

TOWN OF LANSING

TOMPKINS COUNTY, NEW YORK

November 6, 2023

ENGINEER'S REPORT

Proposed Town of Lansing Drainage District #12: Asbury Road Subdivision



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ENGINEER'S REPORT
PROPOSED TOWN OF LANSING
DRAINAGE DISTRICT #12:
ASBURY ROAD SUBDIVISION

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SECTION 1 - INTRODUCTION

The Asbury Road Subdivision is a six-parcel realty subdivision located north of Asbury Road and east of Collins Road. The Subdivision obtained final approval from the Town of Lansing Planning Board on March 28, 2022. Land disturbance activities within the Subdivision are subject to the design and permitting requirements of New York State Department of Environmental Conservation (DEC) SPDES General Permit No. GP-0-20-001. In accordance with the General Permit, the Stormwater Pollution Prevention Plan (SWPPP) prepared by the Owner/Operator incorporates permanent post-construction stormwater treatment and peak flow attenuation practices. In addition, permanent swales have been designed to convey stormwater runoff from the undeveloped areas away from the permanent practices.

The SPDES General Permit requires on-going maintenance of these practices and dictates 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) and grassed diversion swales that will be installed on each residential lot as houses are constructed. Long-term operation and maintenance of these practices and swales will be the responsibility of the drainage district as prescribed in a maintenance agreement carried in the deed or general covenants and restrictions filed and common to the Subdivision. 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 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 establish a drainage benefit district for all lands within this Subdivision and which are further outlined in the Boundary Description in Appendix A. As described herein, Drainage District No. 12 here after referred to as the "District", will provide the methodology for financing long-term stormwater practice maintenance.

SECTION 2 - SERVICE AREA

As depicted on Map 1, the Subdivision is located north of Asbury Road and east of Collins Road. The total land area of the subdivision to be included in Drainage District #12 is approximately 72.358 acres including road right-of-way. Based on the approved final subdivision plat, the lands have been divided into five residential building lots and a remnant parcel of vacant land. The building lots are identified on the final plat and Map 2 as Lots 3-7, and the vacant land as Parcel A.

Lot #	Tax Map Parcel #	Owner	Acres
3		JOHN YOUNG, et al	1.049
4		JOHN YOUNG, et al	1.303
5		JOHN YOUNG, et al	1.306
6		JOHN YOUNG, et al	3.254
7		JOHN YOUNG, et al	9.219
Parcel A		JOHN YOUNG, et al	55.314
Total Area of Building Lots =			71.445

SECTION 3 – OVERVIEW OF MAINTENANCE RESPONSIBILITIES

Under this proposal, the District will assume the responsibility for maintaining the bioretention basin and grassed diversion swale once constructed by the Owner/Operator on lots as identified in Map 2 and detailed in the final plans and SWPPP as approved by the Stormwater Management Officer. The Owner/Operator will be responsible for all temporary sediment and erosion control practices in compliance with the requirements of the NYSDEC SPDES General Permit 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). The NOI must reference the Final Subdivision SWPPP as well as the Subdivision SPDES permit number identified on the Final Plat. Under the General Permit, the individuals who retain permit coverage are responsible for and liable under 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 #12

The Town will be responsible on behalf of the District for undertaking annual inspections and implementing emergency repairs to the 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 and as shown on Map 2. With respect to Lots 3-7, each bioretention basin is intended to receive runoff from the impervious areas of the individual lot they serve. Runoff from the upstream undeveloped land will be captured and diverted to the Town's right-of-way by grass lined swales. 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 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 #12		
Maintenance Item	Frequency (years)^{1,2}	Practices Where Performed
<i>Inspections</i>		
Inspection	1	Bioretention basin and swales
<i>Sediment and Debris Removal</i>		
Unclog outlet pipes	1	Bioretention basin
Debris/Trash Removal	1	Bioretention basin and swales
Remove sediment from swales	5	Swales
<i>Vegetation Management</i>		
Mowing	1	Bioretention basin embankment and swales
Tree removal from embankment	10	Bioretention basin Embankments (should be

TABLE 3. STORMWATER MAINTENANCE ACTIVITIES FOR DRAINAGE DISTRICT #12		
Maintenance Item	Frequency (years)^{1,2}	Practices Where Performed
		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	Bioretention basin
<i>Erosion</i>		
Repair areas of erosion	2-5	Bioretention basin and swales
<i>Structural repairs</i>		
Repair low spots on the embankment	5	Bioretention basin
Till bioretention surface to restore permeability (Filter drains slowly and surface is compacted)	3 (as needed)	Bioretention basin
Replace entire bioretention media (Filter does not drain, and other measures to restore are unsuccessful)	10 (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) Each inspection takes approximately two staff hours, including a site visit by one person, travel time, and report writing.
- 2) A total of five lots are simultaneously developed for residential use.
- 3) Items listed as annual or more frequent occur within the first year, at the frequency named.
- 4) Some erosion occurs within the diversion swales or swales leading to the basins, and will need to be repaired.
- 5) 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.
- 6) Mowing is needed on basin embankments and swales, representing a total of approximately 1.5 acres.

TABLE 4. COST OF FIRST-YEAR MAINTENANCE

Maintenance Item	Description	Unit Cost	Extent	Cost
Inspection and Reporting	Inspect using forms derived from Appendix G of the “New York Stormwater Management Design Manual”	\$150/hour	2-hr for five improved lots	\$1,500
Unclog outlet pipes	Remove accumulated debris from the outlet pipes, possibly by jet cleaning.	\$150/bio	1 time for 5 bio’s	\$750
Mowing and Debris/Trash Removal	Mow the swales and embankments. Remove trash and debris.	\$200/lot	1 time for 5 improved lots	\$1,000
Repair areas of erosion and settling within swales and bio	Replace topsoil, compact and reseed up to two areas.	\$250/lot	1 time for 5 improved lots	\$1,250
TOTAL ESTIMATED COST (ROUNDED) =				\$4,500

SECTION 6 – METHOD OF FINANCING

Estimate of First-Year Maintenance Charges

The cost of annual inspection, reporting and maintenance 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 71.445 acres excluding road right-of-way. Thus, the maintenance charge to each of the parcels within the district is calculated as outlined in the formula below. A tiered rate will be used for parcels considered Vacant Land and Developed Land defined as follows:

“Vacant Land” means a lot or parcel of land that is not improved or significantly disturbed, and which has not been earmarked by planning board or other approvals for development or significant disturbance.

“Developed Land” means a lot or parcel of land was or is improved, or which is earmarked for significant disturbance or development, whether with a residence, an accessory structure, or otherwise, including by planning board or other approvals.

Developed Land will be charged full rate. Parcels that are considered Vacant Land will be charged 10% of the full rate until the property becomes classified as Developed Land.

Maintenance Charge (cost per acre):

Full Rate (Developed Land)=

$$\text{Maintenance Cost}/(\text{Developed Land Acreage} + (10\%*\text{Vacant Land Acreage}))$$

$$\begin{aligned} \text{Full Rate (Developed Land)} &= \$4,500/(16.131 + (10\%*55.314)) \\ &= \mathbf{\$207.73 \text{ per acre}} \end{aligned}$$

$$\begin{aligned} \text{10\% of Full Rate (Vacant Land)} &= \$207.73*10\% \\ &= \mathbf{\$20.77 \text{ per acre}} \end{aligned}$$

Using the cost of \$4,500 derived from Table 4, and the lot areas from the Final Subdivision plat, the estimated first year maintenance fees are presented in Table 5.

TABLE 5. ESTIMATED FIRST-YEAR STORMWATER MAINTENANCE FEES					
Lot #	Tax Parcel #	Owner(s) Name(s)	Developed Land Acreage	Vacant Land Acreage	Estimated Fee (Rounded)
3		JOHN YOUNG, et al	1.049		\$218
4		JOHN YOUNG, et al	1.303		\$271
5		JOHN YOUNG, et al	1.306		\$271
6		JOHN YOUNG, et al	3.254		\$676
7		JOHN YOUNG, et al	9.219		\$1,915
Parcel A		JOHN YOUNG, et al		55.314	\$1,149
		Total	16.131	55.314	\$4,500

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.

APPENDIX A

BOUNDARY DESCRIPTION

TOWN OF LANSING DRAINAGE DISTRICT No. 12

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 in the present centerline of Asbury Road, said point being further located 776.46' East of the present centerline intersection with Collins Road;

RUNNING THENCE North 87° 32' 39" East along the present centerline of Asbury Road for a distance of 60.00' to a point;

RUNNING THENCE North 01° 50' 40" West, passing through an iron pin found at a distance of 26.47' and continuing for a total distance of 325.42' to an iron pin found;

RUNNING THENCE North 87° 08' 08" East, passing through an iron pin found at a distance of 177.99', passing through an iron pin set at an additional distance of 150.02', passing through an iron pin set at an additional distance of 150.02', said course having a total distance of 478.03';

RUNNING THENCE South 03° 51' 57" East for a distance of 328.91' to a point;

RUNNING THENCE North 87° 32' 39" East along the present centerline of Asbury Road for a distance of 150.05' to a point;

RUNNING THENCE North 03° 51' 57" West, passing through an iron pipe found at a distance of 29.76' and continuing for a total distance of 329.98' to an iron pipe found;

RUNNING THENCE North 87° 08' 08" East for a distance of 300.00' to a tall post;

RUNNING THENCE South 03° 51' 57" East for a distance of 332.12' to a point;

RUNNING THENCE North 87° 32' 39" East along the present centerline of Asbury Road for a distance of 76.26' to a point;

RUNNING THENCE North 87° 32' 39" East along the present centerline of Asbury Road for a distance of 150.00' to a point;

RUNNING THENCE North 87° 32' 39" East along the present centerline of Asbury Road for a distance of 150.00' to a point;

RUNNING THENCE North 02° 52' 45" West, passing through an iron pipe found a distance of 36.22' and continuing for a total distance of 404.60' to an iron pin set;

RUNNING THENCE North 02° 52' 45" West for a distance of 113.62' to an iron pipe found;

RUNNING THENCE North 02° 18' 28" West for a distance of 1336.42' to an iron pin set;

RUNNING THENCE South 87° 02' 17" West for a distance of 1616.99' to an iron pin found;

RUNNING THENCE South 86° 41' 09" West for a distance of 328.97' to an iron pin set;

RUNNING THENCE South 02° 41' 44" East for a distance of 200.00' to a point

RUNNING THENCE South 86° 41' 09" West, passing through an iron pipe found at a distance of 191.47' and continuing for a total distance of 217.50' to a point;

RUNNING THENCE South 02° 50' 10" East along the present centerline of Collins Road for a distance of 642.90' to a point;

RUNNING THENCE South 02° 50' 10" East along the present centerline of Collins Road for a distance of 75.00' to a point;

RUNNING THENCE South 02° 50' 10" East along the present centerline of Collins Road for a distance of 300.00 to a point;

RUNNING THENCE North 87° 29' 09" East, passing through an iron pin found at a distance of 25.00' and continuing for a total distance of 330.84' to an iron pin set;

RUNNING THENCE North 56° 37' 39" East for a distance of 243.70' to an iron pin set;

RUNNING THENCE North 87° 29' 09" East for a distance of 246.68' to an iron pin set;

RUNNING THENCE South 02° 30' 51" East for a distance of 125.00' to an iron pin found;

RUNNING THENCE South 01° 50' 40" East, passing through an iron pin found at a distance of 590.36' and continuing for a total distance of 615.12 to the point and place of beginning;

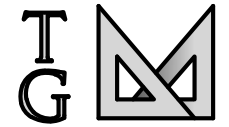
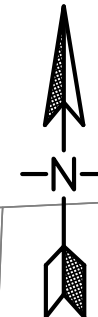
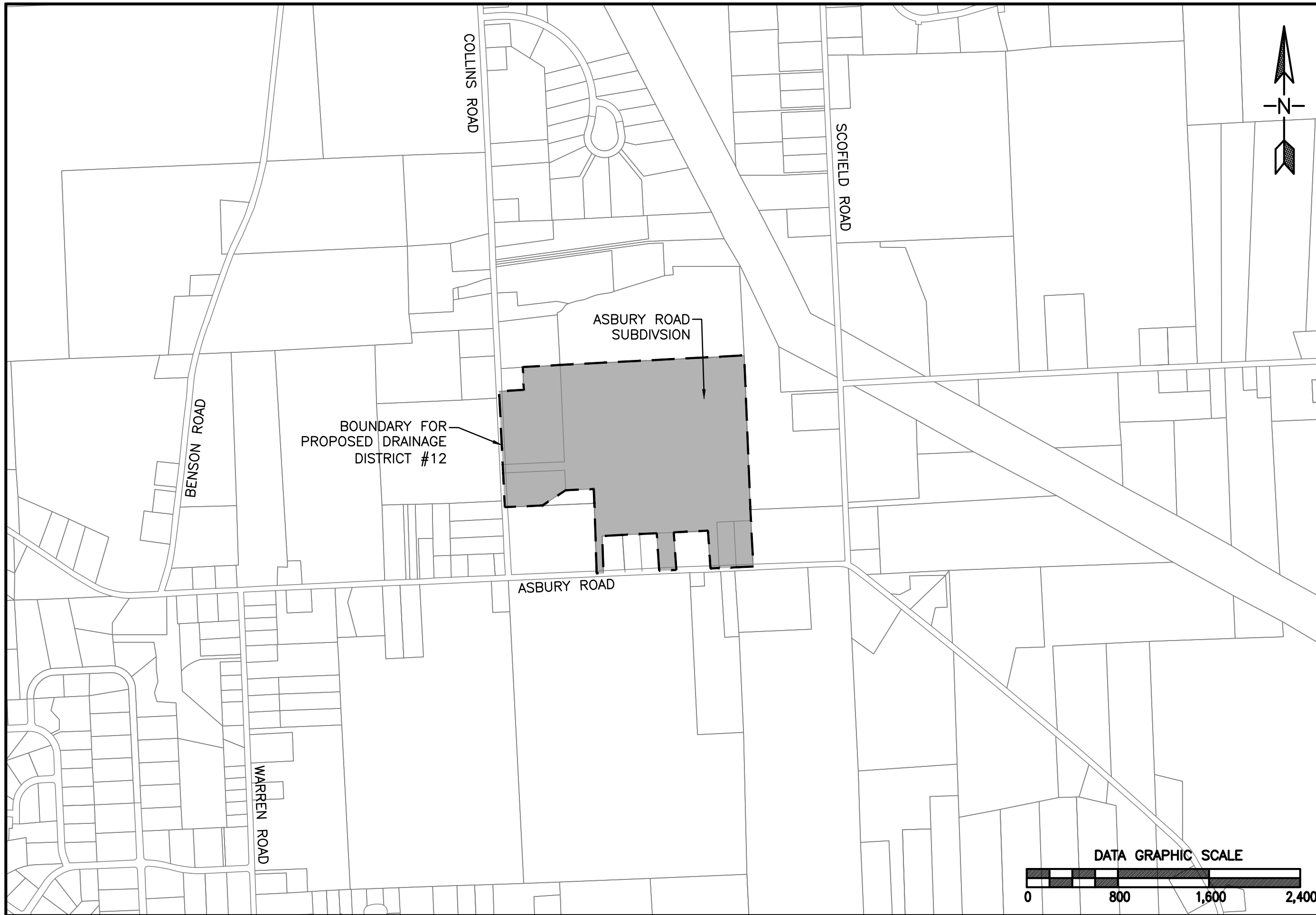
Said parcel having an area of 72.35 acres to the centerline of roads.

Said parcel having an area of 71.45 acres net to the road right of ways.

SUBJECT TO covenants, restrictions, easements and encumbrances of record.

For a more particular description thereof, reference is hereby made to a survey map entitled, being “Subdivision Plat for Lots 3-7, Showing a Portion of Lands of James R. and Julie R. Young and John F. Young and Susan M. Barnett, Located on Asbury Road, Town of Lansing, Tompkins County, New York” dated 1/4/2022, prepared by T.G. Miller, P.C., Engineers and Surveyors, Ithaca, New York, filed concurrently herewith and incorporated herein by reference.

Also, references is hereby made to a survey map entitled, being “Town of Lansing Proposed Drainage District No. 12 Asbury Road Subdivision, Town of Lansing, Tompkins County, New York” dated 8/7/2023, prepared by T.G. Miller, P.C., Engineers and Surveyors, Ithaca, New York, filed concurrently herewith and incorporated herein by reference.



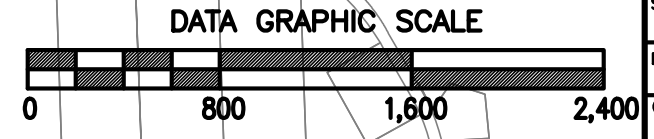
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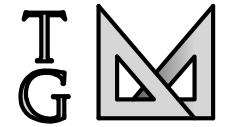
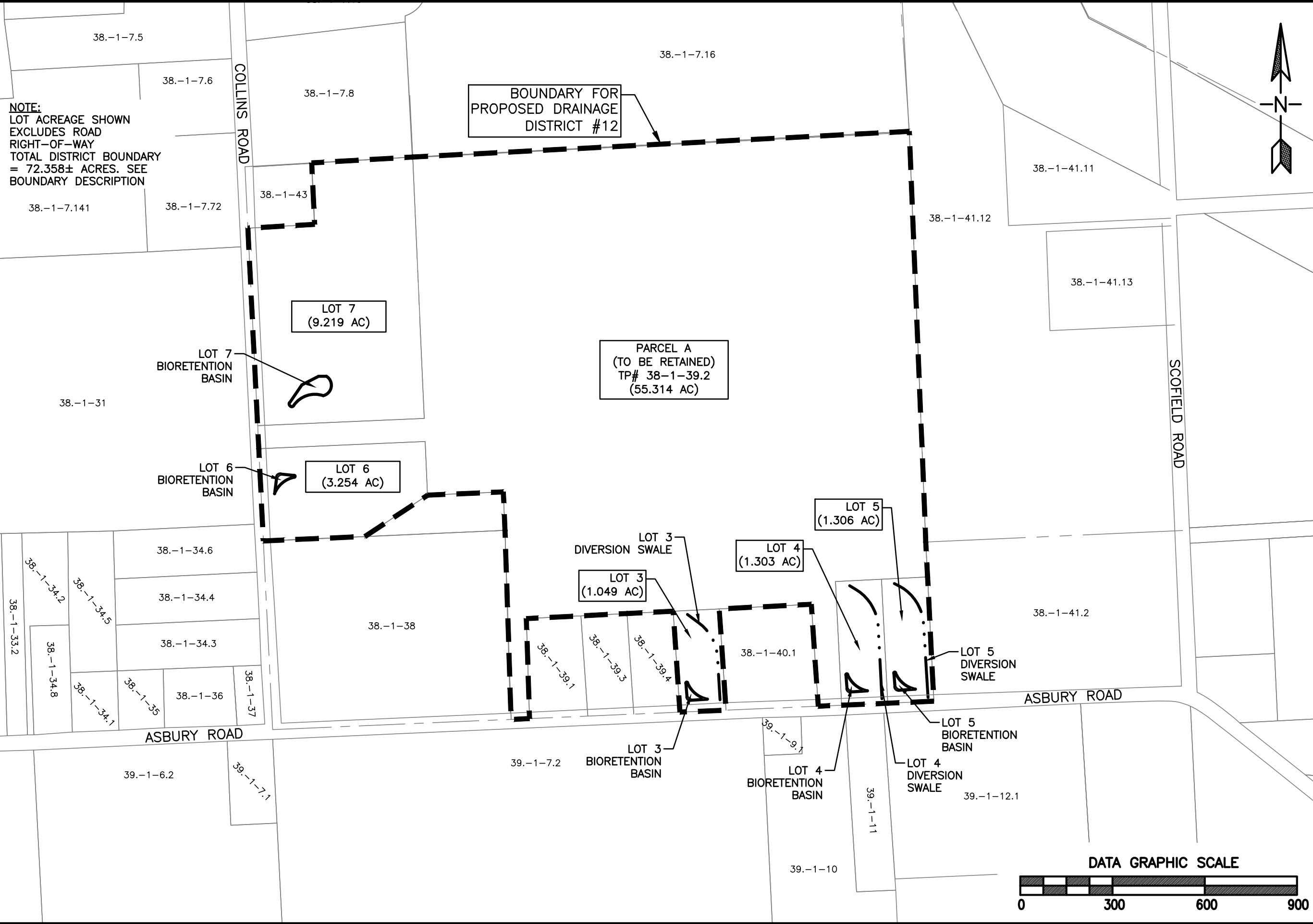
TOWN OF LANSING
PROPOSED DRAINAGE DISTRICT #12
ASBURY ROAD SUBDIVISION
 TOWN OF LANSING, TOMPKINS COUNTY, NEW YORK

SHEET TITLE

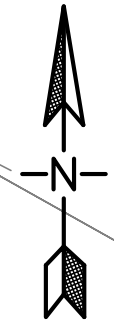
VICINITY
MAP

DATE: 8/7/23	JOB No. E22-01
SCALE: 1" = 800'	SHEET MAP 1
DRAWN BY: OB	CHECKED: DMH





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**TOWN OF LANSING
 PROPOSED DRAINAGE DISTRICT #12
 ASBURY ROAD SUBDIVISION**
 TOWN OF LANSING, TOMPKINS COUNTY, NEW YORK

SHEET TITLE
DISTRICT BOUNDARY AND STORMWATER MANAGEMENT PRACTICE LOCATION

DATE: 8/7/23	JOB No. E22-01
SCALE: 1" = 300'	SHEET MAP 2
DRAWN BY: OBB	
CHECKED: DMH	

