONFORMING TO MNDOT STANDARD PLATE 4154B.

C. NON-SHRINK GROUT OR CEMENT-BASE POLYMER MODIFIED PATCHING MORTAR
1. NON-SHRINK GROUT SHALL BE A NON-METALLIC TYPE GROUT WHICH IS DURABLE IN WETTING AND DRYING, FREEZING AND THAWING CONDITIONS AND SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN ASTM C 1107-91. CEMENT-BASED POLYMER MODIFIED PATCHING MORTAR SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN ASTM C 109, ASTM C 490-77, AND ASTM C 807-83 (MODIFIED).

D. ADJUSTING RINGS: HIGH DENSITY POLYETHYLENE (HDPE) RECYCLED ADJUSTING RINGS AD DEFINED IN ASTM D-1248.

E. ALL MANHOLES, CATCH BASINS, ASSOCIATED COVERS AND CASTINGS SHALL CONFORM TO THE MINNESOTA PLUMBING CODE.

9.03 PIPE

A. PROVIDE PRODUCTS THAT COMPLY WITH THE MINNESOTA PLUMBING CODE.

B. PLASTIC PIPE: ASTM D1785, SCHEDULE 40, POLYVINYL CHLORIDE (PVC) MATERIAL; SIZE AS INDICATED ON DRAWINGS; BELL AND SPIGOT STYLE SOLVENT SEALED END JOINT.

C. REINFORCED CONCRETE PIPE (RCP): ALL STORM SEWER PIPE SHALL MEET THE REQUIREMENTS OF MNDOT 3236 "REINFORCED CONCRETE PIPE" AND AASTHO M 170 "STANDARD SPECIFICATION FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE".

F. PIPE SIZE AS SPECIFIED ON PLANS.

TRACER WIRE: MAGNETIC DETECTABLE CONDUCTOR, CLEAR PLASTIC COVERING, IMPRINTED WITH "STORMWATER SERVICE" IN LARGE LETTERS

9.04 PIPE INSTALLATION

A. INSTALL PIPE, FITTINGS, AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

INSTALL TRACER WIRE 6 INCHES ABOVE TOP OF PLASTIC PIPE.

File Path: ...\240668\02 Howard Lake MN\SD\Drawings\Civil\240668.02 C011 SPECIFICATIONS.dwg
Plot Date: 2025/4/23 9:48 PM

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

PRELIMINARY
NOT FOR CONSTRUCTION
04/24/2025

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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
SITE SPECIFICATIONS

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C012

SEEDING

2.01 SEED MIXTURES
- A. TURF SEED MIX
  1. MANUFACTURER: RAMY TURF PRODUCTS; HTTPS://RAMYTURF.COM/PRODUCT-CATEGORY/SEED/HOUSE-MIXES/LAWN-TURF/
  2. MIX TYPE: STREET SIDE (BOULEVARD SALT TOLERANT)
  3. APPLY MANUFACTURER RECOMMENDED SEED RATES.
- B. SHOOTING STAR NATIVE SEED'S "WOODLAND EDGE MIX," OR APPROVED EQUAL.
  1. MANUFACTURER: SHOOTING STAR NATIVE SEED, OR APPROVED EQUAL.
  2. SEED RATE: PER MANUFACTURER'S INSTRUCTIONS. COVER CROP FOR SEEDED AREAS: PER MANUFACTURER'S INSTRUCTIONS
- C. SHOOTING STAR NATIVE SEED'S "DETENTION BASIN AND RAIN GARDEN MIX," OR APPROVED EQUAL.
  1. MANUFACTURER: SHOOTING STAR NATIVE SEED, OR APPROVED EQUAL.
  2. SEED RATE: PER MANUFACTURER'S INSTRUCTIONS. COVER CROP FOR SEEDED AREAS: PER MANUFACTURER'S INSTRUCTIONS

2.02 SOIL MATERIALS
- A. TOPSOIL REQUIREMENTS ARE IN EARTHWORK SECTION. THE GRADING OF ALL AREAS SHALL BE WITHIN 6" OF FINAL GRADE, AND AT LEAST 6" OF TOPSOIL SHALL BE APPLIED TO ACHIEVE FINAL GRADING. THE LANDSCAPE CONTRACTOR SHALL FINE GRADE AS NEEDED IN PREPARATION FOR THEIR PLANTINGS.
  1. IF TOPSOIL IS EXCAVATED FROM SITE, IT MUST BE TESTED TO CONFIRM IT MEETS SPECIFICATION AND BE FREE OF WEEDS.
  2. CONTRACTOR SHALL RAKE OUT AND REMOVE ALL OBJECTIONABLE MATTER IN THE TOPSOIL AND LEVEL SOIL PRIOR TO INSTALLING SEED. CONTRACTOR TO BEAR THE COST OF TESTING.

2.03 WATER
- A. CONTRACTOR SHALL FURNISH A HOSE AND HOSE CONNECTION FROM HYDRANTS AND/OR OUTLETS WHERE THE WATER WILL BE FURNISHED.
- B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY SOURCE OF WATER AND ITS AVAILABILITY PRIOR TO ITS USE.

2.04 ACCESSORIES
- A. TURF SEED MULCHING MATERIAL: OAT OR WHEAT STRAW, FREE FROM WEEDS, FOREIGN MATTER DETRIMENTAL TO PLANT LIFE, AND DRY. HAY OR CHOPPED CORNSTALKS ARE NOT ACCEPTABLE.
- B. NATIVE SEED MULCHING MATERIALS: NATIVE GRASS STRAW MULCH. MCIA CERTIFIED FREE OF WEED SEED AND FOREIGN MATERIALS. 2 TONS PER ACRE.
- C. STEEP SLOPE MULCHING MATERIAL: ON SLOPES GREATER THAN 4:1 OR AS INDICATED ON DRAWINGS, NETLESS EROSION CONTROL FABRIC, IN NATURAL COLOR.
- D. FERTILIZER: NATURAL BASE, RECOMMENDED FOR TURF GRASSES AND PERENNIALS, WITH AT LEAST 50 PERCENT OF THE ELEMENTS DERIVED FROM ORGANIC SOURCES; OF PROPORTION NECESSARY TO ELIMINATE DEFICIENCIES OF TOPSOIL. IF NO TOPSOIL TEST IS AVAILABLE, FERTILIZER TO HAVE THE FOLLOWING PROPORTIONS:
  1. NITROGEN: 18 PERCENT.
  2. PHOSPHORIC ACID: 1 PERCENT.
  3. SOLUBLE POTASH: 8 PERCENT.

2.05 EXAMINATION
- A. PRIOR TO PLACEMENT OF SEED, CONTRACTOR IS RESPONSIBLE FOR THE EXAMINATION AND ACCEPTANCE OF ALL CONDITIONS AFFECTING THE PROPER INSTALLATION OF HIS WORK AND WILL NOT PROCEED UNTIL ALL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- B. VERIFY THAT PREPARED SOIL BASE IS READY TO RECEIVE THE WORK OF THIS SECTION.

2.06 PREPARATION
- A. PREPARE SUBGRADE IN ACCORDANCE WITH EARTHWORK SECTION ON SHEET C001.
- B. THE GRADING OF ALL AREAS SHALL BE WITHIN 6 INCHES OF FINAL GRADE, WITH AT LEAST 6 INCHES OF TOPSOIL TO ACHIEVE FINAL GRADING. FINE GRADE AS NEEDED IN PREPARATION FOR SEEDING.
- C. TOPSOIL REQUIREMENTS ARE SPECIFIED IN SECTION 3.03.C.

2.07 FERTILIZING
- A. APPLY FERTILIZER IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. APPLY AFTER SMOOTH RAKING OF TOPSOIL AND PRIOR TO ROLLER COMPACTION.
- C. DO NOT APPLY FERTILIZER AT SAME TIME OR WITH SAME MACHINE AS WILL BE USED TO APPLY SEED.
- D. MIX THOROUGHLY INTO UPPER [3] INCHES OF TOPSOIL.
- E. LIGHTLY WATER TO AID THE DISSIPATION OF FERTILIZER.

2.08 SEEDING
- A. APPLY SEED MIXTURES AND COVER CROP AT THE RATES RECOMMENDED BY SEED PRODUCER.
- B. SEED EVENLY IN TWO INTERSECTING DIRECTIONS. RAKE IN LIGHTLY.
- C. DO NOT SEED AREAS IN EXCESS OF THAT WHICH CAN BE MULCHED ON SAME DAY.
- D. PLANTING SEASON:
  1. TURF SEEDING: APRIL 15 - JULY 15, OR SEPTEMBER 20 - OCTOBER 20.
  2. NATIVE SEEDING: APRIL-JUNE OR OCTOBER THROUGH FIRST FREEZE
- E. DO NOT SOW IMMEDIATELY FOLLOWING RAIN, WHEN GROUND IS TOO DRY, OR DURING WINDY PERIODS.
- F. ROLL SEEDED AREA WITH ROLLER NOT EXCEEDING 112 LBS.
- G. IMMEDIATELY FOLLOWING SEEDING AND COMPACTING, APPLY MULCH TO AN EVEN THICKNESS OF 1 TO 3 INCHES. INSTALL AT A RATE OF 2 TONS PER ACRE BY DISC ANCHORING. MAINTAIN CLEAR OF SHRUBS AND TREES.
- H. APPLY WATER WITH A FINE SPRAY IMMEDIATELY AFTER EACH AREA HAS BEEN MULCHED. SATURATE TO 4 INCHES OF SOIL.
- I. FOLLOWING GERMINATION, IMMEDIATELY RE-SEED AREAS WITHOUT GERMINATED SEEDS THAT ARE LARGER THAN 4 BY 4 INCHES.

2.09 HYDROSEEDING
- A. HYDROSEEDING IS AN OPTIONAL ALTERNATIVE TO MECHANICAL SEEDING. IF HYDROSEEDING, THE CONDITIONS BELOW MUST BE FOLLOWED.
  1. APPLY SEEDED SLURRY WITH A HYDRAULIC SEEDER AT A RATE OF [54] LBS PER 1000 SQ FT EVENLY IN TWO INTERSECTING DIRECTIONS.
  2. USE FLOOD-TYPE NOZZLES AND MANUFACTURER'S RECOMMENDED WATER VOLUME.
  3. ONCE THE SEED HAS BEEN ADDED TO THE TANK MIXTURE, A ONE HOUR TIME LIMIT IS SET FOR SPREADING THE MIXTURE ON THE SOIL. ONCE THE ONE HOUR LIMIT HAS PASSED, THE EXCESS MUST BE DISCARDED.
  4. DO NOT HYDROSEED AREA IN EXCESS OF THAT WHICH CAN BE MULCHED ON SAME DAY.
  5. IMMEDIATELY FOLLOWING SEEDING, APPLY MULCH TO A THICKNESS OF 1/8 INCHES. MAINTAIN CLEAR OF SHRUBS AND TREES.
  6. APPLY WATER WITH A FINE SPRAY IMMEDIATELY AFTER EACH AREA HAS BEEN MULCHED. SATURATE TO 4 INCHES OF SOIL.
  7. PROVIDE FERTILIZER TYPE 4 WITH A 17-10-7 ANALYSIS RATIO AT THE RATE OF 150 LB/ACRE ON ALL SEEDED AREAS.
  8. HYDROSEEDING MUST BE PERFORMED SEPARATELY FROM HYDRAULIC EROSION CONTROL PRODUCTS (HYDRO-MULCHING).
  9. TYPE BONDED FIBER MATRIX (BFM) TO BE APPLIED WITH HYDRAULIC SPRAY EQUIPMENT BY A MANUFACTURER'S CERTIFIED APPLICATOR.
  10. APPLY BFM AT THE TARGETED DRY WEIGHT RATE OF 3500 LB/ACRE. ADJUSTMENTS ARE MADE IN THE FIELD BASED ON SITE CHARACTERISTICS, SOIL CONDITIONS, AND MANUFACTURER RECOMMENDATIONS.
  11. USE THE WATER-TO-BALE RATIO RECOMMENDED BY THE MANUFACTURER.
  12. APPLY THE BFM FROM AT LEAST TWO OPPOSING DIRECTIONS AND OBTAIN CONTINUOUS GROUND COVERAGE.
  13. APPLY THE BFM IN TWO STAGES USING ONE HALF OF THE MATERIAL IN EACH STAGE. ALLOW THE FIRST STAGE APPLICATION TO DEWATER BEFORE APPLYING THE SECOND STAGE.
  14. FOLLOWING GERMINATION, IMMEDIATELY RE-SEED AREAS WITHOUT GERMINATED SEEDS THAT ARE LARGER THAN 4 BY 4 INCHES.

2.10 PROTECTION
- A. IDENTIFY SEEDED AREAS WITH STAKES AND STRING AROUND AREA PERIPHERY. SET STRING HEIGHT TO 36 INCHES. SPACE STAKES AT 48 INCHES.
- B. COVER SEEDED SLOPES WHERE GRADE IS 3 INCHES PER FOOT OR GREATER OR AS INDICATED ON THE PLANS WITH EROSION FABRIC. ROLL FABRIC ONTO SLOPES WITHOUT STRETCHING OR PULLING.
- C. LAY FABRIC SMOOTHLY ON SURFACE, BURY TOP END OF EACH SECTION IN 6 INCH DEEP EXCAVATED TOPSOIL TRENCH. PROVIDE 12 INCH OVERLAP OF ADJACENT ROLLS. BACKFILL TRENCH AND RAKE SMOOTH, LEVEL WITH ADJACENT SOIL.
- D. SECURE OUTSIDE EDGES AND OVERLAPS AT 36 INCH INTERVALS WITH STAKES.
- E. AT SIDES OF DITCHES, LAY FABRIC LAPS IN DIRECTION OF WATER FLOW. LAP ENDS AND EDGES MINIMUM 6 INCHES.
- F. CONTRACTOR SHALL PROTECT ALL THAT IS TO REMAIN AND SHALL CONDUCT ALL SEEDING OPERATIONS IN A MANNER THAT WILL NOT DAMAGE OR JEOPARDIZE THE SURROUNDING PLANT LIFE DESIGNATED ON THE DRAWINGS AS PROPOSED OR TO REMAIN.
- G. MONUMENTS: CAREFULLY MAINTAIN BENCHMARKS, MONUMENTS AND OTHER REFERENCE POINTS, IF DISTURBED OR DESTROYED, HAVE REPLACED OR RELOCATED BY A REGISTERED SURVEYOR AT CONTRACTOR'S EXPENSE.

2.11 COORDINATION
- A. COORDINATE TIMING OF TOPSOIL INSTALLATION WITH SEED.

2.12 LIMITS OF WORK
- A. SEED ALL AREAS IDENTIFIED ON DRAWINGS. SEED AREAS BETWEEN THE SITE AND PUBLIC ROAD THAT ARE DISTURBED DURING CONSTRUCTION. ANY SEED THAT IS PLACED ON SITE BY THE EXCAVATOR FOR EROSION CONTROL AND SUBSEQUENTLY DISTURBED SHALL BE REMOVED AND/OR REPLACED BY THE LANDSCAPE CONTRACTOR.
- B. RESTORE ALL LAWN AND SURFACE AREAS, WHETHER WITHIN THE CONTRACT LIMITS OR NOT, DISTURBED AS A RESULT OF EARTHWORK OPERATIONS OF THIS PROJECT. RESTORATION SHALL BE BY SEED UNLESS OTHERWISE NOTED ON THE PLANS.

2.13 ESTABLISHMENT AND REPLACEMENT
- A. ANY SEED WHICH FAILS TO GERMINATE WITHIN THREE WEEKS SHALL BE RE-SEEDED AS SOON AS WEATHER AND SEASONS PERMIT. SPOTS LARGER THAN ONE FOOT IN DIAMETER WHICH ARE BARE OR THINLY GERMINATED SHALL BE RE-SEEDED. ACCEPTANCE OF SEEDED AREAS BY THE LANDSCAPE ARCHITECT WILL NOT BE MADE UNTIL IT IS EVIDENT THAT THE SEED HAS GERMINATED AND 70% OR MORE PERENNIAL COVER IS ESTABLISHED.
- B. THE CONTRACTOR SHALL ENSURE ESTABLISHMENT AND MAINTAIN SEEDED AREAS BY WATERING, WEEDING AND MOWING FOR A PERIOD OF THREE MONTHS FROM DATE OF SUBSTANTIAL COMPLETION.

2.14 WATERING AND MAINTENANCE
- A. WATERING SHALL BE PERFORMED BY THE CONTRACTOR AS NECESSARY TO ASSURE THAT SEEDED AREAS ARE UNIFORMLY MOISTENED AND MAINTAINED IN A MOIST CONDITION FOR A PERIOD OF THREE MONTHS FROM THE DATE OF SUBSTANTIAL COMPLETION.
- B. TURF SEED AREAS:
  1. PROVIDE MAINTENANCE OF SEEDED AREAS FOR THREE MONTHS FROM DATE OF SUBSTANTIAL COMPLETION.
  2. IF SEEDING OCCURS IN THE FALL AND THERE IS INSUFFICIENT TIME FOR THE SEED TO GERMINATE BEFORE FREEZE-UP, THE CONTRACTOR WILL NEED TO CONTINUE TO MAINTAIN THE SEEDED AREAS IN THE SPRING UNTIL THE GRASS IS WELL ESTABLISHED AND EXHIBITS A VIGOROUS GROWING CONDITION.
  3. IF NECESSARY, MOW GRASS AT REGULAR INTERVALS TO MAINTAIN AT A MAXIMUM HEIGHT OF [3] INCHES. DO NOT CUT MORE THAN 1/3 OF GRASS BLADE AT ANY ONE MOWING.
  4. IMMEDIATELY REMOVE CLIPPINGS AFTER MOWING AND TRIMMING.
  5. WATER TO PREVENT GRASS AND SOIL FROM DRYING OUT.
  6. ROLL SURFACE TO REMOVE MINOR DEPRESSIONS OR IRREGULARITIES.
  7. IMMEDIATELY RESEED AREAS THAT SHOW BARE SPOTS.
  8. PROTECT SEEDED AREAS WITH WARNING SIGNS DURING MAINTENANCE PERIOD.
- C. NATIVE SEED AREAS:
  1. DURING FIRST GROWING SEASON, THE NATIVE AREAS SHALL BE MOWED A MINIMUM OF 2 TIMES AS NEEDED TO CONTROL ANNUAL WEED DEVELOPMENT. MOWING SHALL TAKE PLACE WHEN REGROWTH REACHES 18-30 INCHES. MOWING HEIGHT SHALL BE 4-6 INCHES. A FLAIL OR ROTARY MOWER OF HAND HELD WEED WHIP SHALL BE USED. CONTRACTOR SHALL ALSO KEEP NATIVE GRASS AND FORB PLANTINGS FREE OF ALL NOXIOUS WEEDS AND OTHER INVASIVE VEGETATION. RESEED AS REQUIRED TO MEET INTENDED RESULTS OF A HEALTHY NATIVE GRASS AND FORB PLANTING.
  2. IN YEARS FOLLOWING THE FIRST GROWING SEASON, MANAGEMENT SERVICES COULD INCLUDE CONTROLLED BURNING, SPOT SPRAYING, SPOT CUTTING, HAND WEEDING, AND VOLUNTEER TREE SAPLING REMOVAL.
  3. MAINTENANCE INSTRUCTIONS: CONTRACTOR SHALL SUBMIT TYPEWRITTEN INSTRUCTIONS RECOMMENDING PROCEDURES FOR TO BE ESTABLISHED BY OWNER FOR MAINTENANCE AND MANAGEMENT OF NATIVE GRASS AND FORB PLANTING DURING ENTIRE YEAR. SUBMIT PRIOR TO EXPIRATION OF REQUIRED MAINTENANCE PERIODS.
  4. PROVIDE OWNER WITH OPTIONAL CONTRACT FOR EXTENDED MANAGEMENT SERVICES TO BE CONTRACTED SEPARATELY FROM THE INSTALLATION CONTRACT AFTER TERMINATION OF WARRANTY AND MANAGEMENT SERVICES INCLUDE IN INSTALLATION.

2.15 CLEAN-UP
- A. ALL MATERIAL BROUGHT INTO PAVED AREAS BY SEEDING WORK OPERATIONS SHALL BE REMOVED PROMPTLY, KEEPING THESE AREAS CLEAN AT ALL TIMES. UPON COMPLETION OF SEEDING, EXCESS SOILS, ROCK AND DEBRIS NOT PREVIOUSLY CLEANED UP SHALL BE DISPOSED OF OFF-SITE.
- B. ALL GROUND AREA DISTURBED AS A RESULT OF SEEDING SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR TO THE DESIRED NEW APPEARANCE.

SODDING

3.01 LIMITS OF WORK
- A. SOD ALL AREAS IDENTIFIED ON DRAWINGS. RESTORE ALL LAWN AND SURFACE AREAS, WHETHER WITHIN THE CONSTRUCTION LIMITS OR NOT, DISTURBED AS A RESULT OF EARTHWORK OPERATIONS OF THIS JOB. RESTORATION SHALL BE BY SOD UNLESS OTHERWISE NOTED ON THE PLAN.

3.02 MATERIALS
- A. SOD SHALL INCLUDE A MAXIMUM OF 2" OF WELL-ESTABLISHED CULTURED SOD. SOD SHALL BE FREE FROM NOXIOUS WEEDS, RELATIVELY FREE FROM ALL OTHER WEEDS AND FREE FROM ROOTS, STONES AND OTHER OBJECTIONABLE MATERIALS. SOD SHALL RESIST NORMAL HANDLING WITHOUT UNDUE BREAKING OR TEARING.
- B. BEFORE SOD IS CUT, IT SHALL BE RAKED FREE OF DEBRIS AND THE TOP GROWTH TRIMMED TO A HEIGHT OF APPROXIMATELY 2".
- C. SOD SHALL BE CUT IN UNIFORM STRIPS 18" MINIMUM WIDTH AND TO A UNIFORM THICKNESS SO A DENSE ROOT SYSTEM WILL BE RETAINED, BUT BE EXPOSED ON THE BOTTOM SIDE OF THE SOD. WHEN SOD IS CUT, IT SHALL BE SUFFICIENTLY MOIST TO WITHSTAND EXPOSURE AND HANDLING DURING TRANSPLANT OPERATIONS. IF NECESSARY, SOD SHALL BE WATERED BEFORE CUTTING.

3.03 TOPSOIL
- A. LANDSCAPE CONTRACTOR SHALL RAKE OUT AND REMOVE ALL OBJECTIONABLE MATTER IN THE TOPSOIL AND LEVEL SOIL PRIOR TO INSTALLING SOD.

3.04 GROUND PREPARATION
- A. THE GRADING OF ALL AREAS TO WITHIN 6" OF FINAL GRADE AND THE PLACING OF 4" TOPSOIL FOR FINAL GRADING IS SPECIFIED IN THE EARTHWORK SECTION.
- B. PRIOR TO PLACEMENT OF SOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXAMINATION AND ACCEPTANCE OF ALL CONDITIONS AFFECTING THE PROPER INSTALLATION OF HIS WORK AND SHALL NOT PROCEED UNTIL ALL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- C. IMMEDIATELY PRIOR TO SODDING, CONTRACTOR SHALL LOOSEN THE TOPSOIL PLACED BY THE EARTHWORK CONTRACTOR TO A DEPTH OF 3" ON ALL AREAS EXCEPT SLOPES STEEPER THAN 3 HORIZONTALLY TO 1 VERTICALLY, USING DISCS, HARROWS AND TILLER RAKES TO PRODUCE FINE GRADE. ON SLOPES STEEPER THAN 3 TO 1, USE CULTIVATING EQUIPMENT IN GENERAL DIRECTION AT RIGHT ANGLES TO THE DIRECTION OF SURFACE DRAINAGE WHEREVER PRACTICAL. THE LANDSCAPE CONTRACTOR SHALL TOP-OFF THE SOIL WITH AN AVERAGE OF 2" OF TOP SOIL TO RAISE GRADES TO THE FINAL ELEVATIONS.

3.05 FERTILIZING
- A. FERTILIZER SHALL BE A COMMERCIAL FORMULA CONTAINING AT LEAST THE MINIMUM ANALYSIS OF 10-10-10 (10% TOTAL NITROGEN, 10% PHOSPHORIC ACID, AND 10% WATER SOLUBLE POTASH) OR COMPARABLE FERTILIZER, APPLIED AT THE RATE OF 30 POUNDS PER 1,000 SQUARE FEET.
- B. FERTILIZER SHALL BE APPLIED TO A PROPERLY PREPARED SOIL BED PRIOR TO SODDING WITH A MECHANICAL SPREADER AND THOROUGHLY MIXED IN TOP 3" BY MEANS OF A MEEKER HARROW, BY WEIGHTED CHAIN LINK FENCE, OR OTHER APPROVED METHOD. FERTILIZER MUST BE DRY AND FREE FLOWING WHEN APPLIED.
- C. APPLY FERTILIZER NO MORE THAN 48 HOURS BEFORE LAYING SOD.
- D. LIGHTLY WATER TO AID THE DISSIPATION OF FERTILIZER.

3.06 SODDING
- A. PRECAUTIONS SHALL BE TAKEN TO PREVENT SOD FROM DRYING OUT AND FROM HEATING. SOD THAT SHOWS VISIBLE SIGNS OF HEATING SHALL NOT BE INCORPORATED IN THE PROJECT.
- B. STRIPS SHALL BE PLACED TIGHTLY AGAINST EACH OTHER SO THAT NO OPEN JOINTS ARE APPARENT. JOINTS BETWEEN ENDS OF STRIPS SHALL BE STAGGERED AT LEAST ONE FOOT BETWEEN ADJACENT ROWS. SOD SHALL BE PLACED WITHOUT STRETCHING ON TOPSOIL. LAY SMOOTH AND ALIGN WITH ADJOINING GRASS AREAS.
- C. AT THE TOP OF THE SLOPES, SOD WILL BE LAID SO WATER FROM ADJACENT AREAS WILL HAVE FREE FLOW INTO SODDED AREAS.
- D. NO SODDING SHALL BE DONE EARLIER THAN AUGUST 15TH NOT LATER THAN OCTOBER 15TH, FOR FALL SODDING; OR EARLIER THAN APRIL 15TH NOT LATER THAN JUNE 1ST FOR SPRING SODDING. CHANGES IN ABOVE DATES ONLY IF DIRECTED IN WRITING BY THE LANDSCAPE ARCHITECT, SPECIFYING EXACT DATE OF INSTALLATION AND LENGTH OF GUARANTEE PERIOD.
- E. SOD PLACED ON SLOPES STEEPER THAN 3:1 OR IN DRAINAGE SWALES SHALL BE STAKED. SOD SHALL BE STAKED WITH 2 WOOD STAKES PER ROLL. STAKES SHALL BE SPACED NOT MORE THAN 30" APART AT AN ANGLE AGAINST THE FLOW OF THE WATER. STAKES SHALL PROJECT 1/2" ABOVE THE SOD.
- F. SOD SHALL BE WATERED AND COMPRESSED INTO THE UNDERLYING SOIL BY ROLLING OR TAMPED INTO PLACE. THE INITIAL WATERING AND ROLLING SHALL PROVIDE FIRM CONTACT AND BOND BETWEEN THE SOD AND THE UNDERLYING SOIL. THE ROLLING SHALL RESULT IN A SMOOTH, EVEN SURFACE FREE OF HUMPS AND DEPRESSIONS BUT SHALL NOT CAUSE EXCESSIVE COMPACTION. WATER SODDED AREAS IMMEDIATELY AFTER INSTALLATION. SATURATE SOD TO 4 INCHES OF SOIL.
- G. KEEP SOD CONTINUOUSLY MOIST AND WELL-WATERED FOR 14 DAYS AFTER LAYING. THEREAFTER, WATER SOD UNTIL SOIL IS SOAKED AT LEAST ONCE EVERY FOUR DAYS UNLESS NATURAL RAINFALL HAS PROVIDED EQUIVALENT WATER.
- H. PROTECT SODDED AREAS WITH WARNING SIGNS DURING MAINTENANCE PERIOD.

3.07 WATERING AND MOWING
- A. WATERING OF ALL TURF AREAS SHALL BE PERFORMED BY THE CONTRACTOR AS NECESSARY TO ASSURE THAT SODDED AREAS ARE UNIFORMLY MOISTENED AND MAINTAINED IN A MOIST CONDITION UNTIL THE WORK HAS BEEN APPROVED BY THE LANDSCAPE ARCHITECT AND RESPONSIBILITY FOR MAINTENANCE ACCEPTED BY THE OWNER.
- B. SODDED AREAS SHALL BE KEPT TRIMMED TO A HEIGHT NOT TO EXCEED 3" DURING THE CONSTRUCTION PERIOD AND PRIOR TO ACCEPTANCE BY THE OWNER. IMMEDIATELY REMOVE HEAVY CLIPPINGS AFTER MOWING AND TRIMMING.

3.08 ESTABLISHMENT AND REPLACMENT
- A. ANY SOD WHICH FAILS TO BECOME ESTABLISHED DURING THE FIRST 30 DAYS AFTER OWNER ACCEPTANCE SHALL BE REPLACED IMMEDIATELY BY THE CONTRACTOR AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
- B. THE CONTRACTOR SHALL MAINTAIN BY WATERING, WEEDING AND CUTTING ALL SODDED AREAS UNTIL OWNER ACCEPTANCE OF THE PROJECT.

File Path: J:\240668\02 Harvest Lake MN\500 Drawings\Civil\240668.02 C011 SPECIFICATIONS.dwg
Plot Date: 2/2/24 9:48 PM

LHB
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CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

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NO	DATE	REVISION

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04/24/2025

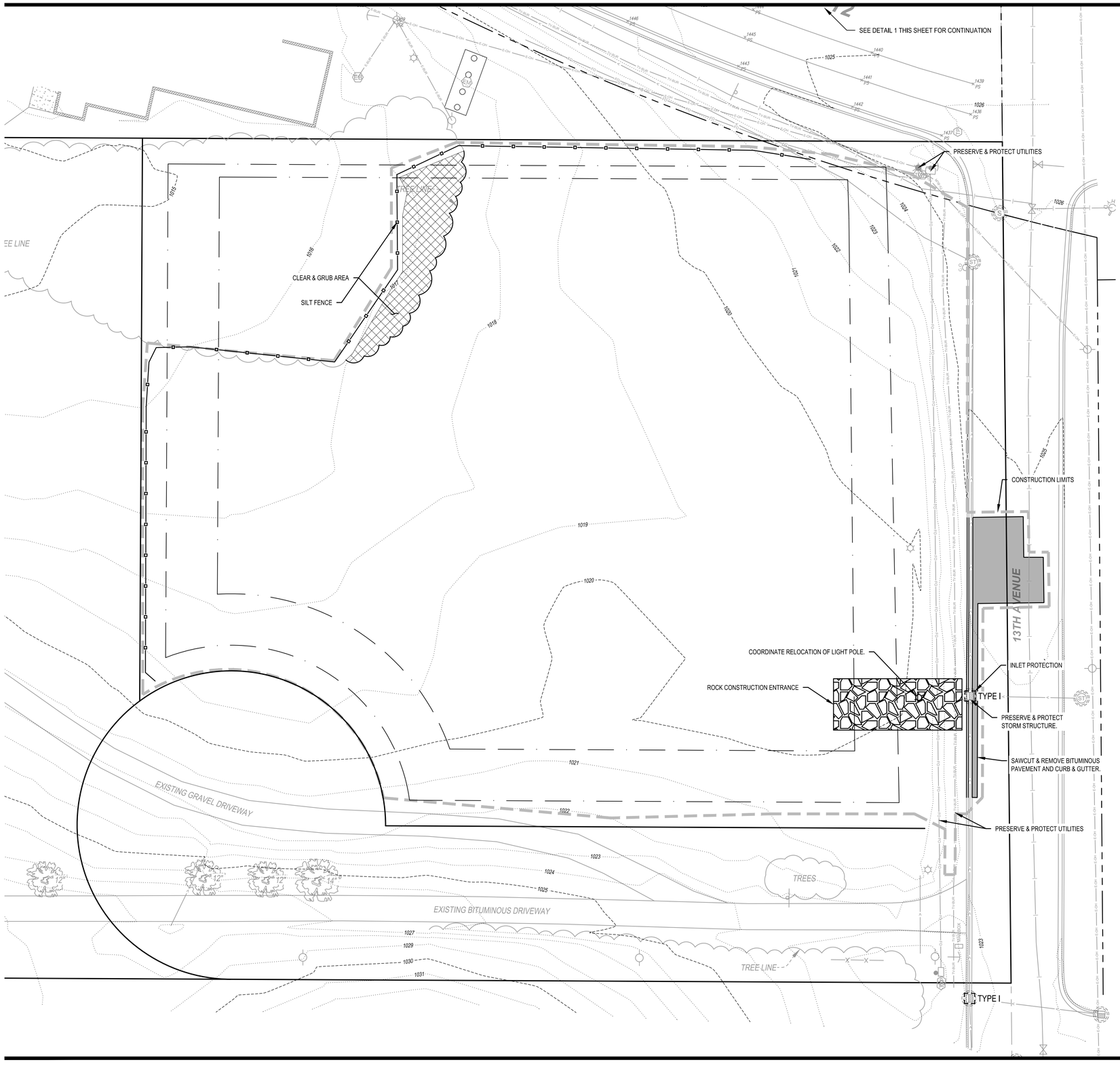
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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
SITE SPECIFICATIONS

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO:

C013



LEGEND

- CONSTRUCTION LIMITS
- ROCK CONSTRUCTION ENTRANCE
- SILT FENCE
- TYPE I — INLET PROTECTION
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE

SHEET NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL ON THIS PROJECT. THE EROSION CONTROL DEVICES SHOWN IN THESE DRAWINGS ARE THE MINIMUM REQUIREMENTS. CONSTRUCT EROSION CONTROL DEVICES AS SHOWN AND AS NECESSARY TO PREVENT RUNOFF, TRACKING, OR LOSS OF SOIL MATERIAL FROM DISTURBED AREAS ON THE PROJECT SITE.
2. SEDIMENT AND EROSION CONTROL DEVICES SHALL BE FUNCTIONAL BEFORE ANY LAND DISTURBANCE ON THE SITE.
3. REMOVE ALL TOPSIOL AND ORGANICS, BRUSH, SHRUBS, TREES AND TREE STUMPS WITHIN THE CONSTRUCTION LIMITS PRIOR TO SUBGRADE PREPARATION UNLESS OTHERWISE NOTED IN THE DRAWINGS. REFER TO GEOTECHNICAL REPORT FOR TOPSOIL THICKNESS.
4. BITUMINOUS PAVEMENT EDGES TO BE REMOVED SHALL BE SAW CUT ALONG A NEAT LINE AS INDICATED IN THE DRAWINGS. DAMAGED PAVEMENT EDGES DUE TO CONSTRUCTION ACTIVITIES SHALL BE RE-SAW CUT ALONG A NEW LINE PRIOR TO PAVEMENT INSTALLATION. REMOVED BITUMINOUS PAVEMENT SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED DISPOSAL FACILITY.

ESTIMATED QUANITIES		
EROSION CONTROL MEASURE	QTY *	MEASURE
SILT FENCE	446	LF
INLET PROTECTION	3	EACH
ROCK CONSTRUCTION ENTRANCE	1	EACH
EROSION CONTROL BLANKET	17455	SF
DITCH CHECK	7	EA
* REFER TO SHEETS C101 & C102		

WARNING

LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.
CALL BEFORE DIGGING

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1-800-252-1166
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MINNEAPOLIS, MN 55402

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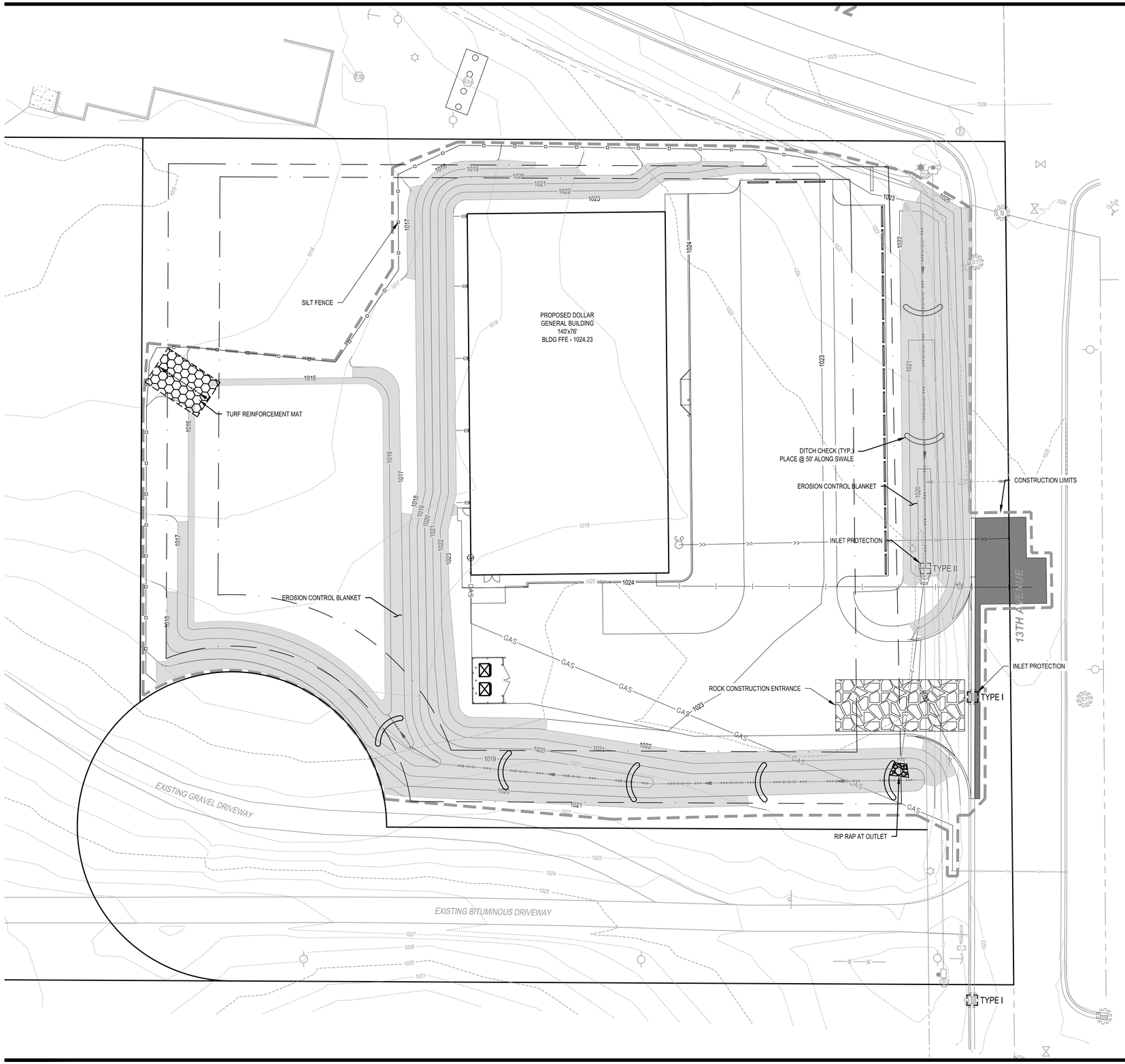
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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
REMOVALS & INITIAL EROSION CONTROL PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: **C101**

File Path: I:240668\02 Hewett Lake MN\50 Drawings\Civil\240668.02 C101 REMOVALS.dwg
Plot Date: 2025/4/23 9:49 PM



LEGEND

- CONSTRUCTION LIMITS
- SILT FENCE
- TYPE I INLET PROTECTION
- NETLESS BLANKET
- RIPRAP
- DITCH CHECK

GENERAL NOTES

1. SEDIMENT AND EROSION CONTROL MEASURES INDICATED ON SHEET C101 ARE TO BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
2. REFER TO LANDSCAPE PLAN FOR PERMANENT TURF ESTABLISHMENT REQUIREMENTS.
3. SEE SHEETS C101 FOR INITIAL EROSION CONTROL PLAN.
4. SLOPES TO BE STABILIZED WITH MNDOT CATEGORY 20 BLANKET AND BIODEGRADABLE STAPLES OR APPROVED EQUAL. NETTING AND METAL STAPLES WILL NOTE BE ALLOWED.

WARNING

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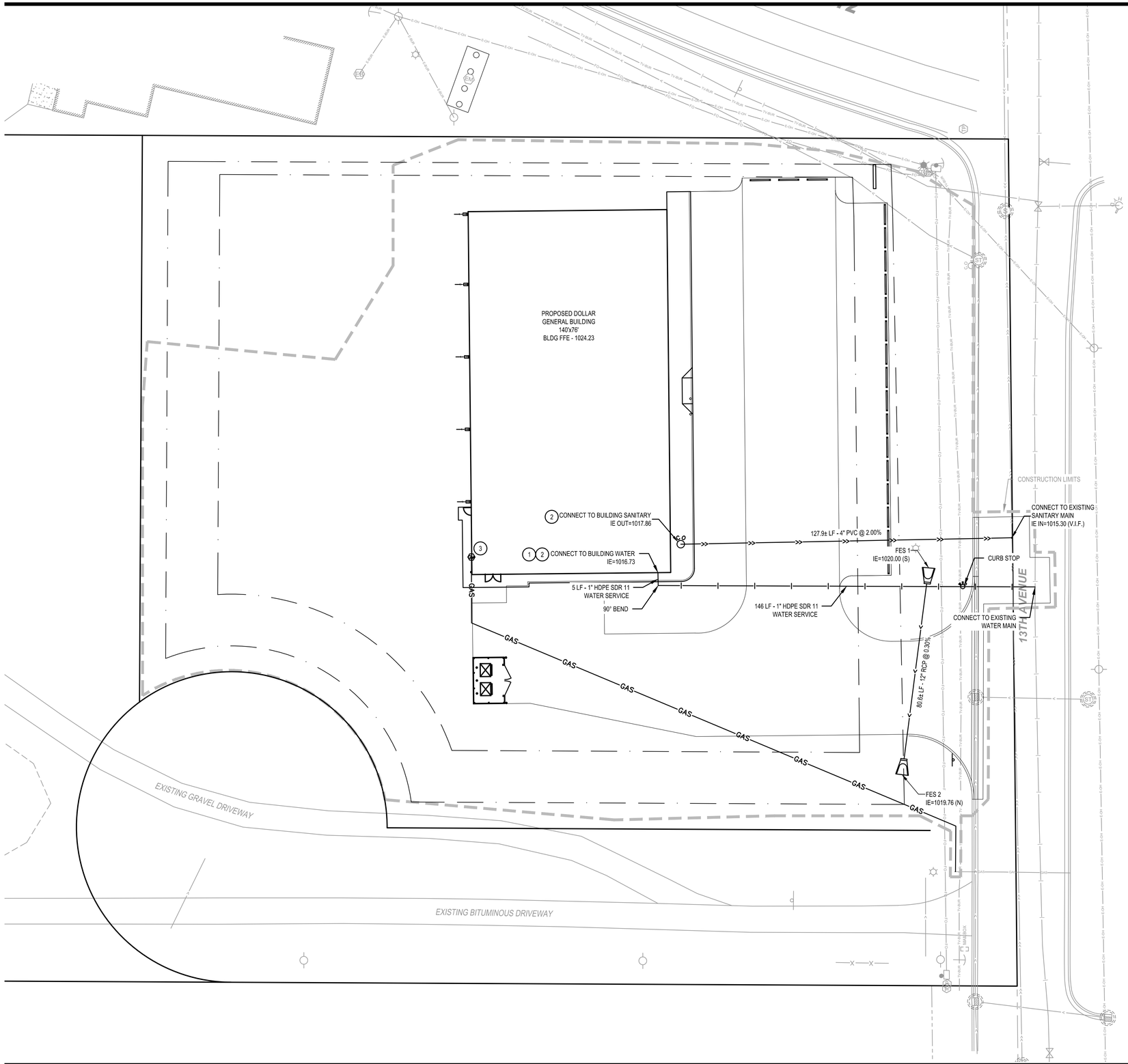
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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
PROPOSED EROSION CONTROL PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240688
DRAWING NO: **C102**

File Path: I:\240688\2 Howard Lake MN\00 Drawings\Cad\240688.00 C102 PROP EC.dwg
Plot Date: 2025/4/23 9:51 PM



LEGEND

- CONSTRUCTION LIMITS
- WATER SERVICE
- FLARED END SECTION, SEE 6/C501
- STORM SEWER
- SANITARY SEWER SERVICE
- GAS LINE
- SPLASH BLOCK, REFER TO ARCH FOR DETAIL
- CURB STOP

SHEET NOTES

1. EXISTING UTILITIES ARE BASED ON RECORD DRAWINGS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENGINEER. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. UTILIZE THE "GOPHER STATE ONE CALL SYSTEM" (1-800-252-1166) TO HAVE PUBLIC UTILITIES LOCATED WITHIN THE CONSTRUCTION LIMITS. CONTACT THE OWNER TO LOCATE PRIVATE UTILITIES LOCATED WITHIN THE CONSTRUCTION LIMITS. NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS.
2. UNLESS NOTED OTHERWISE, ALL UTILITY TRENCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAIL 3 ON SHEET C503.
3. NOT ALL FITTINGS ARE SHOWN IN THE DRAWINGS. PROVIDE ALL NECESSARY FITTINGS TO COMPLETE THE WORK.
4. THE CONTRACTOR SHALL FIELD BEND ALL WATER SERVICE PIPE. PROVIDE MINIMUM INSIDE BEND RADIUS OF 5 FEET.
5. ALL FLARED END SECTIONS SHALL HAVE TRASH GUARDS INSTALLED ON THEM.

SHEET KEY NOTES

1. THE PROPOSED WATER SERVICE SHALL BE INSTALLED WITH A MINIMUM 7.5' OF COVER.
2. CONNECT TO PROPOSED BUILDING PLUMBING 5 FEET FROM THE OUTER BUILDING WALL. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.
3. GAS METER LOCATION. GAS SERVICE TO BE DESIGNED BY CONTRACTOR. IF PROPANE TANK IS NEEDED COORDINATE LOCATION WITH LHB.

WARNING

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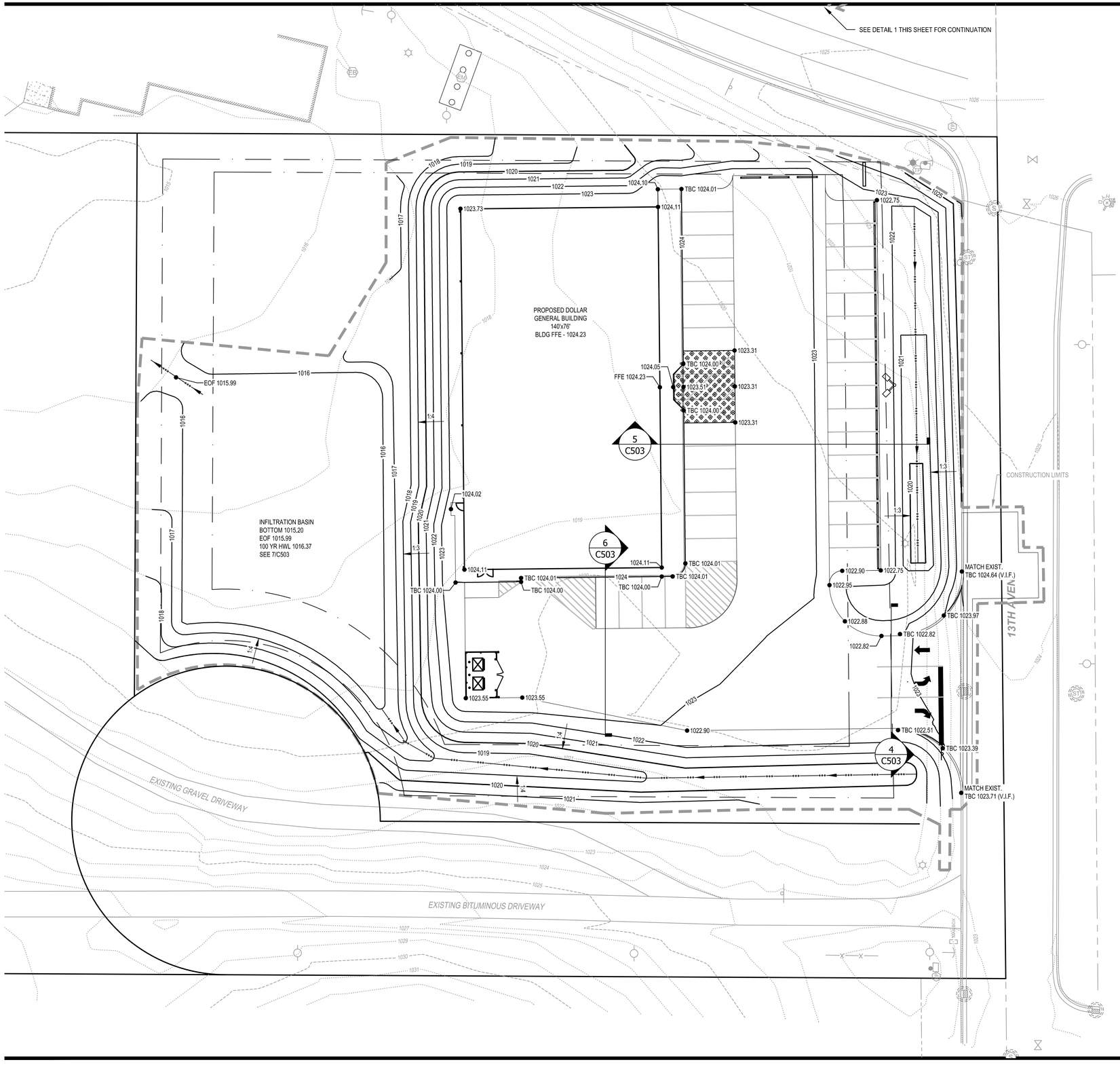
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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
UTILITY PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C201

File Path: ...\240668\02 Howard Lake MN\50\Drawings\Civil\240668.02 C201 UTILITY.dwg
Plot Date: 2025/4/23 9:51 PM



LEGEND

- CONSTRUCTION LIMITS
- MAJOR CONTOUR (5' INTERVAL)
- MINOR CONTOUR (1' INTERVAL)
- SLOPE ARROW
- 863.25 SPOT ELEVATION
- SWALE
- ADA CRITICAL AREA 2% MAX IN ANY DIRECTION

GENERAL NOTES

1. GRADES SHOWN ARE FINISH SURFACE ELEVATIONS UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL MAKE APPROPRIATE DEDUCTIONS FOR VARYING SURFACES TO DETERMINE SUBGRADE ELEVATIONS.
2. SPOT ELEVATIONS ALONG CURB LINES REPRESENT THE TOP BACK OF CURB UNLESS OTHERWISE NOTED.
3. UNLESS NOTED OTHERWISE, GRADES ADJACENT TO THE BUILDING WALL SHALL BE 6" BELOW FINISH FLOOR ELEVATION IN LANDSCAPED AREAS AND 1.5" BELOW FINISH FLOOR ELEVATION FOR PAVED AREAS.
4. CONTRACTOR SHALL STOP WORK IMMEDIATELY IN THE AFFECTED AREA AND NOTIFY THE OWNER IF CONTAMINANTS ARE FOUND IN THE EXISTING SOILS.
5. SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 2.0%. CROSS-SLOPES OF AT LEAST 1.5% IN THE GENERAL DIRECTION OF THE OVERALL SITE SLOPE WILL BE ACHIEVED IN AREAS WHERE LONGITUDINAL SLOPES ARE LESS THAN 1.5%.
6. ONLY PLACE FILL MATERIALS ON COMPETENT, INSPECTED SUBGRADE.
7. IN AREAS WHERE NEW FILL IS TO BE PLACED ON SLOPING GROUND, BENCHING THE SURFACE SHALL BE COMPLETED PRIOR TO PLACING THE FILL. BENCHING SHALL BE COMPLETED WHERE SLOPES ARE STEEPER THAN 4:1 (HORIZONTAL:VERTICAL)
8. SEE SHEETS C101-102 FOR THE SEDIMENTATION AND EROSION CONTROL PLANS.
9. PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREA. DO NOT ALLOW WATER TO POND IN EXCAVATION AREAS, AND MAINTAIN ALL EXISTING DRAINAGE PATTERNS.
10. THE CONTRACTOR SHALL ADJUST TO GRADE ALL MANHOLES STRUCTURES AND APPURTENANCES THAT FALL WITHIN THE LIMITS OF THIS CONTRACT. THE CONTRACTOR SHALL KEEP ALL SAID EXISTING UTILITIES AND THEIR APPURTENANCES FREE OF DEBRIS AND OPERABLE AT ALL TIMES DURING CONSTRUCTION.
11. ALL GRADE WITHIN THE LANDSCAPED AREAS SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL AND HAVE A MINIMUM GRADE OF 2%, UNLESS OTHERWISE NOTED. AROUND THE BUILDING SHALL BE GRADED AT 5% FOR 10'. GRADED SWALES MUST HAVE A MINIMUM BOTTOM SLOPE OF 2.0%.
12. WORK WITHIN THE PUBLIC ROW MUST BE COORDINATED WITH THE CITY. CONTRACTOR TO PROVIDE 2 HOUR NOTICE.

WARNING

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MINNEAPOLIS, MN 55402

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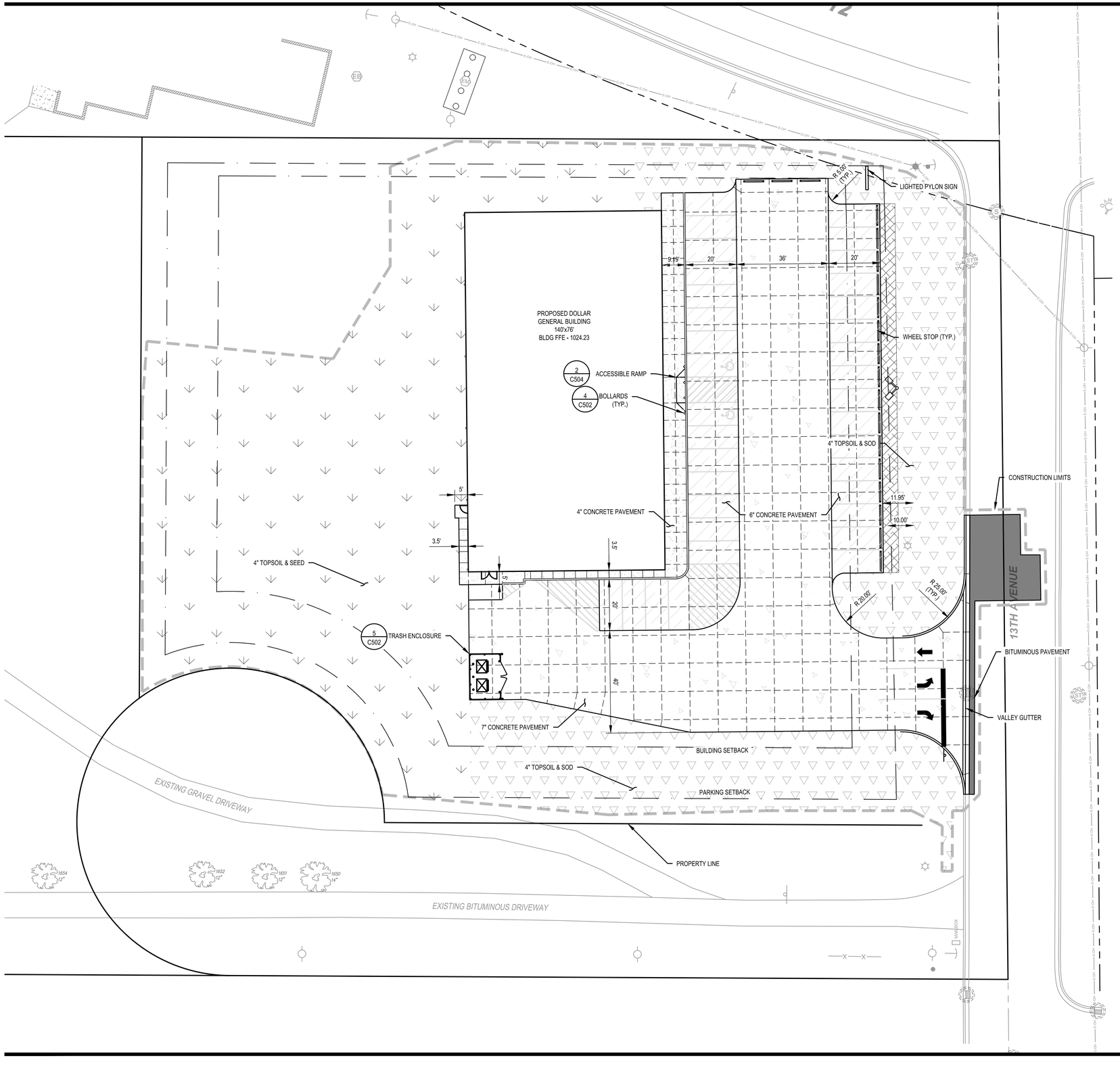
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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
GRADING PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C301

File Path: ...\240668\2 Howard Lake MN\SD\Drawings\Civil\240668.02 C301 GRADING.dwg
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LEGEND

- CONSTRUCTION LIMITS
- 7" CONCRETE PAVEMENT. SEE INSET A, 1/C502
- 6" CONCRETE PAVEMENT. SEE INSET B, 1/C502
- 4" CONCRETE WALK. SEE INSET C, 1/C502
- CONCRETE JOINTS. SEE2/C502
- BITUMINOUS PAVEMENT. SEE INSET D, 1/C502
- 4" TOPSOIL & SOD
- 4" TOPSOIL & SEED
- HARDWOOD MULCH

SHEET NOTES

1. PREVENT FROM DAMAGE ALL SURFACES OUTSIDE THE CONSTRUCTION LIMITS. RESTORE ALL DISTURBED AREAS DUE TO CONSTRUCTION ACTIVITIES TO PRE-CONSTRUCTION CONDITION UNLESS OTHERWISE NOTED IN THE DRAWINGS.
2. PROVIDE BITUMINOUS TACK COAT BETWEEN PROPOSES BITUMINOUS PAVEMENTS AND ALL ADJACENT CONCRETE OR BITUMINOUS SURFACES.
3. PROVIDE BITUMINOUS TACK COAT BETWEEN THE WEARING AND NON-WEARING COURSES FOR ALL PROPOSED BITUMINOUS PAVEMENTS.
4. SAW CUT ALL EXISTING PAVEMENTS ADJACENT TO PROPOSED PAVEMENTS ALONG A NEAT LINE AND FULL SAW DEPTH. SAW CUT ALL EXISTING CONCRETE PAVEMENTS OR CURB AT THE NEAREST EXISTING JOINT.
5. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TO THE BACK OF CURB.
6. PROVIDE 1/2" EXPANSION JOINT, IN ACCORDANCE WITH DETAIL 2 ON SHEET C502, AT ALL INTERFACES BETWEEN STRUCTURES AND ALL CONCRETE PAVEMENT OR WALKS UNLESS NOTED OTHERWISE.
7. ONLY PLACE FILL MATERIALS ON COMPETENT, INSPECTED SUBGRADE.
8. CURB IN FUTURE CUL-DE-SAC SHALL BE A MINIMUM 17' FROM EXISTING SEPTIC FIELD.

WARNING

LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.
CALL BEFORE DIGGING

MINNESOTA
ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY
MN STATUTE 216D

0 10' 20' 40'

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

PRELIMINARY
NOT FOR CONSTRUCTION
04/24/2025

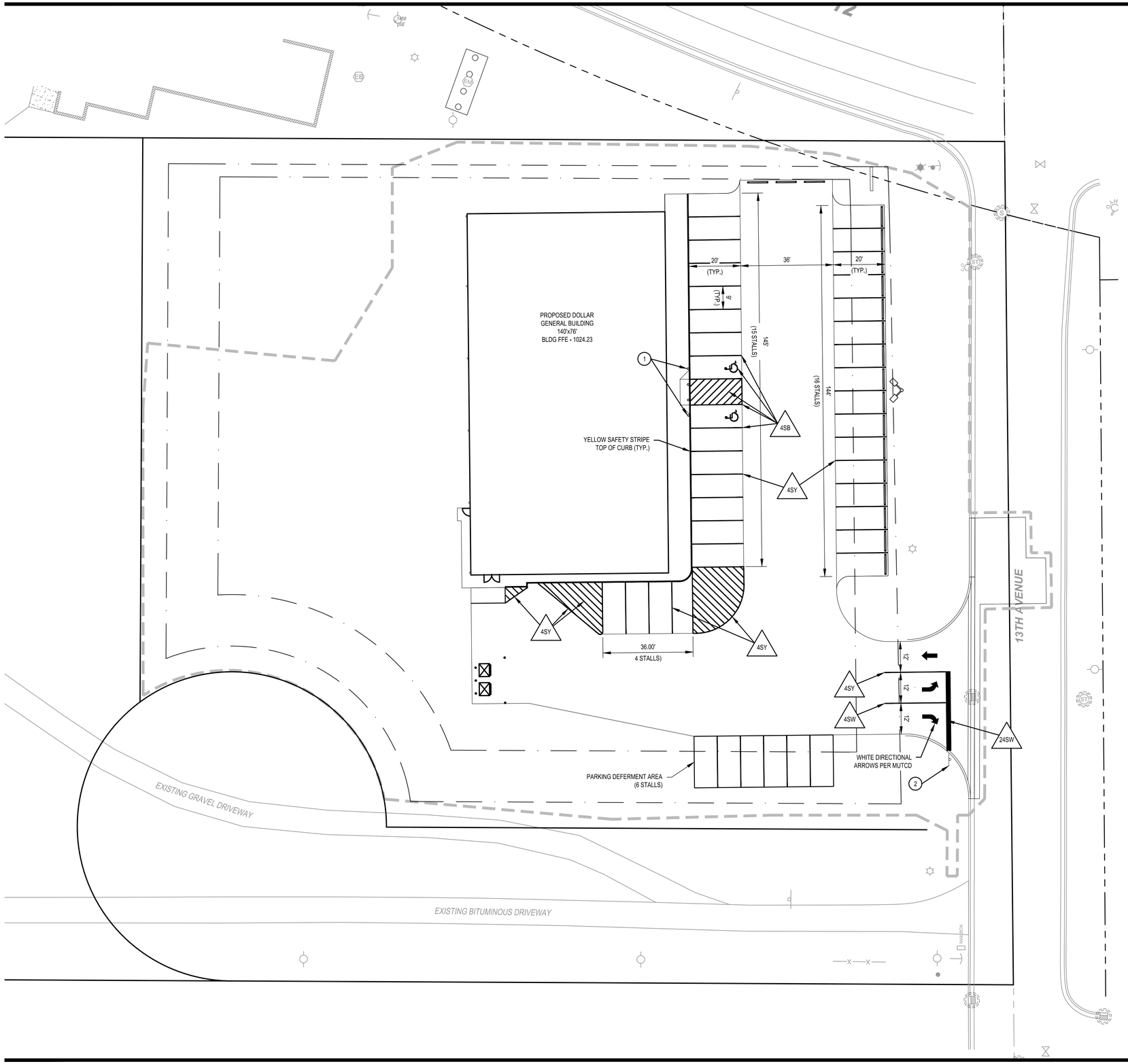
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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
SURFACING & LAYOUT PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C401

File Path: J:\240668\02 Howard Lake MN\500 Drawings\Civil\240668.02 C401 SURFACING.dwg
Plot Date: 2025\4\23 9:52 PM



LEGEND

CONSTRUCTION LIMITS

STRIPING KEY

CIRCLE-EPOXY
SQUARE-PREF TAPE
TRIANGLE-PAINT
OCTAGON-PREF THERMO

1ST DIGIT	2ND DIGIT	3RD DIGIT
WIDTH	PATTERN	COLOR
4", 8", ETC.	S - SOLID	W - WHITE
	B - BROKEN	Y - YELLOW
	T - DOTTED	B - BLUE
	D - DOUBLE	
	K - DOUBLE BROKEN	
	H - DOUBLE DOTTED	

G=GROUND IN	W=WET REFLECTIVE
C=CONTRAST	E=ENHANCED SKID RESISTANCE

EXAMPLE: 4SW GCW = 4" SOLID WHITE LATEX GROUND IN, CONTRAST, WET REFLECTIVE

SIGN KEY NOTES			
	SIGN TYPE	SIZE	NOTES
1	ACCESSIBLE PARKING SIGN	12"x18"	COMPLY WITH MN ACESSIBILITY CODE SECTION 502, 1-SIDED, WHITE LETTERS ON BLUE BACKGROUND
2	STOP SIGN	36"x36"	WHITE LETTERS ON RED BACKGROUND

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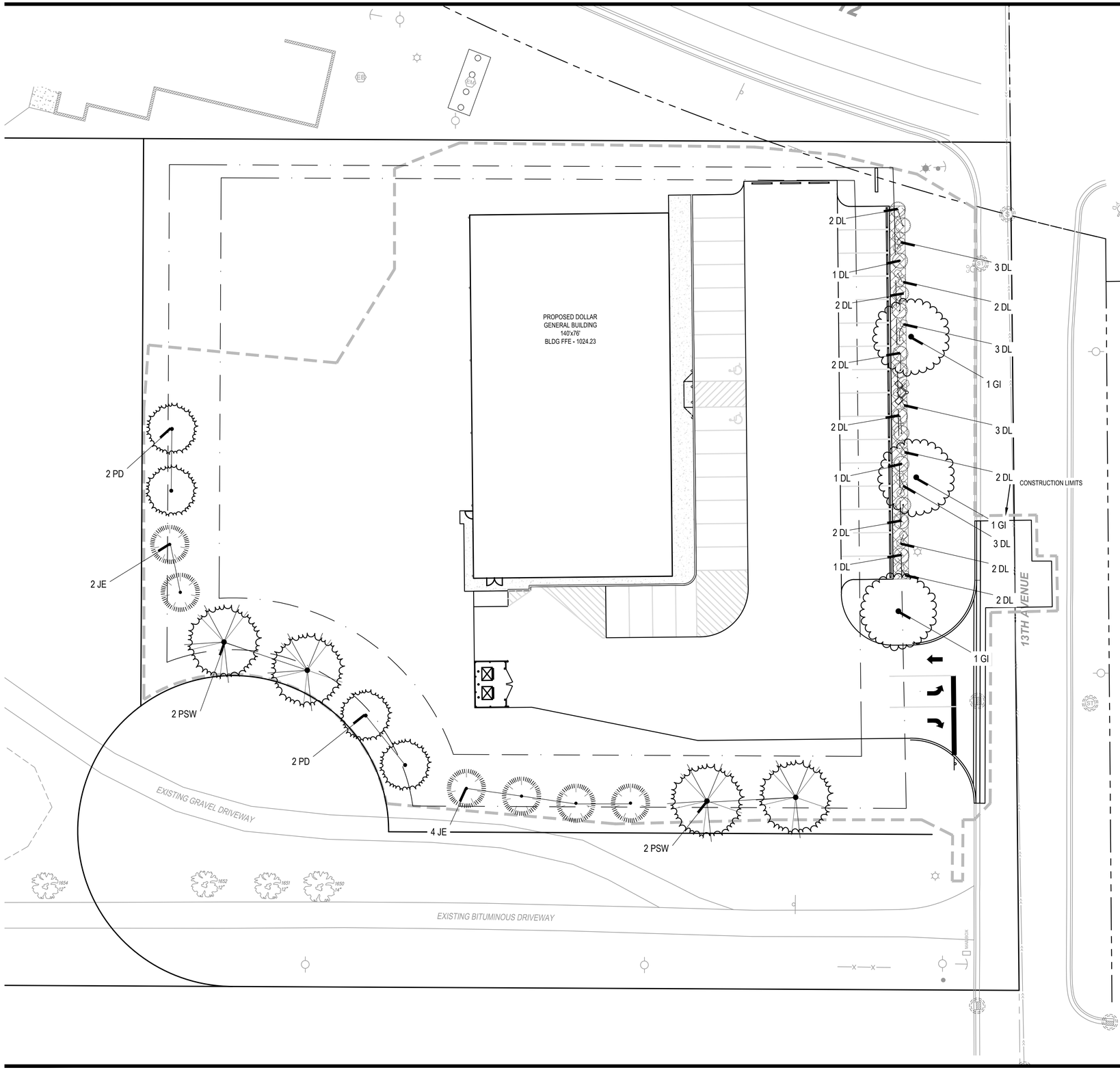
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PROJECT NAME:
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STORE 31529
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HOWARD LAKE, MN 55349

DRAWING TITLE:
STRIPING & SIGNAGE PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C402

File Path: J:\240668\02 Howard Lake MN\500 Drawings\Civil\240668.02 C402 STRIPING.dwg
Plot Date: 2025/4/23 16:53 PM



PLANT SCHEDULE

DECIDUOUS SHRUB

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	SPACING
	DL	20	Diervilla lonicera Dwarf Bush Honeysuckle	#5 CONT.	36" o.c.
	RG	13	Rhus aromatica 'Gro-Low' Gro-Low Fragrant Sumac	#5 CONT.	72" o.c.

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT
CONIFEROUS CANOPY TREE			
	JE	Juniperus virginiana / Eastern Redcedar	6` HT.
	PD	Picea glauca `Densata` / Black Hills White Spruce	6` HT.
	PSW	Pinus strobus / White Pine	6` HT.
DECIDUOUS CANOPY TREE			
	GI	Gleditsia triacanthos inermis `Impcole` / Imperial® Honey Locust	2.5" B&B

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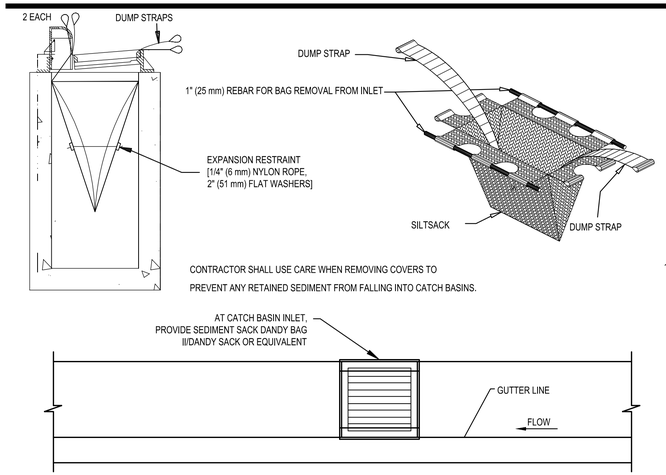
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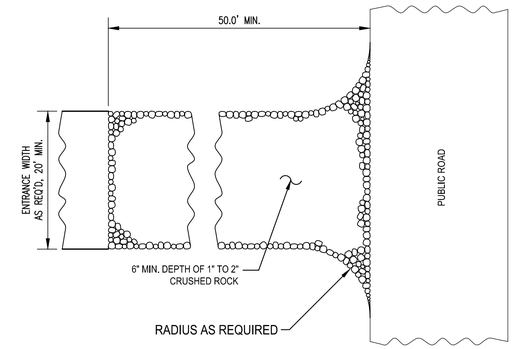
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SURFACING & LAYOUT PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240688
DRAWING NO: C403

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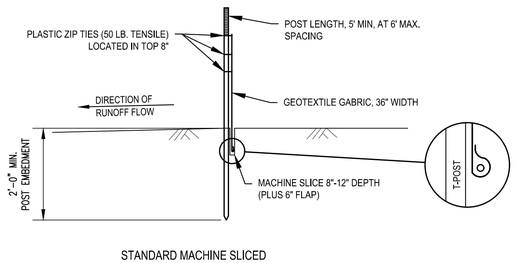
1 INLET PROTECTION – TYPE I & II
NOT TO SCALE



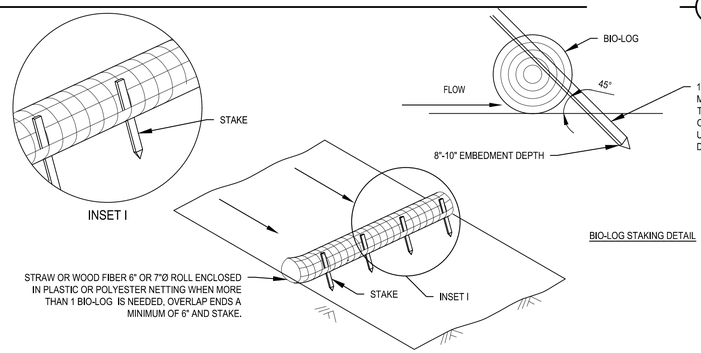
CONSTRUCTION ENTRANCE SPECIFICATIONS

- STONE SIZE: USE 1"-2" CRUSHED ROCK OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THICKNESS: NOT LESS THAN 6".
- FILTER CLOTH: SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
- MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WASHING: WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABALIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERODIC INSPECTION AND NEEDED MAINTANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.

2 ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE



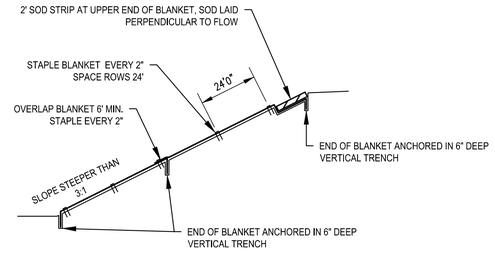
STANDARD MACHINE SLICED



1"x2"x18" WOODEN STAKES AT 1.0' SPACING MAXIMUM. STAKES SHALL BE DRIVED THROUGH THE BACK HALF OF THE BIO-LOG AT AN ANGLE OF 45° WITH THE TOP OF THE STAKE POINTING UPSTREAM. PROVIDE 8"-10" OF EMBEDMENT DEPTH.

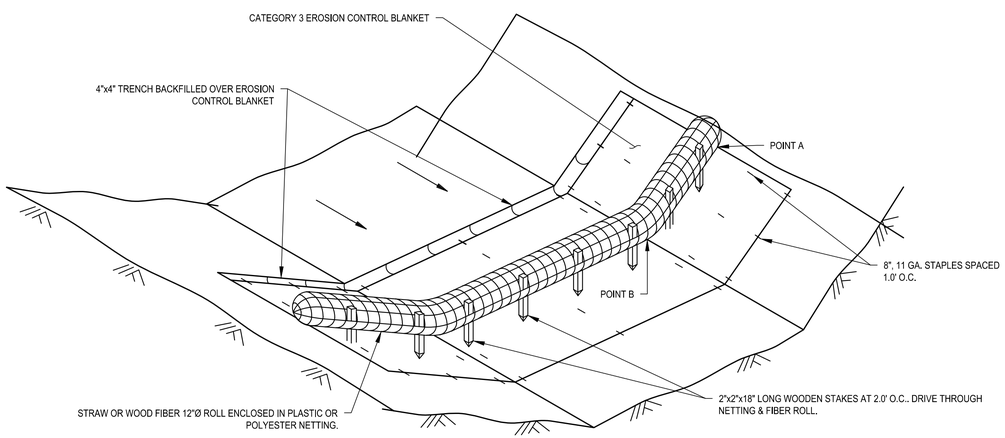
BIO-LOG STAKING DETAIL

3 SILT FENCE MACHINE SLICED OR BIO–LOG
NOT TO SCALE



NOTE: EROSION CONTROL BLANKER ON SLOPES STEEPER THAN 3:1 OR 3:1 SLOPES GREATER THAN 5' VERTICALLY FROM EDGE OF SHOULDER TO TOE OF SLOPE.

4 EROSION CONTROL BLANKET
NOT TO SCALE



5 DITCH CHECK
NOT TO SCALE

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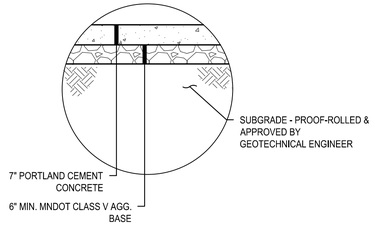
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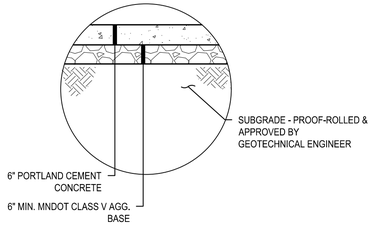
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PROJ. NO: 240668
DRAWING NO: C501

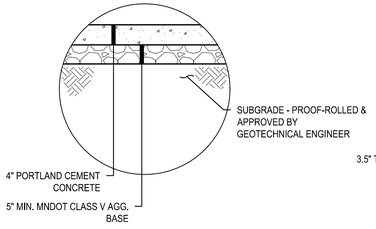
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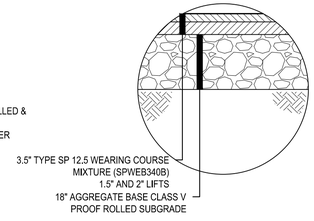
"INSET A"
HEAVY DUTY CONCRETE PAVEMENT



"INSET B"
LIGHT DUTY CONCRETE PAVEMENT

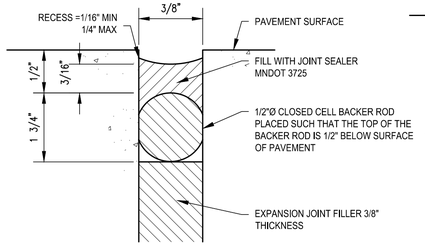


"INSET C"
CONCRETE WALK

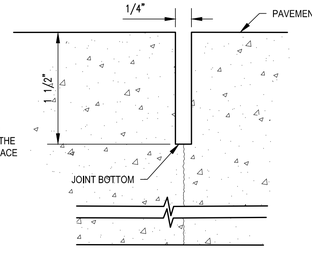


"INSET D"
BITUMINOUS PAVEMENT

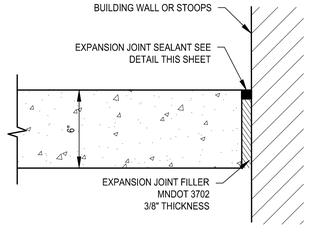
1 INSETS
NOT TO SCALE



3/8" EXPANSION JOINT SEALANT DETAIL
(FORMED & SEALED)



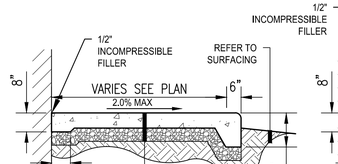
6" CONCRETE PAVEMENT CONTROL JOINT DETAIL
(SAWED)



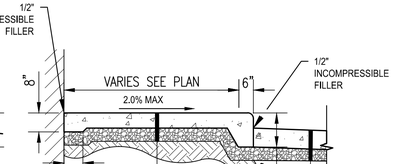
EXPANSION JOINT ADJACENT TO STRUCTURES

NOTE:
1. PRIOR TO SEALING, THE JOINT SHALL BE CLEANED AND DRIED BY AIR BLASTING.

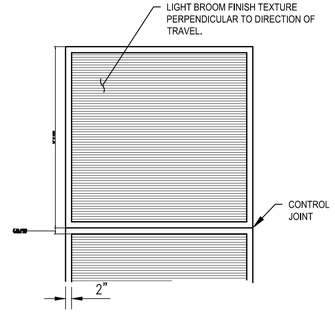
2 JOINT DETAILS
NOT TO SCALE



ADJACENT TO LANDSCAPING

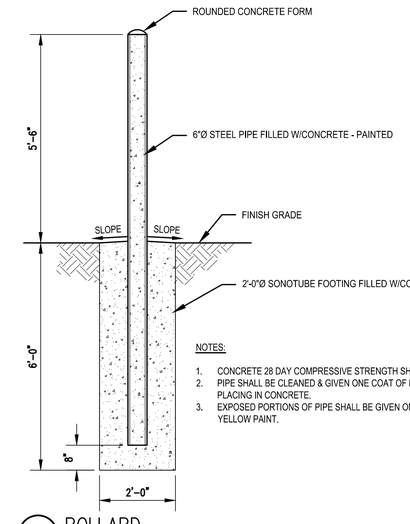


ADJACENT TO BUILDING



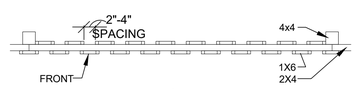
PLAN VIEW

3 CONCRETE WALK
NOT TO SCALE

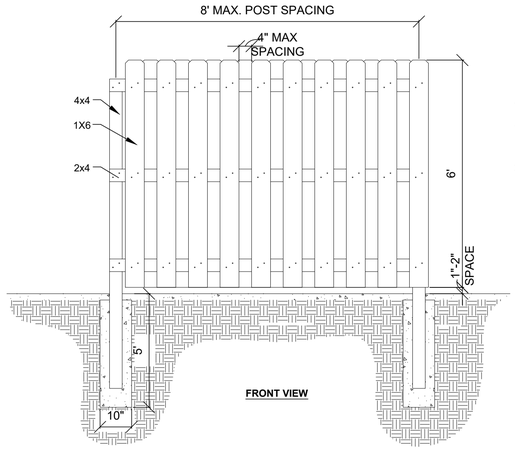


NOTES:
1. CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE 4,500 PSI.
2. PIPE SHALL BE CLEANED & GIVEN ONE COAT OF RED OXIDE PRIMER BEFORE PLACING IN CONCRETE.
3. EXPOSED PORTIONS OF PIPE SHALL BE GIVEN ONE COAT OF SAFETY YELLOW PAINT.

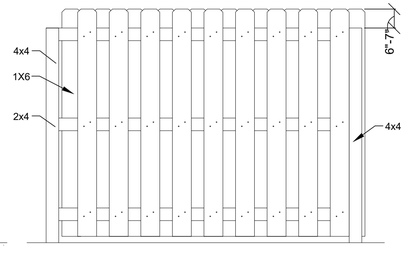
4 BOLLARD
NOT TO SCALE



TOP VIEW

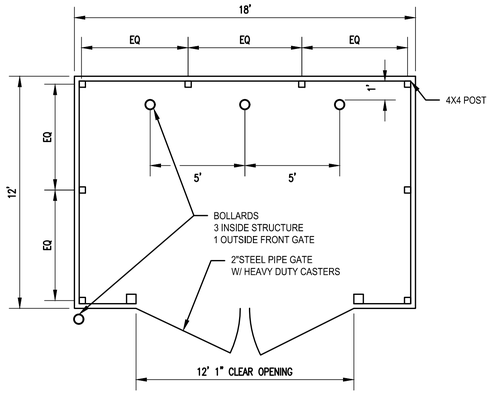


FRONT VIEW

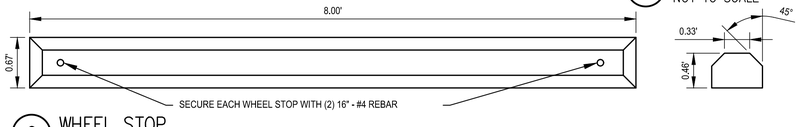


REAR VIEW

NOTE:
1. WOOD TO BE TREATED PINE. USE GALVANIZED NAILS FOR FASTENING.
2. NUMBER OF BOARDS WILL VARY DEPENDING ON SPACE BETWEEN BOARDS AND ACTUAL WIDTH OF BOARDS.



5 TRASH ENCLOSURE
NOT TO SCALE



6 WHEEL STOP
NOT TO SCALE

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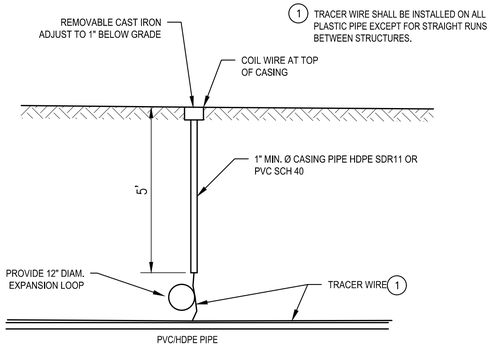
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DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

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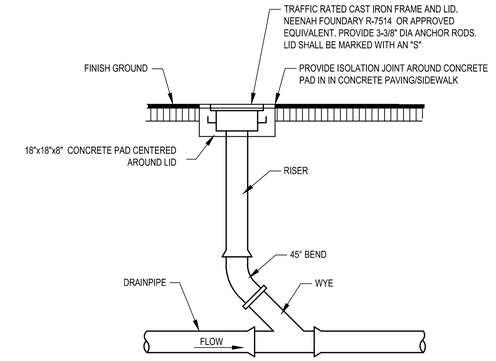
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PROJ. NO: 240668
DRAWING NO: C502

KEY NOTES:

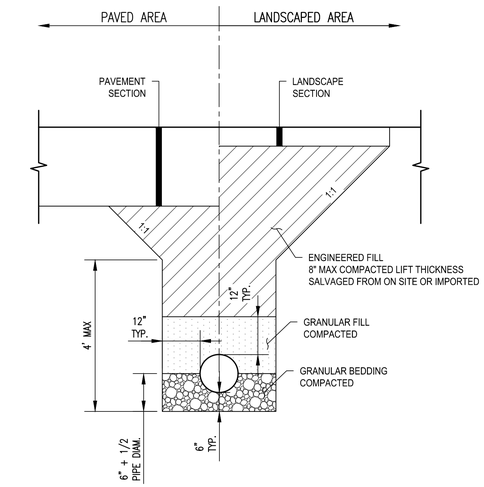
1. TRACER WIRE SHALL BE INSTALLED ON ALL PLASTIC PIPE EXCEPT FOR STRAIGHT RUNS BETWEEN STRUCTURES.



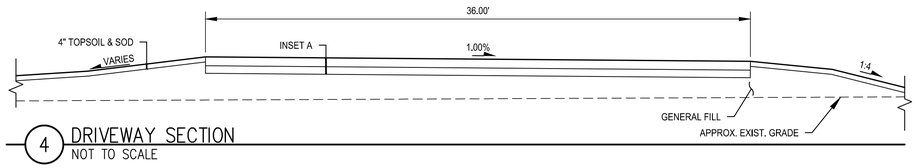
1 TRACER WIRE
NOT TO SCALE



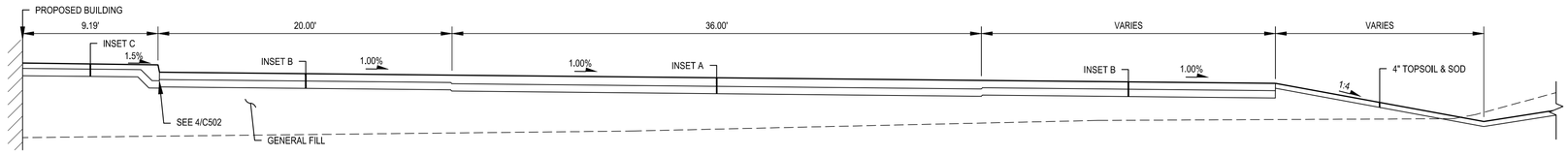
2 CLEANOUT
NOT TO SCALE



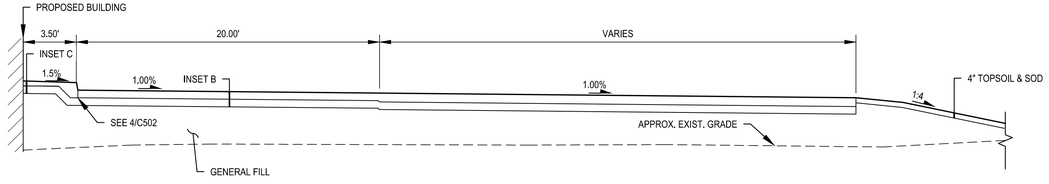
3 TYPICAL UTILITY TRENCH SECTION
NOT TO SCALE



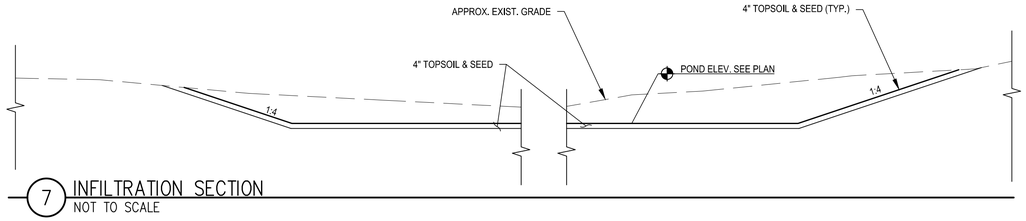
4 DRIVEWAY SECTION
NOT TO SCALE



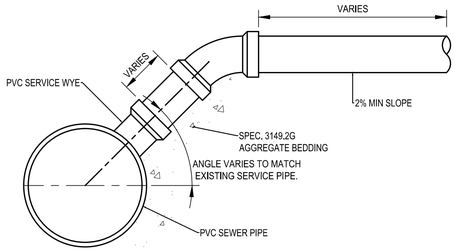
5 PARKING LOT SECTION
NOT TO SCALE



6 PARKING LOT SECTION
NOT TO SCALE

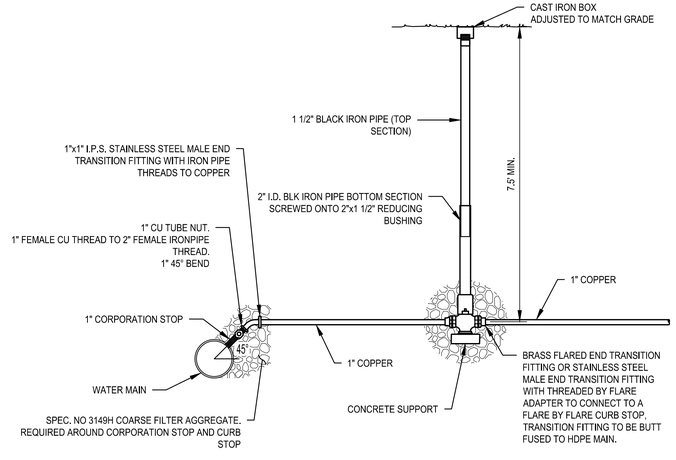


7 INFILTRATION SECTION
NOT TO SCALE



NOTE:
1. WYE INCLUDES FURNISHING AND INSTALLING WYE IN SEWER MAIN.
2. RECONNECT SANITARY SERVICE INCLUDES UP TO 4.0' OF PVC HOUSE SERVICE PIPE AND ALL FITTINGS.
3. 4"/6" PVC SEWER SERVICE PIPE IS INTENDED FOR THE RECONSTRUCTION OF SEWER SERVICES (WHEN FOUND TO BE IN NEED BY THE ENGINEER). COMPLETE IN PLACE FROM 4.0' BEYOND THE ℄ OF THE SEWER TO A POINT DESIGINATED BY THE ENGINEER.

9 SANITARY WYE CONNECTION
NOT TO SCALE



8 WATER MAIN CONNECTION
NOT TO SCALE

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Plot Date: 2/2024/23 9:54 PM

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701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

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1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

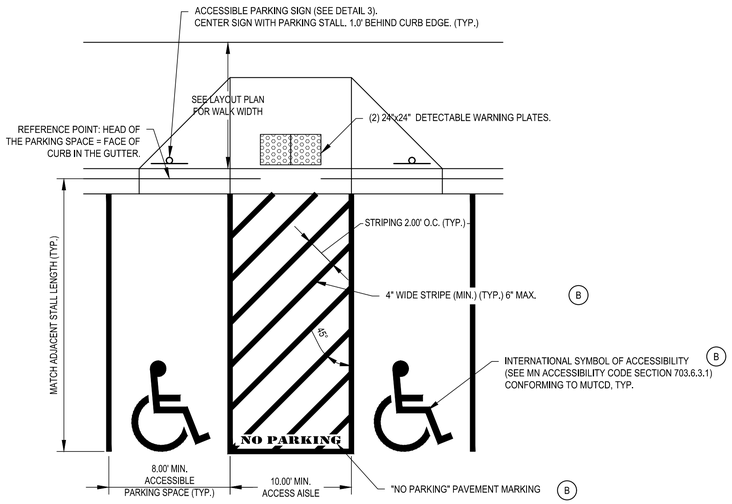
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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
CIVIL DETAILS

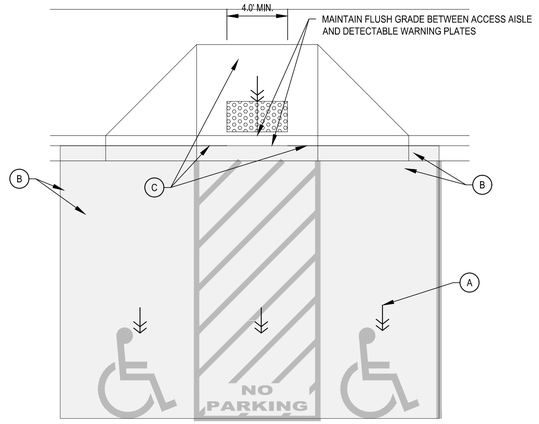
DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C503



A DO NOT PROVIDE A "NO PARKING" SIGN IF NOT INDICATED ON THE LAYOUT PLAN (E.G., TO PREVENT AN OBSTRUCTION IN AN ACCESSIBLE ROUTE).

B SEE LAYOUT PLANS FOR PAVEMENT MARKING COLOR

1 ACCESSIBLE PARKING STALL LAYOUT DETAIL, TYPICAL
NTS



A HATCH AREA: IN HATCHED AREA PROVIDE 2.00% MAX. SLOPE IN ANY DIRECTION

B MATCH SLOPE OF GUTTER TO THE SLOPE OF ADJACENT PAVEMENT.

C SEE C301 FOR GRADING INFORMATION. SEE MNDOT STANDARD PLAN 5-297-250 (DETAIL 1, C522) AND MNDOT STANDARD PLATE 7038A (DETAIL 3, C524) FOR CURB RAMP TYPE AND DETAILS.

2 ACCESSIBLE PARKING STALL GRADING DETAIL, TYPICAL
NTS

GENERAL NOTES

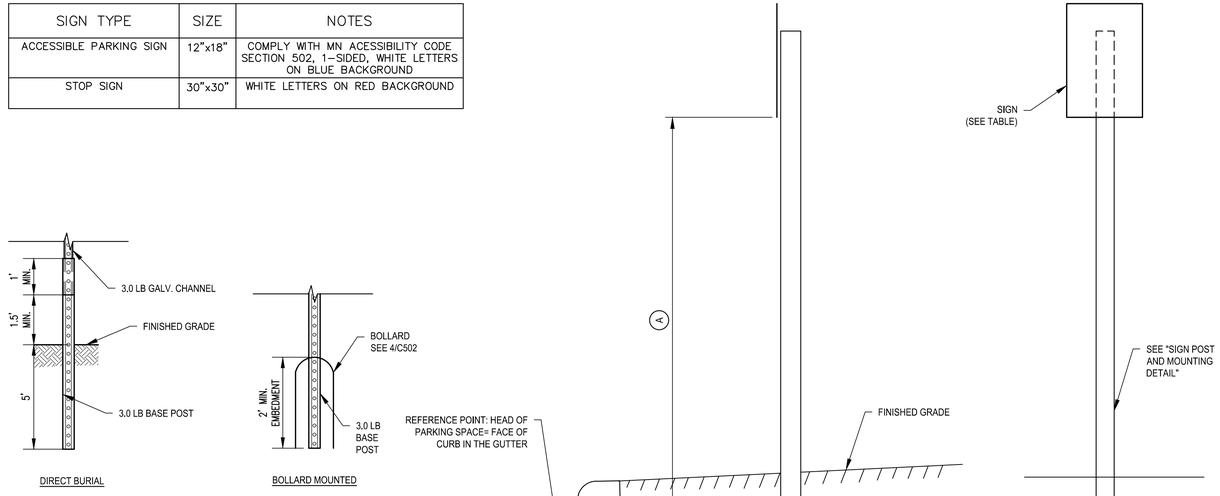
DEFINITIONS:

1. MAXIMUM AND MINIMUM: ABSOLUTE VALUES THAT SHALL NOT BE EXCEEDED AND DO NOT INCLUDE CONSTRUCTION TOLERANCES; ABBREVIATED "MAX" AND "MIN".

QUALITY CONTROL:

1. VERIFY DIMENSIONS, SLOPES AND GRADES **PRIOR** TO PERFORMING THE WORK, AND MAKE ADJUSTMENTS AS NECESSARY TO ENSURE THE FINISHED ACCESSIBLE PARKING FEATURES COMPLY WITH THE PLANS.
2. NOTIFY THE ENGINEER OF DISCREPANCIES IN DIMENSIONS, SLOPES AND GRADES **PRIOR** TO PERFORMING THE WORK.

SIGN TYPE	SIZE	NOTES
ACCESSIBLE PARKING SIGN	12"x18"	COMPLY WITH MN ACESSIBILITY CODE SECTION 502, 1-SIDED, WHITE LETTERS ON BLUE BACKGROUND
STOP SIGN	30"x30"	WHITE LETTERS ON RED BACKGROUND



NOTES:
1. ALL SIGNS POST SHALL CONFORM TO MNDOT SPECIFICATION SECTION 3401.

SIGN POST AND MOUNTING DETAIL-CHANNEL
NOT TO SCALE

NOTES:

A PROVIDE AN ELEVATION DIFFERENCE OF 63"±1" BETWEEN THE BOTTOM OF THE SIGN AND THE FLOOR OF THE PARKING SPACE AT THE THE HEAD OF THE STALL.

3 SIGN DETAILS
NOT TO SCALE

File Path: \240668\02 Howard Lake MN\50 Drawings\Civil\240668.02 C501 DETAILS.dwg
Plot Date: 2025/4/23 9:54 PM

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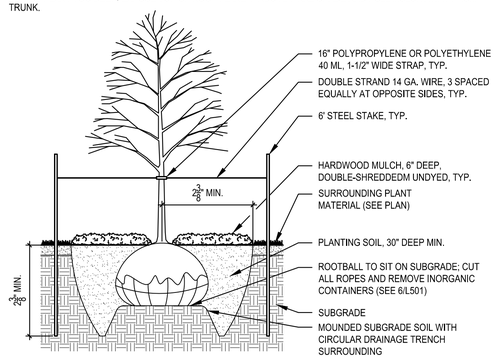
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DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
CIVIL DETAILS

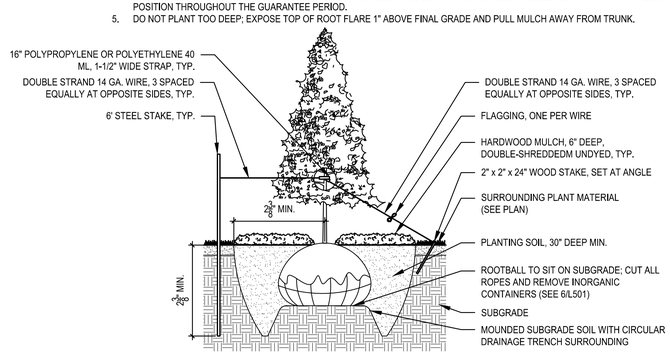
DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C504

NOTES:
1. IT IS THE CONTRACTOR'S OPTION TO STAKE TREES; HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.
2. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
3. DO NOT PLANT TOO DEEP; EXPOSE TOP OF ROOT FLARE 1" ABOVE FINAL GRADE AND PULL MULCH AWAY FROM TRUNK.



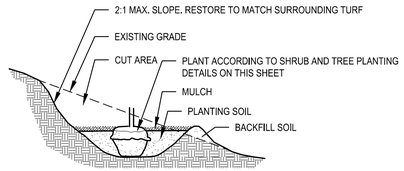
1 DECIDUOUS TREE
NOT TO SCALE

NOTES:
1. CONIFER TO HAVE SHREDDED HARDWOOD MULCH UNLESS NOTED OTHERWISE. NO MULCH SHALL BE IN CONTACT WITH TRUNK.
2. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
3. TWO ALTERNATE METHODS OF TREE STAKING ARE ILLUSTRATED.
4. IT IS THE CONTRACTOR'S OPTION TO STAKE TREES; HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.
5. DO NOT PLANT TOO DEEP; EXPOSE TOP OF ROOT FLARE 1" ABOVE FINAL GRADE AND PULL MULCH AWAY FROM TRUNK.



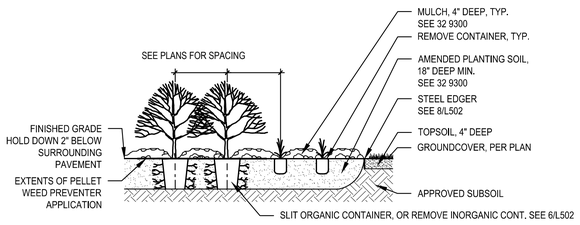
2 CONIFEROUS TREE
NOT TO SCALE

NOTE:
1. EXTEND EXCAVATION AND BACKFILL SOIL TO A POINT DOWNSLOPE EQUAL TO OR LOWER IN ELEVATION THAN THE BOTTOM OF THE HOLE DIRECTLY BENEATH THE PLANT TO ENSURE ADEQUATE DRAINAGE IN HEAVY SOILS. GRANULAR SOIL MUST BE ADDED AS BACKFILL IN AREAS OF POOR DRAINAGE.



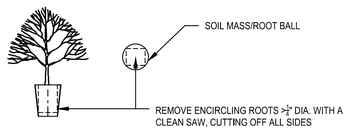
3 TREE PLANTING ON A SLOPE
NOT TO SCALE

NOTES:
1. HAND LOOSEN ROOTS OF CONTAINERIZED MATERIAL (TYPICAL).
2. HAND REMOVE EXCESS SOIL AT TOP OF ROOT BALL TO EXPOSE TOP OF ROOT FLARE. TYPICALLY REQUIRES THE REMOVAL OF 1-6" OF SOIL FROM CONTAINER OR B&B.
3. ENSURE THAT FIRST MAIN LATERAL ROOT IS LESS THAN 1" BELOW THE FINAL PLANTING SURFACE.
4. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
5. SHRUBS TO SIT ON SUBGRADE.
6. APPLY PELLET WEED PREVENTER PRIOR TO MULCHING AND ONLY UNDER SHRUBS IN LANDSCAPE BEDS SURROUNDING THE BUILDING AND MONUMENT SIGN. SEE EXTENTS OF APPLICATION IN DETAIL.

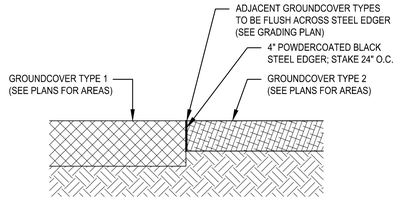


4 SHRUB & PERENNIAL PLANTING – LANDSCAPE BEDS
NOT TO SCALE

NOTES:
1. FOR TREES, SHRUBS, AND PERENNIALS WITH INORGANIC CONTAINERS, FOLLOW THE "BOXING" PROCEDURE TO REMOVE ENCIRCLING ROOTS.
2. "BOXING" IS ONLY NECESSARY ON THE PLANTS THAT HAVE ENCRICLING ROOTS WITH DIAMETERS GREATER THAN 1/2"
3. HAND LOOSENING OF ROOTS IS STILL NECESSARY AFTER "BOXING" THE ROOT BALL (TYPICAL).



5 BOXING PROCEDURE FOR CONTAINERIZED PLANTS
NOT TO SCALE



6 STEEL EDGER
NOT TO SCALE

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Plot Date: 2025/4/23 3:54 PM

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LANDSCAPE DETAILS

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240688
DRAWING NO: C505

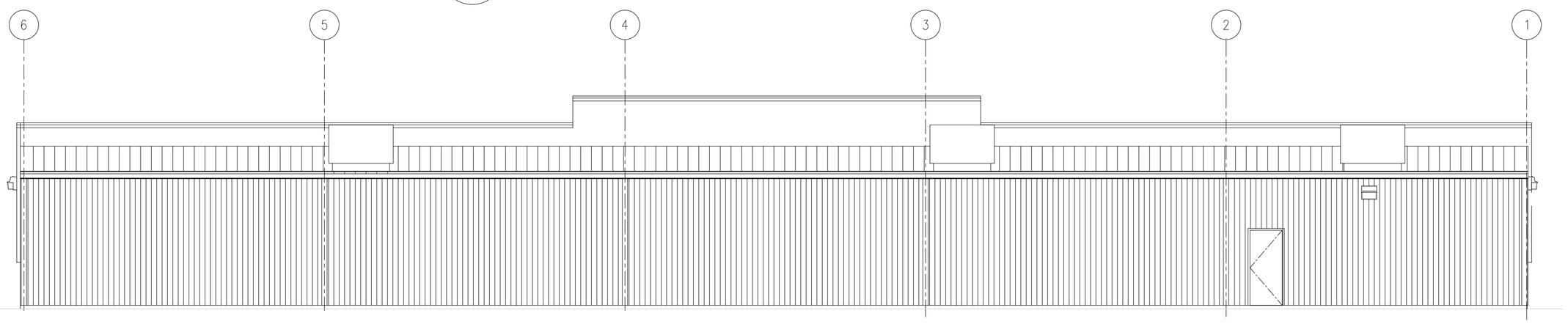
FINISHES

EXTERIOR FINISHES ARE TO MATCH OR BE EQUAL TO VP METAL BUILDING SYSTEM'S FINISH SELECTION UNLESSS AUTHORITY HAVING JURISDICTION DOES NOT ALLOW.	PEMB VENDOR	VP BUILDINGS ATTN: RANDY SPEARS 205-907-8176					STAR BUILDING SYSTEMS ATTN: JEFF HORN 866-664-8899					NUCOR BUILDING SYSTEMS ATTN: BOB BARRY 315-622-4440					BIG BEE STEEL BUILDINGS ATTN: KEVIN BUSLER 800-633-3378					CHIEF BUILDINGS ATTN: ERIN SULLIVAN 800-845-1767					PREFERRED COLORS IF ALTERNATE EXTERIOR MATERIALS ARE USED INSTEAD OF METAL PANELS			
	COOL EGYPTIAN WHITE	COOL DARK BRONZE	BRONZE	COOL COTTON WHITE	GALVALUME	LIGHT STONE	MEDIUM BRONZE KYNAR 500	BRONZE	POLAR WHITE	GALVALUME	LIGHT STONE	MEDIUM BRONZE KYNAR 500	BRONZE	POLAR WHITE	GALVALUME	SANDSTONE	BURNISHED SLATE	BRONZE	POLAR WHITE	GALVALUME	PARCHMENT	ANTIQUE BRONZE	BRONZE	POLAR WHITE	GALVALUME	SHERWIN WILLIAMS SW7532 "BALANCED BEIGE"	SHERWIN WILLIAMS SW7504 "HAM FIST" BROWN	BRONZE	WHITE BY PEMB MANUFACTURER	GALVALUME
GUTTERS	•					•					•					•					•					•					
DOWN SPOUTS	•					•					•					•					•					•					
SIDE AND REAR METAL WALL PANELS & TRIM, RECEIVING & EMERGENCY EXIT DOORS (EXTERIOR OF DOORS TO BE PAINTED, REFER TO DOOR SCHEDULE)	•					•					•					•					•					•					
ARCHITECTURAL BLOCK AT BUILDING FACADE TO BE PRE-FINISHED OR PAINTED (2 COATS – LOXON XP MASONRY COATING A24W400 SERIES) TO MATCH THE METAL WALL PANEL.	•					•					•					•					•					•					
FLAT METAL SOFFIT AT STOREFRONT VESTIBULE.				•					•					•					•					•					•		
BUILDING FASCIA WALL, PARAPET OVER ENTRANCE, AND CANOPY		•					•					•					•					•					•				
STOREFRONT SYSTEM			•					•					•					•					•						•			
STANDING SEAM METAL ROOF PANELS					•				•						•					•					•						•
INTERIOR SALES AND RECEIVING FLOOR LINER PANELS				•					•					•					•					•					•		

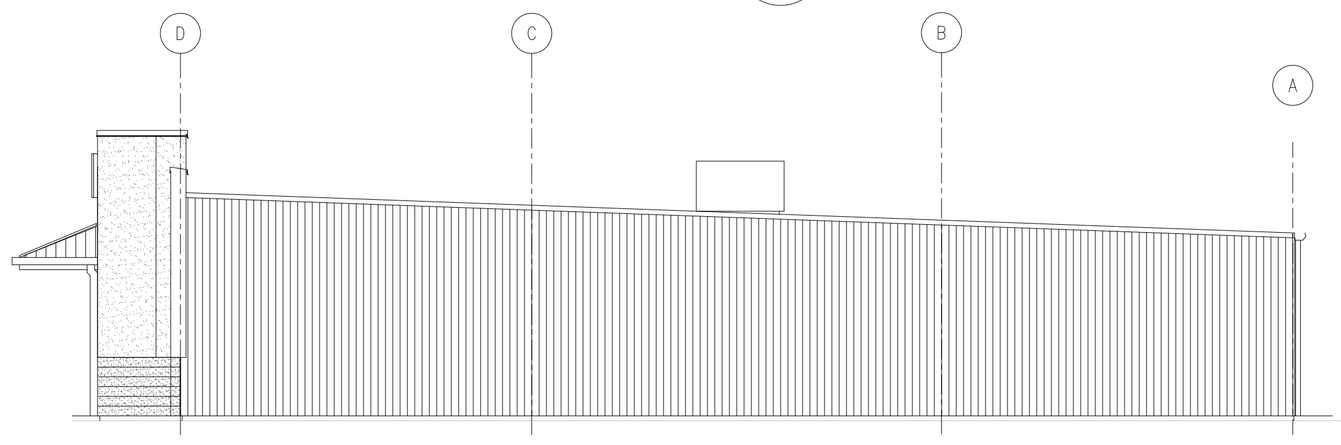


KEY NOTES:
1. WARM STONE (7032) MASONRY BASE
2. LIGHT STONE METAL PANELS
3. BRONZE REVERSE RIB METAL PANELS
4. BRONZE RIB ROOF AWNING
5. BRONZE COPING

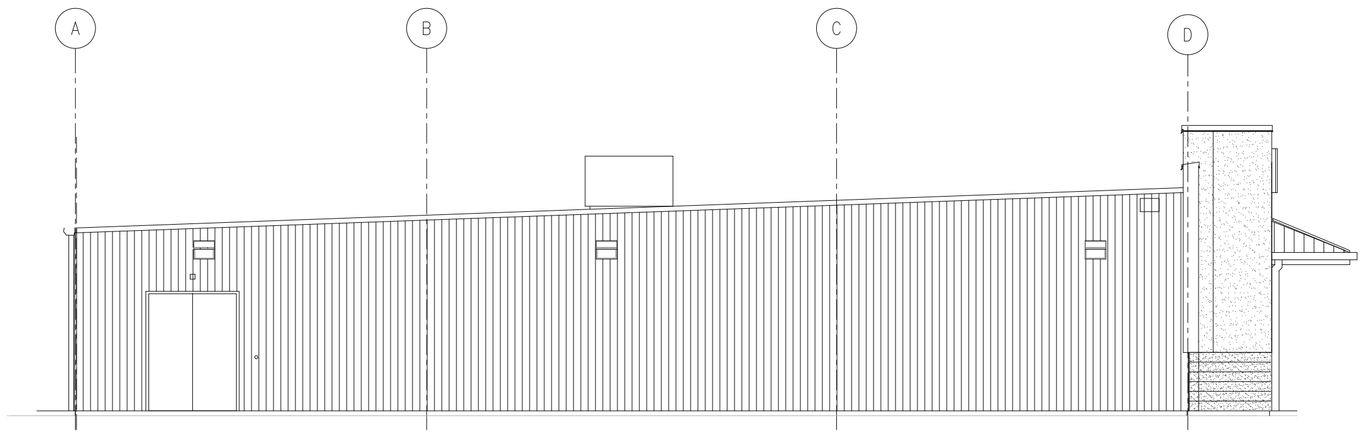
1 / A2 FRONT ELEVATION – DGMM
1/8" = 1'-0"



2 / A2 REAR ELEVATION
1/8" = 1'-0"



3 / A2 SIDE ELEVATION (NO ACCESS)
1/8" = 1'-0"



4 / A2 SIDE ELEVATION (TRUCK SIDE)
1/8" = 1'-0"

ARCHITECTURE
INTERIOR DESIGN

INSIDE OUTSIDE ARCHITECTURE, INC.
Lea E. Kangas
18601 152nd AVE N
DAYTON, MN 55327
763-428-5870

CONSULTANTS
Becklin & Whitney Consulting Engineers, Inc.
139 1st Ave E, Ste 100,
P.O. Box 471
Cambridge, MN 55008
Ph: 763-689-5631 Fax: 763-552-5631

OWNER
PAUL ABDO
612-382-0066

GENERAL CONTRACTOR
BRANDON POUND
763-645-1413

PROJECT

DOLLAR GENERAL®
#31529
PROTOTYPE C - DGMM
Howard Lake, MN 55349

CONTENTS

EXTERIOR ELEVATIONS

CERTIFICATION

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Architect under the laws of the State of Minnesota.

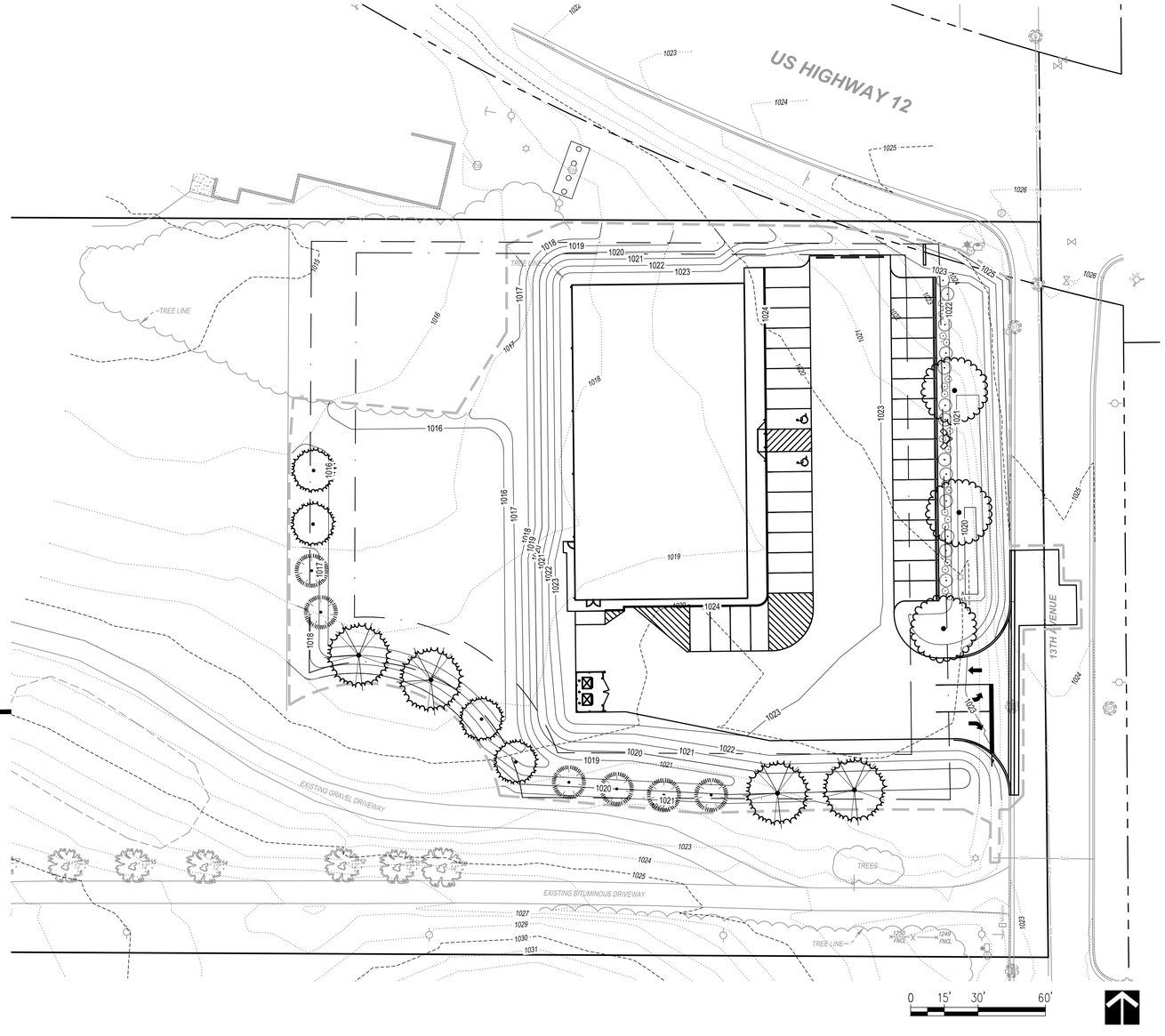
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A2

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DOLLAR GENERAL
HOWARD LAKE, MN



DRAWING INDEX

GENERAL
G001 TITLE SHEET

SURVEY
ALTA SURVEY

CIVIL
C001 NOTES & LEGEND
C002 STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE
C011-013 SPECIFICATIONS
C101 REMOVALS & INITIAL EROSION CONTROL PLAN
C102 PROPOSED EROSION CONTROL PLAN
C201 UTILITY PLAN
C301 GRADING PLAN
C401 SURFACING & LAYOUT PLAN
C402 STRIPING & SIGNAGE PLAN
C501-504 CIVIL DETAILS
C505 LANDSCAPE DETAILS

WARNING

LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.
CALL BEFORE DIGGING

MINNESOTA
ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY
MN STATUTE 216D

CONTACT INFORMATION

PROPERTY OWNER
AMH MALMO, LLC

ABDO MARKETHOUSE, LLC.
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402
PROJECT MANAGER
PAUL ABDO
C:612-382-0066
PAUL@ABDOMARKETHOUSE.COM

DESIGNER
LHB INC.
701 WASHINGTON AVE N, SUITE 200
MINNEAPOLIS MN 55401
CIVIL ENGINEER
JORDAN CABAK
O: 612-752-6948
JORDAN.CABAK@LHBCORP.COM

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TITLE SHEET

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: **G001**

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THIS PLAN SET.
2. OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PAY ALL PERMIT AND OTHER ASSOCIATED FEES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES.
3. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY WARNING SIGNS AND BARRICADES. COST SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. BARRICADES SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
4. ALL DEBRIS AND REFUSE RESULTING FROM CONSTRUCTION OPERATIONS SHALL BE HAULED OFF-SITE AND DISPOSED OF PROPERLY AT THE CONTRACTOR'S EXPENSE.
5. CONTRACTOR SHALL PROTECT FROM DAMAGE ALL EXISTING FEATURES DESIGNATED TO REMAIN. ANY FEATURES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
6. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL UNDERGROUND UTILITIES. UTILIZE THE ONE CALL EXCAVATION NOTICE SYSTEM OF "GOPHER ONE CALL" CALL 1-800-252-1166.

REMOVAL NOTES

1. PROTECT ALL FENCES, SIGNS, STRUCTURES, DRIVES, SIDEWALKS, STREETS, BUSHES, TREES, ETC. WHICH ARE NOT DESIGNATED FOR REMOVAL, OR OUTSIDE THE LIMITS OF CONSTRUCTION.
2. THE CONTRACTOR (GENERAL CONTRACTOR) IS RESPONSIBLE FOR REPAIRING ALL DAMAGE INCURRED DURING CONSTRUCTION. THIS INCLUDES, BUT NOT LIMITED TO, DAMAGE CAUSED BY SUBCONTRACTORS TO THE GENERAL CONTRACTOR. REPAIRS SHALL EQUAL OR EXCEED THE QUALITY OF EXISTING CONDITIONS.

GRADING NOTES

1. GRADES SHOWN ARE FINISH SURFACE ELEVATIONS UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL MAKE APPROPRIATE DEDUCTIONS FOR VARYING SURFACING TYPES (E.G., PAVEMENT, TOPSOIL) TO DETERMINE SUBGRADE ELEVATIONS.
2. SPOT ELEVATIONS ALONG CURB LINES REPRESENT THE TOP-BACK-OF-CURB UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL STOP WORK IMMEDIATELY IN THE AFFECTED AREA AND NOTIFY THE OWNER IF CONTAMINANTS ARE FOUND IN THE EXISTING SOILS BASED ON VISUAL OR OLFACTORY (SMELL) OBSERVATION.
4. SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 2.0%.
5. PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREA. DO NOT ALLOW WATER TO POND IN EXCAVATION AREAS, AND MAINTAIN ALL EXISTING DRAINAGE PATTERNS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL OSHA REGULATIONS IN THE EXECUTION OF WORK UNDER THIS CONTRACT.

EROSION CONTROL NOTES

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY NPDES PERMITS AND SHALL MAINTAIN SAID PERMITS AS REQUIRED BY THE REGULATORY AGENCY.
2. THE EROSION CONTROL PLAN INCLUDED IN THE SET SHALL ACT AS THE POLLUTION PREVENTION PLAN AS REQUIRED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER PERMIT. FAILURE TO IMPLEMENT THE CONTROLS AND PRACTICES OUTLINED WOULD RESULT IN VIOLATION OF THE ENVIRONMENTAL PROTECTION ACT AND CLEAN WATER ACT AND IS GROUNDS FOR PENALTIES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES, NOTIFICATION, MAINTENANCE, MONITORING, AND RECORD KEEPING REQUIRED BY THE NPDES GENERAL PERMIT.
4. LOCATIONS OF STABILIZED CONSTRUCTION ENTRANCES INDICATED ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST LOCATION AND SIZE OF ENTRANCES TO ACCOMMODATE CONSTRUCTION VEHICLES AND ACTIVITIES.
5. THE CONTRACTOR SHALL NOT DISTURB EXISTING VEGETATION OUTSIDE THE LIMITS OF CONSTRUCTION.
6. PERIODICALLY CLEAN OUT AND DISPOSE OF ALL SEDIMENT ONCE THE STORAGE CAPACITY OF THE DRAINAGE FEATURE OR STRUCTURE RECEIVING THE SEDIMENT IS REDUCED BY ONE-HALF. CLEAN OUT AND DISPOSE OF ALL SEDIMENT AT THE COMPLETION OF THE PROJECT.
7. PROVIDE ADDITIONAL ON-SITE PROTECTION, IN ADDITION TO THAT SHOWN SO THAT SEDIMENT IS NOT PERMITTED TO LEAVE THE PROJECT CONFINES DUE TO UNFORESEEN CONDITIONS OR ACCIDENTS.
8. SCHEDULE TEMPORARY SEEDING OPERATIONS IMMEDIATELY AFTER SITE GRADING WORK IS COMPLETE.
9. TEMPORARY STOCKPILE LOCATIONS SHALL BE COORDINATED WITH THE OWNER.
10. PROVIDE SILT FENCE AROUND STOCKPILES DURING CONSTRUCTION TO PREVENT SEDIMENT IN RUNOFF FROM THE SITE.
11. ALL EROSION CONTROL FEATURES SHALL BE KEPT IN WORKING ORDER. THE CONTRACTOR SHALL REPAIR ALL DAMAGES CAUSED BY SOIL EROSION AND CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY OR AS DIRECTED BY THE INSPECTOR.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CONTAINMENT DIKES OR OTHER PROTECTIVE MEASURES AROUND ALL ON-SITE FUELING AND CHEMICAL STORAGE AREAS.
13. IN THE EVENT OF A RELEASE OF OIL OR HAZARDOUS SUBSTANCE, THE CONTRACTOR SHALL COMPLY WITH THE LOCAL, STATE AND FEDERAL REQUIREMENTS OF ENVIRONMENTAL QUALITY FOR NOTIFICATION, CONTAINMENT, INVESTIGATION, REMEDIAL ACTION AND DISPOSAL.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTAINING ERODED MATERIALS WITHIN THE SITE AND PREVENTING ERODED MATERIALS FROM ENTERING EXISTING AND NEW STORM SEWER SYSTEMS BY INSTALLING FABRIC SILT FENCES, STRAW BALE DIKES, OR OTHER APPURTENANCES AS NECESSARY IN ADDITION TO WHAT IS SHOWN ON THE DRAWINGS.

UTILITY NOTES

1. COORDINATE INSPECTION AND TESTING FOR ALL UNDERGROUND UTILITIES WITH THE APPROPRIATE AUTHORITIES PRIOR TO COVERING TRENCHES. COMPLY WITH ALL LOCAL REQUIREMENTS AND CONDUCT ALL TESTS TO THE SATISFACTION OF THE LOCAL AUTHORITIES.
2. ALL EXISTING UTILITIES AND SERVICE LINES SHALL BE KEPT IN SERVICE AT ALL TIMES DURING CONSTRUCTION OF THIS PROJECT, UNLESS OTHERWISE AUTHORIZED BY THE OWNER.
3. REPORT ANY DISCREPANCIES TO THE ENGINEER. RECONNECT ALL SERVICES NOT MARKED FOR REMOVAL OR AS DIRECTED BY THE OWNER.
4. REPAIR OF DAMAGED UTILITIES SHALL BE REPORTED THROUGH THE OWNER.
5. CONTRACTOR SHALL IDENTIFY, FIELD VERIFY AND COORDINATE ALL EXISTING AND PROPOSED UTILITY CROSSINGS AND UTILITY TIE-IN POINTS IN THE FIELD. REPORT CONFLICTS REQUIRING REDESIGN TO THE OWNER.
6. DIMENSIONS TO PROPOSED UTILITIES ARE FROM THE CENTER OF STRUCTURE OR PIPE.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING ON THE PROJECT. REFER TO THE GEOTECHNICAL REPORT FOR GROUND WATER CONDITION AND RECOMMENDATIONS FOR DEWATERING..
8. GAS SERVICE TO BE DESIGNED BY THE CONTRACTOR. IF PROPANE TANK IS NEEDED COORDINATE LOCATION WITH LHB.

GENERAL SPECIFICATION

THE CURRENT EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION SHALL GOVERN, EXCEPT AS MODIFIED BY THE PROJECT SPECIFICATIONS. (AVAILABLE AT: http://www.dot.state.mn.us/tecsup)

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MN MUTCD, INCLUDING THE MOST CURRENT FIELD MANUAL. (AVAILABLE AT: http://www.dot.state.mn.us/trafficeng)

SURVEY CONTROL NOTES

HORIZONTAL DATUM:
MINNESOTA DOT: WRIGHT COUNTY, US FOOT NAD83

ADDITIONAL SURVEY CONTROL ON SITE IS AVAILABLE CONTACT LHB SURVEY AT 763-689-4042

ABBREVIATIONS

A.I.P.	ABANDON IN PLACE	MH	MANHOLE
A.G.	ABOVE GROUND	MOD.	MODIFIED
B.G.	BELOW GROUND	O.C.	ON CENTER
CB	CATCH BASIN	P(CB/MH)	PROPOSED CATCH BASIN/MAHNOLE
DIP	DUCTILE IRON PIPE	PE	POLYETHYLENE
EXIST.	EXISTING	PIV	POST INDICATOR VALVE
ELEV.	ELEVATION	PVC	POLYVINYL CHLORIDE
E.W.	EACH WAY	PROP.	PROPOSED
EOF	EMERGENCY OVERFLOW ELEVATION	RCP	REINFORCED CONCRETE PIPE
FES	FLARED END SECTION	R.O.W.	RIGHT OF WAY
FM	FORCE MAIN	SCH.	STANDARD
HDPE	HIGH DENSITY POLYETHYLENE	STMH	STORM MANHOLE
HMA	HOT MIX ASPHALT	TEMP.	TEMPORARY
HP	HIGH POINT	(TYP.)	TYPICAL
HYD	HYDRANT	V.I.F.	VERIFY IN FIELD
IE	INVERT ELEVATION	MNDOT	MINNESOTA DEPARTMENT OF TRANSPORTATION
LP	LOW POINT		
MAX.	MAXIMUM	WWM	WELDED WIRE MESH
MIN.	MINIMUM		

EXISTING LEGEND

- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- TREE LINE
- EXISTING MAJOR CONTOUR (5' INTERVAL)
- EXISTING MINOR CONTOUR (1' INTERVAL)
- EXISTING STREET SIGN
- FOUND RIGHT OF WAY MONUMENT
- FOUND IRON PIPE
- EXISTING STORM MANHOLE
- EXISTING CATCH BASIN
- EXISTING GAS METER
- EXISTING CABLE PEDESTAL
- EXISTING TELEPHONE PEDESTAL
- EXISTING UNDERGROUND FIBER SIGN
- EXISTING POWER POLE
- EXISTING LIGHT POLE
- EXISTING HYDRANT
- EXISTING WATER VALVE
- E--BUR-- EXISTING UNDERGROUND ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND STORM SEWER
- EXISTING UNDERGROUND GAS

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

PRELIMINARY
NOT FOR CONSTRUCTION
04/24/2025

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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
NOTES & LEGEND

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240688
DRAWING NO: C001

File Path: ...\240688\02 Howard Lake MN\500 Drawings\Civil\240688.02 C001 NOTES & LEGEND.dwg
Plot Date: 2025/4/23 9:47 PM

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

1. GENERAL

   THE MINNESOTA POLLUTION CONTROL AGENCY (MPCA) REGULATES STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY DISTURBING LAND EQUAL TO OR GREATER THAN ONE ACRE THROUGH A GENERAL STORMWATER PERMIT (PERMIT NO. MN R100001) AUTHORIZING THE DISCHARGE OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY TO WATERS OF THE STATE IN COMPLIANCE WITH THE CLEAN WATER ACT AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM (NPDES/SDS) PROGRAM. THE GENERAL PERMIT (PERMIT) REQUIRES THE DEVELOPMENT AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP IS A COMBINATION OF NARRATIVE, CALCULATIONS, PLANS SHEETS, AND STANDARD DETAIL SHEETS THAT ADDRESS THE FORESEEABLE CONDITIONS AT ANY STAGE IN THE CONSTRUCTION OR POST-CONSTRUCTION ACTIVITIES.

2. GENERAL AND ADMINISTRATIVE REQUIREMENTS

   A. RESPONSIBLE PARTIES: THE OWNER AND GENERAL CONTRACTOR (OPERATOR)(CONTRACTOR) ARE CO-PERMITTEES OF THE PERMIT AND ARE JOINTLY RESPONSIBLE FOR COMPLIANCE WITH TERMS AND CONDITIONS OF THE PERMIT. OBTAIN AND REVIEW THE PERMIT AND COMPLY WITH PERMIT SECTIONS 3, 4, 6-24 (PERMIT PART 3.5). VERIFY THAT PERMIT REQUIREMENTS ARE SATISFIED AND COMPLETE THE BLANKS ON THIS SWPPP SHEET(S).

   B. PERMIT APPLICATION (PERMIT ITEM 3.2): THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE OWNER, COMPLETING THE PERMIT APPLICATION ON-LINE, AND PAYING THE APPLICATION FEE. APPLY ON-LINE AT THE MPCA CONSTRUCTION STORM WATER WEBSITE: https://www.pca.state.mn.us/water/construction-stormwater.

   C. PERMIT COVERAGE (PERMIT ITEMS 3.3, 3.4): FOR PROJECTS THAT DISTURB LESS THAN 50 ACRES OR DO NOT DISCHARGE STORMWATER WITHIN 1 MILE (AERIAL RADIUS MEASUREMENT FROM PROJECT BOUNDARIES) OF A SPECIAL OR IMPAIRED WATER, PERMIT COVERAGE TYPICALLY BECOMES EFFECTIVE UPON ON-LINE APPLICATION AND COMPLETION OF THE PAYMENT PROCESS.

   FOR PROJECTS THAT DISTURB 50 ACRES OR MORE AND DISCHARGE STORMWATER WITHIN 1 MILE OF A SPECIAL OR IMPAIRED WATER, THE COMPLETE SWPPP MUST BE SUBMITTED TO THE MPCA AT LEAST 30 DAYS BEFORE THE START OF CONSTRUCTION. CONSTRUCTION MAY BEGIN AFTER ON-LINE APPLICATION, COMPLETION OF THE PAYMENT PROCESS, AND, AFTER RECEIVING A DETERMINATION LETTER FROM THE MPCA THAT REVIEW OF THE SWPPP IS COMPLETE. IF THE MPCA FAILS TO CONTACT PERMITTEES WITHIN 30 DAYS OF APPLICATION RECEIPT, COVERAGE IS EFFECTIVE 30 DAYS AFTER COMPLETING THE PAYMENT PROCESS.

   * DOES THE PROJECT DISTURB 50 ACRES OR MORE? NO
   * DOES THE PROJECT DISCHARGE WITHIN 1-MILE OF A SPECIAL (PERMIT ITEM 23.3-23.6) OR IMPAIRED WATER (PERMIT ITEM 23.7)? YES

   IF "YES" FOR BOTH OF THE ABOVE, SUBMIT THE ONLINE APPLICATION, PAYMENT, AND THE COMPLETE SWPPP (SWPPP AND PLAN SHEETS IT REFERENCES, STORMWATER REPORT, AND SITE ASSESSMENTS FOR GROUNDWATER AND SOIL CONTAMINATION), AT LEAST 30 DAYS BEFORE THE START OF CONSTRUCTION.

   DO NOT BEGIN LAND DISTURBING CONSTRUCTION ACTIVITIES UNTIL PERMIT COVERAGE IS EFFECTIVE. THE START OF ANY LAND DISTURBING ACTIVITIES SIGNIFIES THAT THE CONTRACTOR IS ASSUMING RESPONSIBILITY FOR PERMIT COVERAGE AND HAS COMPLIED WITH PERMIT REQUIREMENTS.

   D. NOTIFICATION OF COVERAGE (PERMIT ITEM 3.6): THE CONTRACTOR WILL RECEIVE A NOTIFICATION OF COVERAGE FROM THE MPCA (E.G., VIA EMAIL). KEEP OR POST A COPY OF THE NOTIFICATION OF COVERAGE WITH THE SWPPP AT THE PROJECT SITE. PROVIDE COPIES TO THE OWNER AND LHB.

   E. CHANGE OF COVERAGE FOR NEW OWNER OR NEW OPERATOR (PERMIT ITEMS 3.7, 3.8): FOR A NEW OWNER OR OPERATOR, THE CURRENT OWNER, AND NEW OWNER OR OPERATOR, MUST SUBMIT A "NOTICE OF TERMINATION/PERMIT MODIFICATION FORM" PRIOR TO THE NEW OWNER OR OPERATOR COMMENCING CONSTRUCTION ACTIVITY, NO LATER THAN 30 DAYS AFTER PROPERTY OWNERSHIP TRANSITION. THIS FORM IS AVAILABLE AT THE ABOVE MPCA WEBSITE.

   F. TERMINATION OF COVERAGE (PERMIT SECTION 4): THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE OWNER AND TERMINATING PERMIT COVERAGE BY COMPLETING AND SUBMITTING A "NOTICE OF TERMINATION/PERMIT MODIFICATION FORM" (NOT) TO THE MPCA AFTER ALL OF THE CONDITIONS OF PERMIT ITEM 4.4 AND 4.5 ARE SATISFIED. PROVIDE, TO OWNER, PHOTOS OF THE SITE SUBMITTED TO THE MPCS WITH THE NOT.

   G. RECORD RETENTION AND AVAILABILITY (PERMIT SECTION 20): THE CONTRACTOR SHALL KEEP A COPY OF THE SWPPP, INCLUDING ALL CHANGES, AND INSPECTIONS AND MAINTENANCE RECORDS ON SITE OR ELECTRONICALLY AVAILABLE ON-SITE DURING NORMAL WORKING HOURS DURING CONSTRUCTION PER PERMIT SECTION 20. THIS DOCUMENTATION MUST BE KEPT ON FILE FOR 3 YEARS AFTER SUBMITTAL OF THE NOTICE OF TERMINATION. COORDINATE TRANSFER OF THIS DOCUMENTATION TO THE OWNER AT PROJECT COMPLETION.

   H. CHANGES (AMENDMENTS) TO SWPPP (PERMIT SECTION 6): UPDATE AND DOCUMENT CHANGES WITHIN 7 DAYS TO THE SWPPP DURING CONSTRUCTION PER PERMIT SECTION 6. KEEP DOCUMENTATION WITH THE SWPPP (E.G., "THE REASON INLET PROTECTION WAS REMOVED FROM INLET 23 WAS DUE TO STREET FLOODING/FREEZING CONCERNS, AS ALLOWED BY PERMIT ITEM 9.8.").

3. CONSTRUCTION ACTIVITY REQUIREMENTS

   A. GENERAL: COMPLY WITH THE PERMIT AND SWPPP AND THE REQUIREMENTS OF THE PERMIT. THE BEST MANAGEMENT PRACTICES (BMPS) IDENTIFIED IN THE SWPPP AND PERMIT MUST BE SELECTED, INSTALLED, AND MAINTAINED IN AN APPROPRIATE AND FUNCTIONAL MANNER IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, MANUFACTURER RECOMMENDATIONS, AND ACCEPTED ENGINEERING PRACTICES.

   B. EROSION PREVENTION PRACTICES (PERMIT SECTION 8): BEFORE WORK BEGINS, DELINEATE THE LOCATION OF AREAS NOT TO BE DISTURBED (E.G., BUFFERS).

   WHEN STEEP SLOPES MUST BE DISTURBED, USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES (E.G., SLOPE DRAINING, TERRACING).

   WHEN CONSTRUCTION ACTIVITY WILL NOT RESUME FOR A PERIOD EXCEEDING 7 CALENDAR DAYS, STABILIZE EXPOSED SOIL AREAS (INCLUDING STOCKPILES) IMMEDIATELY, AND COMPLETE THE STABILIZATION NO LATER THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY HAS CEASED. AMEND SWPPP BY INDICATING THE LOCATION OF AREAS WHERE CONSTRUCTION WILL BE PHASED TO MINIMIZE DURATION OF EXPOSED SOIL AREAS (E.G., STEEP SLOPE AREAS).

   PLAN FOR AND IMPLEMENT CONSTRUCTION PRACTICES TO SATISFY THE ABOVE AND ALL CONDITIONS OF PERMIT SECTION 8.

   C. SEDIMENT CONTROL PRACTICES & TEMPORARY SEDIMENT BASINS (PERMIT SECTIONS 9 AND 14): BEFORE ANY LAND DISTURBING ACTIVITY BEGINS, ESTABLISH SEDIMENT CONTROL BMPS ON ALL DOWNGRADIENT AREAS OF THE SITE THAT DRAIN TO ANY SURFACE WATERS, INCLUDING BUT NOT LIMITED TO, CURB AND GUTTER SYSTEMS, STORM SEWER INLETS, DITCHES. BMPS MUST BE LOCATED UPGRADIENT OF ANY BUFFER ZONES AND MUST REMAIN IN PLACE UNTIL PERMANENT COVER IS ESTABLISHED FOR THE AREA DRAINING TO IT.

   PLAN FOR AND IMPLEMENT CONSTRUCTION PRACTICES TO SATISFY THE ABOVE AND ALL CONDITIONS OF PERMIT SECTION 9 AND 14.

   D. DEWATERING AND BASIN DRAINING (PERMIT SECTION 10): COMPLY WITH SECTION 10 OF THE PERMIT.

   E. INSPECTIONS AND MAINTENANCE (PERMIT SECTION 11): COMPLY WITH SECTION 11 OF THE PERMIT.

   F. POLLUTION PREVENTION MANAGEMENT MEASURES (PERMIT SECTION 12): COMPLY WITH SECTION 12 OF THE PERMIT. AMEND SWPPP BY INDICATING THE LOCATION OF POTENTIAL POLLUTANT GENERATING ACTIVITIES ON SITE MAPS FOR THE DURATION OF CONSTRUCTION PER PERMIT SECTION 5.9.

4. SWPPP RESPONSIBILITIES/TRAINED INDIVIDUALS

   A. THE FOLLOWING PERSON PREPARED THE SWPPP AND IS TRAINED IN SWPPP DESIGN (PERMIT ITEM2 5.20, 21.2.a):

   NAME: BENHAMIN HUNINGHAKE, CIVIL DESIGNER I / LHB, INC.
   TRAINING DATE/INSTRUCTOR/ENTITY: CERTIFICATION 4/24 (EXPIRES 5/31/27)/U OF MN
   TRAINING CONTENT/HOURS: DESIGN OF CONSTRUCTION SWPPP RECERTIFICATION/ 8 HOUR

   B. THE CONTRACTOR WILL OVERSEE SWPPP IMPLEMENTATION, REVISE AND AMEND THE SWPPP, AND PERFORM INSPECTIONS. THE FOLLOWING CONTRACTOR REPRESENTATIVE IS TRAINED TO PERFORM THESE DUTIES AND WILL ASSUME THESE RESPONSIBILITIES (PERMIT ITEMS 5.20, 21.2.b):

   NAME: _____
   TRAINING DATE/INSTRUCTOR/ENTITY: _____
   TRAINING CONTENT/HOURS: _____

   C. THE CONTRACTOR WILL SUPERVISE THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPS BEFORE AND DURING CONSTRUCTION. THE FOLLOWING CONTRACTOR REPRESENTATIVE IS TRAINED TO PERFORM THESE DUTIES AND WILL ASSUME THESE RESPONSIBILITIES (PERMIT ITEMS 5.20, 21.2.c):

   NAME: _____
   TRAINING DATE/INSTRUCTOR/ENTITY: _____
   TRAINING CONTENT/HOURS: _____

   D. PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS WHO WILL COORDINATE WITH CONTRACTORS, SUBCONTRACTORS, AND OPERATORS ON-SITE TO OVERSEE IMPLEMENTATION OF THE SWPPP (PERMIT ITEM 5.21)(TYPICALLY GENERAL CONTRACTOR):

   NAME/TITLE: _____

   E. THE PERSON(S), ORGANIZATION, OR ENTITIES RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEMS (PERMIT ITEM 5.23):

   NAME/TITLE: _____
   MAINTENANCE PLAN: _____

   F. CHAIN OF RESPONSIBILITY: THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL SWPPP IMPLEMENTATION ON THE CONSTRUCTION SITE AND IS ACCOUNTABLE FOR SUBCONTRACTORS AND OTHER CONTRACTORS WORKING ON SITE AND THEIR COMPLIANCE WITH THE GENERAL STORMWATER PERMIT AND SWPPP REQUIREMENTS.

5. REGULATORY AGENCIES AND PERMITS

   A. COMPLY WITH REQUIREMENTS OF ALL REGULATORY AGENCIES AND PERMITS HAVING JURISDICTION DURING CONSTRUCTION ACTIVITIES. THE FOLLOWING ADDITIONAL REGULATORS AND PERMITS ARE KNOWN TO HAVE SITE JURISDICTION:
      1) CITY OF HOWARD LAKE (GRADING PERMIT)
      2) MNDOT (FOR ALL WORK WITHIN THE MNDOT HWY ROW)

6. DESCRIPTION OF THE CONSTRUCTION ACTIVITY / SWPPP COMPONENTS

   A. NARRATIVE/TIMING (PERMIT ITEM 5.4):
      1) PROJECT SUMMARY: THE PROJECT INVOLVES THE DEVELOPMENT OF THE DOLLAR GENERAL LOCATED ON 1.56 ACRES. SPECIFIC WORK INCLUDES:
         a. CLEAR AND GRUB OF SITE, DEMOLITION OF EXISTING SURFACES FOR CONSTRUCTION.
         b. SITE GRADING & STORM SEWER CONSTRUCTION
         c. CONSTRUCTION OF OTHER UTILITIES (E.G. DRINKING WATER AND SANITARY SEWER).
         d. DEWATERING ACTIVITIES.
         e. BUILDING CONSTRUCTION
         f. PARKING LOT CONSTRUCTION
         g. SITE FINISHES AND LANDSCAPING.

      2) TIMING FOR INSTALLATION OF EROSION & SEDIMENTATION BMPS, IN GENERAL SEQUENTIAL ORDER FROM FIRST TO LAST (PERMIT ITEM 5.4):
         a. INLET PROTECTION FOR EXISTING INLETS / SILT FENCE / DELINEATION AREAS NOT TO BE DISTURBED / ROCK CONSTRUCTION ENTRANCE: PROVIDE PRIOR TO CONSTRUCTION; MAINTAIN DURING CONSTRUCTION.
         b. SILT FENCE AROUND STOCKPILES: PROVIDE DURING CONSTRUCTION.
         c. PORTABLE SEDIMENT CONTAINMENT SYSTEMS FOR TREATING WATER FROM DEWATERING OPERATIONS : PROVIDE DURING CONSTRUCTION.
         d. HARD SURFACING (E.G., BUILDING ROOFS, PAVEMENTS)
         e. VEGETATIVE COVER / EROSION CONTROL BLANKETS: AFTER FINAL TOPSOIL PLACEMENT AND FINISH GRADING.
         f. REMOVAL OF TEMPORARY BMPS: AFTER FINAL STABILIZATION IS ESTABLISHED.

      3) IMPERVIOUS SURFACE AREAS / WATER QUALITY VOLUME:
         a. PRE-CONSTRUCTION IMPERVIOUS (PERMIT ITEM 5.8): 0.00 ACRES
         b. POST-CONSTRUCTION IMPERVIOUS (PERMIT ITEM 5.8): 0.76 ACRES
         c. NET NEW IMPERVIOUS: 0.76 ACRES
         d. WATER QUALITY VOLUME: NA, UNDER 1 ACRE ADDED IMPERVIOUS
         e. ACTUAL WATER QUALITY VOLUME RETAINED ON-SITE / METHOD OF RETENTION: NA
         f. THE REASON THE FULL WATER QUALITY VOLUME CANNOT BE INFILTRATED (PER PERMIT ITEM 5.15): NA
         g. REMAINDER OF WATER QUALITY VOLUME AND ALTERNATIVE TREATMENT METHOD: NA

      4) CHEMICALS AND CHEMICAL TREATMENT SYSTEMS USED FOR ENHANCING THE ON-SITE SEDIMENTATION PROCESS AND HOW COMPLIANCE WILL BE ACHIEVED (PERMIT ITEM 5.22): NA

      5) PER PERMIT ITEM 5.13, DOCUMENTATION OF INFEASIBILITY FOR:
         a. TEMPORARY SEDIMENT BASIN (PERMIT PART 14.10): NA
            ALTERNATIVE (PERMIT ITEM 5.14): NA
         b. OBTAINING RIGHT-OF-WAY FOR PERMANENT STORMWATER MANAGEMENT SYSTEMS OF LINEAR PROJECTS: NA
         c. BUFFER ZONES (PERMIT ITEMS 9.17 AND 23.11): NA

      6) STORMWATER MITIGATION MEASURES IDENTIFIED IN ENVIRONMENTAL REVIEW OR OTHER REQUIRED REVIEW (PERMIT ITEM 5.16): NA

   B. STORMWATER REPORT (PERMIT ITEM 5.6): PERMANENT STORMWATER TREATMENT NOT REQUIRED. THUS, NO STORMWATER REPORT IS NEEDED.

   C. SITE ASSESSMENTS FOR GROUNDWATER OR SOIL CONTAMINATION (PERMIT ITEM 5.25): NA

   D. PLAN SHEETS:
      1) SWPPP (PERMIT ITEM 5.2): THIS SHEET(S), INCLUDING DOCUMENTATION DESCRIBED AND REFERENCED HEREIN.
      2) TEMPORARY BMPS / ESTIMATED QUANTITIES (E.G., LINEAR FEET OF SILT FENCE, SQUARE FEET OF EROSION CONTROL BLANKET) / LOCATIONS OF AREAS NOT TO BE DISTURBED / SOIL TYPES (PERMIT ITEMS 5.3, 5.5, 5.7, 5.9): SEE SHEET C101-102
      3) PERMANENT BMPS (PERMIT ITEM 5.3, 5.5): SEE SHEET C301
      4) EXISTING GRADES, DRAINAGE BOUNDARIES AND FLOW DIRECTIONS, DISCHARGE POINTS WHERE STORMWATER LEAVES THE SITE OR ENTERS SURFACE WATERS, AREAS OF STEEP SLOPES (PERMIT ITEM 5.9): SEE SHEET C101-102
      5) FINAL GRADES, DRAINAGE BOUNDARIES AND FLOW DIRECTIONS, DISCHARGE POINTS WHERE STORMWATER LEAVES THE SITE OR ENTERS SURFACE WATERS, AREAS OF STEEP SLOPES (PERMIT ITEM 5.9): SEE SHEET C301
      6) IMPERVIOUS SURFACING / METHODS OF FINAL STABILIZATION (PERMANENT COVER)(PERMIT ITEM 5.17): SEE SHEET C401
      7) MAP OF SURFACE WATERS, EXISTING WETLANDS AND STORMWATER PONDS/BASINS IDENTIFIABLE ON USGS 7.5 MIN. QUAD. MAPS, NWI MAP OR EQUIVALENT WITHIN 1 MILE OF SITE (AERIAL RADIUS MEASUREMENT FROM PROJECT BOUNDARIES) THAT RECEIVE RUNOFF FROM SITE DURING OR AFTER CONSTRUCTION (IDENTIFY SPECIAL AND IMPAIRED WATERS AND ANY APPROVED TMDLS)(PERMIT ITEMS 5.10, 5.19): SEE THIS SHEET
      8) FOR THE ABOVE SPECIAL OR IMPAIRED WATERS, DOCUMENTATION OF BMPS USED TO ADDRESS TMDL OR WLA REQUIREMENTS TO COMPLY WITH PERMIT SECTION 23: NA
      9) SITE MAP OF CONSTRUCTION ACTIVITY AREAS THAT ARE ADJACENT TO AND DRAIN TO MINNESOTA DEPARTMENT OF NATURAL RESOURCES (MDNR) PUBLIC WATERS PROMULGATED AS "WORK IN WATER RESTRICTIONS" DURING SPECIFIED FISH SPAWNING TIMES (PERMIT ITEM 5.11): NA
      10) METHODS TO PRESERVE TOPSOIL AND TOPSOIL PRESERVATION AREAS (PERMIT ITEM 5.24): NA
      11) METHODS TO MINIMIZE SOIL COMPACTION AND INFILTRATION AREAS TO BE PROTECTED FROM EXCESSIVE SOIL COMPACTION AND SEDIMENTATION (PERMIT ITEM 5.24): NA
      12) AREAS WHERE CONSTRUCTION WILL BE PHASED TO MINIMIZE THE DURATION OF EXPOSED SOILS (PERMIT ITEM 5.18): TBD BY CONTRACTOR
      13) DELINEATION OF BUFFER ZONES (PERMIT ITEM 5.12): NA

   E. STANDARD DETAIL SHEETS: SEE SHEET C501-505

   F. MAINTENANCE PLAN: PERMANENT TREATMENT NOT REQUIRED. THUS, NO MAINTENCE PLAN IS NEEDED.

7. STANDARDS SPECIFICATIONS FOR CONSTRUCTION:

   UNLESS NOTED OTHERWISE IN CONTRACT DOCUMENTS, MATERIAL AND CONSTRUCTION REQUIREMENTS FOR TEMPORARY SEDIMENT CONTROL AND EROSION PREVENTION SHALL BE IN ACCORDANCE WITH THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

8. CALCULATIONS AND OTHER INFORMATION USED FOR DESIGN OF TEMPORARY SEDIMENTATION BASINS AND PERMANENT STORMWATER TREATMENT SYSTEMS (PERMIT ITEM 5.6): NA

9. PROCEDURES TO ESTABLISH ADDITIONAL TEMPORARY BMPS, AS NECESSARY, DURING CONSTRUCTION (PERMIT ITEM 5.5):

   A. IF REGULAR INSPECTIONS OR OTHER OBSERVATIONS INDICATE THE NEED FOR ADDITIONAL TEMPORARY BMPS TO PREVENT EROSION, THEN PROVIDE ADDITIONAL BMPS BEFORE THE NEXT RAIN EVENT,

   B. MAINTAIN CLEAR AND UPDATED PLANS (MAPS) OF THE CURRENT TEMPORARY BMPS.

   C. AMEND THE SWPPP WITH ALL CHANGES TO THE SWPPP WITHIN 7 DAYS.

1 NEARBY WETLANDS

0 750' 1500' 3000'

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

PRELIMINARY
NOT FOR CONSTRUCTION
04/24/2025

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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO:

C002

File Path: J:\240668\02 Howard Lake MN\50 Drawings\Civil\240668.02 C002 SWPPP.dwg
Plot Date: 2025/4/23 9:48 PM

GENERAL

1.01 GOVERNING SPECIFICATION

A. THE STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION (MNDOT), CURRENT EDITION, EXCEPT AS MODIFIED OR ALTERED IN THE DRAWINGS.

B. ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MINNESOTA MUTCD, CURRENT EDITION. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL ON THE PROJECT.

C. ALL REFERENCES TO MEASUREMENT AND PAYMENT IN THE GOVERNING SPECIFICATIONS SHALL NOT APPLY.

1.02 UTILITY PROPERTY AND SERVICE

A. CONSTRUCTION OPERATIONS IN PROXIMITY OF UTILITY PROPERTIES SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF MNDOT 1507, EXCEPT AS MODIFIED BELOW:

1. INTERFERENCE OF UNDERGROUND STRUCTURES
   a. UTILITIES ARE BASED ON RECORD INFORMATION AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENGINEER. NOTIFY THE ENGINEER IMMEDIATELY OF ANY INTERFERENCES.
   b. NO ESSENTIAL UTILITY SERVICE SHALL BE DISRUPTED WITHOUT AUTHORIZATION FROM THE ENGINEER AND UTILITY OWNER.
   c. COORDINATE WORK WITH UTILITY COMPANIES; NOTIFY BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS; OBTAIN REQUIRED PERMITS.
   d. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL IN MN, 1-800-252-1166 FOR LOCATING AND MARKING OF ALL UTILITIES WITHIN THE WORK AREA PRIOR TO ANY EXCAVATION ON THE PROJECT SITE.

1.03 CONSTRUCTION SURVEYING

A. THE OWNER WILL PROVIDE THE INITIAL HORIZONTAL AND VERTICAL CONTROL POINTS IN THE FIELD FOR THE PROJECT AS INDICATED IN THE PLANS. UPON REQUEST BY THE CONTRACTOR, THE ENGINEER WILL ALSO PROVIDE ELECTRONIC DATA IN THE FORMAT THAT WAS USED IN THE ACCOMPLISHMENT OF THE SURVEYS FOR THE CONSTRUCTION PLAN, AND IN CONSTRUCTION PLAN DEVELOPMENT ITSELF. HOWEVER, DUE TO THE MANY DIFFERENT PROCESSES THAT THE DESIGN SURVEY DATA GOES THROUGH AND THE LARGE VARIETY OF SOURCES OF INPUT IN THE FINAL PRODUCTION OF THE PLAN ITSELF, NO WARRANTEE IS MADE AS TO THE VALUE OR ADAPTABILITY OF THE ELECTRONIC DATA TO THE SURVEYOR. NO WARRANTEE IS MADE THAT THE DATA SYSTEMS USED BY THE ENGINEER, OR ANY CONSULTANTS EMPLOYED BY THE OWNER FOR SURVEYING OR CONSTRUCTION PLAN PREPARATION, WILL BE COMPATIBLE WITH THE SYSTEMS USED BY THE CONTRACTOR'S SURVEYOR. INFORMATION SHOWN ON THE PRINTED 'PLAN' SHALL ALWAYS GOVERN OVER ANY ELECTRONIC 'PLAN' DATA.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING ON THE PROJECT.

1. THE CONTRACTOR SHALL:
   a. BE RESPONSIBLE FOR THE PRESERVATION OF ALL REFERENCE POINTS, MONUMENTS, GOVERNMENT LAND CORNERS, HORIZONTAL AND VERTICAL CONTROL POINTS, STAKES, AND MARKS THAT ARE ESTABLISHED BY THE ENGINEER OR OTHERS WITHIN THE PROJECT LIMITS. IF THE CONTRACTOR OR ITS SURVEYOR FAILS TO PRESERVE THESE ITEMS, AND IF THEY MUST BE RE-ESTABLISHED BY THE OWNER, THE ENGINEER WILL DEDUCT A CHARGE FROM MONIES DUE OR BECOMING DUE THE CONTRACTOR ACCORDING TO THE OWNER'S COSTS.
   b. VERIFY THE ORIGINAL SITE CONTROL POINTS PROVIDED ON THE PLANS BY THE OWNER'S SURVEYOR. ANY SITE CONTROL POINTS SUBJECT TO DISTURBANCE BY THE PLANNED CONSTRUCTION OPERATIONS SHALL BE TRANSFERRED BY THE CONTRACTOR TO AN UNDISTURBED LOCATION ON THE SITE OR TO AN OFFSITE LOCATION. CONTRACTOR SHALL PRESERVE, PROTECT AND MAINTAIN A MINIMUM OF THREE SITE CONTROL POINTS AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION AND FOR A PERIOD OF ONE YEAR FOLLOWING SUBSTANTIAL COMPLETION OF THE PROJECT.
   c. START AND END ALL LEVEL RUNS, TRAVERSES, OR GPS CONTROL SURVEYS FROM KNOWN CONTROL.
   d. PERFORM ALL CONSTRUCTION SURVEYING.
   e. PRESENT THE ENGINEER WITH THE AS-BUILT SURVEY DATA. THE AS-BUILT SURVEY DATA SHALL INCLUDE THE FOLLOWING:
      e.1. CHANGES FROM THE PLAN:
         e.1.1. MANHOLE AND CATCH BASIN INVERTS AND TOP OF CASTINGS
         e.1.2. LOCATION OF NEW STORM SEWER AND DRAIN TILE
         e.1.3. LOCATION OF NEW BUILDING ELEMENTS
         e.1.4. CONTOURS OF CONSTRUCTED EMBANKMENTS, SWALES, AND STORMWATER PRACTICES
      e.2. LOCATIONS OF NEW UTILITIES AND UTILITIES RELOCATED OR REPLACED AS PART OF THE PROJECT.
      e.3. THE INFORMATION SHALL INCLUDE THE X, Y AND IF APPLICABLE, THE Z COORDINATES IN THE PROJECT DATUM. IF THE ORIGINAL ITEM HAD NO COORDINATE REFERENCE, THEN SHOW THE REVISED CENTERLINE STATION AND OFFSET.
   f. FURNISH SURVEY DOCUMENTATION AND AS-BUILT SURVEY DATA TO THE ENGINEER WITHIN THE TIME LIMITS INDICATED IN THE SURVEYING WORK SCHEDULE AND PRIOR TO APPLICATION FOR FINAL PAYMENT.

1.04 GEOTECHNICAL REFERENCE INFORMATION: A GEOTECHNICAL EVALUATION REPORT WAS PREPARED FOR THIS PROJECT BY KILO ENGINEERING, LLC DATED SEPTEMBER 6, 2023. THE REPORT CONTAINS INFORMATION ON SITE SOILS, GROUNDWATER, AND CONSTRUCTION RECOMMENDATIONS. THE PROJECT DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT THE REPORTS, NOT CHANGE THE RECOMMENDATIONS. CONTACT LHB TO OBTAIN COPIES OF THESE REPORTS AND FOR CLARIFICATION IF THERE IS CONFLICTING DIRECTION.

CLEARING & GRUBBING

2.01 SITE CLEARING

A. MINIMIZE PRODUCTION OF DUST DUE TO CLEARING OPERATIONS; DO NOT USE WATER IF THAT WILL RESULT IN ICE, FLOODING, SEDIMENTATION OF PUBLIC WATERWAYS OR STORM SEWERS, OR OTHER POLLUTION.

B. PROTECT ALL TREES WITHIN THE CONSTRUCTION LIMITS, EXCEPT AS NOTED ON PLANS. NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS ARISE BETWEEN EXISTING TREES AND PROPOSED SITE IMPROVEMENTS.

C. REMOVE ALL SHRUBS, BUSHES, STUMPS, AND VEGETATION AS NOTED ON PLANS. STOCKPILE TOPSOIL WITHIN THE CONSTRUCTION LIMITS. ALL REMOVAL OF VEGETATION IS INCIDENTAL TO THE WORK.

D. DO NOT REMOVE OR DAMAGE VEGETATION BEYOND THE LIMITS INDICATED ON DRAWINGS.

E. VEGETATION REMOVED: DO NOT BURN, BURY, LANDFILL, OR LEAVE ON SITE, EXCEPT AS INDICATED. ALL OTHER VEGETATION CLEARED SHALL BE REMOVED FROM THE SITE.

F. RESTORATION: IF VEGETATION OUTSIDE REMOVAL LIMITS OR WITHIN SPECIFIED PROTECTIVE FENCES IS DAMAGED OR DESTROYED DUE TO SUBSEQUENT CONSTRUCTION OPERATIONS, REPLACE AT NO COST TO OWNER.

EARTHWORK

3.01 EXCAVATION AND GRADING

A. EXCAVATE TO ACCOMMODATE NEW STRUCTURES AND CONSTRUCTION OPERATIONS.
   1. EXCAVATE TO THE SPECIFIED ELEVATIONS.
   2. EXCAVATE TO THE LENGTH AND WIDTH REQUIRED TO SAFELY INSTALL, ADJUST, AND REMOVE ANY FORMS, BRACING, OR SUPPORTS NECESSARY FOR THE INSTALLATION OF THE WORK.
   3. CUT UTILITY TRENCHES WIDE ENOUGH TO ALLOW INSPECTION OF INSTALLED UTILITIES.
   4. HAND TRIM EXCAVATIONS. REMOVE LOOSE MATTER.

B. REMOVE ALL UNSUITABLE SOILS (TOPSOIL, SOILS WITH TRACE ORGANICS, WET OR OTHERWISE DISTURBED SOILS) FROM THE BUILDING, PAVING, AND SIDEWALK AREAS.

C. REMOVE TOPSOIL FROM AREAS TO BE FURTHER EXCAVATED, RE-LANDSCAPED, OR RE-GRADED, WITHOUT MIXING WITH FOREIGN MATERIALS.

D. DO NOT REMOVE TOPSOIL WHEN WET.

E. REMOVE SUBSOIL FROM AREAS TO BE FURTHER EXCAVATED, RE-LANDSCAPED, OR RE-GRADED.

F. DO NOT REMOVE WET SUBSOIL, UNLESS IT IS SUBSEQUENTLY PROCESSED TO OBTAIN OPTIMUM MOISTURE CONTENT.

G. BENCHING SLOPES: HORIZONTALLY BENCH EXISTING SLOPES GREATER THAN 1V:4H TO KEY FILL MATERIAL TO SLOPE FOR FIRM BEARING.

H. STABILITY: REPLACE DAMAGED OR DISPLACED SUBSOIL TO SAME REQUIREMENTS AS FOR SPECIFIED FILL.

I. STOCKPILE TOPSOIL TO BE RE-USED ON SITE; REMOVE REMAINDER, IF ANY, FROM SITE. SUPPLEMENT AS NEEDED TO ACHIEVE 4 INCHES OF TOPSOIL IN ALL TURF AREAS.

J. SUBGRADE APPROVAL/PROOF ROLLING
   1. FOLLOWING EXCAVATION TO THE DESIGN SUBGRADE ELEVATIONS IN ALL BUILDINGS AND PAVEMENT AREAS AND PRIOR TO PLACEMENT OF ANY BASE COURSE OR OTHER FILL MATERIALS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S DESIGNATED CONSTRUCTION REPRESENTATIVE TO SCHEDULE INSPECTION OF THE SUBGRADE AND OBSERVE PROOF ROLLING OPERATIONS. PROVIDE A MINIMUM OF 24 HOURS CONFIRMED NOTICE. ALL PROOF ROLLING SHALL BE COMPLETED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER'S DESIGNATED CONSTRUCTION REPRESENTATIVE.
   2. TO COMPLETE PROOF ROLLING, EXPOSED SUBGRADE AREAS SHALL BE PROVIDED WITH A RELATIVELY SMOOTH SURFACE, SUITABLE FOR OBSERVING SOIL REACTION DURING PROOF ROLLING.
   3. CONTRACTOR SHALL SCHEDULE AND PROVIDE A FULLY LOADED TRI-AXLE DUMP TRUCK FOR PROOF ROLLING. LOADED TRUCK SHALL HAVE A MINIMUM GROSS OPERATING WEIGHT OF 30 TONS. TEST SHALL BE CONDUCTED WITH "TAG" OR "PUSHER" AXLES RETRACTED FROM THE GROUND.
   4. TEST ROLLING SHALL BE ACCOMPLISHED IN A SERIES OF TRAVERSE PARALLEL TO THE CENTERLINE OF THE STREET, PARKING AREA OR BUILDING AREA. THE TRUCK SHALL TRAVERSE THE LENGTH OF THE STREET OR PARKING / BUILDING AREAS ONCE FOR EACH 12 FEET OF WIDTH. ADDITIONAL PASSES ALONG THE TRAVERSE SHALL BE COMPLETED AS DIRECTED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE, TO FURTHER DEFINE UNSATISFACTORY SUBGRADE.
   5. SOFT AREAS, YIELDING AREAS, CRACKED AREAS OR AREAS WHERE ROLLING OR WAVE ACTION IS OBSERVED SHALL BE CONSIDERED INDICATIVE OF AN UNSATISFACTORY SUBGRADE. SUCH AREAS SHALL BE UNDERCUT AS OUTLINED IN SUBSEQUENT SUBSECTIONS OF THIS SPECIFICATION.
   6. ONCE THE SUBGRADE HAS BEEN PROOF ROLLED AND APPROVED, PROTECT THE SOILS FROM BECOMING SATURATED, FROZEN, OR ADVERSELY ALTERED.

3.02 FILLING

A. WHEN MORE THAN ONE TYPE OF SOIL IS AVAILABLE ON-SITE, USE THE TYPE(S) EXHIBITING THE BETTER STRUCTURAL AND DRAINAGE CHARACTERISTICS IN FILL AREAS WHERE SOME TYPE OF LOADING WILL BE SUPERIMPOSED (E.G., BUILDINGS, PAVEMENTS).

B. PLACE FILL IN A MANNER TO PREVENT STONES NESTING AND FORMING VOIDS.

C. MOISTURE CONDITION AS NECESSARY. WET SUBGRADE SOILS OR WET SOILS USED AS FILL MAY REQUIRE CONSIDERABLE DRYING IN ORDER TO ACHIEVE SPECIFIED COMPACTIONS, ESPECIALLY FOR COHESIVE SOILS.

D. DO NOT PLACE FILL IN STANDING WATER, OVER SOFTENED SOILS, OR ON FROZEN GROUND WHERE FROST HAS PENETRATED GREATER THAN 2 INCHES.

E. DO NOT PLACE, SPREAD, OR ROLL FROZEN FILL. DO NOT PLACE FILL ON FROZEN GROUND OR DURING UNFAVORABLE WEATHER.

F. COMPACTION WITH NON SELF-PROPELLED COMPACTION EQUIPMENT IS LIMITED TO MAXIMUM LIFTS OF 6 INCHES.

G. IF SOIL ANALYSIS, COMPACTION TESTS, OR INSPECTIONS INDICATE THAT THE MATERIALS SPECIFIED HAVE NOT BEEN FURNISHED, PLACED, AND COMPACTED IN COMPLIANCE WITH THESE SPECIFICATIONS, REMOVE THE MATERIAL, REPLACE, RECOMPACT, AND RETEST.

3.03 FILL MATERIALS

A. GENERAL FILL: NON-ORGANIC SELECT COMPACTABLE SALVAGED SUBSOIL EXCAVATED ON-SITE CONFORMING TO MNDOT 2106.2B COMMON EMBANKMENT, WHEN ON-SITE SOILS ARE EXHAUSTED THE CONTRACTOR SHALL PROVIDE IMPORTED MNDOT 2106.2B COMMON EMBANKMENT AS NECESSARY TO COMPLETE THE WORK. GENERAL FILL EXCAVATED FROM ON-SITE SHALL MEET THE FOLLOWING REQUIREMENTS:
   1. GRADED.
   2. FREE OF LUMPS LARGER THAN 3 INCHES, ROCKS LARGER THAN 2 INCHES, AND DEBRIS.
   3. GENERAL FILL SALVAGED FROM ON-SITE SHALL BE SELECTED, SEPARATED AND PROTECTED TO MANAGE THE SOILS MOISTURE CONTENT. THE CONTRACTOR SHALL DRY OR MOISTURE CONDITION THE SOIL AS NECESSARY IN ORDER TO ACHIEVE THE REQUIRED COMPACTION DENSITIES. IF DRYING THE SOILS IS NOT FEASIBLE DUE TO WEATHER OR THE SEASON, THE CONTRACTOR SHALL PROVIDE COMMON EMBANKMENT TO BALANCE THE SITE AT NO ADDITIONAL COST TO THE OWNER.
   4. IF SALVAGED SUBSOIL FROM ON-SITE IS NOT COMPACTABLE DUE TO MOISTURE CONTENT, OR FOR OTHER REASONS, THE CONTRACTOR SHALL REMOVE THE UNCOMPACTABLE SOILS AND REPLACE WITH MNDOT 2106.2B COMMON EMBANKMENT.

B. STRUCTURAL FILL (NFS): IMPORTED BORROW.
   1. GRADED IN ACCORDANCE WITH ASTM C136, WITHIN THE FOLLOWING LIMITS:
      a. 1 INCH SIEVE: 100 PERCENT PASSING.
      b. No. 4 SIEVE: 60 TO 100 PERCENT PASSING.
      c. No. 40 SIEVE: 0 TO 40 PERCENT PASSING.
      d. No. 200 SIEVE: 0 TO 5 PERCENT PASSING.

C. ENGINEERED FILL: SUBSOIL EXCAVATED ON-SITE (NON-ORGANIC, DEBRIS-FREE SANDY SOILS) OR IMPORTED BORROW (NON-ORGANIC GRANULAR SOIL).
   1. MAXIMUM PARTICLE SIZE: 2 INCHES
   2. GRADED IN ACCORDANCE WITH ASTM C136, WITHIN THE FOLLOWING LIMITS:
      a. 3 INCH SIEVE: 100 PERCENT PASSING.
      b. No. 200 SIEVE: 0 TO 12 PERCENT PASSING.

D. CHOKER COURSE: CONFORMING TO AASHTO NO. 8, 78, OR 89 STONE, WASHED; NO LIMESTONE.

E. DRAINAGE FILL: CONFORMING TO AASHTO NO. 57 STONE, WASHED; NO LIMESTONE.

F. GRANULAR BEDDING
   1. CONFORMING TO MNDOT 3149.2F GRANULAR BEDDING.

G. TOPSOIL: TOPSOIL SHALL CONFORM TO MNDOT 3877.2A COMMON TOPSOIL BORROW.
   1. TOPSOIL SOURCE: IMPORTED OR SALVAGED ON-SITE. REUSE SURFACE SOIL STOCKPILED ON-SITE WHEN POSSIBLE AND WHEN APPROVED IN WRITING BY LANDSCAPE ARCHITECT. VERIFY SUITABILITY OF STOCKPILED SURFACE SOIL THROUGH TESTING AND AMEND STOCKPILED SOIL TO MEET MNDOT 3877.2A COMMON TOPSOIL BORROW.
   2. CLEAN SURFACE SOIL OF ROOTS, PLANTS, SOD, STONES GREATER THAN 3/4-INCH, CLAY CLUMPS, AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH.
   3. MAXIMUM PARTICLE SIZE OF 3/4-INCH.

H. PLANTING SOIL: PLANTING SOIL FOR PERENNIAL BEDS, TREE AND SHRUB BACKFILL AREAS, AND AS INDICATED IN THE DRAWINGS.
   1. PLANTING SOIL SOURCE FOR TREES AND BOULEVARD RESTORATION SHALL CONFORM TO MNDOT 3877.2B LOAM TOPSOIL BORROW. IMPORTED OR SALVAGED ON-SITE. REUSE SURFACE SOIL STOCKPILED ON-SITE WHEN POSSIBLE AND WHEN APPROVED BY LANDSCAPE ARCHITECT. VERIFY SUITABILITY OF STOCKPILED SURFACE SOIL THROUGH TESTING AND AMEND STOCKPILED SOIL TO MEET MNDOT 3877.2B LOAM TOPSOIL BORROW.
   2. PLANTING SOIL SOURCE FOR PERENNIAL AND SHRUB BEDS: REUSE SURFACE SOIL STOCKPILED ON-SITE WHEN POSSIBLE. DISC IN A MINIMUM OF 12 INCHES OF COMPOST THAT SHALL CONFORM TO MNDOT TYPE 2 COMPOST. VERIFY SUITABILITY OF STOCKPILED SURFACE SOIL THROUGH TESTING AND AMEND STOCKPILED SOIL TO MEET MNDOT 3877.2B LOAM TOPSOIL BORROW.
   3. CLEAN SURFACE SOIL OF ROOTS, PLANTS, SOD, STONES GREATER THAN 3/4-INCH, CLAY CLUMPS, AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH. SALVAGED TOPSOIL STOCKPILED FOR REUSE AS PLANTING SOIL IN PERENNIAL BEDS SHALL BE FREE FROM NOXIOUS WEEDS, RHIZOMES, AND SEEDS DELETERIOUS TO PLANT GROWTH.
   4. MAXIMUM PARTICLE SIZE OF 3/4-INCH.

I. BIOFILTRATION FILL: CONFORMING TO MNDOT 3877.2F FILTER TOPSOIL BORROW (80% SAND, 20% COMPOST).

J. AGGREGATE BASE: CONFORMING TO MNDOT 3138 AGGREGATE BASE, CLASS 5.

3.04 GEOTEXTILE SOIL STABILIZATION AND LAYER SEPARATION

A. GEOTEXTILE FABRIC:
   1. BELOW PAVING OR SIMILAR CONSTRUCTION: CATEGORY 2 SEPARATOR/STRENGTHENING GEOTEXTILE FABRIC MEETING THE REQUIREMENTS OF MNDOT 3733 TYPE 9.

3.05 COMPACTION AND FIELD QUALITY CONTROL

A. MAXIMUM DENSITY SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D698 "STANDARD TEST METHODS FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING STANDARD EFFORT."

B. COMPACTION REQUIREMENTS AT SPECIFIC LOCATIONS, AND TESTING FREQUENCY SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
   1. USE GENERAL FILL UNLESS OTHERWISE SPECIFIED OR INDICATED.
   2. UNDER ALL FOOTINGS:
      a. USE ENGINEERED FILL.
      b. FILL TO BOTTOM OF FOOTING ELEVATION.
      c. COMPACTION TO 98 PERCENT OF MAXIMUM DRY DENSITY.
   3. UNDER INTERIOR SLABS ON GRADE
      a. USE ENGINEERED FILL.
      b. COMPACT TO 95 PERCENT OF MAXIMUM DRY DENSITY.
      c. COVER WITH STRUCTURAL FILL (NFS).
      d. COMPACT TO 95 PERCENT OF MAXIMUM DRY DENSITY.
   4. AGAINST FOUNDATION WALLS AND FOOTINGS
      a. USE ENGINEERED FILL.
      b. COMPACT EACH LIFT TO 95 PERCENT OF MAXIMUM DRY DENSITY.
      c. DO NOT BACKFILL AGAINST UNSUPPORTED FOUNDATION WALLS.
      d. COVER WITH 8 INCHES MINIMUM OF GENERAL FILL, COMPACTED TO 90 PERCENT OF MAXIMUM DRY DENSITY.
   5. UTILITY PIPING, CONDUITS, AND DUCT BANKS
      a. CONFORM TO THE DETAILS IN THE DRAWINGS.
      b. BEDDING: USE FILL TYPE GRANULAR BEDDING.
   6. UNDER EXTERIOR PAVING OR SIMILAR CONSTRUCTION
      a. USE ENGINEERED FILL.
      b. FILL UP TO SUBGRADE ELEVATION, REFER TO THE FINISH SURFACE SECTIONS ON THE DRAWINGS FOR SUBSEQUENT FILL LAYERS.
      c. FILL LAYERS WITHIN THE UPPER 3 FEET OF EXTERIOR PAVEMENT SUBGRADE ELEVATION OR SIMILAR CONSTRUCTION SHALL BE COMPACTED TO 100 PERCENT OF MAXIMUM DRY DENSITY AND TO 95 PERCENT OF MAXIMUM DRY DENSITY BELOW 3 FEET OF EXTERIOR PAVEMENT SUBGRADE ELEVATION.
   7. AT VEGETATED AREAS
      g. USE GENERAL FILL.
      h. COMPACT TO 92 PERCENT OF MAXIMUM DRY DENSITY.

C. PERFORM GRADATION TESTING ON FILL MATERIALS IN ACCORDANCE WITH ASTM C 136.
   1. IF TESTS INDICATE MATERIAL DOES NOT MEET SPECIFIED REQUIREMENTS, REMOVE, REPLACE AND RETEST.
   2. FREQUENCY OF TESTS: PROVIDE THE MINIMUM NUMBER OF TESTS AS FOLLOWS, ONE TEST MINIMUM.
      a. GENERAL FILL: ONE TEST AT/OF FILL SOURCE AND ONE TEST FOR EVERY 1000 CU. YDS. OF FILL PLACED ON SITE.
      b. STRUCTURAL FILL, ENGINEERED FILL, DRAINAGE FILL, GRANULAR BEDDING: ONE TEST AT/OF FILL SOURCE AND ONE TEST FOR EVERY 500 CU. YDS. OF FILL PLACED ON SITE.

D. BIOFILTRATION FILL: PROVIDE GRADATION, CHEMICAL, AND pH TESTING ANALYSIS OF THE COMPOST MATERIALS AND GRADATION ANALYSIS FOR THE FINE AGGREGATE.

E. PERFORM COMPACTION DENSITY TESTING ON COMPACTED FILL IN ACCORDANCE WITH ASTM D6938.
   1. EVALUATE TEST RESULTS IN RELATION TO COMPACTION CURB DETERMINED BY TESTING UNCOMPACTED MATERIAL IN ACCORDANCE WITH ASTM D698 ("STANDARD PROCTOR").
   2. IF TESTS INDICATE WORK DOES NOT MEET SPECIFIED REQUIREMENTS, REMOVE WORK, REPLACE AND RETEST.
   3. FREQUENCY OF TESTS: PROVIDE THE MINIMUM NUMBER OF TESTS AS FOLLOWS, ONE TEST MINIMUM.
      a. SLABS-ON-GRADE: ONE TEST FOR EVERY 1000 SQ. FT. PER 1 FOOT DEPTH OF MATERIAL PLACED OR FRACTION THEREOF.
      b. FOUNDATION WALLS AND FOOTINGS: ONE TEST FOR EVERY 25 LIN. FT. OF WALL/FOOTING LENGTH AND ONE TEST UNDER EACH COLUMN FOOTING.
      c. EXTERIOR PAVING OR SIMILAR CONSTRUCTION: ONE TEST FOR EVERY 2500 SQ. FT. PER 1 FOOT OF DEPTH OF MATERIAL PLACED OR FRACTION THEREOF.
      d. OVER BURIED UTILITY PIPING AND CONDUITS IN TRENCHES: 1 TEST FOR EVERY 200 LIN. FT. OF TRENCH PER 3 FEET OF DEPTH.
      e. VEGETATED AREAS: ONE TEST FOR EVERY 10,000 SQ. FT. PER 1 FOOT OF DEPTH OF MATERIAL PLACED OR FRACTION THEREOF.

G. TOPSOIL AND PLANTING SOIL: FURNISH SOIL ANALYSIS AND A WRITTEN REPORT BY A QUALIFIED SOIL TESTING LABORATORY STATING PERCENTAGES OF ORGANIC MATTER; GRADATION OF SAND, SILT, AND CLAY CONTENT; CATION EXCHANGE CAPACITY; SOLUBLE SALTS; DELETERIOUS MATERIAL; pH; AND MINERAL AND PLANT-NUTRIENT CONTENT OF THE SOIL.
   1. BASED UPON THE TEST RESULTS, DETERMINE SOIL TREATMENTS AND SOIL AMENDMENTS TO BE INCORPORATED. DETERMINE WEIGHT PER 1000 SQ. FT. OR VOLUME PER CU. YD. FOR NITROGEN, PHOSPHORUS, AND POTASH NUTRIENTS AND SOIL AMENDMENTS TO BE ADDED TO PRODUCE SATISFACTORY PLANTING SOIL SUITABLE FOR HEALTHY, VIABLE PLANTS.

H. PROOF ROLL COMPACTED FILL AT SURFACES THAT WILL BE UNDER SLAB-ON-GRADE AND EXTERIOR PAVING.

PORTLAND CEMENT CONCRETE

4.01 QUALITY ASSURANCE

A. CONCRETE PAVEMENT SHALL CONFORM TO MNDOT 2301.

B. CONCRETE SIDEWALKS SHALL CONFORM TO MNDOT 2521.

C. CONCRETE CURB AND GUTTER SHALL CONFORM TO MNDOT 2531.

D. EXCEPT AS MODIFIED BELOW.

4.02 MATERIALS

A. CONCRETE MATERIALS: CONFORMING TO MNDOT 2461.

B. JOINT FILLER: PREFORMED, NON-EXTRUDING BITUMINOUS TYPE (ASTM D1751) OR SPONGE RUBBER OR CORK (ASTM D1752); THICKNESS: 1/2 INCH.

C. CURING COMPOUND: MNDOT 3754 POLY-ALPHA METHYL STYRENE MEMBRANE CURING COMPOUND (AMS).

D. CONCRETE MIX:
   D.1. CONCRETE PAVEMENT CONFORMING TO MNDOT 2461, MIX NO. 3F32.
   D.2. CONCRETE SIDEWALKS CONFORMING TO MNDOT 2461, MIX NO. 3F32.
   D.3. CONCRETE CURB AND GUTTER CONFORMING TO MNDOT 2461, MIX. NO. 3F52 FOR MANUAL PLACEMENT AND MIX NO. 3F32 FOR SLIP-FORM PLACEMENT.

4.03 PREPARATION

A. MOISTEN BASE TO MINIMIZE ABSORPTION OF WATER FROM FRESH CONCRETE.

B. COAT SURFACES OF MANHOLE FRAMES WITH OIL TO PREVENT BOND WITH CONCRETE PAVEMENT.

C. PLACE AND SECURE FORMS TO CORRECT LOCATION, DIMENSION, PROFILE, AND GRADIENT.

D. ASSEMBLE FORMWORK TO PERMIT EASY STRIPPING AND DISMANTLING WITHOUT DAMAGING CONCRETE.

E. PLACE JOINT FILLER VERTICAL IN POSITION, IN STRAIGHT LINES. SECURE TO FORMWORK DURING CONCRETE PLACEMENT.

4.04 PLACING CONCRETE

A. PLACE CONCRETE PAVEMENT IN ACCORDANCE WITH MNDOT 2301.

B. PLACE CONCRETE SIDEWALKS IN ACCORDANCE WITH MNDOT 2521.3.

C. PLACE CONCRETE CURB AND GUTTER IN ACCORDANCE WITH MNDOT 2531.3E.

D. DO NOT PLACE CONCRETE WHEN BASE SURFACE IS WET.

4.05 JOINTS

A. CONCRETE PAVEMENT JOINTS AND JOINT SEALANT SHALL CONFORM TO MNDOT 2301.

B. JOINT CONCRETE SIDEWALKS IN ACCORDANCE WITH MNDOT 2521.3D.

C. JOINT CONCRETE CURB AND GUTTER IN ACCORDANCE WITH MNDOT 2531.3E.

D. ALIGN CURB, GUTTER, AND SIDEWALK JOINTS.

E. PLACE 3/8 INCH WIDE EXPANSION JOINTS AT 50 FOOT INTERVALS TO SEPARATE PAVING FROM VERTICAL SURFACES AND OTHER COMPONENTS AND IN PATTERN INDICATED.
   1. FORM JOINTS WITH JOINT FILLER EXTENDING FROM BOTTOM OF PAVEMENT TO WITHIN 1/2 INCH OF FINISHED SURFACE.
   2. SECURE TO RESIST MOVEMENT BY WET CONCRETE.

F. SAW CUT CONTRACTION JOINTS 1/8 INCH WIDE AT OPTIMUM TIME AFTER FINISHING. CUT 1/4 INTO DEPTH OF SLAB.

4.06 FINISHING

A. FINISH CONCRETE PAVEMENT IN ACCORDANCE WITH MNDOT 2301 (METAL-TINE-TEXTURING IS NOT REQUIRED).

B. FINISH CONCRETE SIDEWALKS IN ACCORDANCE WITH MNDOT 2521.D.

C. FINISH CONCRETE CURB AND GUTTER IN ACCORDANCE WITH MNDOT 2531.3C, F, G.

D. PLACE CURING COMPOUND ON EXPOSED CONCRETE SURFACES IMMEDIATELY AFTER FINISHING. APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

4.07 FIELD QUALITY CONTROL

A. COMPRESSIVE STRENGTH TESTS: ASTM C39/C39M; FOR EACH TEST, MOLD AND CURE THREE CONCRETE TEST CYLINDERS. OBTAIN TEST SAMPLES FOR EVERY 50 CU YD OR LESS OF EACH CLASS OF CONCRETE PLACED EACH DAY.

B. PERFORM ONE SLUMP AND AIR TEST AT THE POINT OF DISCHARGE FOR EACH AND EVERY CONCRETE TRUCK DELIVERY TO THE SITE.

4.08 PROTECTION

A. IMMEDIATELY AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING, EXCESSIVE HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY.

BITUMINOUS PAVING

5.01 QUALITY ASSURANCE

A. EQUIPMENT: UTILIZE EQUIPMENT OF PROPER SIZE AND IN GOOD WORKING CONDITION TO PROSECUTE THE WORK TO FULL COMPLETION IN A SATISFACTORY MANNER.

B. DELIVERY, STORAGE, AND HANDLING: PROTECT MOISTURE SENSITIVE MATERIALS AGAINST WETTING BY RAIN, SNOW, OR GROUND MOISTURE, AND AGAINST INTERMIXTURE WITH EARTH OR OTHER TYPES OF MATERIALS.

C. PROTECT HOT MIX ASPHALT FROM COLD TEMPERATURES AND ENSURE ADEQUATE TEMPERATURE IS MAINTAINED DURING PLACEMENT AND COMPACTION.

5.02 MATERIALS

A. AGGREGATE BASE: MNDOT STANDARD SPECIFICATION SECTION 3138, CLASS 5 OR CLASS 7(SALVAGED/RECYCLED ASPHALT OR CONCRETE), 100 PERCENT CRUSHED.

B. TACK COAT: MNDOT STANDARD SPECIFICATION SECTION 2357.

C. HOT MIX ASPHALT:
   1. BITUMINOUS WEAR COURSE: MNDOT STANDARD SPECIFICATION SECTION 2360, MIXTURE DESIGNATION AS SEEN IN DRAWINGS EXCEPT AS AMENDED IN THE "MODIFICATIONS" BELOW. ASPHALT CONTENT OF MIXTURE PER RESULT OF JOB MIX FORMULA. DESIGN ASPHALT CONTENT IN ACCORDANCE WITH CURRENT MNDOT STANDARD.
   2. RECYCLED MATERIAL MAY BE USED IN THE HMA ACCORDING TO MNDOT STANDARD SPECIFICATION 2360.

5.03 EXECUTION

A. ESTABLISHMENT OF GRADES: GRADE PAVED AREAS UNIFORMLY TO MATCH SURROUNDING EXISTING PAVEMENT WITHOUT AWKWARD OR ABRUPT TRANSITIONS AND TO PROVIDE POSITIVE DRAINAGE FREE OF PUDDLING. UNLESS SPECIFIED OTHERWISE, GRADE AT A CONTINUOUS POSITIVE SLOPE OF 2 PERCENT (MINIMUM) AND 5 PERCENT (MAXIMUM) TO DRAINAGE PROVISIONS (E.G., CURBS, CATCH BASINS, SWALES) TO PREVENT PUDDLES IMMEDIATELY AFTER RAIN EVENTS. ADDITIONALLY, DO NOT ALLOW STANDING WATER AT PAVEMENT EDGES IMMEDIATELY AFTER RAIN EVENTS FOR FINISHED CONDITION.

B. AGGREGATE BASE:
   1. THICKNESS FOR NEW PAVING: REFERENCE DRAWINGS.
   2. PLACE IN MAXIMUM 4 INCH LOOSE LIFTS AND COMPACT TO 100% STANDARD PROCTOR DENSITY.
   3. EXTEND AGGREGATE BASE COURSE A MINIMUM OF 1 FOOT BEYOND OUTSIDE EDGE OF NEW PAVEMENT AND CURB, UNLESS NOTED OTHERWISE IN THE DRAWINGS.
   4. PROOF ROLL SUBGRADE AND CORRECT AS NECESSARY PRIOR TO PAVEMENT INSTALLATION.

C. HOT MIX ASPHALT PAVING
   1. THICKNESS FOR NEW PAVING: REFERENCE DRAWINGS.
   2. PLACE THE BITUMINOUS PAVEMENT IN ACCORDANCE WITH MNDOT STANDARD SPECIFICATION SECTION 2360.
   3. PROVIDE A TACK COAT BETWEEN LIFTS AS SPECIFIED HEREIN.
   4. MINIMUM LIFTS: 1.5 INCHES
   5. COMPACTION FOR NEW PAVING: COMPACT T

PAVEMENT MARKINGS

6.01 QUALITY ASSURANCE

A. CONTRACTOR: SPECIALIZED OR EXPERIENCED IN PAVEMENT MARKING REQUIRED FOR THE PROJECT, FOR NOT LESS THAN 3 YEARS, AND WHICH IS ACCEPTABLE TO PAINT MANUFACTURER.

B. DELIVERY, STORAGE, AND HANDLING
1. PROVIDE PAINT IN MINIMUM 5 GALLON CONTAINERS ACCOMPANIED BY BATCH CERTIFICATE.
2. STORE PRODUCTS IN MANUFACTURER'S UNOPENED PACKAGING UNTIL READY FOR INSTALLATION.

C. EQUIPMENT:
1. EQUIPMENT MUST HAVE PROVISIONS FOR CONSTANT AGITATION OF PAINT, CONTROLLED TRAVEL SPEEDS WITH ONE OR MORE PAINT GUNS SYNCHRONIZED TO BEGIN AND CUT OFF PAINT FLOW AUTOMATICALLY IN CASE OF SKIP LINES, AND SUBJECT TO MANUAL CONTROL IN CASE OF CONTINUOUS AREAS OF VARYING SIZES.
2. PNEUMATIC SPRAY GUNS FOR HAND APPLICATION OF PAINT IN AREAS WHERE MOBILE PAINT APPLICATOR CANNOT BE USED.

6.02 PRODUCTS

A. PAINTED PAVEMENT MARKINGS: COLOR AS INDICATED ON DRAWINGS.
1. LINE AND ZONE MARKING PAINT: IN ACCORDANCE WITH MPI (APL) NO. 97 LATEX TRAFFIC MARKING PAINT.

B. OBLITERATING PAINT: IN ACCORDANCE WITH FS TT-P-1952.
1. BITUMINOUS PAVEMENT: BLACK.
2. CONCRETE PAVEMENT: GRAY.

6.03 EXECUTION

A. PREPARATION:
1. CLEAN SURFACES TO RECEIVE PAINT APPLICATIONS AS REQUIRED BY PAINT MANUFACTURER'S INSTRUCTIONS TO ENSURE GOOD ADHESION.
2. NEW PAVEMENT SURFACES: ALLOW SURFACES TO CURE FOR A PERIOD OF NOT LESS THAN 14 DAYS BEFORE APPLICATION OF MARKING MATERIALS. CLEAN SURFACES BEFORE APPLICATION OF PAINT. REMOVE DUST, DIRT, AND OTHER GRANULAR SURFACE DEPOSITS BY SWEEPING, BLOWING WITH COMPRESSED AIR, RINSING WITH WATER, OR A COMBINATION OF THESE METHODS AS REQUIRED.

B. INSTALLATION:
1. APPLY PAVEMENT MARKINGS IN ACCORDANCE WITH THE PAINT MANUFACTURER'S PRINTED INSTRUCTIONS TO UNIFORM, TRUE, AND SHARP LINE. APPLY PAINT ON PROPERLY CURED, PREPARED, AND DRIED SURFACES AS INDICATED TO ESTABLISHED CONTROL POINTS.
2. OBLITERATING PAINT: APPLY AS NECESSARY TO COVER EXISTING MARKINGS COMPLETELY.
3. MARKING PAINT: APPLY PAINT AT WET FILM THICKNESS OF 0.015 INCH MINIMUM. APPLY PAINT IN ONE COAT. APPLY ADDITIONAL COATS TO LIGHT SPOTS. STRICTLY ADHERE TO MAXIMUM DRYING TIME REQUIREMENTS. REMOVE AND REPLACE PAINT MARKINGS APPLIED DEVIATING FROM TRUE ALIGNMENT, EXCEEDING STIPULATED LENGTH AND WIDTH TOLERANCES, OR SHOWING LIGHT SPOTS, SMEARS, OR OTHER IRREGULARITIES.
4. STALL PAINTING: FOR 4 INCH WIDE STRIPE 300 LINEAL FEET/GALLON (MINIMUM).
5. TOLERANCES: LENGTH AND WIDTH OF LINES WITHIN 3 INCHES AND 1/8 INCH, RESPECTIVELY.
6. TEMPERATURE OF SURFACE: GREATER THAN 50 DEGREES F AND LESS THAN 95 DEGREES F.

C. PROTECTION:
1. PROTECT PAINTED AREAS IN SUCH A MANNER THAT NECESSARY TRAFFIC CAN MOVE WITHOUT UNDUE HINDRANCE.
2. REMOVE AND REPLACE DAMAGED PORTIONS OF MARKINGS AT NO ADDITIONAL COST TO THE OWNER.
3. KEEP PAINTED AREAS FREE OF TRAFFIC FOR A MINIMUM OF 4 HOURS OR UNTIL THOROUGHLY DRY.
4. PROTECT FEATURES ADJACENT TO WORK AREAS FROM DAMAGE DO TO OVERSPRAY.

SITE WATER UTILITY

7.01 QUALITY ASSURANCE

A. ALL MATERIALS, WORK, AND TESTING IN ACCORDANCE WITH MUNICIPALITY AND MINNESOTA PLUMBING CODE REQUIREMENTS.

7.02 PIPE

A. COPPER TUBING: ASTM B88, TYPE K, ANNEALED:
1. FITTINGS: ASME B16.18, CAST COPPER, OR ASME B16.22, WROUGHT COPPER.
2. JOINTS: COMPRESSION CONNECTION OR AWS A5.8M/A5.8, BCUP SILVER BRAZE.

B. POLYETHYLENE PIPE, 4 INCH AND SMALLER: ASTM D3035, FOR 160 PSIG PRESSURE RATING:
1. FITTINGS: AWWA C901, MOLDED OR FABRICATED.
2. JOINTS: BUTT FUSION ACCORDING TO ASTM D3261.

D. PVC PIPE: AWWA C900, CLASS 150.
1. FITTINGS: AWWA C111/A21.11, SCHEDULE 40 PER ASTM D2466 OR SCHEDULE 80 PER ASTM D2467.
2. JOINTS: ASTM D3139 COMPRESSION GASKET RING.

E. TRACE WIRE: MAGNETIC DETECTABLE CONDUCTOR, CLEAR PLASTIC COVERING, IMPRINTED WITH "WATER SERVICE" IN LARGE LETTERS.

7.03 VALVES

A. GATE VALVES 3 INCHES AND OVER:
1. AWWA C509, IRON BODY, BRONZE TRIM, NON-RISING STEM WITH SQUARE NUT, SINGLE WEDGE, RESILIENT SEAT, FLANGED ENDS, CONTROL ROD, POST INDICATOR, VALVE KEY, AND EXTENSION BOX.

B. BALL VALVES UP TO 2 INCHES:
1. BRASS BODY, TEFLON COATED BRASS BALL, RUBBER SEATS AND STEM SEALS, TEE STEM PRE-DRILLED FOR CONTROL ROD, AWWA INLET END, COMPRESSION OUTLET WITH ELECTRICAL GROUND CONNECTOR, WITH CONTROL ROD, VALVE KEY, AND EXTENSION BOX.

C. CORPORATION STOPS UP TO 2 INCHES:
1. INLET CONNECTION SHALL BE MALE TAP END, AWWA STANDARD THREADS. OUTLET CONNECTION SHALL BE A COPPER SERVICE THREAD STRAIGHT COUPLING CONNECTION SUITABLE FOR USE WITH ASTM B88 TYPE K COPPER SERVICE TUBING AND SHALL BE PROVIDED WITH A COPPER TUBE FLARE NUT.

7.04 INSTALLATION - PIPE

A. MAINTAIN SEPARATION OF WATER MAIN FROM SEWER PIPING IN ACCORDANCE WITH MINNESOTA PLUMBING CODE, CURRENT EDITION.

B. ESTABLISH ELEVATIONS OF BURIED PIPING TO ENSURE NOT LESS THAN 8 FEET OF COVER.

C. INSTALL PIPE TO INDICATED ELEVATIONS TO WITHIN TOLERANCE OF 1/2 INCHES.

D. INSTALL DUCTILE IRON PIPING AND FITTINGS TO AWWA C600.

E. INSTALL PIPE TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE OR JOINTS.

F. ALL PLUGS, CAPS, TEES, BENDS, AND OTHER THRUST POINTS SHALL BE PROVIDED WITH THRUST BLOCKING ACCORDING TO DETAILS ON THE DRAWINGS.

7.05 INSTALLATION - VALVES

A. SET VALVES ON SOLID BEARING.

B. CENTER AND PLUMB VALVE BOX OVER VALVE. SET BOX COVER FLUSH WITH FINISHED GRADE.

SITE SANITARY SEWER UTILITY

8.01 QUALITY ASSURANCE

1. ALL MATERIALS, WORK, AND TESTING IN ACCORDANCE WITH MUNICIPALITY AND MINNESOTA PLUMBING CODE REQUIREMENTS.

8.02 MANHOLES AND STRUCTURES

A. MANHOLES
1. ALL SANITARY SEWER MANHOLES SHALL MEET THE REQUIREMENTS OF MNDOT 3622 AND MNDOT STANDARD PLATE 4007C. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING OPENINGS IN THE MANHOLE SECTION AT PROPER LOCATIONS ACCORDING TO THE DRAWINGS. NO STEPS WILL BE ALLOWED IN THE MANHOLES. ALL MANHOLES MUST HAVE AN INTEGRAL CONCRETE BASE.
2. MANHOLE SECTIONS SHALL BE REINFORCED PRECAST CONCRETE IN ACCORDANCE WITH ASTM C478 WITH RESILIENT CONNECTORS COMPLYING WITH ASTM C932.
3. MANHOLE CASTINGS SHALL BE NO. 700-7, CONFORMING TO MNDOT STANDARD PLATE 4101D WITH COVER CASTING NO. 716, CONFORMING TO MNDOT STANDARD PLATE 4110F.
4. SANITARY SEWER MANHOLE COVERS SHALL BE WATER TIGHT.
5. ALL MANHOLES, ASSOCIATED COVERS AND CASTINGS SHALL CONFORM TO THE MINNESOTA PLUMBING CODE.

B. NON-SHRINK GROUT OR CEMENT-BASE POLYMER MODIFIED PATCHING MORTAR
2. NON-SHRINK GROUT SHALL BE A NON-METALLIC TYPE GROUT WHICH IS DURABLE IN WETTING AND DRYING, FREEZING AND THAWING CONDITIONS AND SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN ASTM C 1107-91. CEMENT-BASED POLYMER MODIFIED PATCHING MORTAR SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN ASTM C 109, ASTM C 490-77, AND ASTM C 807-83 (MODIFIED).

C. ADJUSTING RINGS: HIGH DENSITY POLYETHYLENE (HDPE) RECYCLED ADJUSTING RINGS AD DEFINED IN ASTM D-1248.

D. WATER TIGHT SEAL: WATER TIGHT SEAL AT PIPE PENETRATION INCLUDING AN INTERNAL EXPANDING LOCKING BAND CREATING A POSITIVE MECHANICAL SEAL, FLEXIBLE SLEEVE, AND A STAINLESS STEEL EXTERIOR CLAMP. SEAL SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SHALL CONFORM TO THE REQUIREMENTS OF THE MINNESOTA PLUMBING CODE, CURRENT EDITION.

8.03 PIPE

A. PROVIDE PRODUCTS THAT COMPLY WITH THE MINNESOTA PLUMBING CODE.

B. PLASTIC PIPE: ASTM D1785, SCHEDULE 40, POLYVINYL CHLORIDE (PVC) MATERIAL; SIZE AS INDICATED ON DRAWINGS; BELL AND SPIGOT STYLE SOLVENT SEALED END JOINT.

C. FITTINGS: SAME MATERIAL AS PIPE MOLDED OR FORMED TO SUIT PIPE SIZE AND END DESIGN, IN REQUIRED TEE, WYES, BENDS, ELBOWS, CLEANOUTS, REDUCERS, TRAPS, AND OTHER CONFIGURATIONS REQUIRED.

D. FORCE MAIN: POLYETHYLENE (PE) PIPE: ASTM D3350 AND ASTM D3035, POLYETHYLENE (PE) MATERIAL (DR-PR), MINIMUM PRESSURE RATING OF 100 PSI, AT 73.4 DEGREES F. THERMAL BUTT FUSION JOINTS AND FITTINGS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS; PIPE AND FITTINGS SAME MATERIAL UTILIZING TRANSITION FITTINGS WHEN CONNECTING TO EXISTING PIPING.

E. TRACER WIRE: #12 SOLID COPPER WITH "HMWPE" 30 MIL INSULATION. INSULATION FOR SANITARY APPLICATIONS SHALL BE GREEN; CONFORM TO THE REQUIREMENTS OF THE MINNESOTA PLUMBING CODE 604.10.1.

8.04 PIPE INSTALLATION

A. INSTALL PIPE, FITTINGS, AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SEAL WATERTIGHT. FOR PLASTIC PIPE, ALSO COMPLY WITH ASTM D2321.

B. INSTALL TRACER WIRE 6 INCHES ABOVE TOP OF PIPE.

SITE STORMWATER UTILITY

9.01 QUALITY ASSURANCE

1. ALL MATERIALS, WORK, AND TESTING IN ACCORDANCE WITH MUNICIPALITY AND MINNESOTA PLUMBING CODE REQUIREMENTS.

9.02 MANHOLES AND STRUCTURES

A. MANHOLES
1. STORM SEWER MANHOLES SHALL MEET THE REQUIREMENTS OF MNDOT 3622 AND MNDOT STANDARD PLATE 4005M, DESIGN F AND/OR MNDOT STANDARD PLATE 4020J OR 4006L. "O" RING GASKETS SHALL BE USED IN THE JOINTS IN THE BARREL SECTIONS. THE CONE SECTIONS SHALL BE CONCENTRIC (TYPE A).
2. UNLESS SPECIFIED OTHERWISE, MANHOLE CASTINGS SHALL BE NO. 700-7, CONFORMING TO MNDOT STANDARD PLATE 4101D WITH COVER CASTING NO. 716, CONFORMING TO MNDOT STANDARD PLATE 4110F.
3. MANHOLE SECTIONS SHALL BE REINFORCED PRECAST CONCRETE IN ACCORDANCE WITH ASTM C478 WITH RESILIENT CONNECTORS COMPLYING WITH ASTM C932.

B. CATCH BASINS
1. ALL STORM SEWER CATCH BASINS SHALL MEET THE REQUIREMENTS OF MNDOT 3622 AND MNDOT STANDARD PLATE 4020J OR 4006L. "O" RING GASKETS SHALL BE USED IN THE JOINTS IN THE BARREL SECTIONS. THE CONE SECTIONS SHALL BE CONCENTRIC (TYPE A).
2. UNLESS SPECIFIED OTHERWISE, CATCH BASIN CASTINGS SHALL BE NO. 802A, CONFORMING TO MNDOT STANDARD PLATE 4129G WITH CURB BOX CASTING NO. 825, CONFORMING TO MNDOT STANDARD PLATE 4134A AND GRATE NO. 816, CONFORMING TO MNDOT STANDARD PLATE 4154B.

C. NON-SHRINK GROUT OR CEMENT-BASE POLYMER MODIFIED PATCHING MORTAR
1. NON-SHRINK GROUT SHALL BE A NON-METALLIC TYPE GROUT WHICH IS DURABLE IN WETTING AND DRYING, FREEZING AND THAWING CONDITIONS AND SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN ASTM C 1107-91. CEMENT-BASED POLYMER MODIFIED PATCHING MORTAR SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN ASTM C 109, ASTM C 490-77, AND ASTM C 807-83 (MODIFIED).

D. ADJUSTING RINGS: HIGH DENSITY POLYETHYLENE (HDPE) RECYCLED ADJUSTING RINGS AD DEFINED IN ASTM D-1248.

E. ALL MANHOLES, CATCH BASINS, ASSOCIATED COVERS AND CASTINGS SHALL CONFORM TO THE MINNESOTA PLUMBING CODE.

9.03 PIPE

A. PROVIDE PRODUCTS THAT COMPLY WITH THE MINNESOTA PLUMBING CODE.

B. PLASTIC PIPE: ASTM D1785, SCHEDULE 40, POLYVINYL CHLORIDE (PVC) MATERIAL; SIZE AS INDICATED ON DRAWINGS; BELL AND SPIGOT STYLE SOLVENT SEALED END JOINT.

C. REINFORCED CONCRETE PIPE (RCP): ALL STORM SEWER PIPE SHALL MEET THE REQUIREMENTS OF MNDOT 3236 "REINFORCED CONCRETE PIPE" AND AASTHO M 170 "STANDARD SPECIFICATION FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE".

F. PIPE SIZE AS SPECIFIED ON PLANS.

TRACER WIRE: MAGNETIC DETECTABLE CONDUCTOR, CLEAR PLASTIC COVERING, IMPRINTED WITH "STORMWATER SERVICE" IN LARGE LETTERS

9.04 PIPE INSTALLATION

A. INSTALL PIPE, FITTINGS, AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

INSTALL TRACER WIRE 6 INCHES ABOVE TOP OF PLASTIC PIPE.

File Path: ...\240668\02 Howard Lake MN\SD\Drawings\Civil\240668.02 C011 SPECIFICATIONS.dwg
Plot Date: 2025/4/23 9:48 PM

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

PRELIMINARY
NOT FOR CONSTRUCTION
04/24/2025

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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
SITE SPECIFICATIONS

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C012

SEEDING

2.01 SEED MIXTURES
- A. TURF SEED MIX
  1. MANUFACTURER: RAMY TURF PRODUCTS; HTTPS://RAMYTURF.COM/PRODUCT-CATEGORY/SEED/HOUSE-MIXES/LAWN-TURF/
  2. MIX TYPE: STREET SIDE (BOULEVARD SALT TOLERANT)
  3. APPLY MANUFACTURER RECOMMENDED SEED RATES.
- B. SHOOTING STAR NATIVE SEED'S "WOODLAND EDGE MIX," OR APPROVED EQUAL.
  1. MANUFACTURER: SHOOTING STAR NATIVE SEED, OR APPROVED EQUAL.
  2. SEED RATE: PER MANUFACTURER'S INSTRUCTIONS. COVER CROP FOR SEEDED AREAS: PER MANUFACTURER'S INSTRUCTIONS
- C. SHOOTING STAR NATIVE SEED'S "DETENTION BASIN AND RAIN GARDEN MIX," OR APPROVED EQUAL.
  1. MANUFACTURER: SHOOTING STAR NATIVE SEED, OR APPROVED EQUAL.
  2. SEED RATE: PER MANUFACTURER'S INSTRUCTIONS. COVER CROP FOR SEEDED AREAS: PER MANUFACTURER'S INSTRUCTIONS

2.02 SOIL MATERIALS
- A. TOPSOIL REQUIREMENTS ARE IN EARTHWORK SECTION. THE GRADING OF ALL AREAS SHALL BE WITHIN 6" OF FINAL GRADE, AND AT LEAST 6" OF TOPSOIL SHALL BE APPLIED TO ACHIEVE FINAL GRADING. THE LANDSCAPE CONTRACTOR SHALL FINE GRADE AS NEEDED IN PREPARATION FOR THEIR PLANTINGS.
  1. IF TOPSOIL IS EXCAVATED FROM SITE, IT MUST BE TESTED TO CONFIRM IT MEETS SPECIFICATION AND BE FREE OF WEEDS.
  2. CONTRACTOR SHALL RAKE OUT AND REMOVE ALL OBJECTIONABLE MATTER IN THE TOPSOIL AND LEVEL SOIL PRIOR TO INSTALLING SEED. CONTRACTOR TO BEAR THE COST OF TESTING.

2.03 WATER
- A. CONTRACTOR SHALL FURNISH A HOSE AND HOSE CONNECTION FROM HYDRANTS AND/OR OUTLETS WHERE THE WATER WILL BE FURNISHED.
- B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY SOURCE OF WATER AND ITS AVAILABILITY PRIOR TO ITS USE.

2.04 ACCESSORIES
- A. TURF SEED MULCHING MATERIAL: OAT OR WHEAT STRAW, FREE FROM WEEDS, FOREIGN MATTER DETRIMENTAL TO PLANT LIFE, AND DRY. HAY OR CHOPPED CORNSTALKS ARE NOT ACCEPTABLE.
- B. NATIVE SEED MULCHING MATERIALS: NATIVE GRASS STRAW MULCH. MCIA CERTIFIED FREE OF WEED SEED AND FOREIGN MATERIALS. 2 TONS PER ACRE.
- C. STEEP SLOPE MULCHING MATERIAL: ON SLOPES GREATER THAN 4:1 OR AS INDICATED ON DRAWINGS, NETLESS EROSION CONTROL FABRIC, IN NATURAL COLOR.
- D. FERTILIZER: NATURAL BASE, RECOMMENDED FOR TURF GRASSES AND PERENNIALS, WITH AT LEAST 50 PERCENT OF THE ELEMENTS DERIVED FROM ORGANIC SOURCES; OF PROPORTION NECESSARY TO ELIMINATE DEFICIENCIES OF TOPSOIL. IF NO TOPSOIL TEST IS AVAILABLE, FERTILIZER TO HAVE THE FOLLOWING PROPORTIONS:
  1. NITROGEN: 18 PERCENT.
  2. PHOSPHORIC ACID: 1 PERCENT.
  3. SOLUBLE POTASH: 8 PERCENT.

2.05 EXAMINATION
- A. PRIOR TO PLACEMENT OF SEED, CONTRACTOR IS RESPONSIBLE FOR THE EXAMINATION AND ACCEPTANCE OF ALL CONDITIONS AFFECTING THE PROPER INSTALLATION OF HIS WORK AND WILL NOT PROCEED UNTIL ALL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- B. VERIFY THAT PREPARED SOIL BASE IS READY TO RECEIVE THE WORK OF THIS SECTION.

2.06 PREPARATION
- A. PREPARE SUBGRADE IN ACCORDANCE WITH EARTHWORK SECTION ON SHEET C001.
- B. THE GRADING OF ALL AREAS SHALL BE WITHIN 6 INCHES OF FINAL GRADE, WITH AT LEAST 6 INCHES OF TOPSOIL TO ACHIEVE FINAL GRADING. FINE GRADE AS NEEDED IN PREPARATION FOR SEEDING.
- C. TOPSOIL REQUIREMENTS ARE SPECIFIED IN SECTION 3.03.C.

2.07 FERTILIZING
- A. APPLY FERTILIZER IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. APPLY AFTER SMOOTH RAKING OF TOPSOIL AND PRIOR TO ROLLER COMPACTION.
- C. DO NOT APPLY FERTILIZER AT SAME TIME OR WITH SAME MACHINE AS WILL BE USED TO APPLY SEED.
- D. MIX THOROUGHLY INTO UPPER [3] INCHES OF TOPSOIL.
- E. LIGHTLY WATER TO AID THE DISSIPATION OF FERTILIZER.

2.08 SEEDING
- A. APPLY SEED MIXTURES AND COVER CROP AT THE RATES RECOMMENDED BY SEED PRODUCER.
- B. SEED EVENLY IN TWO INTERSECTING DIRECTIONS. RAKE IN LIGHTLY.
- C. DO NOT SEED AREAS IN EXCESS OF THAT WHICH CAN BE MULCHED ON SAME DAY.
- D. PLANTING SEASON:
  1. TURF SEEDING: APRIL 15 - JULY 15, OR SEPTEMBER 20 - OCTOBER 20.
  2. NATIVE SEEDING: APRIL-JUNE OR OCTOBER THROUGH FIRST FREEZE
- E. DO NOT SOW IMMEDIATELY FOLLOWING RAIN, WHEN GROUND IS TOO DRY, OR DURING WINDY PERIODS.
- F. ROLL SEEDED AREA WITH ROLLER NOT EXCEEDING 112 LBS.
- G. IMMEDIATELY FOLLOWING SEEDING AND COMPACTING, APPLY MULCH TO AN EVEN THICKNESS OF 1 TO 3 INCHES. INSTALL AT A RATE OF 2 TONS PER ACRE BY DISC ANCHORING. MAINTAIN CLEAR OF SHRUBS AND TREES.
- H. APPLY WATER WITH A FINE SPRAY IMMEDIATELY AFTER EACH AREA HAS BEEN MULCHED. SATURATE TO 4 INCHES OF SOIL.
- I. FOLLOWING GERMINATION, IMMEDIATELY RE-SEED AREAS WITHOUT GERMINATED SEEDS THAT ARE LARGER THAN 4 BY 4 INCHES.

2.09 HYDROSEEDING
- A. HYDROSEEDING IS AN OPTIONAL ALTERNATIVE TO MECHANICAL SEEDING. IF HYDROSEEDING, THE CONDITIONS BELOW MUST BE FOLLOWED.
  1. APPLY SEEDED SLURRY WITH A HYDRAULIC SEEDER AT A RATE OF [54] LBS PER 1000 SQ FT EVENLY IN TWO INTERSECTING DIRECTIONS.
  2. USE FLOOD-TYPE NOZZLES AND MANUFACTURER'S RECOMMENDED WATER VOLUME.
  3. ONCE THE SEED HAS BEEN ADDED TO THE TANK MIXTURE, A ONE HOUR TIME LIMIT IS SET FOR SPREADING THE MIXTURE ON THE SOIL. ONCE THE ONE HOUR LIMIT HAS PASSED, THE EXCESS MUST BE DISCARDED.
  4. DO NOT HYDROSEED AREA IN EXCESS OF THAT WHICH CAN BE MULCHED ON SAME DAY.
  5. IMMEDIATELY FOLLOWING SEEDING, APPLY MULCH TO A THICKNESS OF 1/8 INCHES. MAINTAIN CLEAR OF SHRUBS AND TREES.
  6. APPLY WATER WITH A FINE SPRAY IMMEDIATELY AFTER EACH AREA HAS BEEN MULCHED. SATURATE TO 4 INCHES OF SOIL.
  7. PROVIDE FERTILIZER TYPE 4 WITH A 17-10-7 ANALYSIS RATIO AT THE RATE OF 150 LB/ACRE ON ALL SEEDED AREAS.
  8. HYDROSEEDING MUST BE PERFORMED SEPARATELY FROM HYDRAULIC EROSION CONTROL PRODUCTS (HYDRO-MULCHING).
  9. TYPE BONDED FIBER MATRIX (BFM) TO BE APPLIED WITH HYDRAULIC SPRAY EQUIPMENT BY A MANUFACTURER'S CERTIFIED APPLICATOR.
  10. APPLY BFM AT THE TARGETED DRY WEIGHT RATE OF 3500 LB/ACRE. ADJUSTMENTS ARE MADE IN THE FIELD BASED ON SITE CHARACTERISTICS, SOIL CONDITIONS, AND MANUFACTURER RECOMMENDATIONS.
  11. USE THE WATER-TO-BALE RATIO RECOMMENDED BY THE MANUFACTURER.
  12. APPLY THE BFM FROM AT LEAST TWO OPPOSING DIRECTIONS AND OBTAIN CONTINUOUS GROUND COVERAGE.
  13. APPLY THE BFM IN TWO STAGES USING ONE HALF OF THE MATERIAL IN EACH STAGE. ALLOW THE FIRST STAGE APPLICATION TO DEWATER BEFORE APPLYING THE SECOND STAGE.
  14. FOLLOWING GERMINATION, IMMEDIATELY RE-SEED AREAS WITHOUT GERMINATED SEEDS THAT ARE LARGER THAN 4 BY 4 INCHES.

2.10 PROTECTION
- A. IDENTIFY SEEDED AREAS WITH STAKES AND STRING AROUND AREA PERIPHERY. SET STRING HEIGHT TO 36 INCHES. SPACE STAKES AT 48 INCHES.
- B. COVER SEEDED SLOPES WHERE GRADE IS 3 INCHES PER FOOT OR GREATER OR AS INDICATED ON THE PLANS WITH EROSION FABRIC. ROLL FABRIC ONTO SLOPES WITHOUT STRETCHING OR PULLING.
- C. LAY FABRIC SMOOTHLY ON SURFACE, BURY TOP END OF EACH SECTION IN 6 INCH DEEP EXCAVATED TOPSOIL TRENCH. PROVIDE 12 INCH OVERLAP OF ADJACENT ROLLS. BACKFILL TRENCH AND RAKE SMOOTH, LEVEL WITH ADJACENT SOIL.
- D. SECURE OUTSIDE EDGES AND OVERLAPS AT 36 INCH INTERVALS WITH STAKES.
- E. AT SIDES OF DITCHES, LAY FABRIC LAPS IN DIRECTION OF WATER FLOW. LAP ENDS AND EDGES MINIMUM 6 INCHES.
- F. CONTRACTOR SHALL PROTECT ALL THAT IS TO REMAIN AND SHALL CONDUCT ALL SEEDING OPERATIONS IN A MANNER THAT WILL NOT DAMAGE OR JEOPARDIZE THE SURROUNDING PLANT LIFE DESIGNATED ON THE DRAWINGS AS PROPOSED OR TO REMAIN.
- G. MONUMENTS: CAREFULLY MAINTAIN BENCHMARKS, MONUMENTS AND OTHER REFERENCE POINTS, IF DISTURBED OR DESTROYED, HAVE REPLACED OR RELOCATED BY A REGISTERED SURVEYOR AT CONTRACTOR'S EXPENSE.

2.11 COORDINATION
- A. COORDINATE TIMING OF TOPSOIL INSTALLATION WITH SEED.

2.12 LIMITS OF WORK
- A. SEED ALL AREAS IDENTIFIED ON DRAWINGS. SEED AREAS BETWEEN THE SITE AND PUBLIC ROAD THAT ARE DISTURBED DURING CONSTRUCTION. ANY SEED THAT IS PLACED ON SITE BY THE EXCAVATOR FOR EROSION CONTROL AND SUBSEQUENTLY DISTURBED SHALL BE REMOVED AND/OR REPLACED BY THE LANDSCAPE CONTRACTOR.
- B. RESTORE ALL LAWN AND SURFACE AREAS, WHETHER WITHIN THE CONTRACT LIMITS OR NOT, DISTURBED AS A RESULT OF EARTHWORK OPERATIONS OF THIS PROJECT. RESTORATION SHALL BE BY SEED UNLESS OTHERWISE NOTED ON THE PLANS.

2.13 ESTABLISHMENT AND REPLACEMENT
- A. ANY SEED WHICH FAILS TO GERMINATE WITHIN THREE WEEKS SHALL BE RE-SEEDED AS SOON AS WEATHER AND SEASONS PERMIT. SPOTS LARGER THAN ONE FOOT IN DIAMETER WHICH ARE BARE OR THINLY GERMINATED SHALL BE RE-SEEDED. ACCEPTANCE OF SEEDED AREAS BY THE LANDSCAPE ARCHITECT WILL NOT BE MADE UNTIL IT IS EVIDENT THAT THE SEED HAS GERMINATED AND 70% OR MORE PERENNIAL COVER IS ESTABLISHED.
- B. THE CONTRACTOR SHALL ENSURE ESTABLISHMENT AND MAINTAIN SEEDED AREAS BY WATERING, WEEDING AND MOWING FOR A PERIOD OF THREE MONTHS FROM DATE OF SUBSTANTIAL COMPLETION.

2.14 WATERING AND MAINTENANCE
- A. WATERING SHALL BE PERFORMED BY THE CONTRACTOR AS NECESSARY TO ASSURE THAT SEEDED AREAS ARE UNIFORMLY MOISTENED AND MAINTAINED IN A MOIST CONDITION FOR A PERIOD OF THREE MONTHS FROM THE DATE OF SUBSTANTIAL COMPLETION.
- B. TURF SEED AREAS:
  1. PROVIDE MAINTENANCE OF SEEDED AREAS FOR THREE MONTHS FROM DATE OF SUBSTANTIAL COMPLETION.
  2. IF SEEDING OCCURS IN THE FALL AND THERE IS INSUFFICIENT TIME FOR THE SEED TO GERMINATE BEFORE FREEZE-UP, THE CONTRACTOR WILL NEED TO CONTINUE TO MAINTAIN THE SEEDED AREAS IN THE SPRING UNTIL THE GRASS IS WELL ESTABLISHED AND EXHIBITS A VIGOROUS GROWING CONDITION.
  3. IF NECESSARY, MOW GRASS AT REGULAR INTERVALS TO MAINTAIN AT A MAXIMUM HEIGHT OF [3] INCHES. DO NOT CUT MORE THAN 1/3 OF GRASS BLADE AT ANY ONE MOWING.
  4. IMMEDIATELY REMOVE CLIPPINGS AFTER MOWING AND TRIMMING.
  5. WATER TO PREVENT GRASS AND SOIL FROM DRYING OUT.
  6. ROLL SURFACE TO REMOVE MINOR DEPRESSIONS OR IRREGULARITIES.
  7. IMMEDIATELY RESEED AREAS THAT SHOW BARE SPOTS.
  8. PROTECT SEEDED AREAS WITH WARNING SIGNS DURING MAINTENANCE PERIOD.
- C. NATIVE SEED AREAS:
  1. DURING FIRST GROWING SEASON, THE NATIVE AREAS SHALL BE MOWED A MINIMUM OF 2 TIMES AS NEEDED TO CONTROL ANNUAL WEED DEVELOPMENT. MOWING SHALL TAKE PLACE WHEN REGROWTH REACHES 18-30 INCHES. MOWING HEIGHT SHALL BE 4-6 INCHES. A FLAIL OR ROTARY MOWER OF HAND HELD WEED WHIP SHALL BE USED. CONTRACTOR SHALL ALSO KEEP NATIVE GRASS AND FORB PLANTINGS FREE OF ALL NOXIOUS WEEDS AND OTHER INVASIVE VEGETATION. RESEED AS REQUIRED TO MEET INTENDED RESULTS OF A HEALTHY NATIVE GRASS AND FORB PLANTING.
  2. IN YEARS FOLLOWING THE FIRST GROWING SEASON, MANAGEMENT SERVICES COULD INCLUDE CONTROLLED BURNING, SPOT SPRAYING, SPOT CUTTING, HAND WEEDING, AND VOLUNTEER TREE SAPLING REMOVAL.
  3. MAINTENANCE INSTRUCTIONS: CONTRACTOR SHALL SUBMIT TYPEWRITTEN INSTRUCTIONS RECOMMENDING PROCEDURES FOR TO BE ESTABLISHED BY OWNER FOR MAINTENANCE AND MANAGEMENT OF NATIVE GRASS AND FORB PLANTING DURING ENTIRE YEAR. SUBMIT PRIOR TO EXPIRATION OF REQUIRED MAINTENANCE PERIODS.
  4. PROVIDE OWNER WITH OPTIONAL CONTRACT FOR EXTENDED MANAGEMENT SERVICES TO BE CONTRACTED SEPARATELY FROM THE INSTALLATION CONTRACT AFTER TERMINATION OF WARRANTY AND MANAGEMENT SERVICES INCLUDE IN INSTALLATION.

2.15 CLEAN-UP
- A. ALL MATERIAL BROUGHT INTO PAVED AREAS BY SEEDING WORK OPERATIONS SHALL BE REMOVED PROMPTLY, KEEPING THESE AREAS CLEAN AT ALL TIMES. UPON COMPLETION OF SEEDING, EXCESS SOILS, ROCK AND DEBRIS NOT PREVIOUSLY CLEANED UP SHALL BE DISPOSED OF OFF-SITE.
- B. ALL GROUND AREA DISTURBED AS A RESULT OF SEEDING SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR TO THE DESIRED NEW APPEARANCE.

SODDING

3.01 LIMITS OF WORK
- A. SOD ALL AREAS IDENTIFIED ON DRAWINGS. RESTORE ALL LAWN AND SURFACE AREAS, WHETHER WITHIN THE CONSTRUCTION LIMITS OR NOT, DISTURBED AS A RESULT OF EARTHWORK OPERATIONS OF THIS JOB. RESTORATION SHALL BE BY SOD UNLESS OTHERWISE NOTED ON THE PLAN.

3.02 MATERIALS
- A. SOD SHALL INCLUDE A MAXIMUM OF 2" OF WELL-ESTABLISHED CULTURED SOD. SOD SHALL BE FREE FROM NOXIOUS WEEDS, RELATIVELY FREE FROM ALL OTHER WEEDS AND FREE FROM ROOTS, STONES AND OTHER OBJECTIONABLE MATERIALS. SOD SHALL RESIST NORMAL HANDLING WITHOUT UNDUE BREAKING OR TEARING.
- B. BEFORE SOD IS CUT, IT SHALL BE RAKED FREE OF DEBRIS AND THE TOP GROWTH TRIMMED TO A HEIGHT OF APPROXIMATELY 2".
- C. SOD SHALL BE CUT IN UNIFORM STRIPS 18" MINIMUM WIDTH AND TO A UNIFORM THICKNESS SO A DENSE ROOT SYSTEM WILL BE RETAINED, BUT BE EXPOSED ON THE BOTTOM SIDE OF THE SOD. WHEN SOD IS CUT, IT SHALL BE SUFFICIENTLY MOIST TO WITHSTAND EXPOSURE AND HANDLING DURING TRANSPLANT OPERATIONS. IF NECESSARY, SOD SHALL BE WATERED BEFORE CUTTING.

3.03 TOPSOIL
- A. LANDSCAPE CONTRACTOR SHALL RAKE OUT AND REMOVE ALL OBJECTIONABLE MATTER IN THE TOPSOIL AND LEVEL SOIL PRIOR TO INSTALLING SOD.

3.04 GROUND PREPARATION
- A. THE GRADING OF ALL AREAS TO WITHIN 6" OF FINAL GRADE AND THE PLACING OF 4" TOPSOIL FOR FINAL GRADING IS SPECIFIED IN THE EARTHWORK SECTION.
- B. PRIOR TO PLACEMENT OF SOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXAMINATION AND ACCEPTANCE OF ALL CONDITIONS AFFECTING THE PROPER INSTALLATION OF HIS WORK AND SHALL NOT PROCEED UNTIL ALL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- C. IMMEDIATELY PRIOR TO SODDING, CONTRACTOR SHALL LOOSEN THE TOPSOIL PLACED BY THE EARTHWORK CONTRACTOR TO A DEPTH OF 3" ON ALL AREAS EXCEPT SLOPES STEEPER THAN 3 HORIZONTALLY TO 1 VERTICALLY, USING DISCS, HARROWS AND TILLER RAKES TO PRODUCE FINE GRADE. ON SLOPES STEEPER THAN 3 TO 1, USE CULTIVATING EQUIPMENT IN GENERAL DIRECTION AT RIGHT ANGLES TO THE DIRECTION OF SURFACE DRAINAGE WHEREVER PRACTICAL. THE LANDSCAPE CONTRACTOR SHALL TOP-OFF THE SOIL WITH AN AVERAGE OF 2" OF TOP SOIL TO RAISE GRADES TO THE FINAL ELEVATIONS.

3.05 FERTILIZING
- A. FERTILIZER SHALL BE A COMMERCIAL FORMULA CONTAINING AT LEAST THE MINIMUM ANALYSIS OF 10-10-10 (10% TOTAL NITROGEN, 10% PHOSPHORIC ACID, AND 10% WATER SOLUBLE POTASH) OR COMPARABLE FERTILIZER, APPLIED AT THE RATE OF 30 POUNDS PER 1,000 SQUARE FEET.
- B. FERTILIZER SHALL BE APPLIED TO A PROPERLY PREPARED SOIL BED PRIOR TO SODDING WITH A MECHANICAL SPREADER AND THOROUGHLY MIXED IN TOP 3" BY MEANS OF A MEEKER HARROW, BY WEIGHTED CHAIN LINK FENCE, OR OTHER APPROVED METHOD. FERTILIZER MUST BE DRY AND FREE FLOWING WHEN APPLIED.
- C. APPLY FERTILIZER NO MORE THAN 48 HOURS BEFORE LAYING SOD.
- D. LIGHTLY WATER TO AID THE DISSIPATION OF FERTILIZER.

3.06 SODDING
- A. PRECAUTIONS SHALL BE TAKEN TO PREVENT SOD FROM DRYING OUT AND FROM HEATING. SOD THAT SHOWS VISIBLE SIGNS OF HEATING SHALL NOT BE INCORPORATED IN THE PROJECT.
- B. STRIPS SHALL BE PLACED TIGHTLY AGAINST EACH OTHER SO THAT NO OPEN JOINTS ARE APPARENT. JOINTS BETWEEN ENDS OF STRIPS SHALL BE STAGGERED AT LEAST ONE FOOT BETWEEN ADJACENT ROWS. SOD SHALL BE PLACED WITHOUT STRETCHING ON TOPSOIL. LAY SMOOTH AND ALIGN WITH ADJOINING GRASS AREAS.
- C. AT THE TOP OF THE SLOPES, SOD WILL BE LAID SO WATER FROM ADJACENT AREAS WILL HAVE FREE FLOW INTO SODDED AREAS.
- D. NO SODDING SHALL BE DONE EARLIER THAN AUGUST 15TH NOT LATER THAN OCTOBER 15TH, FOR FALL SODDING; OR EARLIER THAN APRIL 15TH NOT LATER THAN JUNE 1ST FOR SPRING SODDING. CHANGES IN ABOVE DATES ONLY IF DIRECTED IN WRITING BY THE LANDSCAPE ARCHITECT, SPECIFYING EXACT DATE OF INSTALLATION AND LENGTH OF GUARANTEE PERIOD.
- E. SOD PLACED ON SLOPES STEEPER THAN 3:1 OR IN DRAINAGE SWALES SHALL BE STAKED. SOD SHALL BE STAKED WITH 2 WOOD STAKES PER ROLL. STAKES SHALL BE SPACED NOT MORE THAN 30" APART AT AN ANGLE AGAINST THE FLOW OF THE WATER. STAKES SHALL PROJECT 1/2" ABOVE THE SOD.
- F. SOD SHALL BE WATERED AND COMPRESSED INTO THE UNDERLYING SOIL BY ROLLING OR TAMPED INTO PLACE. THE INITIAL WATERING AND ROLLING SHALL PROVIDE FIRM CONTACT AND BOND BETWEEN THE SOD AND THE UNDERLYING SOIL. THE ROLLING SHALL RESULT IN A SMOOTH, EVEN SURFACE FREE OF HUMPS AND DEPRESSIONS BUT SHALL NOT CAUSE EXCESSIVE COMPACTION. WATER SODDED AREAS IMMEDIATELY AFTER INSTALLATION. SATURATE SOD TO 4 INCHES OF SOIL.
- G. KEEP SOD CONTINUOUSLY MOIST AND WELL-WATERED FOR 14 DAYS AFTER LAYING. THEREAFTER, WATER SOD UNTIL SOIL IS SOAKED AT LEAST ONCE EVERY FOUR DAYS UNLESS NATURAL RAINFALL HAS PROVIDED EQUIVALENT WATER.
- H. PROTECT SODDED AREAS WITH WARNING SIGNS DURING MAINTENANCE PERIOD.

3.07 WATERING AND MOWING
- A. WATERING OF ALL TURF AREAS SHALL BE PERFORMED BY THE CONTRACTOR AS NECESSARY TO ASSURE THAT SODDED AREAS ARE UNIFORMLY MOISTENED AND MAINTAINED IN A MOIST CONDITION UNTIL THE WORK HAS BEEN APPROVED BY THE LANDSCAPE ARCHITECT AND RESPONSIBILITY FOR MAINTENANCE ACCEPTED BY THE OWNER.
- B. SODDED AREAS SHALL BE KEPT TRIMMED TO A HEIGHT NOT TO EXCEED 3" DURING THE CONSTRUCTION PERIOD AND PRIOR TO ACCEPTANCE BY THE OWNER. IMMEDIATELY REMOVE HEAVY CLIPPINGS AFTER MOWING AND TRIMMING.

3.08 ESTABLISHMENT AND REPLACMENT
- A. ANY SOD WHICH FAILS TO BECOME ESTABLISHED DURING THE FIRST 30 DAYS AFTER OWNER ACCEPTANCE SHALL BE REPLACED IMMEDIATELY BY THE CONTRACTOR AT THE DIRECTION OF THE LANDSCAPE ARCHITECT.
- B. THE CONTRACTOR SHALL MAINTAIN BY WATERING, WEEDING AND CUTTING ALL SODDED AREAS UNTIL OWNER ACCEPTANCE OF THE PROJECT.

File Path: J:\240668\02 Harvest Lake MN\500 Drawings\Civil\240668.02 C011 SPECIFICATIONS.dwg
Plot Date: 2/2/24 9:48 PM

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

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04/24/2025

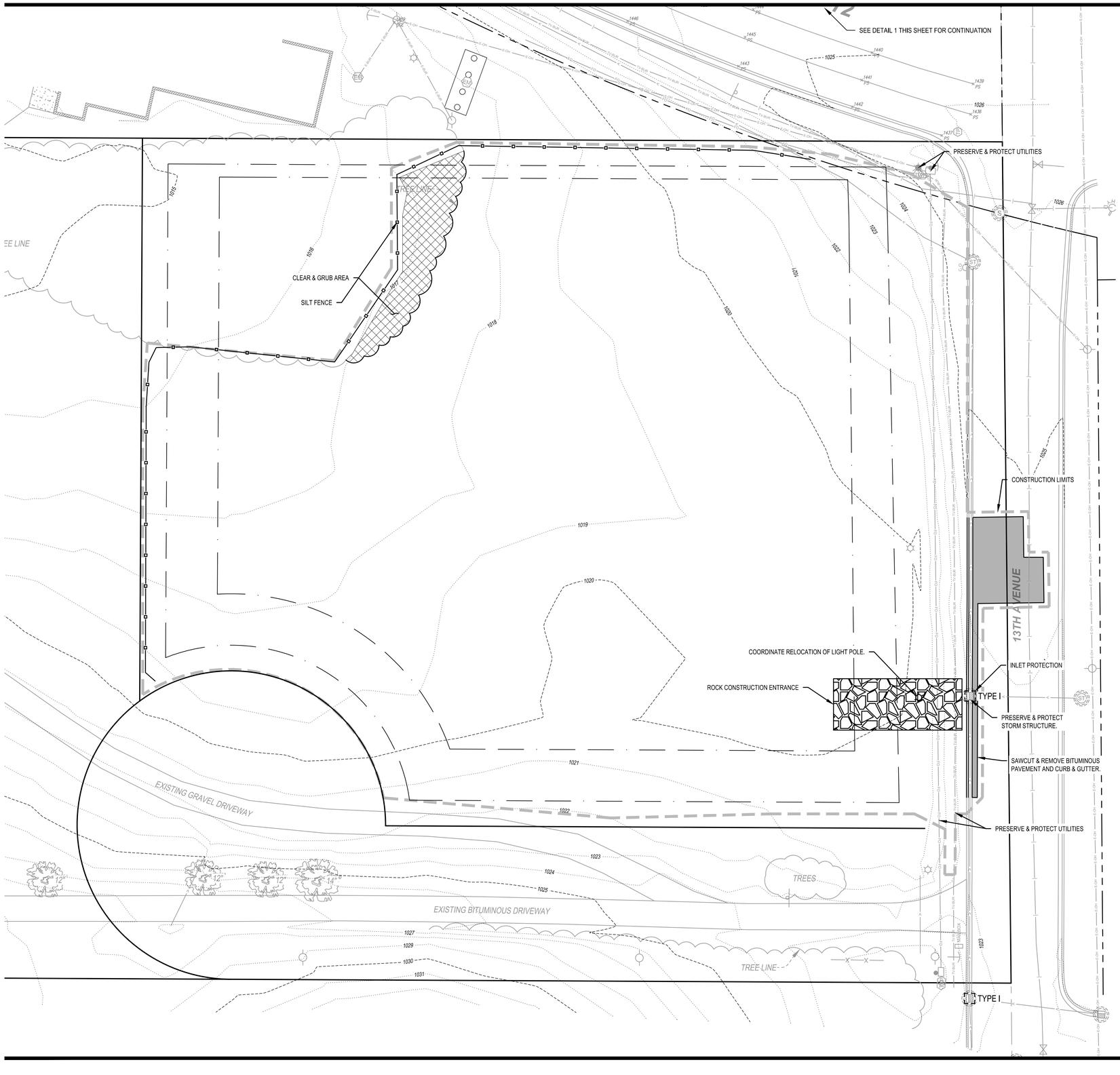
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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
SITE SPECIFICATIONS

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO:

C013



LEGEND

- CONSTRUCTION LIMITS
- ROCK CONSTRUCTION ENTRANCE
- SILT FENCE
- TYPE I — INLET PROTECTION
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE

SHEET NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL ON THIS PROJECT. THE EROSION CONTROL DEVICES SHOWN IN THESE DRAWINGS ARE THE MINIMUM REQUIREMENTS. CONSTRUCT EROSION CONTROL DEVICES AS SHOWN AND AS NECESSARY TO PREVENT RUNOFF, TRACKING, OR LOSS OF SOIL MATERIAL FROM DISTURBED AREAS ON THE PROJECT SITE.
2. SEDIMENT AND EROSION CONTROL DEVICES SHALL BE FUNCTIONAL BEFORE ANY LAND DISTURBANCE ON THE SITE.
3. REMOVE ALL TOPSIOL AND ORGANICS, BRUSH, SHRUBS, TREES AND TREE STUMPS WITHIN THE CONSTRUCTION LIMITS PRIOR TO SUBGRADE PREPARATION UNLESS OTHERWISE NOTED IN THE DRAWINGS. REFER TO GEOTECHNICAL REPORT FOR TOPSOIL THICKNESS.
4. BITUMINOUS PAVEMENT EDGES TO BE REMOVED SHALL BE SAW CUT ALONG A NEAT LINE AS INDICATED IN THE DRAWINGS. DAMAGED PAVEMENT EDGES DUE TO CONSTRUCTION ACTIVITIES SHALL BE RE-SAW CUT ALONG A NEW LINE PRIOR TO PAVEMENT INSTALLATION. REMOVED BITUMINOUS PAVEMENT SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED DISPOSAL FACILITY.

ESTIMATED QUANITIES		
EROSION CONTROL MEASURE	QTY *	MEASURE
SILT FENCE	446	LF
INLET PROTECTION	3	EACH
ROCK CONSTRUCTION ENTRANCE	1	EACH
EROSION CONTROL BLANKET	17455	SF
DITCH CHECK	7	EA
* REFER TO SHEETS C101 & C102		

WARNING

LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.
CALL BEFORE DIGGING

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1-800-252-1166
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MINNEAPOLIS, MN 55402

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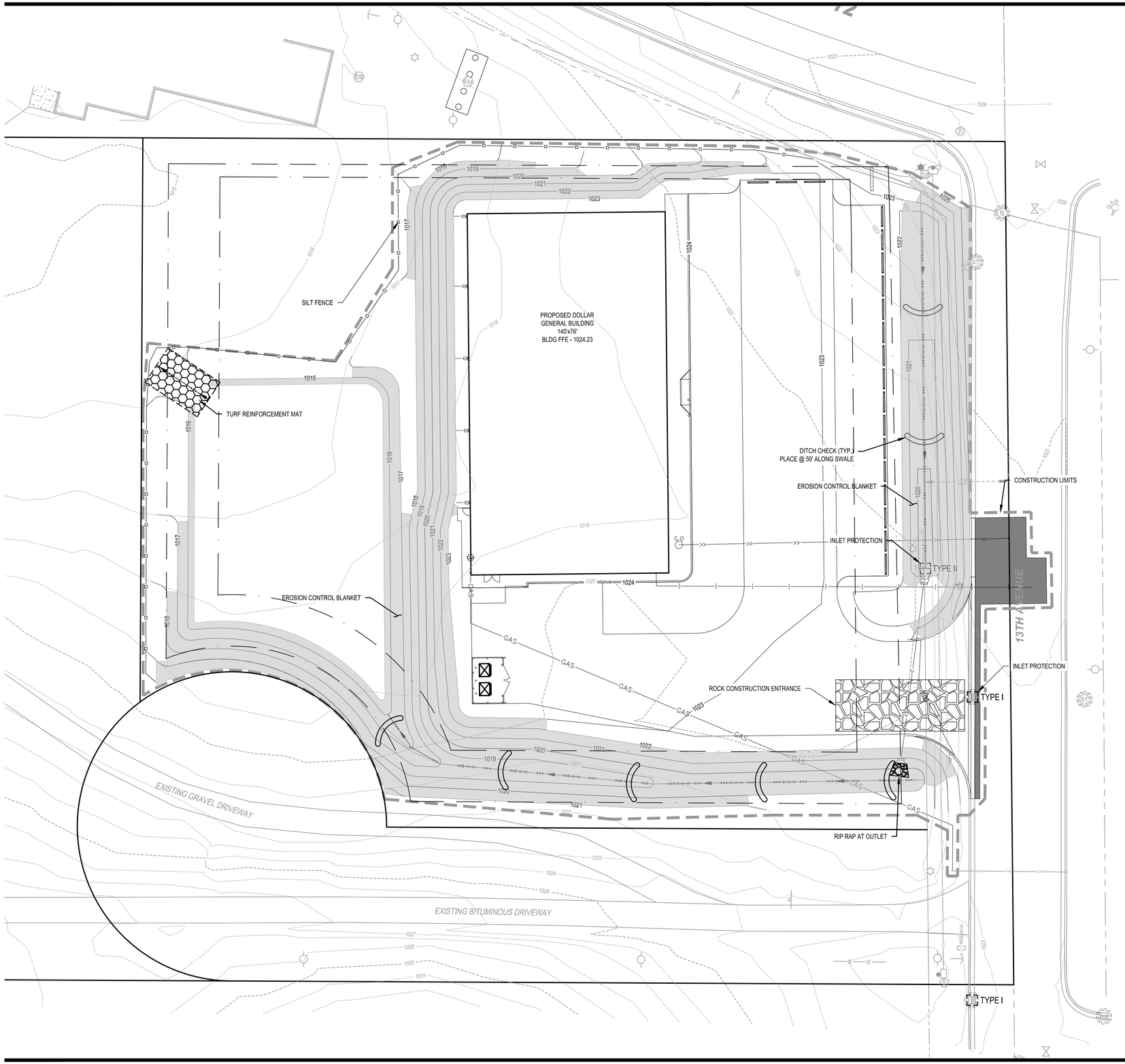
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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
REMOVALS & INITIAL EROSION CONTROL PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: **C101**

File Path: I:240668\02 Hewett Lake MN\50 Drawings\Civil\240668.02 C101 REMOVALS.dwg
Plot Date: 2025/4/23 9:49 PM



LEGEND

- CONSTRUCTION LIMITS
- SILT FENCE
- TYPE I INLET PROTECTION
- NETLESS BLANKET
- RIPRAP
- DITCH CHECK

GENERAL NOTES

1. SEDIMENT AND EROSION CONTROL MEASURES INDICATED ON SHEET C101 ARE TO BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
2. REFER TO LANDSCAPE PLAN FOR PERMANENT TURF ESTABLISHMENT REQUIREMENTS.
3. SEE SHEETS C101 FOR INITIAL EROSION CONTROL PLAN.
4. SLOPES TO BE STABILIZED WITH MNDOT CATEGORY 20 BLANKET AND BIODEGRADABLE STAPLES OR APPROVED EQUAL. NETTING AND METAL STAPLES WILL NOTE BE ALLOWED.

WARNING

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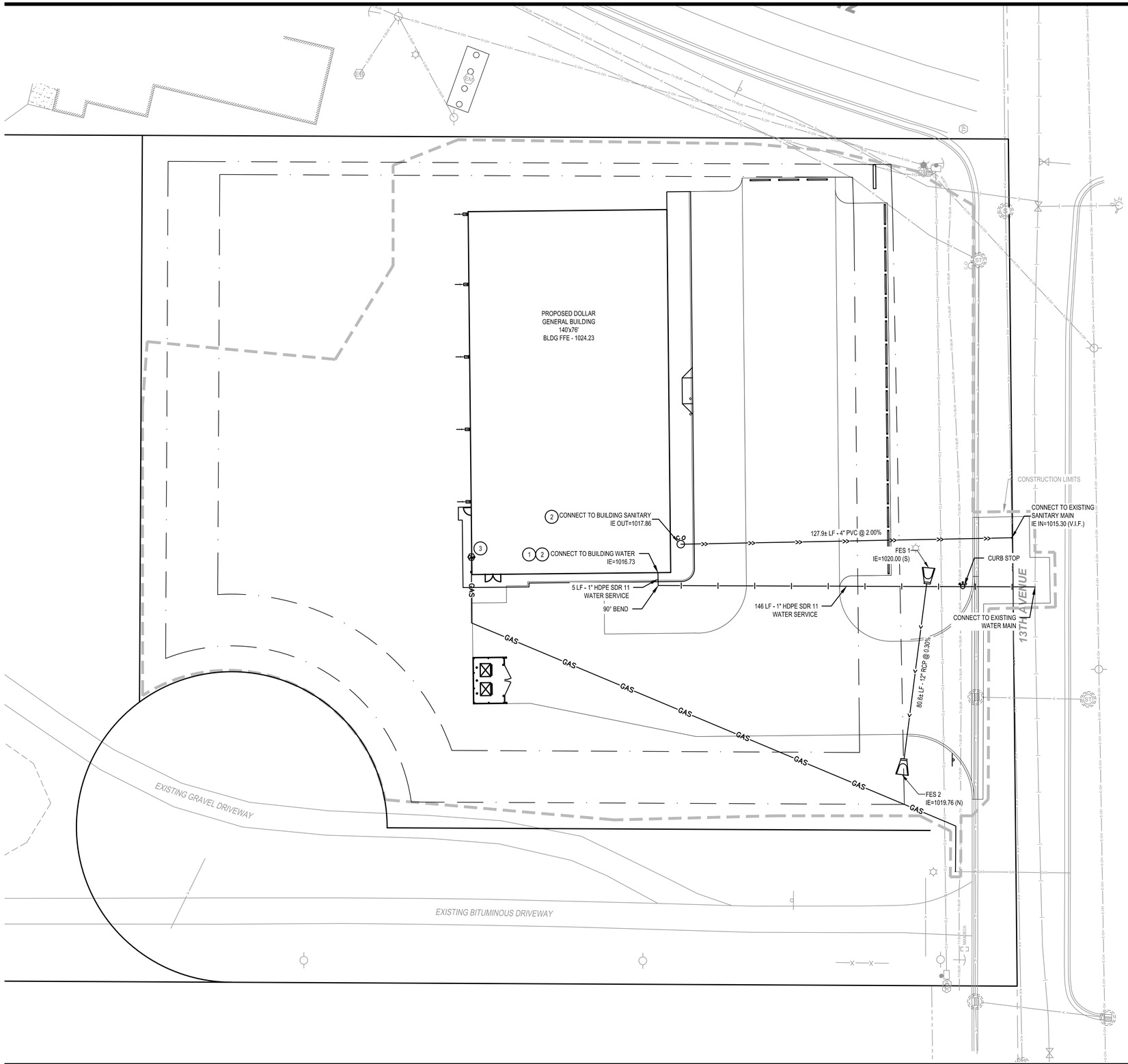
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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
PROPOSED EROSION CONTROL PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240688
DRAWING NO: **C102**

File Path: I:\240688\2 Howard Lake MN\00 Drawings\Cad\240688.00 C102 PROP EC.dwg
Plot Date: 2025/4/23 9:51 PM



LEGEND

- CONSTRUCTION LIMITS
- WATER SERVICE
- FLARED END SECTION, SEE 6/C501
- STORM SEWER
- SANITARY SEWER SERVICE
- GAS LINE
- SPLASH BLOCK, REFER TO ARCH FOR DETAIL
- CURB STOP

SHEET NOTES

1. EXISTING UTILITIES ARE BASED ON RECORD DRAWINGS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENGINEER. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. UTILIZE THE "GOPHER STATE ONE CALL SYSTEM" (1-800-252-1166) TO HAVE PUBLIC UTILITIES LOCATED WITHIN THE CONSTRUCTION LIMITS. CONTACT THE OWNER TO LOCATE PRIVATE UTILITIES LOCATED WITHIN THE CONSTRUCTION LIMITS. NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS.
2. UNLESS NOTED OTHERWISE, ALL UTILITY TRENCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAIL 3 ON SHEET C503.
3. NOT ALL FITTINGS ARE SHOWN IN THE DRAWINGS. PROVIDE ALL NECESSARY FITTINGS TO COMPLETE THE WORK.
4. THE CONTRACTOR SHALL FIELD BEND ALL WATER SERVICE PIPE. PROVIDE MINIMUM INSIDE BEND RADIUS OF 5 FEET.
5. ALL FLARED END SECTIONS SHALL HAVE TRASH GUARDS INSTALLED ON THEM.

SHEET KEY NOTES

1. THE PROPOSED WATER SERVICE SHALL BE INSTALLED WITH A MINIMUM 7.5' OF COVER.
2. CONNECT TO PROPOSED BUILDING PLUMBING 5 FEET FROM THE OUTER BUILDING WALL. REFER TO MECHANICAL FOR ADDITIONAL INFORMATION.
3. GAS METER LOCATION. GAS SERVICE TO BE DESIGNED BY CONTRACTOR. IF PROPANE TANK IS NEEDED COORDINATE LOCATION WITH LHB.

WARNING

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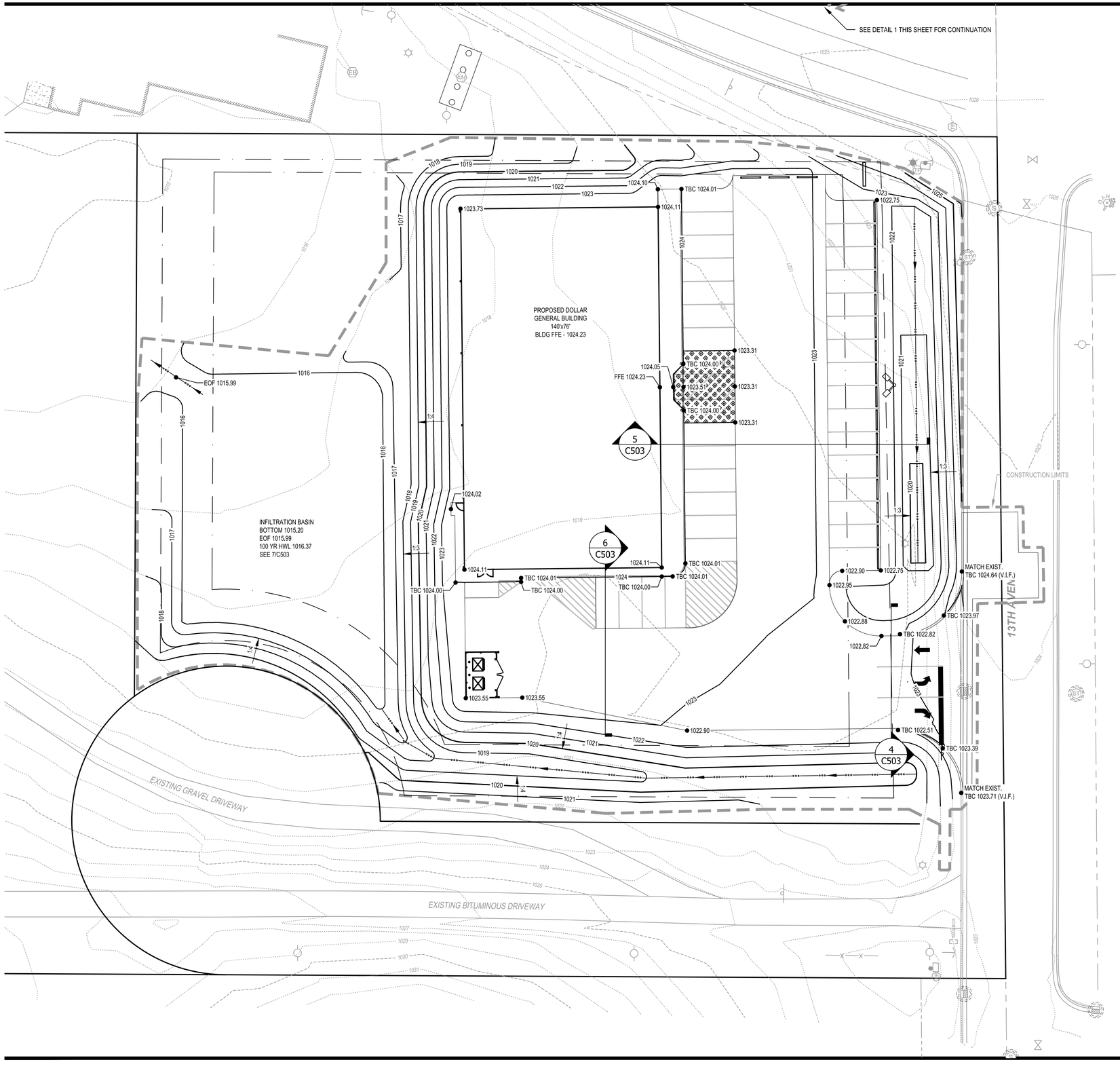
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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
UTILITY PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C201

File Path: ...\240668\02 Howard Lake MN\50\Drawings\Civil\240668.02 C201 UTILITY.dwg
Plot Date: 2025/4/23 9:51 PM



LEGEND

- CONSTRUCTION LIMITS
- MAJOR CONTOUR (5' INTERVAL)
- MINOR CONTOUR (1' INTERVAL)
- SLOPE ARROW
- 863.25 SPOT ELEVATION
- SWALE
- ADA CRITICAL AREA 2% MAX IN ANY DIRECTION

GENERAL NOTES

1. GRADES SHOWN ARE FINISH SURFACE ELEVATIONS UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL MAKE APPROPRIATE DEDUCTIONS FOR VARYING SURFACES TO DETERMINE SUBGRADE ELEVATIONS.
2. SPOT ELEVATIONS ALONG CURB LINES REPRESENT THE TOP BACK OF CURB UNLESS OTHERWISE NOTED.
3. UNLESS NOTED OTHERWISE, GRADES ADJACENT TO THE BUILDING WALL SHALL BE 6" BELOW FINISH FLOOR ELEVATION IN LANDSCAPED AREAS AND 1.5" BELOW FINISH FLOOR ELEVATION FOR PAVED AREAS.
4. CONTRACTOR SHALL STOP WORK IMMEDIATELY IN THE AFFECTED AREA AND NOTIFY THE OWNER IF CONTAMINANTS ARE FOUND IN THE EXISTING SOILS.
5. SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 2.0%. CROSS-SLOPES OF AT LEAST 1.5% IN THE GENERAL DIRECTION OF THE OVERALL SITE SLOPE WILL BE ACHIEVED IN AREAS WHERE LONGITUDINAL SLOPES ARE LESS THAN 1.5%.
6. ONLY PLACE FILL MATERIALS ON COMPETENT, INSPECTED SUBGRADE.
7. IN AREAS WHERE NEW FILL IS TO BE PLACED ON SLOPING GROUND, BENCHING THE SURFACE SHALL BE COMPLETED PRIOR TO PLACING THE FILL. BENCHING SHALL BE COMPLETED WHERE SLOPES ARE STEEPER THAN 4:1 (HORIZONTAL:VERTICAL)
8. SEE SHEETS C101-102 FOR THE SEDIMENTATION AND EROSION CONTROL PLANS.
9. PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREA. DO NOT ALLOW WATER TO POND IN EXCAVATION AREAS, AND MAINTAIN ALL EXISTING DRAINAGE PATTERNS.
10. THE CONTRACTOR SHALL ADJUST TO GRADE ALL MANHOLES STRUCTURES AND APPURTENANCES THAT FALL WITHIN THE LIMITS OF THIS CONTRACT. THE CONTRACTOR SHALL KEEP ALL SAID EXISTING UTILITIES AND THEIR APPURTENANCES FREE OF DEBRIS AND OPERABLE AT ALL TIMES DURING CONSTRUCTION.
11. ALL GRADE WITHIN THE LANDSCAPED AREAS SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL AND HAVE A MINIMUM GRADE OF 2%, UNLESS OTHERWISE NOTED. AROUND THE BUILDING SHALL BE GRADED AT 5% FOR 10'. GRADED SWALES MUST HAVE A MINIMUM BOTTOM SLOPE OF 2.0%.
12. WORK WITHIN THE PUBLIC ROW MUST BE COORDINATED WITH THE CITY. CONTRACTOR TO PROVIDE 2 HOUR NOTICE.

WARNING

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MINNEAPOLIS, MN 55402

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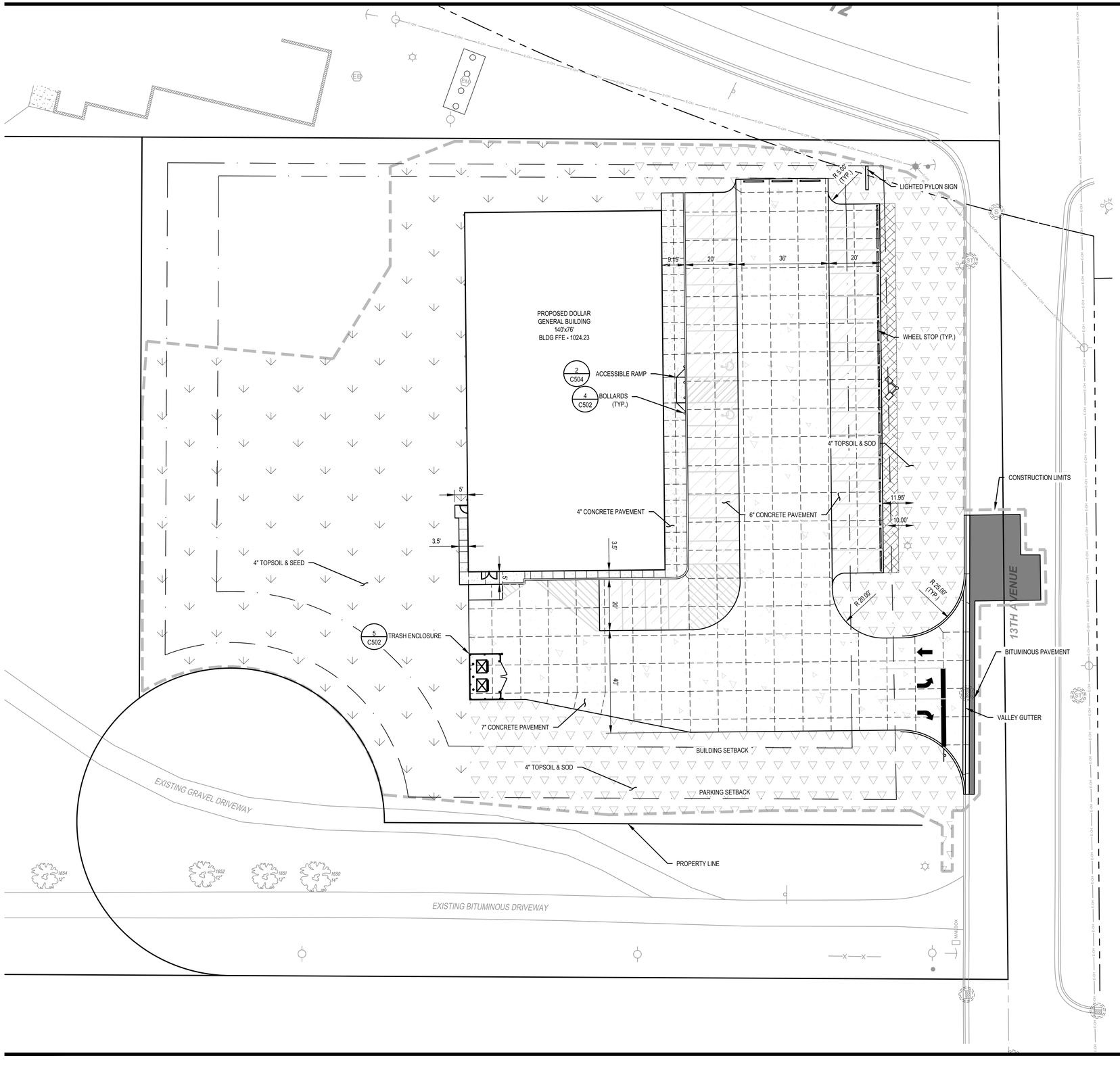
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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
GRADING PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C301

File Path: ...\240668\2 Howard Lake MN\SD\Drawings\Civil\240668.02 C301 GRADING.dwg
Plot Date: 20250414/23 9:46 PM



LEGEND

- CONSTRUCTION LIMITS
- 7" CONCRETE PAVEMENT. SEE INSET A, 1/C502
- 6" CONCRETE PAVEMENT. SEE INSET B, 1/C502
- 4" CONCRETE WALK. SEE INSET C, 1/C502
- CONCRETE JOINTS. SEE2/C502
- BITUMINOUS PAVEMENT. SEE INSET D, 1/C502
- 4" TOPSOIL & SOD
- 4" TOPSOIL & SEED
- HARDWOOD MULCH

SHEET NOTES

1. PREVENT FROM DAMAGE ALL SURFACES OUTSIDE THE CONSTRUCTION LIMITS. RESTORE ALL DISTURBED AREAS DUE TO CONSTRUCTION ACTIVITIES TO PRE-CONSTRUCTION CONDITION UNLESS OTHERWISE NOTED IN THE DRAWINGS.
2. PROVIDE BITUMINOUS TACK COAT BETWEEN PROPOSES BITUMINOUS PAVEMENTS AND ALL ADJACENT CONCRETE OR BITUMINOUS SURFACES.
3. PROVIDE BITUMINOUS TACK COAT BETWEEN THE WEARING AND NON-WEARING COURSES FOR ALL PROPOSED BITUMINOUS PAVEMENTS.
4. SAW CUT ALL EXISTING PAVEMENTS ADJACENT TO PROPOSED PAVEMENTS ALONG A NEAT LINE AND FULL SAW DEPTH. SAW CUT ALL EXISTING CONCRETE PAVEMENTS OR CURB AT THE NEAREST EXISTING JOINT.
5. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TO THE BACK OF CURB.
6. PROVIDE 1/2" EXPANSION JOINT, IN ACCORDANCE WITH DETAIL 2 ON SHEET C502, AT ALL INTERFACES BETWEEN STRUCTURES AND ALL CONCRETE PAVEMENT OR WALKS UNLESS NOTED OTHERWISE.
7. ONLY PLACE FILL MATERIALS ON COMPETENT, INSPECTED SUBGRADE.
8. CURB IN FUTURE CUL-DE-SAC SHALL BE A MINIMUM 17' FROM EXISTING SEPTIC FIELD.

WARNING

LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.
CALL BEFORE DIGGING

MINNESOTA
ONE-CALL SYSTEM
1-800-252-1166
REQUIRED BY
MN STATUTE 216D

0 10' 20' 40'

LHB
701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS

NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

PRELIMINARY
NOT FOR CONSTRUCTION
04/24/2025

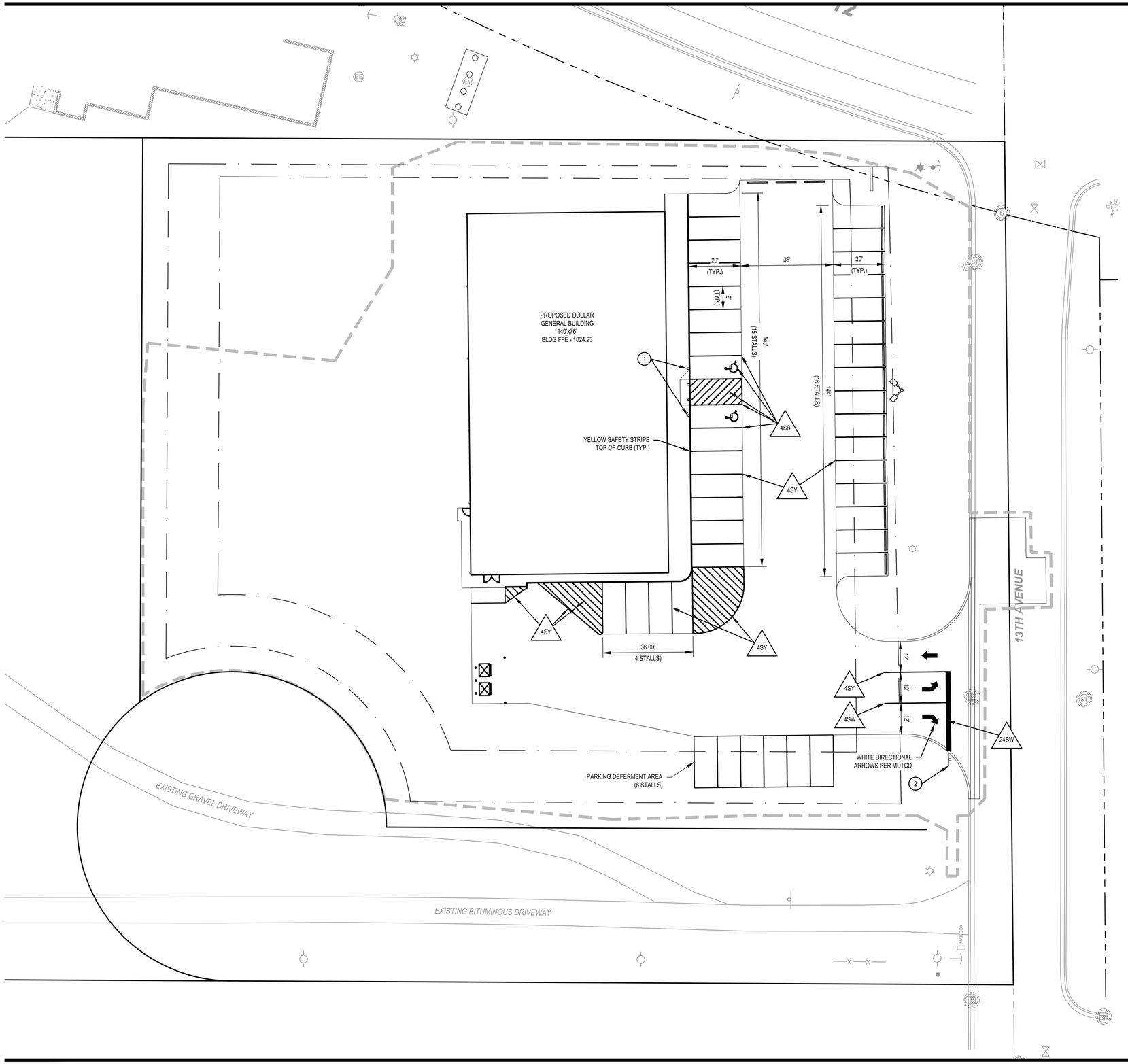
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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
SURFACING & LAYOUT PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C401

File Path: J:\240668\02 Howard Lake MN\500 Drawings\Civil\240668.02 C401 SURFACING.dwg
Plot Date: 2025\4\23 9:52 PM



LEGEND

CONSTRUCTION LIMITS

STRIPING KEY

CIRCLE-EPOXY
SQUARE-PREF TAPE
TRIANGLE-PAINT
OCTAGON-PREF THERMO

1ST DIGIT	2ND DIGIT	3RD DIGIT
WIDTH	PATTERN	COLOR
4", 8", ETC.	S - SOLID	W - WHITE
	B - BROKEN	Y - YELLOW
	T - DOTTED	B - BLUE
	D - DOUBLE	
	K - DOUBLE BROKEN	
	H - DOUBLE DOTTED	

G=GROUND IN	W=WET REFLECTIVE
C=CONTRAST	E=ENHANCED SKID RESISTANCE

EXAMPLE: 4SW GCW = 4" SOLID WHITE LATEX GROUND IN, CONTRAST, WET REFLECTIVE

SIGN KEY NOTES			
	SIGN TYPE	SIZE	NOTES
1	ACCESSIBLE PARKING SIGN	12"x18"	COMPLY WITH MN ACESSIBILITY CODE SECTION 502, 1-SIDED, WHITE LETTERS ON BLUE BACKGROUND
2	STOP SIGN	36"x36"	WHITE LETTERS ON RED BACKGROUND

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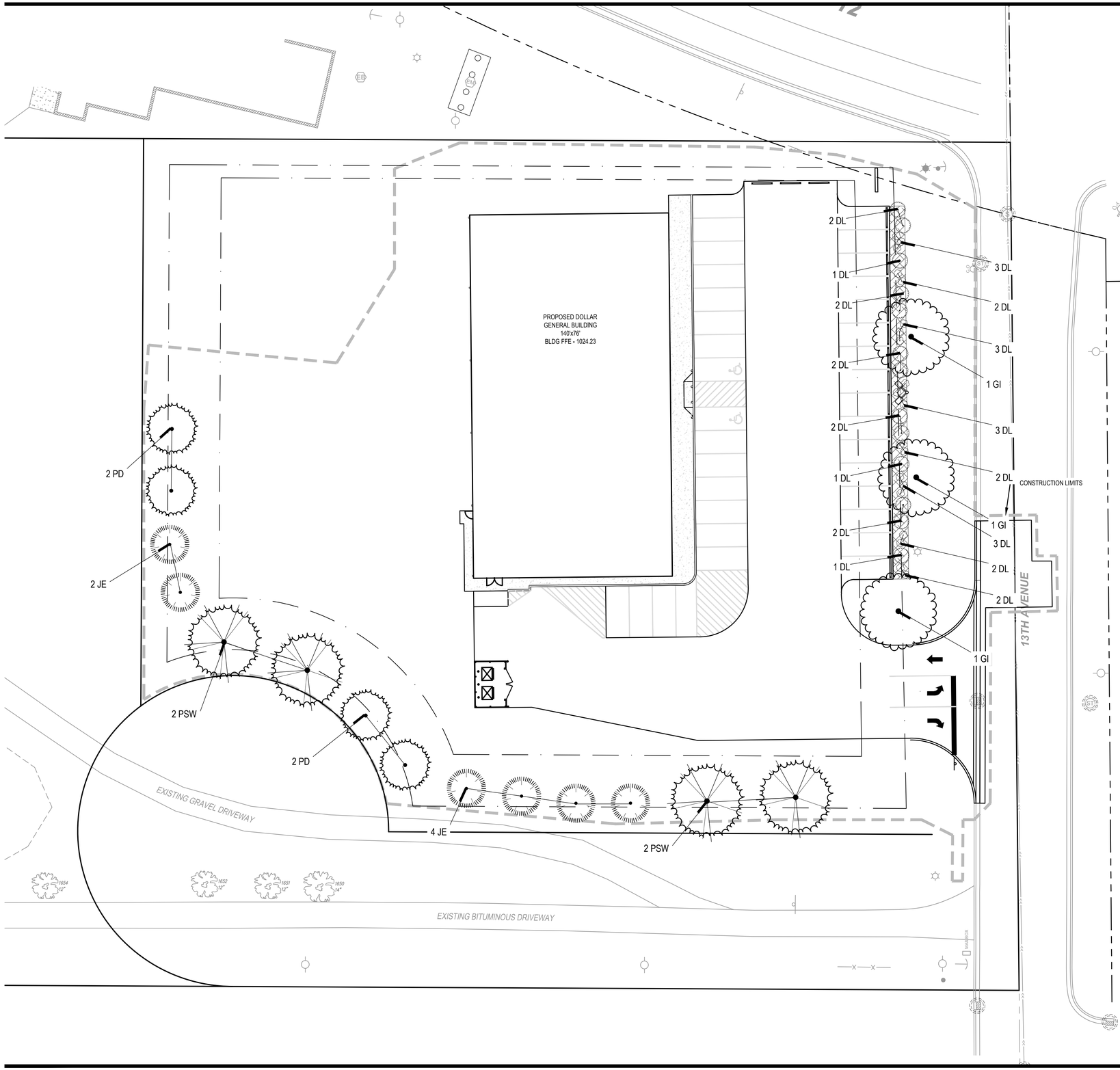
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PROJECT NAME:
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HOWARD LAKE, MN 55349

DRAWING TITLE:
STRIPING & SIGNAGE PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C402

File Path: J:\240668\02 Howard Lake MN\500 Drawings\Civil\240668.02 C402 STRIPING.dwg
Plot Date: 2025/4/23 16:53 PM



PLANT SCHEDULE

DECIDUOUS SHRUB

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	SPACING
	DL	20	Diervilla lonicera Dwarf Bush Honeysuckle	#5 CONT.	36" o.c.
	RG	13	Rhus aromatica 'Gro-Low' Gro-Low Fragrant Sumac	#5 CONT.	72" o.c.

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT
CONIFEROUS CANOPY TREE			
	JE	Juniperus virginiana / Eastern Redcedar	6` HT.
	PD	Picea glauca `Densata` / Black Hills White Spruce	6` HT.
	PSW	Pinus strobus / White Pine	6` HT.
DECIDUOUS CANOPY TREE			
	GI	Gleditsia triacanthos inermis `Impcole` / Imperial® Honey Locust	2.5" B&B

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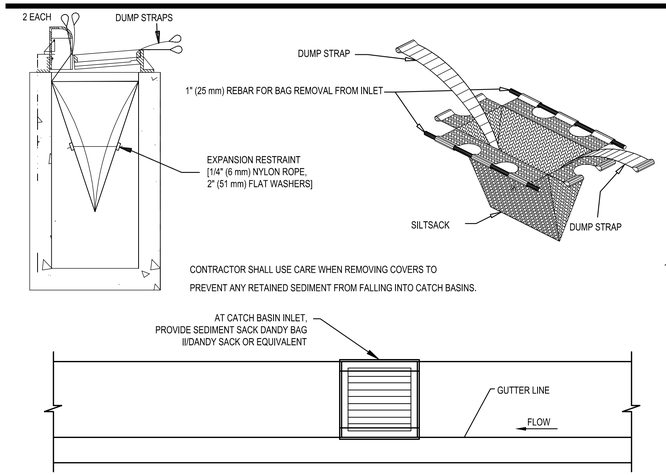
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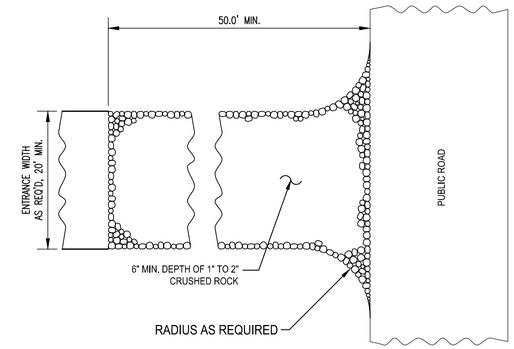
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SURFACING & LAYOUT PLAN

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240688
DRAWING NO: C403

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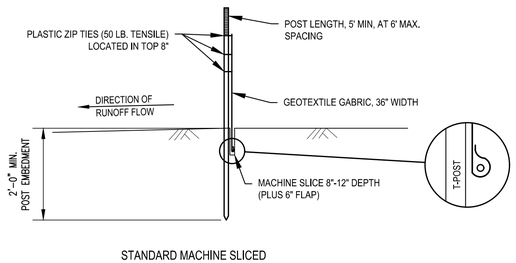
1 INLET PROTECTION – TYPE I & II
NOT TO SCALE



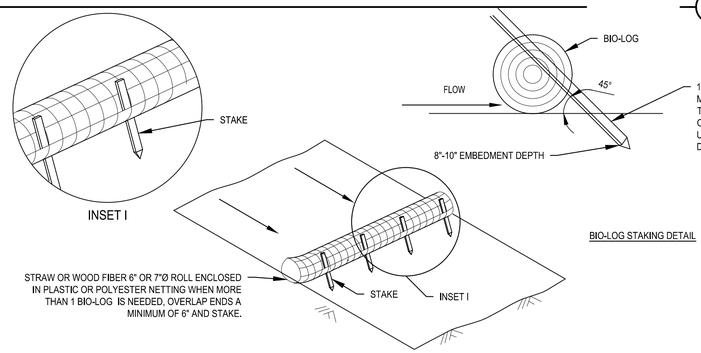
CONSTRUCTION ENTRANCE SPECIFICATIONS

- STONE SIZE: USE 1"-2" CRUSHED ROCK OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THICKNESS: NOT LESS THAN 6".
- FILTER CLOTH: SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
- MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WASHING: WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABALIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERODIC INSPECTION AND NEEDED MAINTANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.

2 ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE



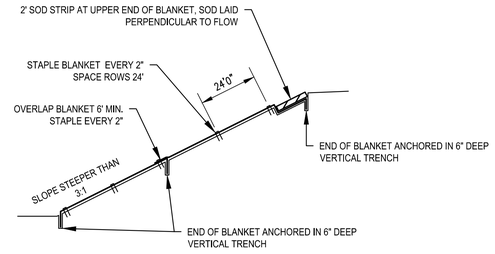
STANDARD MACHINE SLICED



1"x2"x18" WOODEN STAKES AT 1.0' SPACING MAXIMUM. STAKES SHALL BE DRIVED THROUGH THE BACK HALF OF THE BIO-LOG AT AN ANGLE OF 45° WITH THE TOP OF THE STAKE POINTING UPSTREAM. PROVIDE 8"-10" OF EMBEDMENT DEPTH.

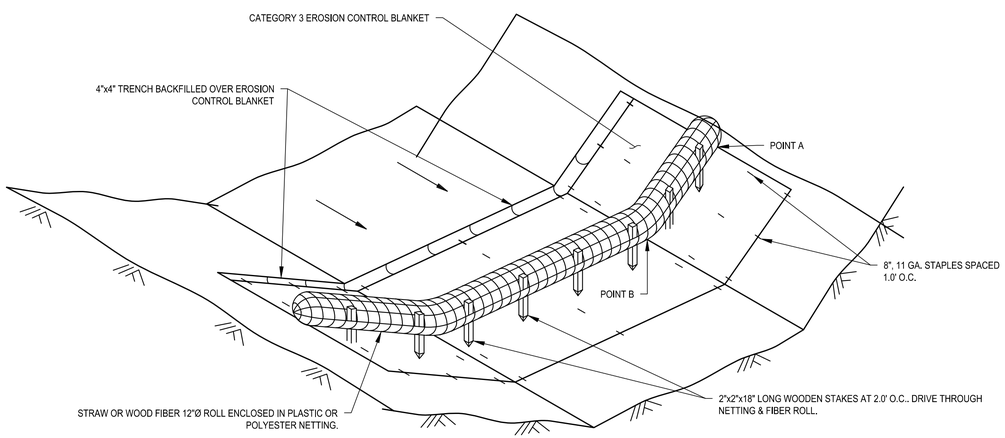
BIO-LOG STAKING DETAIL

3 SILT FENCE MACHINE SLICED OR BIO–LOG
NOT TO SCALE



NOTE: EROSION CONTROL BLANKER ON SLOPES STEEPER THAN 3:1 OR 3:1 SLOPES GREATER THAN 5' VERTICALLY FROM EDGE OF SHOULDER TO TOE OF SLOPE.

4 EROSION CONTROL BLANKET
NOT TO SCALE



5 DITCH CHECK
NOT TO SCALE

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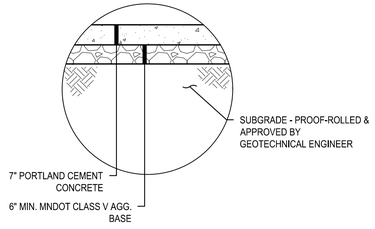
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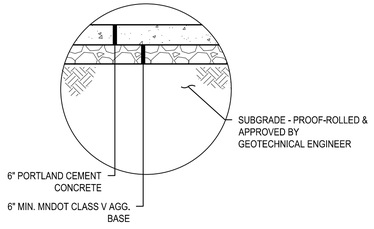
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CIVIL DETAILS

DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C501

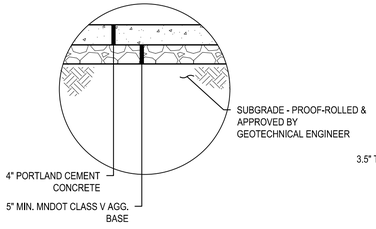
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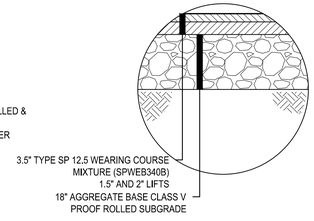
"INSET A"
HEAVY DUTY CONCRETE PAVEMENT



"INSET B"
LIGHT DUTY CONCRETE PAVEMENT

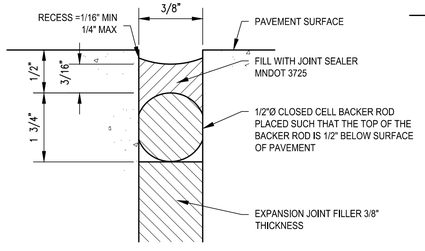


"INSET C"
CONCRETE WALK

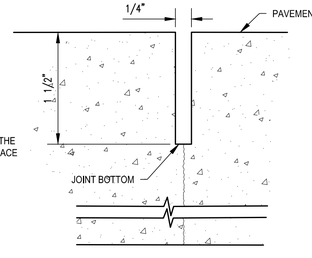


"INSET D"
BITUMINOUS PAVEMENT

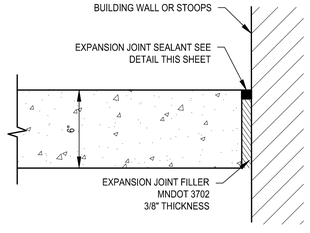
1 INSETS
NOT TO SCALE



3/8" EXPANSION JOINT SEALANT DETAIL
(FORMED & SEALED)



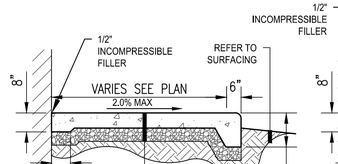
6" CONCRETE PAVEMENT CONTROL JOINT DETAIL
(SAWED)



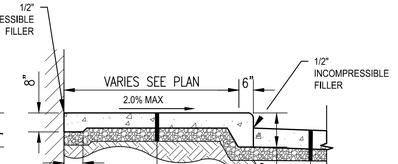
EXPANSION JOINT ADJACENT TO STRUCTURES

NOTE:
1. PRIOR TO SEALING, THE JOINT SHALL BE CLEANED AND DRIED BY AIR BLASTING.

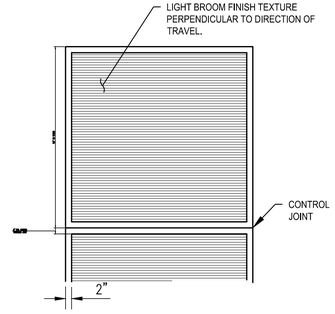
2 JOINT DETAILS
NOT TO SCALE



ADJACENT TO LANDSCAPING

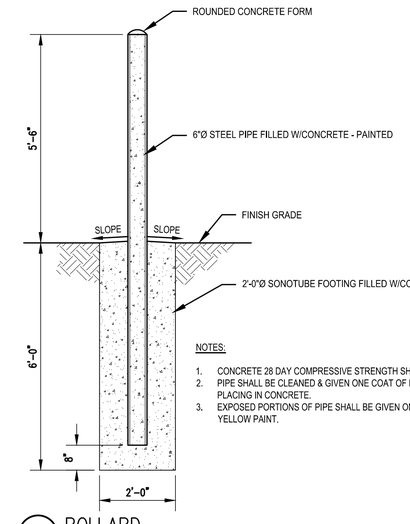


ADJACENT TO BUILDING



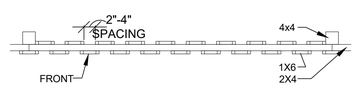
PLAN VIEW

3 CONCRETE WALK
NOT TO SCALE

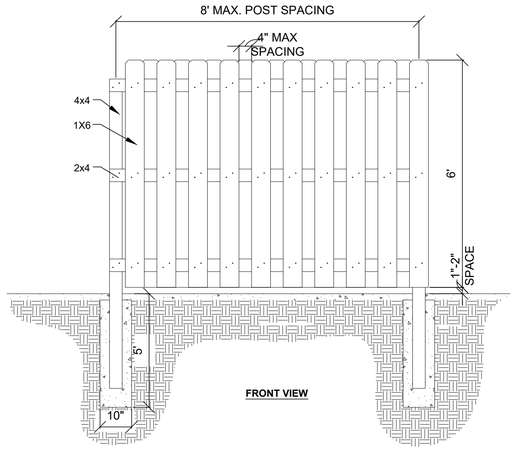


NOTES:
1. CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE 4,500 PSI.
2. PIPE SHALL BE CLEANED & GIVEN ONE COAT OF RED OXIDE PRIMER BEFORE PLACING IN CONCRETE.
3. EXPOSED PORTIONS OF PIPE SHALL BE GIVEN ONE COAT OF SAFETY YELLOW PAINT.

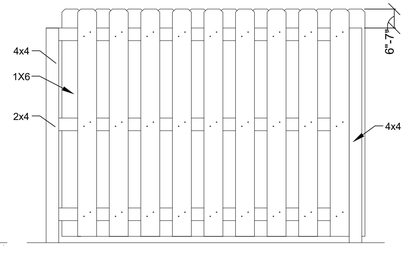
4 BOLLARD
NOT TO SCALE



TOP VIEW

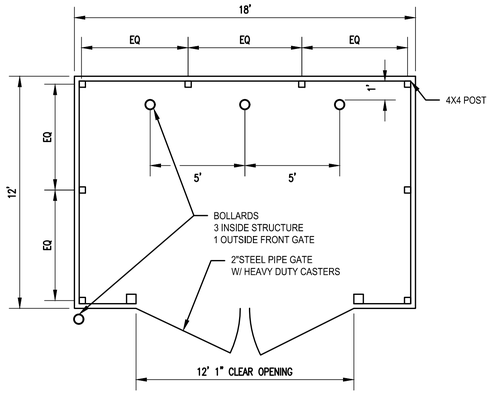


FRONT VIEW

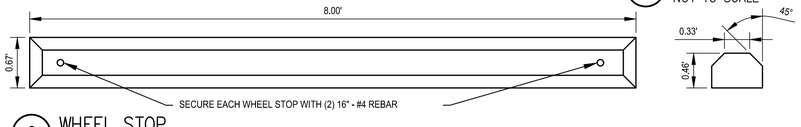


REAR VIEW

NOTE:
1. WOOD TO BE TREATED PINE. USE GALVANIZED NAILS FOR FASTENING.
2. NUMBER OF BOARDS WILL VARY DEPENDING ON SPACE BETWEEN BOARDS AND ACTUAL WIDTH OF BOARDS.



5 TRASH ENCLOSURE
NOT TO SCALE



6 WHEEL STOP
NOT TO SCALE

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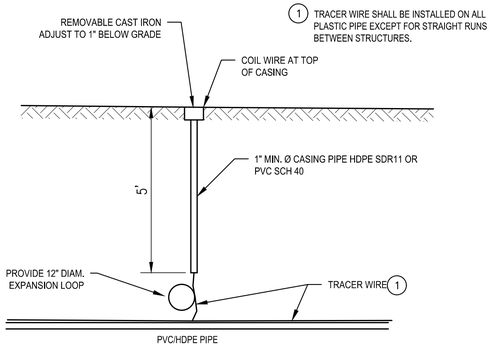
PROJECT NAME:
DOLLAR GENERAL STORE 31529
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HOWARD LAKE, MN 55349

DRAWING TITLE:
CIVIL DETAILS

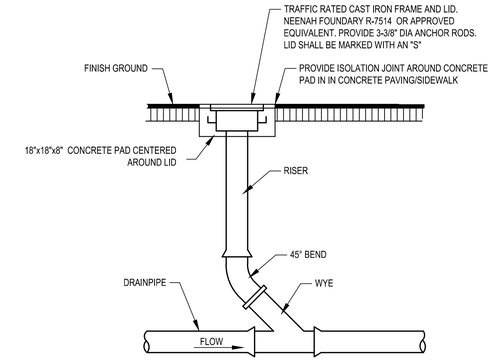
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PROJ. NO: 240668
DRAWING NO: C502

KEY NOTES:

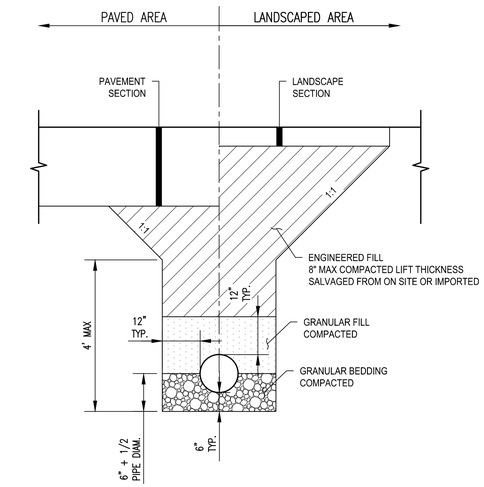
1. TRACER WIRE SHALL BE INSTALLED ON ALL PLASTIC PIPE EXCEPT FOR STRAIGHT RUNS BETWEEN STRUCTURES.



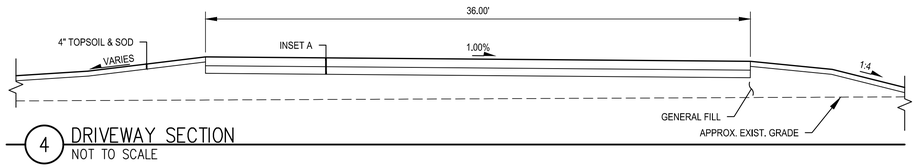
1 TRACER WIRE
NOT TO SCALE



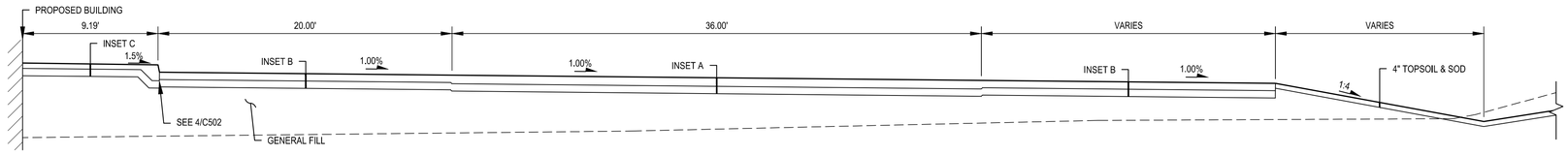
2 CLEANOUT
NOT TO SCALE



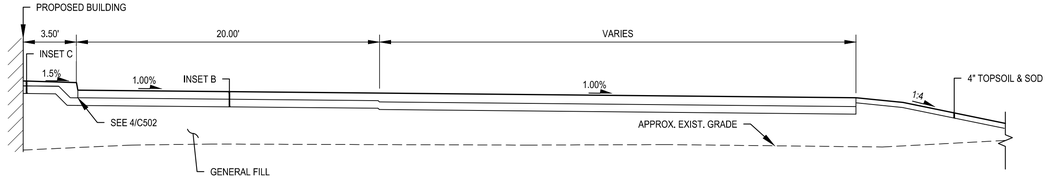
3 TYPICAL UTILITY TRENCH SECTION
NOT TO SCALE



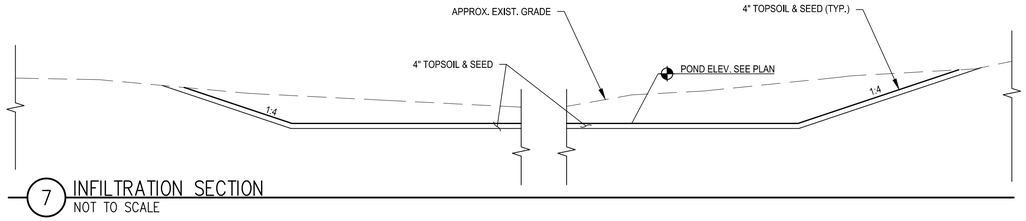
4 DRIVEWAY SECTION
NOT TO SCALE



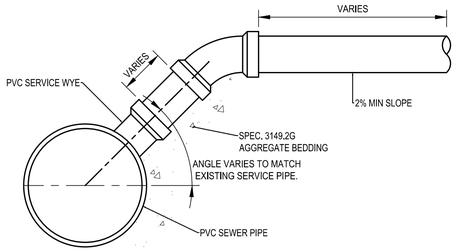
5 PARKING LOT SECTION
NOT TO SCALE



6 PARKING LOT SECTION
NOT TO SCALE

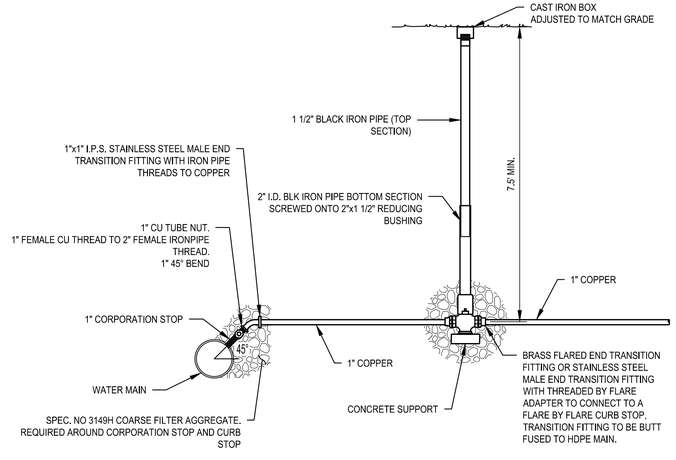


7 INFILTRATION SECTION
NOT TO SCALE



NOTE:
1. WYE INCLUDES FURNISHING AND INSTALLING WYE IN SEWER MAIN.
2. RECONNECT SANITARY SERVICE INCLUDES UP TO 4.0' OF PVC HOUSE SERVICE PIPE AND ALL FITTINGS.
3. 4"/6" PVC SEWER SERVICE PIPE IS INTENDED FOR THE RECONSTRUCTION OF SEWER SERVICES (WHEN FOUND TO BE IN NEED BY THE ENGINEER). COMPLETE IN PLACE FROM 4.0' BEYOND THE ℄ OF THE SEWER TO A POINT DESIGINATED BY THE ENGINEER.

9 SANITARY WYE CONNECTION
NOT TO SCALE



8 WATER MAIN CONNECTION
NOT TO SCALE

File Path: J:\240668\2 Harvest Lake MN\500 Drawings\Civil\240668.02 C503 DETAILS.dwg
Plot Date: 2/2024/23 9:54 PM

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701 Washington Ave. N, Ste 200 | Minneapolis, MN 55401 | 612.338.2029

CLIENT:
ABDO MARKETHOUSE, LLC
601 MARQUETTE AVENUE NORTH
MINNEAPOLIS, MN 55402

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NO	DATE	ISSUED FOR
1	04/24/2024	SITE PLAN REVIEW

NO	DATE	REVISION

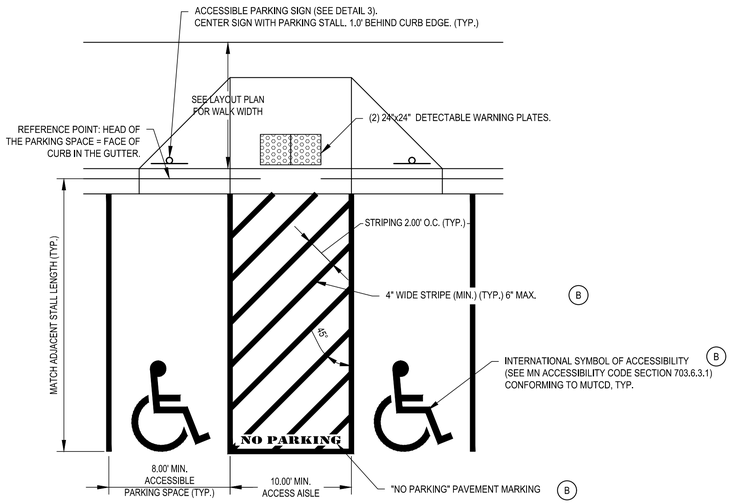
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04/24/2025

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PROJECT NAME:
DOLLAR GENERAL
STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
CIVIL DETAILS

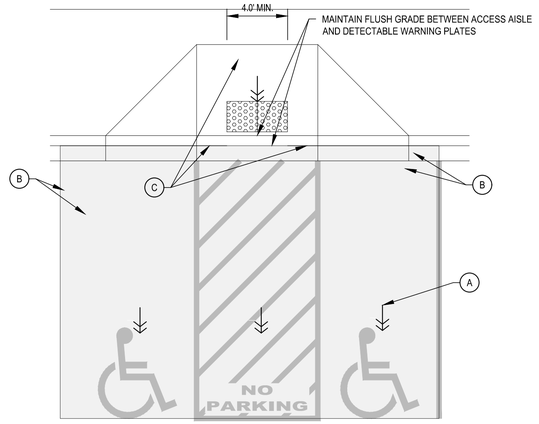
DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C503



A DO NOT PROVIDE A "NO PARKING" SIGN IF NOT INDICATED ON THE LAYOUT PLAN (E.G., TO PREVENT AN OBSTRUCTION IN AN ACCESSIBLE ROUTE).

B SEE LAYOUT PLANS FOR PAVEMENT MARKING COLOR

1 ACCESSIBLE PARKING STALL LAYOUT DETAIL, TYPICAL
NTS



A HATCH AREA: IN HATCHED AREA PROVIDE 2.00% MAX. SLOPE IN ANY DIRECTION

B MATCH SLOPE OF GUTTER TO THE SLOPE OF ADJACENT PAVEMENT.

C SEE C301 FOR GRADING INFORMATION. SEE MNDOT STANDARD PLAN 5-297-250 (DETAIL 1, C522) AND MNDOT STANDARD PLATE 7038A (DETAIL 3, C524) FOR CURB RAMP TYPE AND DETAILS.

2 ACCESSIBLE PARKING STALL GRADING DETAIL, TYPICAL
NTS

GENERAL NOTES

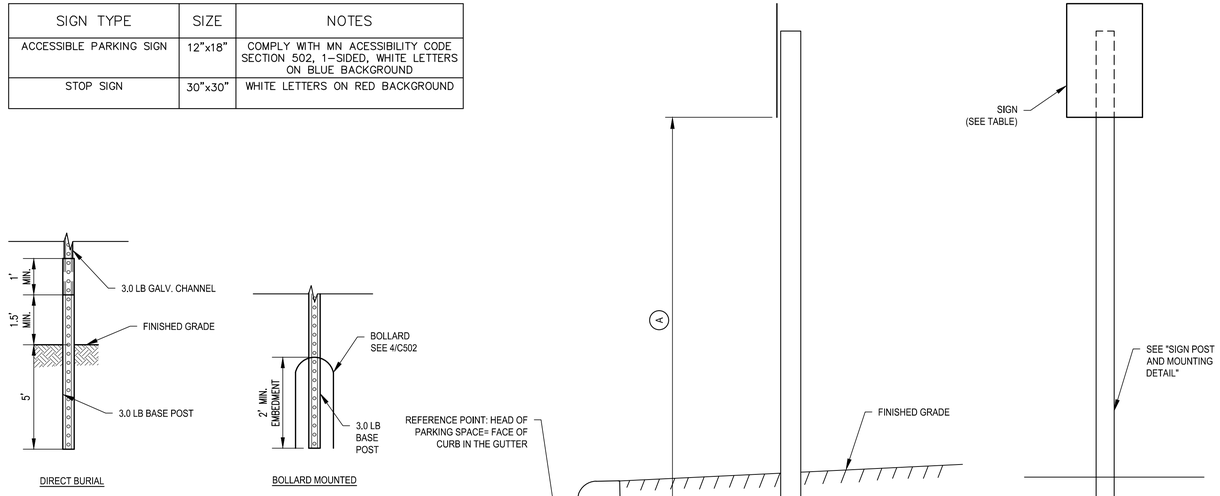
DEFINITIONS:

1. MAXIMUM AND MINIMUM: ABSOLUTE VALUES THAT SHALL NOT BE EXCEEDED AND DO NOT INCLUDE CONSTRUCTION TOLERANCES; ABBREVIATED "MAX" AND "MIN".

QUALITY CONTROL:

1. VERIFY DIMENSIONS, SLOPES AND GRADES **PRIOR** TO PERFORMING THE WORK, AND MAKE ADJUSTMENTS AS NECESSARY TO ENSURE THE FINISHED ACCESSIBLE PARKING FEATURES COMPLY WITH THE PLANS.
2. NOTIFY THE ENGINEER OF DISCREPANCIES IN DIMENSIONS, SLOPES AND GRADES **PRIOR** TO PERFORMING THE WORK.

SIGN TYPE	SIZE	NOTES
ACCESSIBLE PARKING SIGN	12"x18"	COMPLY WITH MN ACESSIBILITY CODE SECTION 502, 1-SIDED, WHITE LETTERS ON BLUE BACKGROUND
STOP SIGN	30"x30"	WHITE LETTERS ON RED BACKGROUND



NOTES:
1. ALL SIGNS POST SHALL CONFORM TO MNDOT SPECIFICATION SECTION 3401.

SIGN POST AND MOUNTING DETAIL-CHANNEL
NOT TO SCALE

NOTES:

A PROVIDE AN ELEVATION DIFFERENCE OF 63"±1" BETWEEN THE BOTTOM OF THE SIGN AND THE FLOOR OF THE PARKING SPACE AT THE THE HEAD OF THE STALL.

3 SIGN DETAILS
NOT TO SCALE

File Path: \240668\02 Howard Lake MN\50 Drawings\Civil\240668.02 C501 DETAILS.dwg
Plot Date: 2025/4/23 9:54 PM

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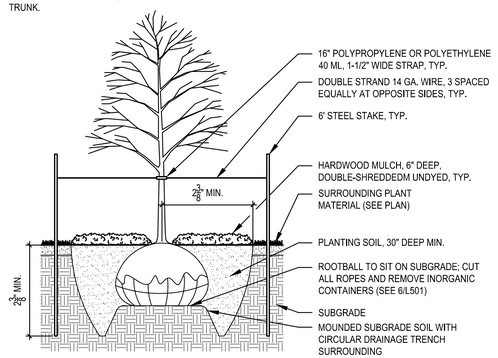
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PROJECT NAME:
DOLLAR GENERAL STORE 31529
6XX 13TH AVE
HOWARD LAKE, MN 55349

DRAWING TITLE:
CIVIL DETAILS

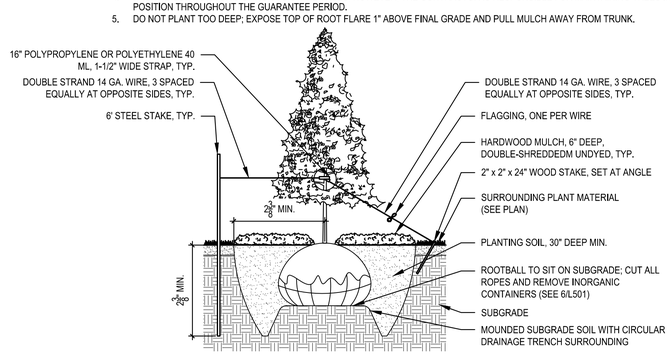
DRAWN BY: DPG
CHECKED BY: BJH
PROJ. NO: 240668
DRAWING NO: C504

NOTES:
1. IT IS THE CONTRACTOR'S OPTION TO STAKE TREES; HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.
2. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
3. DO NOT PLANT TOO DEEP; EXPOSE TOP OF ROOT FLARE 1" ABOVE FINAL GRADE AND PULL MULCH AWAY FROM TRUNK.



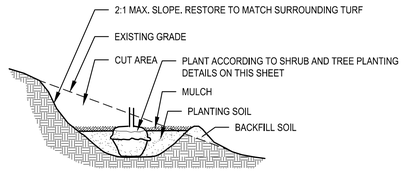
1 DECIDUOUS TREE
NOT TO SCALE

NOTES:
1. CONIFER TO HAVE SHREDDED HARDWOOD MULCH UNLESS NOTED OTHERWISE. NO MULCH SHALL BE IN CONTACT WITH TRUNK.
2. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
3. TWO ALTERNATE METHODS OF TREE STAKING ARE ILLUSTRATED.
4. IT IS THE CONTRACTOR'S OPTION TO STAKE TREES; HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.
5. DO NOT PLANT TOO DEEP; EXPOSE TOP OF ROOT FLARE 1" ABOVE FINAL GRADE AND PULL MULCH AWAY FROM TRUNK.



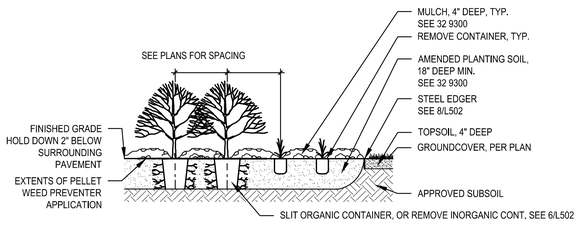
2 CONIFEROUS TREE
NOT TO SCALE

NOTE:
1. EXTEND EXCAVATION AND BACKFILL SOIL TO A POINT DOWNSLOPE EQUAL TO OR LOWER IN ELEVATION THAN THE BOTTOM OF THE HOLE DIRECTLY BENEATH THE PLANT TO ENSURE ADEQUATE DRAINAGE IN HEAVY SOILS. GRANULAR SOIL MUST BE ADDED AS BACKFILL IN AREAS OF POOR DRAINAGE.



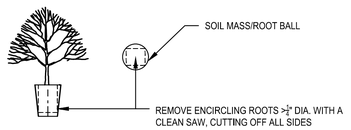
3 TREE PLANTING ON A SLOPE
NOT TO SCALE

NOTES:
1. HAND LOOSEN ROOTS OF CONTAINERIZED MATERIAL (TYPICAL).
2. HAND REMOVE EXCESS SOIL AT TOP OF ROOT BALL TO EXPOSE TOP OF ROOT FLARE. TYPICALLY REQUIRES THE REMOVAL OF 1-6" OF SOIL FROM CONTAINER OR B&B.
3. ENSURE THAT FIRST MAIN LATERAL ROOT IS LESS THAN 1" BELOW THE FINAL PLANTING SURFACE.
4. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
5. SHRUBS TO SIT ON SUBGRADE.
6. APPLY PELLET WEED PREVENTER PRIOR TO MULCHING AND ONLY UNDER SHRUBS IN LANDSCAPE BEDS SURROUNDING THE BUILDING AND MONUMENT SIGN. SEE EXTENTS OF APPLICATION IN DETAIL.

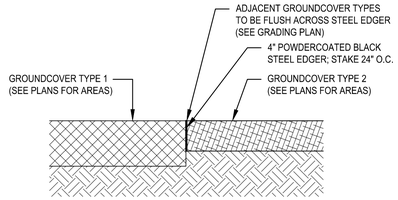


4 SHRUB & PERENNIAL PLANTING – LANDSCAPE BEDS
NOT TO SCALE

NOTES:
1. FOR TREES, SHRUBS, AND PERENNIALS WITH INORGANIC CONTAINERS, FOLLOW THE "BOXING" PROCEDURE TO REMOVE ENCIRCLING ROOTS.
2. "BOXING" IS ONLY NECESSARY ON THE PLANTS THAT HAVE ENCRICLING ROOTS WITH DIAMETERS GREATER THAN 1/2"
3. HAND LOOSENING OF ROOTS IS STILL NECESSARY AFTER "BOXING" THE ROOT BALL (TYPICAL).



5 BOXING PROCEDURE FOR CONTAINERIZED PLANTS
NOT TO SCALE



6 STEEL EDGER
NOT TO SCALE

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MINNEAPOLIS, MN 55402

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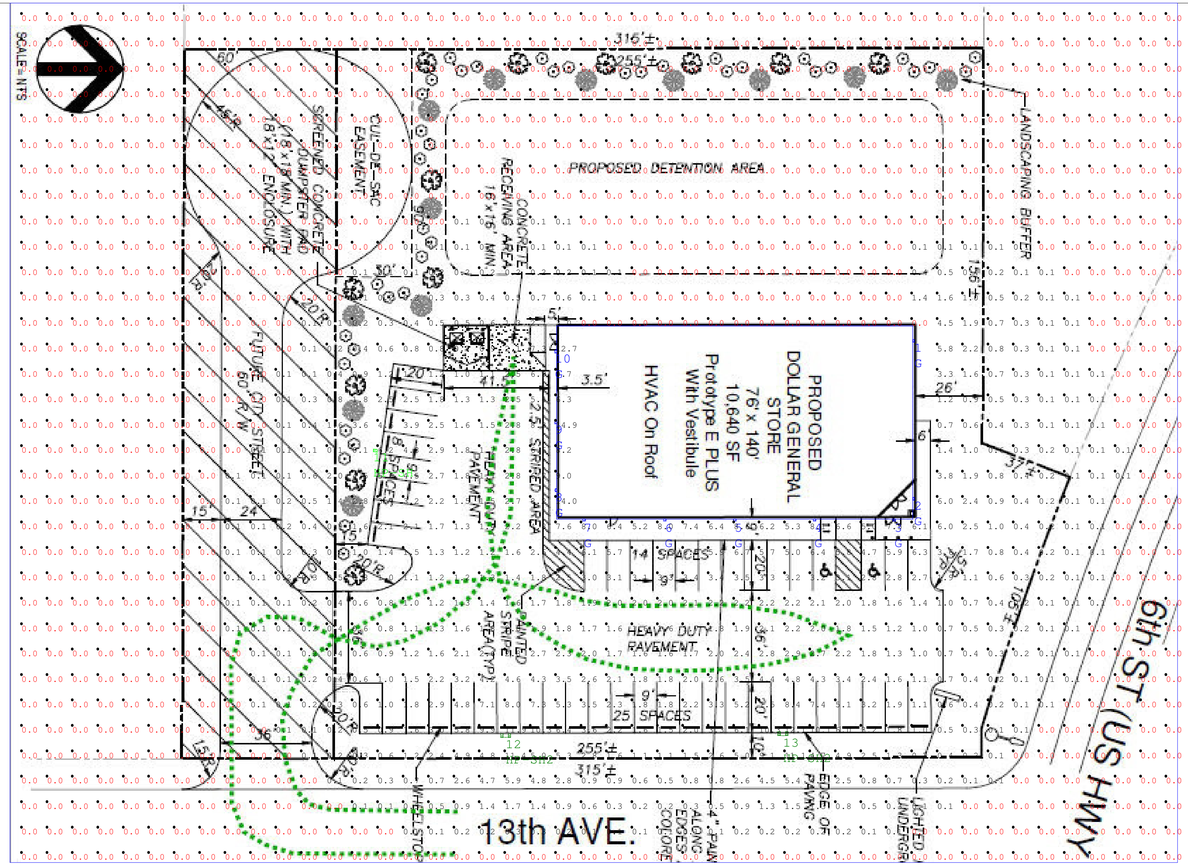
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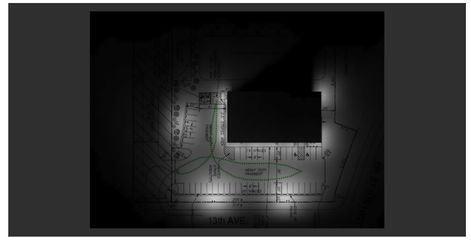
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HOWARD LAKE, MN 55349

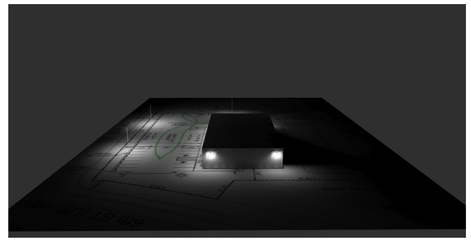
DRAWING TITLE:
LANDSCAPE DETAILS

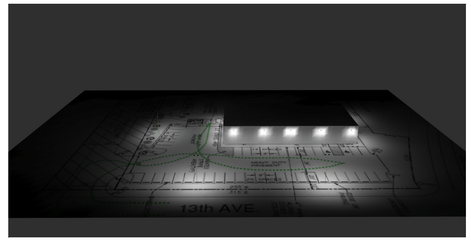
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CHECKED BY: BJH
PROJ. NO: 240688
DRAWING NO: C505

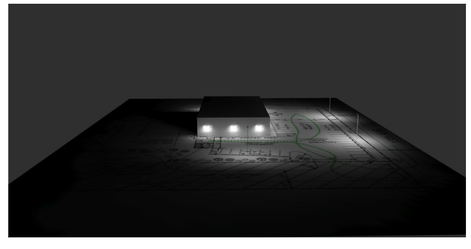


Luminaire Location Summary		
LumNo	Label	Z
1	G	15.5
2	G	15.5
3	G	15.5
4	G	15.5
5	G	15.5
6	G	15.5
7	G	15.5
8	G	11
9	G	11
10	G	11
11	HP-SH	27
12	HP-SH2	27
13	HP-SH2	27









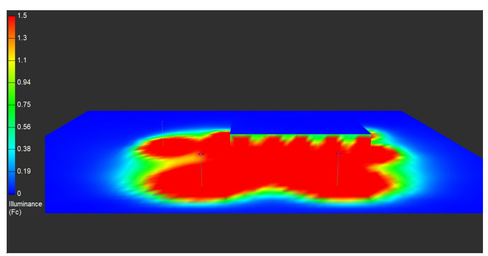
Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	2	HP-SH2	Twin	NLES AL1212 Back Shield, 2-H	0.950	16181	147.489	589.956
	10	G	Single	NLES WP4054	0.950	5696	42.2406	422.406
→	1	HP-SH	Single	NLES AL1212 Back Shield	0.950	16181	147.489	147.489

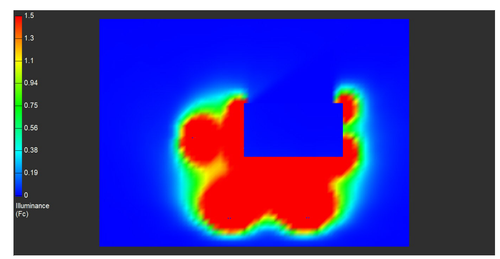
Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Site	Illuminance	Fc	0.81	14.9	0.0	N.A.	N.A.
Parking Lot	Illuminance	Fc	2.98	12.1	0.6	4.97	20.17

Notes:

Plan Notes:
Calculations at Ground Level (10' x 10' Grid Spacing). Refer to luminaire location summary for mounting heights of each fixture. Pole mounted fixtures include a 2ft concrete base. Mounting heights indicated on luminaire location summary is a total A.F.G. height.

General Notes:
Due to changing lighting ordinances it is the contractors resposibility to submit the site photometrics & luminaire specs to the local inspector before ordering to ensure this plan complies with local lighting ordinances. This lighting design is based on information supplied by others. Changes in electrical supply, area geometry & objects within the lighted area may produce illumination values different from the predicted results shown on this layout. This layout is based on .IES files that were lab tested or computer generated, actual results may vary.





NLES

#	Date	Comments

Revisions

Drawn By: Brent M. Finley, LC
Checked By:
Date: 4/25/2025
Scale:

Dollar General -
Howard Lake MN 31529