

TOWN OF LANSING

TOMPKINS COUNTY, NEW YORK

August 7, 2023

ENGINEER'S REPORT

Proposed Town of Lansing Drainage District #11: East Shore Circle Subdivision



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ENGINEER'S REPORT
PROPOSED TOWN OF LANSING
DRAINAGE DISTRICT #11:
EAST SHORE CIRCLE SUBDIVISION

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SECTION 1 - INTRODUCTION

The East Shore Circle Major Subdivision is a nine-parcel realty subdivision located north of East Shore Circle and west of East Shore Drive. The Major Subdivision obtained final approval from the Town of Lansing Planning Board on April 24, 2023. In addition, East Shore Circle Minor Subdivision is a four-parcel realty subdivision located south of East Shore Circle and west of East Shore Drive. The Minor Subdivision obtained final approval from the Town of Lansing Planning Board on January 22, 2018. Land disturbance activities within the subdivisions are subject to the design and permitting requirements of New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-20-001 and GP-0-15-002, respectively. In accordance with these General Permits, the Stormwater Pollution Prevention Plans (SWPPP) prepared by the Owner/Operator for each subdivision incorporate permanent post-construction stormwater treatment and peak flow attenuation practices. In addition, permanent swales have been designed to convey stormwater runoff to and away from permanent practices.

The General Permits require on-going maintenance of these practices and dictate the Owner/Operator ensure one of the following prior to terminating permit coverage:

- a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,*
- b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),*
- c. for post-construction stormwater management practices that are privately owned, the owner or operator has a deed covenant in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.*
- d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, the owner or operator has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.*

In this instance, there are permanent water quality treatment practices (bioretention basins, detention ponds and dry ponds) together with grassed diversion swales that will be or have been installed on residential lots or lands that will be dedicated to the Town. Long-term operation and maintenance of these practices and swales will be the responsibility of the Town as prescribed in a maintenance agreement carried in the deed or general covenants and restrictions filed and common to the Subdivision. As described herein, Drainage District No. 11 here after referred to as the "District", will provide the methodology for financing long-term stormwater practice maintenance. It is the intent that any prior Stormwater Operation, Reporting and Maintenance Agreements (SOMRAs) recorded for the four-parcel minor subdivision will be superseded by a new Stormwater Declarations, Covenants, Conditions and Restrictions Agreement drafted concurrently with the formation of the District. The maintenance agreements and covenants will be reviewed and approved by the Town's Counsel to assure that adequate rights of access and maintenance are provided. These privately owned and District owned practices will require annual inspection by the drainage district. To offset the expenses related to the inspection and maintenance of these stormwater management facilities, the Town is proposing to form the District to include all lands within the Minor and Major Subdivisions, which are further described in Appendix A, Boundary Description.

SECTION 2 - SERVICE AREA

As depicted on Map 1, the subdivisions are located north and south of East Shore Circle and west of East Shore Drive. The total land area of the two subdivisions to be included in the District is approximately 21.46 acres, inclusive of road right-of way. Based on the approved final subdivision plats, the lands have been divided into eight residential building lots, two storm water lots, and a remnant parcel of vacant land on the south side of E. Shore Circle. The parcels to be included in the District are identified on Map 2 and itemized in Table 1.

Table 1. Tax Map Parcels in Drainage District #11			
Lot #	Tax Map Parcel #	Owner	Acres
1		JOHN YOUNG, et al	1.03
2		JOHN YOUNG, et al	1.04
3		JOHN YOUNG, et al	1.24
4		JOHN YOUNG, et al	1.32
5		JOHN YOUNG, et al	2.07
7		JOHN YOUNG, et al	9.85
8		JOHN YOUNG, et al	0.39
9		JOHN YOUNG, et al	0.58
-	37.1-7-12.8	PIKULIK, GRIGORY & NATALYA	1.05
-	37.1-7-12.9	PIKULIK, GRIGORY & NATALYA	1.05
-	37.1-7-12.10	GLENNA MCMINN	1.16
Total			20.78

SECTION 3 – OVERVIEW OF MAINTENANCE RESPONSIBILITIES

Under this proposal, the District will assume the responsibility for maintaining the dry pond, detention ponds, bioretention basins and grassed diversion swale once constructed by the Owner/Operator on lots as identified in Map 2 and detailed in the final approved Major Subdivision plans and SWPPP dated _____, 2023 and final approved Minor Subdivision plan and SWPPP dated December 27, 2017. The Owner/Operator will be responsible for all temporary sediment and erosion control practices in compliance with the requirements of the General Permits for land disturbance activities. The roles and responsibilities of the District and the Owner/Operator are further outlined below.

3.1 The Owner/Operator

Prior to beginning construction on any lot or parcel, the Owner/Operator will be responsible for obtaining coverage under the General Permit by submitting a Notice of Intent (NOI). Under the General Permit, the individuals who obtain coverage are responsible for complying with the permit until a Notice of Termination (NOT) is filed with the NYSDEC. A NOT cannot be filed until the site is completely stabilized and all soil disturbance activity is ceased. Until that time, the Owner/Operator will be liable for the following elements of the permit:

- 1) Fees for continuing permit coverage.
- 2) Construction inspections for ongoing construction activity.
- 3) Ensuring final site stabilization.
- 4) Responsibility and liability for water quality violations caused by construction activity within the Subdivision.
- 5) Filing of a NOT to terminate permit coverage.

3.2 Town of Lansing on behalf of Drainage District #11

The Town will be responsible on behalf of the District for undertaking annual inspections and implementing emergency repairs to the dry pond, detention ponds, bioretention practices and grassed diversion swales as deemed necessary. In addition, the Town will be responsible for administration of the Drainage District, including tracking expenses, assessing fees, and collecting fees attributable to any emergency repair activities for the permanent stormwater practices.

The required permanent practices, or Facilities, are to be installed by Owner/Operator on each building lot or parcel prior to or as houses are constructed, thereafter, to be maintained by the District. The District will complete annual inspection, reporting, maintenance and improvement obligations. To assure compliance with such local law and NYSDEC Stormwater regulations, the following minimum provisions shall cover each building lot or parcel within the District:

- 1) All landowners and lot owners shall be responsible to construct and install, and once so constructed and installed, the District to operate, maintain, and repair the stormwater management facilities as described in or as shown upon the Final Subdivision Plat, the Stormwater Drainage District Map, or the Stormwater Pollution Prevention Plan (hereinafter severally and together, the "Stormwater Plan"), including but not limited to drainage ditches, swales, infiltrators, drop inlets, pipes, culverts, soil absorption devices, raingardens, bioretention basins, and all appurtenances thereto (hereinafter severally and together, the "Facilities"), to ensure that the Facilities continue to function as designed and for their intended purposes.
- 2) All Owners shall grant access to the Town of Lansing for the purposes of observing, maintaining, and inspecting the Facilities at any time, and from time-to-time, as may be deemed appropriate, necessary, or desirable by the Town.
- 3) If any deficiencies in Facilities are discovered or suspected to have been caused by the Owner/Operator, the Town will notify the Owner in writing and mandate a reasonable number of days to effect needed analyses or repairs or maintenance pursuant to a fair plan on notice to the Owner. If the Owner shall fail to complete any analyses or repairs or maintenance to the reasonable satisfaction of the Town within the required period set forth in any notice the Town may effect the same and charge to the Owner the cost thereof. Emergencies do not require prior notice. The Town may collect such costs in any manner as allowed by law and determinations and demands for reimbursement shall be subject to review under Article 78 of the New York Civil Practice Law and Rules.
- 4) No Owner may authorize, undertake, or permit the alteration of, abandonment of, modification of, demolition of, discontinuation of, or interference with any Facilities, except in strict accordance with the written approval of the Town.

- 5) All covenants or maintenance easements or agreements implementing these basic requirements shall be written in a form as is acceptable to and approved by the Town, and all rights of entry and rights of way to and for the Facilities shall be written as appurtenant easements and rights-of-way duly limited to that which is reasonably necessary for stormwater needs and practices under law. All covenants and maintenance easements and agreement shall be enforceable in law or equity.
- 6) Other landowners within the Drainage District shall also have rights of enforcement relative to stormwater Facilities maintenance to prevent flooding, nuisance, loss of property or property value, and hazards.

SECTION 4 - OVERVIEW OF MAINTENANCE ACTIVITIES

The Owner/Operator will be responsible for constructing the permanent practices on their land in accordance with the Final Subdivision SWPPP applicable to each subdivision and as shown on Map 2. With respect to Lots 1-5, the dry pond (Lot 9), bioretention basin (Lot 8) and swales on Lots 1, 3, 4 and 5 shall be constructed prior to issuing buildings permits in order to capture runoff from the impervious areas of the individual lots they serve. For parcels 37.1-7-12.8, 37.1-7-12.9 and 37.1-7-12.10 the Owner/Operator shall construct individual lot detention pond, bioretention basin and swale in order to capture runoff from the impervious areas of the lot they serve. Maintenance activities for these practices may include annual inspections, routine maintenance, and emergency repairs. This section outlines some of the routine activities needed to maintain both the long-term pollutant removal and structural integrity of stormwater practices. These activities are encompassed within six general categories as described below. In addition, Table 3 outlines some of the detailed activities within these categories, together with an estimated frequency.

Inspections

An annual inspection is needed to monitor the permanent practices. In the long term, these inspections reduce expenses by allowing the Owner and District to address small problems as they occur, with relatively low-cost solutions.

Sediment and Debris Removal

Sediment, trash and other debris accumulate within bioretention practices at a fairly constant rate. As sediment accumulates in stormwater practices, the capacity to treat and attenuate stormwater is reduced. In addition, the sediment can clog outflow pipes and reduce the capacity of the overflow channels. Some typical maintenance activities include removing sediment and debris, and unclogging outlet pipes.

Vegetation Management

Vegetation can enhance pollutant removal in some stormwater management practices but needs to be managed. Mowing is necessary to maintain a safe basin embankment.

Animals and Nuisances

Some typical nuisance issues for stormwater basins are mosquitoes and animal burrows. Mosquitoes can sometimes breed in pond forebays, particularly if dense vegetation develops. Some non-toxic methods are available to discourage mosquito breeding. Animal burrows damage basin embankments and need to be filled immediately.

Erosion

Over time, soil erosion can occur at some critical points in stormwater management practices, particularly when bare soil exists. When erosion occurs, the area needs to be stabilized to prevent further damage.

Structural Repairs

Although the stormwater detention ponds, dry ponds and bioretention basins that services the lots in this Subdivision have relatively few moving parts and structural elements, some long-term repairs may be needed. These will include replacing or repairing cracked pipes, eroded banks, and basin cleanout structures.

Inspections of Private Practices

These will be as needed and conducted in conjunction with annual review and any complaints or direct observations made during construction and site alterations.

TABLE 3. STORMWATER MAINTENANCE ACTIVITIES FOR DRAINAGE DISTRICT #11		
Maintenance Item	Frequency (years)^{1,2}	Practices Where Performed
<i>Inspections</i>		
Inspection	1	Detention Pond, Dry Pond, Bioretention basin and swales
<i>Sediment and Debris Removal</i>		
Unclog outlet pipes	1	Detention Pond, Dry Pond, Bioretention basin and swales
Debris/Trash Removal	1	Detention Pond, Dry Pond, Bioretention basin and swales
Remove sediment from forebay and swales	5	Forebay Swales
Dredge Detention Pond and Dry Pond	15	Detention Pond and Dry Pond
<i>Vegetation Management</i>		
Mowing	1	Detention Pond, Dry Pond, Bioretention basin and swales
Tree removal from embankment	10	Detention Pond, Dry Pond, Bioretention basin Embankments (should be limited by mowing)
Replace vegetation (Dead or decaying vegetation in filter)	As needed	Bioretention basin
<i>Animals/ Nuisances</i>		
Remove animal burrows from basin embankment.	5	Detention Pond, Dry Pond and Bioretention basin
<i>Erosion</i>		
Repair areas of erosion	2-5	Detention Pond, Dry Pond, Bioretention basin and swales
<i>Structural repairs</i>		
Repair low spots on the embankment	5	Detention Pond, Dry Pond and Bioretention basin
Repair or replace trash racks	15	Detention Pond and Dry Pond
Repair cracks in concrete	10	Dry Pond
Replace riser structure (concrete)	50	Dry Pond
Till bioretention surface to restore permeability (Filter drains slowly and surface is compacted)	3 (or as needed)	Bioretention basin

TABLE 3. STORMWATER MAINTENANCE ACTIVITIES FOR DRAINAGE DISTRICT #11		
Maintenance Item	Frequency (years)^{1,2}	Practices Where Performed
Replace entire bioretention media (Filter does not drain, and other measures to restore are unsuccessful)	10 (or as needed)	Bioretention basin
1: Maintenance Frequencies derived from the “New York State Stormwater Management Design Manual created by the New York State Department of Environmental Conservation.		
2: Frequency may vary, and the need for maintenance will be determined by annual inspections.		

SECTION 5 – ESTIMATE OF FIRST-YEAR MAINTENANCE COST

This section estimates the initial first year maintenance cost, with the goal of establishing an initial assessment rate for landowners of properties within the District. Over time, these costs will vary, based on the occurrence of relatively high cost items at the time services are performed. The cost estimate includes assumptions regarding the items that will occur within the first year, the extent of these items, and the unit cost. The first-year maintenance plan, along with cost estimates, is presented in Table 4.

The first-year maintenance items are derived from the maintenance frequencies presented in Table 3, with the following assumptions:

- 1) All residential lots are simultaneously developed for residential use.
- 2) Items listed as annual or more frequent occur within the first year, at the frequency named.
- 3) Some erosion occurs within the diversion swales or swales leading to the basins, and will need to be repaired.
- 4) As a contingency, it is assumed that two five-year frequency items occur in the first year, including repairing low spots on the embankment and removing animal burrows.
- 5) Mowing is needed on basin embankments and swales, representing a total of approximately 2.0 acres.

TABLE 4. COST OF FIRST-YEAR MAINTENANCE				
Maintenance Item	Description	Unit Cost	Extent	Cost
Inspection, Reporting and coordinating corrective actions	Inspect using forms derived from Appendix G of the “New York Stormwater Management Design Manual”	\$150/hour	10 hours	\$1,500
Unclog outlet pipes	Remove accumulated debris from the outlet pipes, possibly by jet cleaning.	\$150/basin	1 time for 8 basins	\$1,200
Mowing and Debris/Trash Removal	Mow the swales and embankments. Remove trash and debris.	\$800/acre	2 acres	\$1,600
Repair areas of erosion and settling within swales and basins	Replace topsoil, compact and reseed area.	\$5/sf	400 sf	\$2,000
TOTAL ESTIMATED COST (ROUNDED) =				\$6,300

SECTION 6 – METHOD OF FINANCING

Estimate of First-Year Maintenance Charges

The cost of annual inspection and reporting completed by the Town will be assessed to the owners of taxable land within the District. The total acreage of all parcels based on the approved final plat is 20.78 acres excluding road right-of-way. Thus, the maintenance charge to each of the parcels within the district is calculated as:

$$\text{Charge} = [\text{Maintenance Cost}] / 20.78$$

Using the cost of \$6,300 derived from Table 4, and the lot areas from the Final Subdivision plats, the estimated first-year maintenance fees are presented in Table 5.

TABLE 5. ESTIMATED FIRST-YEAR STORMWATER MAINTENANCE FEES				
Lot #	Tax Map Parcel #	Owner	Acres	
1		JOHN YOUNG, et al	1.03	\$328
2		JOHN YOUNG, et al	1.04	\$331
3		JOHN YOUNG, et al	1.24	\$394
4		JOHN YOUNG, et al	1.32	\$420
5		JOHN YOUNG, et al	2.07	\$658
7		JOHN YOUNG, et al	9.85	\$3,133
-	37.1-7-12.8	PIKULIK, GRIGORY & NATALYA	1.05	\$334
-	37.1-7-12.9	PIKULIK, GRIGORY & NATALYA	1.05	\$334
-	37.1-7-12.10	GLENNA MCMINN	1.16	\$369
Total			19.81	\$6,300

Method of Assessment

The charges to finance the costs of this district will be included in the annual Town/County tax bill. Although estimated first year charges are included in this report, the calculated charge will be a reimbursement for actual maintenance activities of each preceding year. The Town will track all maintenance activities and the resulting costs in labor and equipment, and annually adjust the amount to be raised from each landowner.

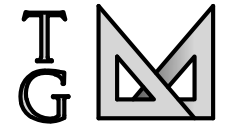
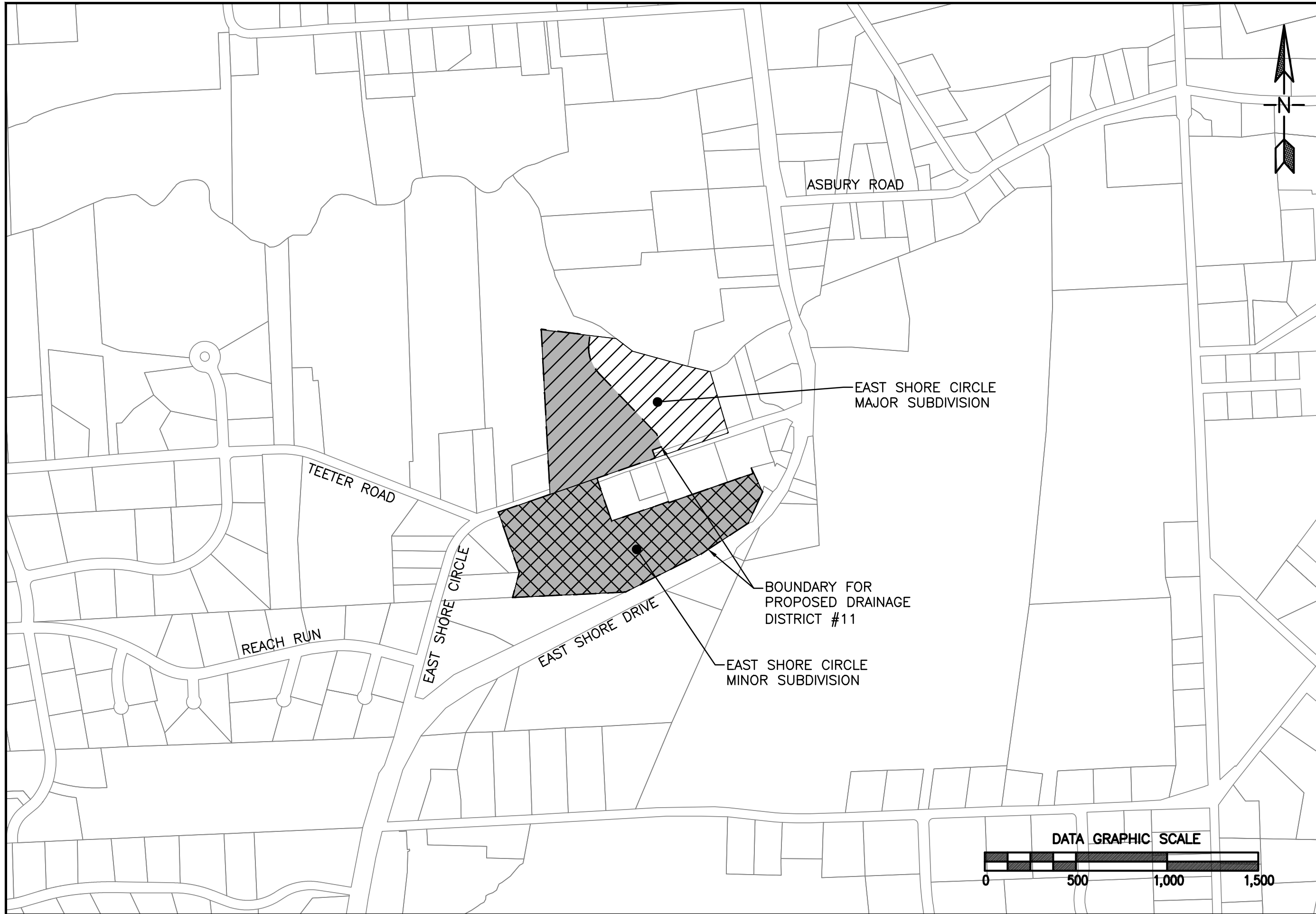
BOUNDARY DESCRIPTION

TOWN OF LANSING DRAINAGE DISTRICT No. 11

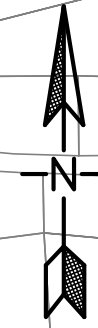
All that tract or parcel of land situate in the Town of Lansing, County of Tompkins, State of New York being bounded and described as follows:

Beginning at a point...

The boundaries of the said District and the Tax Map Parcels included are as shown on Map 2 attached hereto.



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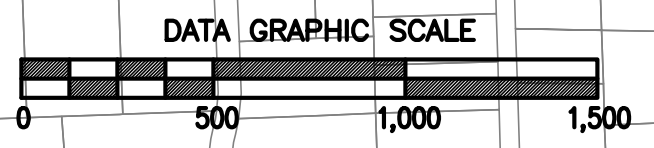


TOWN OF LANSING
PROPOSED DRAINAGE DISTRICT #11
EAST SHORE CIRCLE SUBDIVISION
 TOWN OF LANSING, TOMPKINS COUNTY, NEW YORK

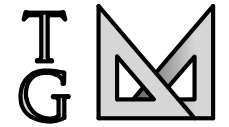
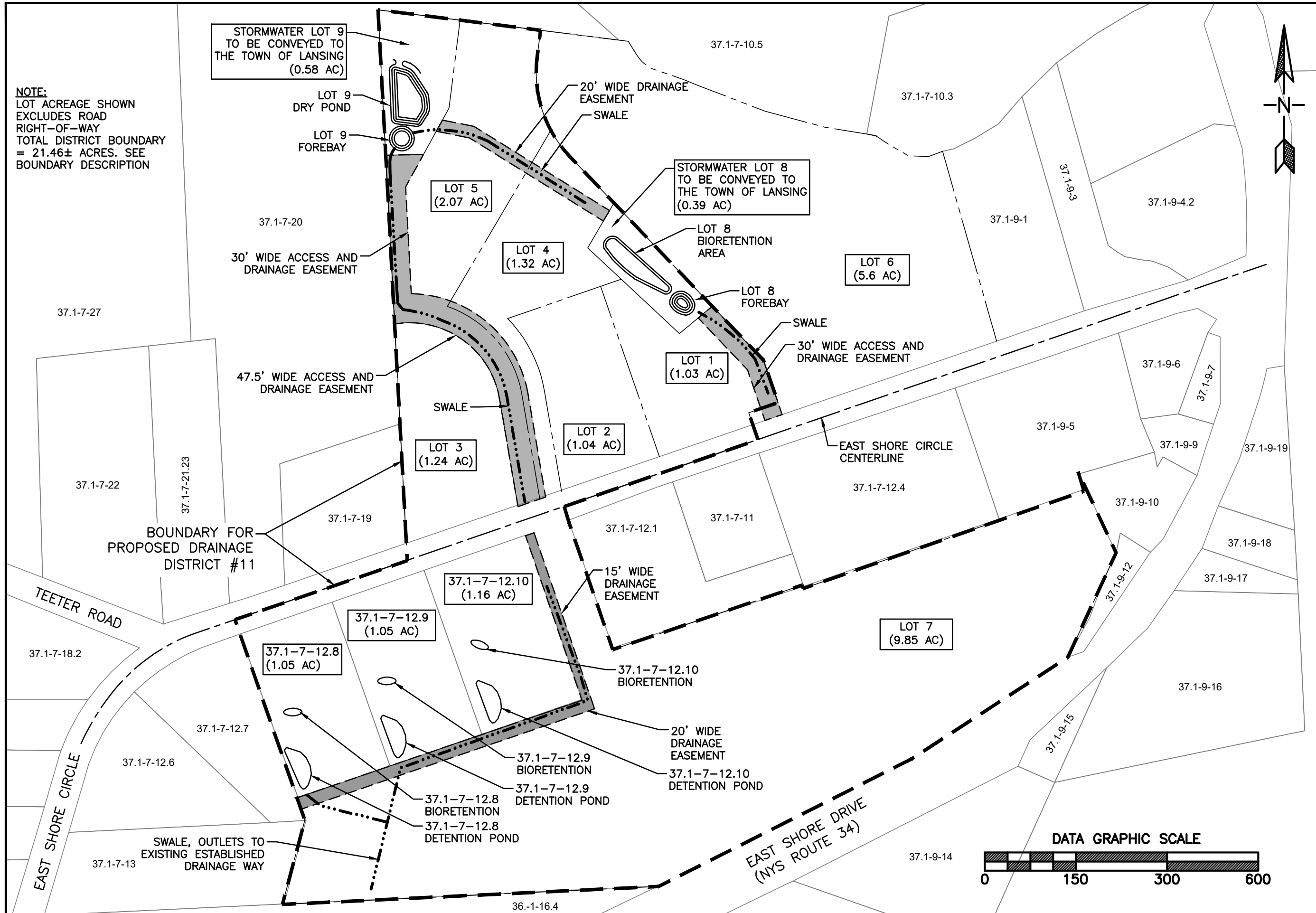
SHEET TITLE

VICINITY
 MAP

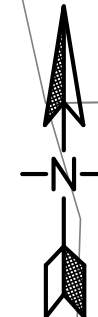
DATE: 8/7/23	JOB No. E23-01
SCALE: 1" = 500'	SHEET MAP 1
DRAWN BY: AXA	
CHECKED: DMH	



NOTE:
 LOT ACREAGE SHOWN
 EXCLUDES ROAD
 RIGHT-OF-WAY
 TOTAL DISTRICT BOUNDARY
 = 21.46± ACRES. SEE
 BOUNDARY DESCRIPTION



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**TOWN OF LANSING
 PROPOSED DRAINAGE DISTRICT #11
 EAST SHORE CIRCLE SUBDIVISION**
 TOWN OF LANSING, TOMPKINS COUNTY, NEW YORK

SHEET TITLE
 DISTRICT BOUNDARY
 AND STORMWATER
 MANAGEMENT
 PRACTICE LOCATION

DATE: 8/7/23	JOB No. E23-01
SCALE: 1" = 150'	SHEET MAP 2
DRAWN BY: AXA	
CHECKED: DMH	

